11th Meeting of the Conference of the Parties to the Convention on Wetlands (Ramsar, Iran, 1971)

"Wetlands: home and destination"

Bucharest, Romania, 6-13 July 2012

Resolution XI.1

Institutional hosting of the Ramsar Secretariat

1. CONFIRMING that the Ramsar Convention on Wetlands is an international treaty deposited with the United Nations and that activities mandated by its Conference of the Parties for the implementation of the Convention are activities carried out under the legal authority of an international treaty and its Contracting Parties;

2. RECALLING the adoption of the Strategic Plan 2009-2015 by Resolution X.1 as the basis for the future implementation of the Convention;

3. RECALLING that Resolution X.5 (2008) of the Conference of the Contracting Parties established an Ad Hoc Working Group on Administrative Reform with the objective of recommending efficient and effective measures to improve the capacity and operation of the Ramsar Secretariat to support and facilitate the implementation of the Convention and serve the interests of the Contracting Parties, and of determining whether the Secretariat should continue to be hosted by IUCN or should be institutionally hosted by UNEP;

4. EXPRESSING APPRECIATION to the Ad Hoc Working Group on Administrative Reform and the Standing Committee, as well as to the Ramsar Secretariat, IUCN, and UNEP, for the significant work that has been carried out on this matter;

5. RECOGNIZING the need to successfully conclude the consultative process on this matter and to take a decision at the latest by the 11th meeting of the Conference of the Parties;

6. NOTING the interest of all Parties in enhancing the visibility and stature of the Ramsar Convention and increasing synergies with other MEAs and with UNEP, and seeking to improve the development of the Convention by introducing other UN official languages in the operation of the Convention;

7. ACKNOWLEDGING the strong desire of Arab States to inscribe the Arab language as an official language of the Ramsar Convention and WELCOMING the expression of openness of this Conference of the Contracting Parties with regard to this topic;

8. RESOLVING to facilitate the current and future work of the Ramsar Secretariat without further delay;

9. EXPRESSING appreciation for the quality of the cooperation between the IUCN and the Secretariat of the Ramsar Convention;

10. NOTING the desire of some Parties to incorporate a high-level political segment in meetings of the Conference of the Parties to improve the visibility of the Convention; and

11. WELCOMING the wish of the Parties to reach a consensus on a dynamic and sustainable solution;

THE CONFERENCE OF THE CONTRACTING PARTIES

12. DECIDES to renew its confidence in IUCN and to continue its hosting arrangement for the Ramsar Secretariat;

13. REQUESTS the Secretary General of the Ramsar Convention to inform the Executive Director of UNEP and the Director-General of IUCN of the deliberations and INVITES the Secretariat to inform the Parties through diplomatic channels about this Resolution;

14. INVITES IUCN to work towards continued improvement of this cooperation in order, amongst other things, to reinforce the efficiency of the Secretariat's functioning and the status of its staff, as well as the issues of common interest related to the host country;

15. REQUESTS the Standing Committee to establish at its 46th meeting a mechanism of the Contracting Parties that will, taking into account the needs of the Contracting Parties and the Ramsar Secretariat, facilitate negotiations between the Ramsar Secretariat and the Director-General of IUCN, evaluate the work already achieved and seek ways of improving the current operations of the Secretariat and enhancing the implementation of the Ramsar Convention, and to provide the Standing Committee with a report on these negotiations at its 47th meeting;

16. CALLS UPON the Contracting Parties to cooperate with the Ramsar Secretariat, as appropriate, to enhance collaboration and coordination between IUCN and the Convention;

17. INSTRUCTS the Standing Committee through an appropriate Working Group representative of Parties to develop strategies that explore:

    a) accommodation of UN languages into the Convention;
    b) elevation of Ramsar visibility and stature, including *inter alia* enhancing high-level political engagement in the work of the Convention at national, regional and global level; the working group will among other possibilities look into establishing a ministerial segment at the COP including the topics to be addressed at this level;
    c) enhancement of synergies with MEAs and other international entities including through Regional Initiatives;
    d) increased involvement in UNEP's initiatives and programs regarding biodiversity-related MEAs to enhance cooperation and synergies between Ramsar and UNEP;

and INVITES all Parties to participate in this group and its discussions including through electronic means where feasible; and

18. REQUESTS the Working Group to provide each Standing Committee meeting with a progress report including any implications such as financial ones and recommendations, and ALSO REQUESTS the Standing Committee to submit a report, including its recommendations, to the 12th meeting of the Conference of the Contracting Parties.

11th Meeting of the Conference of the Parties to the Convention on Wetlands (Ramsar, Iran, 1971)

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Resolution XI.2

Financial and budgetary matters

1. RECALLING the budgetary provisions established by Article 6, paragraphs 5 and 6, of the Convention on Wetlands;

2. ACKNOWLEDGING WITH APPRECIATION the prompt payment by the majority of Contracting Parties of their contributions to the Core budget of the Convention,-and NOTING WITH CONCERN that a number of Parties still have outstanding contributions (COP11 DOC. 15);

3. NOTING WITH GRATITUDE the additional voluntary financial contributions made by many Contracting Parties through their Ramsar Administrative Authorities and other agencies, including some development assistance agencies, and also the contributions made by non-governmental organizations and the private sector for activities undertaken by the Secretariat, and UNDERLINING the importance of such voluntary contributions to the non-core budget;

4. ACKNOWLEDGING WITH APPRECIATION the financial and administrative services provided to the Secretariat by IUCN, underpinned by the Services Agreement between Ramsar and IUCN revised in 2009;

5. NOTING that Contracting Parties have been kept informed of the financial situation of the Secretariat through the audited annual financial statements for 2008 to 2011 and the reports of the Standing Committee meetings in 2009, 2010 and 2011 that have been circulated to Contracting Parties; and

6. RECOGNIZING the need to continue to strengthen financial partnerships with relevant international organizations and other entities and to explore additional funding opportunities through their existing financial mechanisms consistent with those institutions' mandates and existing programming;

THE CONFERENCE OF THE CONTRACTING PARTIES

7. ACKNOWLEDGES that since the 10th meeting of the Conference of the Contracting Parties in 2008 the Secretariat has managed the Convention's funds prudently, efficiently and openly;

8. ACKNOWLEDGES the Contracting Parties that have served in the Subgroup on Finance of the Standing Committee during the past cycle, and in particular Finland, which has acted as Chair of the Subgroup;

9. DECIDES that the *Terms of Reference for the Financial Administration of the Convention* contained in Annex 3 to Resolution V.2 (1993) will be applied *in toto* to the 2013-2015 cycle;

10. FURTHER DECIDES that the Subgroup on Finance, as established by Resolution VI.17, will continue to operate under the aegis of the Standing Committee and with the roles and responsibilities specified in that Resolution;

11. NOTES that the 2013-2015 budget includes a Core element funded by contributions from Contracting Parties, prepared on the basis that there are no fundamental changes to the operation of the Secretariat during 2013-2015, and a non-Core unfunded element to be financed by additional voluntary contributions, and APPROVES the combined budget for the 2013-2015 cycle as attached in Annex I to enable the implementation of the 2009-2015 Strategic Plan of the Convention;

12. AUTHORIZES the Standing Committee, with the advice of its Subgroup on Finance, to revise Core budgetary allocations between budget lines in the light of significant positive or negative changes during the cycle to costs, rates of inflation, interest and tax income projected in the budget, without increasing the contributions of Parties or increasing the charges paid to IUCN above the budgeted 13% maximum;

13. AUTHORIZES the Standing Committee, with the advice of its Subgroup on Finance, to revise non-Core budgetary allocations and priorities depending upon the success of the Parties and Secretariat in securing voluntary funding for these activities;

14. DECIDES that the contribution of each Contracting Party to the core budget (other than those making only voluntary contributions) should be in accordance with the scale of assessments for the contributions of Member States to the United Nations budget as approved by the UN General Assembly, which for those only paying voluntary contributions is applied on an indicative basis, and except in the case of Contracting Parties which, in applying the UN scale, could make annual contributions to the Ramsar Convention Core budget of less than CHF 1,000, in which case the annual contribution will be that amount;

15. NOTES WITH GRATITUDE that at the 10th meeting of the Conference of the Parties the Contracting Parties of Africa contributing less than CHF 2,000 agreed to increase their payments to that level, and that the difference between CHF 2,000 and their annual assessment will form a voluntary contribution specifically earmarked for African Regional Initiatives;

16. URGES all Contracting Parties to pay their contributions to the core budget promptly by 1 January of each year, or as soon thereafter as that country's budget cycle will permit;

17. URGES Contracting Parties with outstanding contributions to make a renewed effort to settle them as expeditiously as possible to enhance the financial sustainability of the Convention through contributions by all Contracting Parties, and REQUESTS the

Secretariat to contact Contracting Parties with outstanding contributions in excess of three years and work with them to identify appropriate options and actions for addressing the situation and initiating a plan for making payment of contributions, and to report back to each Standing Committee meeting and meeting of the Conference of the Parties on activities taken in this regard and results achieved;

18. ENCOURAGES Contracting Parties and others to increase additional voluntary contributions to fund the important non-Core element of the 2013-2015 combined budget, which includes, *inter alia*, the work of the Scientific and Technical Review Panel, the Ramsar Sites Information Service, Ramsar Advisory Missions, Regional Initiatives and Centres, and the Small Grants Fund;

19. REQUESTS the Secretariat to continue to develop new approaches and tools to secure voluntary financial contributions for priority projects;

20. REAFFIRMS its conviction that the Convention's grants programmes, including the Small Grants Fund, are of great value in terms of the implementation of the Convention and INVITES Parties and others to make additional voluntary contributions to secure the efficient operation of these programmes, REQUESTS the Standing Committee to review the operation of the programme during the triennium, and ALSO REQUESTS the Secretariat to make the Small Grants Fund a priority in all fundraising efforts;

21. DECIDES that the Reserve Fund:

    a) provides for unforeseen and unavoidable expenditures;
    b) receives realized core budget surpluses (or deficits);
    c) should not be lower than 6% of the annual core budget of the Convention and not greater than 15%;
    d) should be administered by the Secretary General with the approval of the Subgroup on Finance as established by the Standing Committee;

    and that this decision supersedes Resolution VI.17 (1996), paragraph 10;

22. REQUESTS the Secretary General to endeavor to increase the Reserve Fund over the 2013-2015 triennium in accordance with this budget and to report annually to the Standing Committee on the status and propose to its Subgroup on Finance for its concurrence prior to any uses of the Fund; and

23. AFFIRMS that the Ramsar Convention budget for the 2013-2015 cycle shall not be considered as setting a precedent for the budget in subsequent years or of any other international convention.

Annex I: Combined Budget for 2013-2015.
Annex II: Illustrative Core budget contributions by Contracting Party.
Annex III: Analysis of 2013-2015 budgeted non-Core expenditures.

ANNEX I - Ramsar 2013-2015 Combined Budget, in CHF'000

	2013		2014		2015	
	Core	Non-Core	Core	Non-Core	Core	Non-Core
INCOME	**CHF'000**	**CHF'000**	**CHF'000**	**CHF'000**	**CHF'000**	**CHF'000**
i. Parties' contributions	3,779	-	3,779	-	3,779	-
ii. Voluntary contributions	1,065	3,400	1,065	4,637	1,065	5,337
iii. Income Tax	225	-	225	-	225	-
iv. Income Interest	12	-	12	-	12	-
TOTAL INCOME	**5,081**	**3,400**	**5,081**	**4,637**	**5,081**	**5,337**
EXPENDITURES						
A. Secretariat Senior Management	825	-	825	-	825	-
B. Partnership Coordinator	311	130	311	130	311	130
C. Regional Advice and Support	1,347	-	1,347	587	1,347	587
D. Support to Regional Initiative Networks & Centres	160	300	120	300	120	300
E. Scientific and Technical Services	210	635	210	635	210	635
F. Communications, Documentation, CEPA	506	130	506	130	506	130
G. Administration/RSIS/Web	754	130	794	130	794	130
H. Operating Costs	97	-	97	-	97	-
I. Standing Committee Services	85	25	85	25	85	25
J. IUCN Administrative Service Charges (maximum)	566	-	566	-	566	-
K. Miscellaneous - Reserve Fund	75	-	75	-	75	-
K. Miscellaneous - Bad debt/exchange/legal	145	-	145	-	145	-
1. RSIS and RIS database	-	100	-	100	-	200
2. World Wetlands Day	-	100	-	100	-	100
3. Ramsar Advisory Missions	-	150	-	150	-	150
4. CEPA Action Planning Workshops	-	100	-	100	-	100
5. Grants Programmes - SGF/WFF/SGA	-	1,400	-	1,400	-	1,400
6. Regional Meetings	-	150	-	750	-	150
7. COP Delegates and Ramsar Award	-	-	-	-	-	1,200
8. Strategic Visioning/Planning for 40+ and 2016-2021	-	50	-	100	-	100
TOTAL EXPENDITURES	**5,081**	**3,400**	**5,081**	**4,637**	**5,081**	**5,337**
TOTAL SALARY COSTS– staff salaries and related costs**	**3,330**	**260**	**3,330**	**797**	**3,330**	**797**
	66%	8%	66%	17%	66%	15%
TOTAL TRAVEL COSTS	**165**		**165**		**165**	
	3%		3%		3%	

** COP recognises that salary costs budgets are frozen, but has no desire to reduce Core budget positions over the period, and that if IUCN obliges staff cost increases, exceeded budget lines will be dealt with from the reserve fund.

ANNEX II - ILLUSTRATIVE CORE BUDGET CONTRIBUTIONS BY CONTRACTING PARTY 2013-201

Illustration, based on:				
Membership as at 11.7.12		2013 Core Contribution	2014 Core Contribution	2015 Core Contribution
UN Scale of Assessments 2010-2012*		CHF	CHF	CHF
1310-00091	Albania	1,000	1,000	1,000
1310-00001	Algeria	6,242	6,242	6,242
1310-00145	Antigua & Barbuda	1,000	1,000	1,000
1310-00003	Argentina	13,996	13,996	13,996
1310-00002	Armenia	1,000	1,000	1,000
1310-00004	Australia	94,264	94,264	94,264
1310-00005	Austria	41,499	41,499	41,499
1310-00124	Azerbaijan	1,000	1,000	1,000
1310-00099	Bahamas	1,000	1,000	1,000
1310-00102	Bahrain	1,902	1,902	1,902
1310-00006	Bangladesh	1,000	1,000	1,000
1310-00149	Barbados	1,000	1,000	1,000
1310-00116	Belarus	2,048	2,048	2,048
1310-00007	Belgium	52,423	52,423	52,423
1310-00112	Belize	1,000	1,000	1,000
1310-00118	Benin	1,000	1,000	1,000
131000161	Bhutan	1,000	1,000	1,000
1310-00008	Bolivia	1,000	1,000	1,000
1310-00128	Bosnia and Herzegovina	1,000	1,000	1,000
1310-00096	Botswana	1,000	1,000	1,000
1310-00009	Brazil	78,561	78,561	78,561
1310-00010	Bulgaria	1,853	1,853	1,853
1310-00011	Burkina Faso	1,000	1,000	1,000
1310-00132	Burundi	1,000	1,000	1,000
1310-00115	Cambodia	1,000	1,000	1,000
1310-00150	Cameroon	1,000	1,000	1,000
1310-00012	Canada	156,391	156,391	156,391
1310-00146	Cape Verde	1,000	1,000	1,000
1310-00148	Central African Republic	1,000	1,000	1,000
1310-00072	Chad	1,000	1,000	1,000
1310-00013	Chile	11,509	11,509	11,509
1310-00014	China	155,513	155,513	155,513
1310-00110	Colombia	7,022	7,022	7,022
1310-00084	Comoros	1,000	1,000	1,000
1310-00109	Congo	1,000	1,000	1,000
1310-00015	Costa Rica	1,658	1,658	1,658
1310-00093	Côte d'Ivoire	1,000	1,000	1,000
1310-00016	Croatia	4,730	4,730	4,730
1310-00123	Cuba	3,462	3,462	3,462
1310-00125	Cyprus	2,243	2,243	2,243
1310-00017	Czech Republic	17,019	17,019	17,019
1310-00100	Republic of Korea	110,210	110,210	110,210
1310-00092	Democratic Republic of Congo	1,000	1,000	1,000
1310-00018	Denmark	35,891	35,891	35,891
1310-00135	Djibouti	1,000	1,000	1,000
1310-00131	Dominican Republic	2,048	2,048	2,048
1310-00019	Ecuador	1,951	1,951	1,951
1310-00020	Egypt	4,584	4,584	4,584
1310-00113	El Salvador	1,000	1,000	1,000
1310-00136	Equatorial Guinea	1,000	1,000	1,000
1310-00022	Estonia	1,951	1,951	1,951
1310-00151	Fiji	1,000	1,000	1,000
1310-00023	Finland	27,601	27,601	27,601
1310-00024	France	298,591	298,591	298,591
1310-00025	Gabon	1,000	1,000	1,000
1310-00094	Gambia	1,000	1,000	1,000
1310-00105	Georgia	1,000	1,000	1,000
1310-00026	Germany	391,002	391,002	391,002

Illustration, based on:				
Membership as at 11.7.12		2013 Core Contribution	2014 Core Contribution	2015 Core Contribution
UN Scale of Assessments 2010-2012*		CHF	CHF	CHF
1310-00027	Ghana	1,000	1,000	1,000
1310-00028	Greece	33,697	33,697	33,697
1310-00161	Grenada	1,000	1,000	1,000
1310-00029	Guatemala	1,365	1,365	1,365
1310-00030	Guinea	1,000	1,000	1,000
1310-00031	Guinea-Bissau	1,000	1,000	1,000
1310-00032	Honduras	1,000	1,000	1,000
1310-00033	Hungary	14,191	14,191	14,191
1310-00034	Iceland	2,048	2,048	2,048
1310-00035	India	26,041	26,041	26,041
1310-00036	Indonesia	11,606	11,606	11,606
1310-00038	Iran, Islamic Republic of	11,362	11,362	11,362
1310-00156	Iraq	1,000	1,000	1,000
1310-00037	Ireland	24,285	24,285	24,285
1310-00098	Israel	18,726	18,726	18,726
1310-00039	Italy	243,779	243,779	243,779
1310-00103	Jamaica	1,000	1,000	1,000
1310-00040	Japan	611,032	611,032	611,032
1310-00041	Jordan	1,000	1,000	1,000
1310-00153	Kazakhstan	3,706	3,706	3,706
1310-00042	Kenya	1,000	1,000	1,000
1310-00133	Kyrgyz Republic	1,000	1,000	1,000
1310-00159	Lao Peoples Republic	1,000	1,000	1,000
1310-00087	Latvia	1,853	1,853	1,853
1310-00114	Lebanon	1,609	1,609	1,609
1310-00139	Lesotho	1,000	1,000	1,000
1310-00137	Liberia	1,000	1,000	1,000
1310-00119	Libya	6,291	6,291	6,291
1310-00043	Liechtenstein	1,000	1,000	1,000
1310-00044	Lithuania	3,170	3,170	3,170
1310-00045	Luxembourg	4,389	4,389	4,389
1310-00111	Madagascar	1,000	1,000	1,000
1310-00097	Malawi	1,000	1,000	1,000
1310-00085	Malaysia	12,338	12,338	12,338
1310-00046	Mali	1,000	1,000	1,000
1310-00047	Malta	1,000	1,000	1,000
1310-00138	Marshall Islands	1,000	1,000	1,000
1310-00049	Mauritania	1,000	1,000	1,000
1310-00127	Mauritius	1,000	1,000	1,000
1310-00050	Mexico	114,892	114,892	114,892
1310-00104	Monaco	1,000	1,000	1,000
1310-00106	Mongolia	1,000	1,000	1,000
1310-00154	Montenegro	1,000	1,000	1,000
1310-00048	Morocco	2,828	2,828	2,828
1310-00140	Mozambique	1,000	1,000	1,000
1310-00142	Myanmar	1,000	1,000	1,000
1310-00090	Namibia	1,000	1,000	1,000
1310-00051	Nepal	1,000	1,000	1,000
1310-00052	Netherlands	90,460	90,460	90,460
1310-00053	New Zealand	13,313	13,313	13,313
1310-00101	Nicaragua	1,000	1,000	1,000
1310-00054	Niger	1,000	1,000	1,000
1310-00122	Nigeria	3,804	3,804	3,804
1310-00055	Norway	42,475	42,475	42,475
1310-00057	Pakistan	3,999	3,999	3,999
1310-00134	Palau	1,000	1,000	1,000
1310-00056	Panama	1,073	1,073	1,073
1310-00058	Papua New Guinea	1,000	1,000	1,000
1310-00089	Paraguay	1,000	1,000	1,000

Illustration, based on:				
Membership as at 11.7.12		2013 Core Contribution	2014 Core Contribution	2015 Core Contribution
UN Scale of Assessments 2010-2012*		CHF	CHF	CHF
1310-00059	Peru	4,389	4,389	4,389
1310-00060	Philippines	4,389	4,389	4,389
1310-00061	Poland	40,378	40,378	40,378
1310-00062	Portugal	24,919	24,919	24,919
1310-00063	Romania	8,631	8,631	8,631
1310-00121	Republic of Moldova	1,000	1,000	1,000
1310-00064	Russian Federation	78,122	78,122	78,122
1310-00147	Rwanda	1,000	1,000	1,000
1310-00130	Saint Lucia	1,000	1,000	1,000
1310-00141	Samoa	1,000	1,000	1,000
1310-00152	Sao Tome and Principe	1,000	1,000	1,000
1310-00065	Senegal	1,000	1,000	1,000
1310-00081	Serbia	1,804	1,804	1,804
1310-00143	Seychelles	1,000	1,000	1,000
1310-00117	Sierra Leone	1,000	1,000	1,000
1310-00066	Slovakia	6,925	6,925	6,925
1310-00067	Slovenia	5,023	5,023	5,023
1310-00068	South Africa	18,775	18,775	18,775
1310-00021	Spain	154,928	154,928	154,928
1310-00069	Sri Lanka	1,000	1,000	1,000
1310-00144	Sudan	1,000	1,000	1,000
1310-00070	Suriname	1,000	1,000	1,000
1310-00071	Sweden	51,887	51,887	51,887
1310-00083	Switzerland	55,105	55,105	55,105
1310-00107	Syrian Arab Republic	1,219	1,219	1,219
1310-00126	Tajikistan	1,000	1,000	1,000
1310-00108	Thailand	10,192	10,192	10,192
1310-00086	The FYR of Macedonia	1,000	1,000	1,000
1310-00088	Togo	1,000	1,000	1,000
1310-00073	Trinidad and Tobago	2,146	2,146	2,146
1310-00074	Tunisia	1,463	1,463	1,463
1310-00075	Turkey	30,088	30,088	30,088
1310-00158	Turkmenistan	1,268	1,268	1,268
1310-00076	Uganda	1,000	1,000	1,000
1310-00095	Ukraine	4,243	4,243	4,243
1310-00155	United Arab Emirates	19,067	19,067	19,067
1310-00077	United Kingdom	322,048	322,048	322,048
1310-00120	United Republic of Tanzania	1,000	1,000	1,000
1310-00078	Uruguay	1,317	1,317	1,317
1310-00129	Uzbekistan	1,000	1,000	1,000
1310-00079	Venezuela	15,312	15,312	15,312
1310-00080	Viet Nam	1,609	1,609	1,609
1310-00157	Yemen	1,000	1,000	1,000
1310-00082	Zambia	1,000	1,000	1,000
		3,778,744	3,778,744	3,778,744
Other contributions				
21371-0001	United States of America**	1,065,799	1,065,799	1,065,799
TOTALS		4,844,543	4,844,543	4,844,543

* Revised UN Scale will be applied, when released.

** As previously, 22% of total contributions from Parties

Annex III: Analysis of 2013-2015 budgeted non-Core expenditures

	None Core budget item	Three year funding requirement CHF
1. Junior Partnership/fundraising officer to support the Partnership coordinator and build the unit. Could be JPO or other.	B	390,000
2. 1 Regional Officer to support each of the 4 regional teams in the Secretariat, from 2014. Could be JPO.	C	1,174,000
3. Support to Regional Initiative Networks and Centres. Funding for the priority activities.	D	900,000
4. STRP programme of work for 2013-2015 (Strategy 1.1, 1.2, 1.4, 1.5, 1.6, 1.7, 1.9, 2.5, 3.1), including the Global Wetland Observing System (GWOS) project (but excluding the RSIS project in item 8 below)	E	1,905,000
5. Junior officer as webmaster/social media officer to strengthen the communications team	F	390,000
6. IT Officer to, *inter alia*, drive upgrades in the website and documentation management software, allow for InforMEA participation and support other database management and upgrades. Also to oversee electronic RSIS and Ramsar Sites Database overhaul project	G	390,000
7. Interpretation for Standing Committee sub group meetings	I	75,000
8. Investment in Electronic RSIS submission and RIS database processes and software	1	400,000
9. World Wetlands Day (currently funded by Danone) at the current level, i.e., preparation and dissemination of products such as leaflets and posters and other CEPA materials for customization and promotion of WWD (Strategy 4.1)	2	300,000
10. Emergency Ramsar Advisory Missions for Parties unable to self-fund their missions (Strategy 2.4, 2.6)	3	450,000
11. Delivery of one CEPA action planning workshop and other CEPA actions to support the Core-funded CEPA activities (Strategy 4.1)	4	300,000
12. CHF 1 million per annum of resourcing for the Small Grants Fund and CHF 400,000 in other grant funding in order to keep the three current grant programmes operational. (Support to many 2009-2015 Strategies, including 1.3 and 5.1)	5	4,200,000
13. Annual regional meetings (technical), with enhanced funding in the pre-COP year to fund delegates and meeting costs for COP preparatory regional meetings	6	1,050,000
14. Sponsorship to bring eligible delegates to COP12 in 2015 (Strategy 3.3, 4.2)	7	1,200,000
15. 2016-2021 visioning process and 2016-2021 Strategic Plan, with significant input from Contracting Parties and other relevant stakeholders for 2016-2021	8	250,000
	CHF	13,374,000

11th Meeting of the Conference of the Parties to the Convention on Wetlands (Ramsar, Iran, 1971)

"Wetlands: home and destination"

Bucharest, Romania, 6-13 July 2012

Resolution XI.3

Adjustments to the Strategic Plan 2009-2015 for the 2013-2015 triennium

1. RECALLING the adoption by Contracting Parties of the Ramsar Strategic Plan 2009-2015 in Resolution X.1 (2008);

2. ALSO RECALLING that Resolution X.1 (paragraph 10) requested the Standing Committee to assess progress and any difficulties in implementing the Plan at each of its meetings from information provided to the Committee members by Contracting Parties, and asked the Secretariat and the Standing Committee to conduct a midterm review of progress and to propose adjustments, if necessary, to be submitted to the 11th meeting of the Conference of the Contracting Parties (COP11);

3. ACKNOWLEDGING those Contracting Parties that have provided information in their National Reports to COP11 on implementation progress and any implementation difficulties and in some cases have proposed adjustments to the Strategic Plan;

4. AWARE that the Ramsar Secretariat and the Convention's Scientific and Technical Review Panel (STRP) have reviewed the congruence and consistency of Strategic Plan Key Result Areas (KRAs) with key implementation activities as reflected in the indicators in the National Report Form for COP11, and NOTING that the review has revealed that there are certain key aspects of the Convention's implementation, notably concerning the Changwon Declaration (Resolution X.3), which are not reflected in the present Strategic Plan's KRAs;

5. ALSO AWARE that all biodiversity-related conventions have committed to contributing jointly to the implementation of the Strategic Plan for Biodiversity 2011-2020 and its "Aichi Biodiversity Targets" adopted at the 10th meeting of the Conference of the Parties to the Convention on Biological Diversity (Nagoya, Japan, 2010); and

6. WELCOMING the recognition by the Rio+20 Conference of the key role that ecosystems play in maintaining water quantity and quality and supporting actions within respective national boundaries to protect and sustainably manage these ecosystems;

THE CONFERENCE OF THE CONTRACTING PARTIES

7. RECOGNIZES the important contribution that the Ramsar Convention makes through implementation of the Ramsar Strategic Plan 2009-2015 towards the achievement of the "Aichi Biodiversity Targets" of the CBD's Strategic Plan for Biodiversity 2011-2020;

8. ADOPTS the adjustments to the Strategic Plan 2009-2015 for the 2013-2015 triennium as set out in the annex to this Resolution, and INSTRUCTS the Secretariat to make available the adjusted Strategic Plan to Contracting Parties and all others concerned with its implementation, including in the 5th edition of the Ramsar Wise Use Handbooks; and

9. URGES Contracting Parties to take these adjustments into account in planning their implementation of the Strategic Plan 2009-2015 in the 2013-2015 triennium.

Annex

Adjustments to the Strategic Plan 2009-2015

1. After paragraph 16, add the following new paragraph:

   "16 bis. The results of the actions undertaken and achievements under the Strategic Plan at the global level will be reported through regional and global synthesis reports prepared by the Secretariat, taking account of information provided in the Contracting Parties' National Reports and Regional Initiatives' reports to the Conference of the Parties."

2. After paragraph 16, add the following new paragraph:

   "16 ter. The results of the actions undertaken and achievements under the Strategic Plan at the national level will be reported through Contracting Parties' National Reports and Regional Initiatives' reports to the Conference of the Parties. National Wetland Committees, where they exist, will have an important role in evaluating and following up these results."

3. Amend paragraph 25 to read:

   "Externally, the Strategic Plan also contributes to, *inter alia*, achievement of Millennium Development Goals; achievement of the 'Aichi Biodiversity Targets' of the Strategic Plan for Biodiversity 2011-2020 (CBD COP10 Decision X/2) as set out in Appendix 1; achievement of the 2012 target for Marine Protected Areas; providing responses to the key issues of climate change; and implementation of decisions from the Commission on Sustainable Development in policies on water and sanitation."

4. Following the current text of the Mission of the Convention, add the following paragraph:

   "To achieve this Mission it is essential that the vital ecosystem services, and especially those related to water and those that wetlands provide to people and nature through their natural infrastructure, are fully recognized, maintained, restored and wisely used."

5. Under Strategy 1.3 (Policies, legislation and institutions), add the following KRA:

"KRA 1.3.iii. In accordance with national legislation, Environmental Impact Assessments have been made for any project which is likely to have negative impacts on the ecological character of wetlands."

6. Amend Strategy 1.4 to read:

"STRATEGY 1.4 Cross-sectoral recognition of wetland services. Increase recognition of and attention in decision-making to the significance of wetlands for reasons of biodiversity conservation, water supply and quality, coastal protection, integrated coastal zone management, environmental flows, environmental integrity, flood defense, climate change mitigation and/or adaptation, food security, poverty eradication, tourism, productive sectors, cultural heritage, education, and scientific research, by developing and disseminating methodologies to achieve the wise use of wetlands."

7. Under Strategy 1.4 (Cross-sectoral recognition of wetland services), add the following KRA:

"KRA 1.4.iv. All relevant actors in both the public and private sectors fully recognize in their decision-making the benefits of maintaining wetlands and their ecosystem services as natural infrastructure, including through dissemination of the "Changwon Declaration" (Resolution X.3). (National: CPs)

8. Under Strategy 2.1 (Ramsar Site designation), amend KRA 2.1.iv to read:
"KRA 2.1.iv. Contracting Parties to have considered, in their implementation of KRA 2.1.i, affording priority to the designation of Ramsar Sites from among types of wetlands under-represented in the Ramsar List. (National: CPs)"

9. Under Strategy 3.4 (Sharing information and expertise), add new KRA 3.4.iv to read:

"KRA 3.4.iv. Increased sharing of Convention implementation experiences at national and regional levels, including through providing experiences to be posted on the Ramsar website. (National: CPs; Regional: Ramsar Regional Initiatives)"

10. Under Strategy 4.1 (CEPA), amend KRA 4.1.vi to read:

"KRA 4.1.vi. Convention implementation mechanisms for wetland management, wise use, and conservation applied by a wide range of stakeholders, including local communities, on global, regional, national, and subnational levels. (Global to Subnational: all implementers)"

11. Under Strategy 4.3 (Convention bodies' effectiveness), add the following KRAs:

"KRA 4.3.v. All Contracting Parties to have reviewed the need to establish, or to have established, an operational National Ramsar/Wetlands Committee or equivalent body."

"KRA 4.3.vi. Capacity-building training materials prepared, including for the training of trainers, and a national/regional programme of capacity-building initiatives established for enhancing understanding of the implementation of the Convention and its adopted

guidance (Global: Secretariat, STRP; Regional: Ramsar Regional Centres; National: CPs, wetland managers)"

12. Add the following Appendix 1 to the end of the current Strategic Plan text:

Appendix 1

How implementation of Ramsar Strategic Plan 2009-2015 Strategies contributes to the "Aichi Biodiversity Targets" (CBD COP10 Decision X/2 *Strategic Plan for Biodiversity 2011-2020*)

Note that some Ramsar Strategic Plan Strategies contribute to the delivery of aspects of several Aichi Biodiversity Targets.

Aichi Biodiversity Targets	Ramsar Strategic Plan Strategies
Strategic goal A. Address the underlying causes of biodiversity loss by mainstreaming biodiversity across government and society	**Strategies 1.3, 1.4, 1.5, 1.7, 1.10, 1.11, 3.1, 3.2, 3.4 & 4.1**
Target 1: By 2020, at the latest, people are aware of the values of biodiversity and the steps they can take to conserve and use it sustainably.	**STRATEGY 1.5 Recognition of role of the Convention.** Raise the profile of the Convention by highlighting its capacity as a unique mechanism for wetland ecosystem management at all levels; promote the usefulness of the Convention as a possible implementation mechanism to meet the goals and targets of other global conventions and processes. **STRATEGY 1.6 Science-based management of wetlands.** Promote successful implementation of the wise use concept by ensuring that national policies and wetland management plans are based on the best available scientific knowledge, including technical and traditional knowledge. **STRATEGY 1.7 Integrated Water Resources Management.** Ensure that policies and implementation of Integrated Water Resources Management (IWRM), applying an ecosystem-based approach, are included in the planning activities in all Contracting Parties and in their decision-making processes, particularly concerning groundwater management, catchment/river basin management, coastal and nearshore marine zone planning, and climate change mitigation and/or adaptation activities. **STRATEGY 3.2 Regional initiatives.** Support existing regional arrangements under the Convention and promote additional arrangements. **STRATEGY 3.4 Sharing information and expertise.** Promote the sharing of expertise and information concerning the conservation and wise use of wetlands. **STRATEGY 4.1 CEPA.** Support, and assist in implementing at all levels, where appropriate, the Convention's Communication, Education, Participation and Awareness Programme (Resolution X.8) for promoting the conservation and wise use of wetlands through communication, education, participation, and awareness (CEPA) and work towards wider awareness of the Convention's goals, mechanisms, and key findings.

Target 2: By 2020, at the latest, biodiversity values have been integrated into national and local development and poverty reduction strategies and planning processes and are being incorporated into national accounting, as appropriate, and reporting systems.	**STRATEGY 1.3 Policy, legislation and institutions.** Develop and implement policies, legislation, and practices, including growth and development of appropriate institutions, in all Contracting Parties to ensure that the wise use provisions of the Convention are being effectively applied. **STRATEGY 1.4 Cross-sectoral recognition of wetland services.** Increase recognition of and attention in decision-making to the significance of wetlands for reasons of biodiversity conservation, water supply and quality, coastal protection, integrated coastal zone management, environmental flows, environmental integrity, flood defense, climate change mitigation and/or adapation, food security, poverty eradication, tourism, cultural heritage, and scientific research, by developing and disseminating methodologies to achieve wise use of wetlands. **STRATEGY 1.7 Integrated Water Resources Management.** Ensure that policies and implementation of Integrated Water Resources Management (IWRM), applying an ecosystem-based approach, are, included in the planning activities in all Contracting Parties and in their decision-making processes, particularly concerning groundwater management, catchment/river basin management, coastal and nearshore marine zone planning, and climate change mitigation and/or adaptation activities. **STRATEGY 3.1 Synergies and partnerships with MEAs and IGOs.** Work as partners with international and regional multilateral environmental agreements (MEAs) and other intergovernmental agencies (IGOs).
Target 3: By 2020, at the latest, incentives, including subsidies, harmful to biodiversity are eliminated, phased out or reformed in order to minimize or avoid negative impacts, and positive incentives for the conservation and sustainable use of biodiversity are developed and applied, consistent and in harmony with the Convention and other relevant international obligations, taking into account national socio economic conditions.	**STRATEGY 1.3 Policy, legislation and institutions.** Develop and implement policies, legislation, and practices, including growth and development of appropriate institutions, in all Contracting Parties to ensure that the wise use provisions of the Convention are being effectively applied. **STRATEGY 1.11 Incentive measures.** Promote incentive measures that encourage the application of the wise use provisions of the Convention.
Target 4: By 2020, at the latest, Governments, business and stakeholders at all levels have taken steps to achieve or have implemented plans for sustainable production and consumption and have kept the impacts of use of natural resources well within safe ecological limits.	**STRATEGY 1.4 Cross-sectoral recognition of wetland services.** Increase recognition of and attention in decision-making to the significance of wetlands for reasons of biodiversity conservation, water supply and quality, coastal protection, integrated coastal zone management, environmental flows, environmental integrity, flood defense, climate change mitigation and/or adaptation, food security, poverty eradication, tourism, cultural heritage, and scientific research, by developing and disseminating methodologies to achieve wise use of wetlands. **STRATEGY 1.10 Private sector.** Promote the involvement of the private sector in the conservation and wise use of wetlands.

Strategic goal B. Reduce the direct pressures on biodiversity and promote sustainable use	**Strategies 1.4, 1.5, 1.6, 1.8, 1.9, 2.3, 2.4, 2.6, 2.7 & 3.5**
Target 5: By 2020, the rate of loss of all natural habitats, including forests, is at least halved and where feasible brought close to zero, and degradation and fragmentation is significantly reduced.	**STRATEGY 1.5 Recognition of role of the Convention.** Raise the profile of the Convention by highlighting its capacity as a unique mechanism for wetland ecosystem management at all levels; promote the usefulness of the Convention as a possible implementation mechanism to meet the goals and targets of other global conventions and processes. **STRATEGY 1.6 Science-based management of wetlands.** Promote successful implementation of the wise use concept by ensuring that national policies and wetland management plans are based on the best available scientific knowledge, including technical and traditional knowledge. **STRATEGY 1.8 Wetland restoration.** Identify priority wetlands and wetland systems where restoration or rehabilitation would be beneficial and yield long-term environmental, social, or economic benefits, and implement the necessary measures to recover these sites and systems. **STRATEGY 2.3 Management planning – new Ramsar Sites.** While recognizing that Ramsar Site designation can act as a stimulus for development of effective site management plans, generally encourage the philosophy that all new Ramsar Sites should have effective management planning in place before designation, as well as resources for implementing such management. **STRATEGY 2.4 Ramsar Site ecological character.** Maintain the ecological character of all designated Ramsar Sites, through planning and management. **STRATEGY 2.6 Ramsar Site status.** Monitor the condition of Ramsar Sites and address negative changes in their ecological character, notify the Ramsar Secretariat of changes affecting Ramsar Sites, and apply the Montreux Record, if appropriate, and Ramsar Advisory Mission as tools to address problems. **STRATEGY 2.7 Management of other internationally important wetlands.** Appropriate management and wise use achieved for those internationally important wetlands that have not yet been formally designated as Ramsar Sites but have been identified through domestic application of the *Strategic Framework* or an equivalent process.

Target 6: By 2020 all fish and invertebrate stocks and aquatic plants are managed and harvested sustainably, legally and applying ecosystem based approaches, so that overfishing is avoided, recovery plans and measures are in place for all depleted species, fisheries have no significant adverse impacts on threatened species and vulnerable ecosystems and the impacts of fisheries on stocks, species and ecosystems are within safe ecological limits.	**STRATEGY 1.4 Cross-sectoral recognition of wetland services.** Increase recognition of and attention in decision-making to the significance of wetlands for reasons of biodiversity conservation, water supply and quality, coastal protection, integrated coastal zone management, environmental flows, environmental integrity, flood defense, climate change mitigation and/or adaptation, food security, poverty eradication, tourism, cultural heritage, and scientific research, by developing and disseminating methodologies to achieve wise use of wetlands. **STRATEGY 3.5 Shared wetlands, river basins and migratory species.** Promote inventory and cooperation for the management of shared wetlands and hydrological basins, including cooperative monitoring and management of shared wetland-dependent species.
Target 7: By 2020 areas under agriculture, aquaculture and forestry are managed sustainably, ensuring conservation of biodiversity.	**STRATEGY 1.4 Cross-sectoral recognition of wetland services.** Increase recognition of and attention in decision-making to the significance of wetlands for reasons of biodiversity conservation, water supply and quality, coastal protection, integrated coastal zone management, environmental flows, environmental integrity, flood defense, climate change mitigation and/or adaptation, food security, poverty eradication, tourism, cultural heritage, and scientific research, by developing and disseminating methodologies to achieve wise use of wetlands. **STRATEGY 1.5 Recognition of role of the Convention.** Raise the profile of the Convention by highlighting its capacity as a unique mechanism for wetland ecosystem management at all levels; promote the usefulness of the Convention as a possible implementation mechanism to meet the goals and targets of other global conventions and processes. **STRATEGY 3.5 Shared wetlands, river basins and migratory species.** Promote inventory and cooperation for the management of shared wetlands and hydrological basins, including cooperative monitoring and management of shared wetland-dependent species.
Target 8: By 2020, pollution, including from excess nutrients, has been brought to levels that are not detrimental to ecosystem function and biodiversity.	**STRATEGY 1.4 Cross-sectoral recognition of wetland services.** Increase recognition of and attention in decision-making to the significance of wetlands for reasons of biodiversity conservation, water supply and quality, coastal protection, integrated coastal zone management, environmental flows, environmental integrity, flood defense, climate change mitigation and/or adaptation, food security, poverty eradication, tourism, cultural heritage, and scientific research, by developing and disseminating methodologies to achieve wise use of wetlands.
Target 9: By 2020, invasive alien species and pathways are identified and prioritized, priority species are controlled or eradicated, and measures are in place to manage pathways to prevent their introduction and establishment.	**STRATEGY 1.9 Invasive alien species.** Encourage Contracting Parties to develop a national inventory of invasive alien species that currently and/or potentially impact the ecological character of wetlands, especially Ramsar Sites, and ensure mutual supportiveness between the national inventory and IUCN's Global Register on Invasive Species (GRIS); develop guidance and promote procedures and actions to prevent, control or eradicate such species in wetland systems.

Target 10: By 2015, the multiple anthropogenic pressures on coral reefs, and other vulnerable ecosystems impacted by climate change or ocean acidification are minimized, so as to maintain their integrity and functioning.	**STRATEGY 1.4 Cross-sectoral recognition of wetland services.** Increase recognition of and attention in decision-making to the significance of wetlands for reasons of biodiversity conservation, water supply and quality, coastal protection, integrated coastal zone management, environmental flows, environmental integrity, flood defense, climate change mitigation and/or adaptation, food security, poverty eradication, tourism, cultural heritage, and scientific research, by developing and disseminating methodologies to achieve wise use of wetlands.
Strategic goal C. Improve the status of biodiversity by safeguarding ecosystems, species and genetic diversity	**Strategies 2.1, 2.2, 2.3, 2.4, 2.5, 2.6, 2.7 & 3.5**
Target 11: By 2020, at least 17 per cent of terrestrial and inland water areas, and 10 per cent of coastal and marine areas, especially areas of particular importance for biodiversity and ecosystem services, are conserved through effectively and equitably managed, ecologically representative and well connected systems of protected areas and other effective area-based conservation measures, and integrated into the wider landscapes and seascapes.	**STRATEGY 2.1 Ramsar Site designation.** Apply the *Strategic Framework and guidelines for the future development of the List of Wetlands of International Importance* (Ramsar Handbook 14). **STRATEGY 2.2 Ramsar Site information.** Ensure that the Ramsar Sites Information Service, including the Ramsar Sites Database, is available and enhanced as a tool for guiding the further designation of wetlands for the List of Wetlands of International Importance and for research and assessment, and is effectively managed by the Secretariat. **STRATEGY 2.3 Management planning – new Ramsar Sites.** While recognizing that Ramsar Site designation can act as a stimulus for development of effective site management plans, generally encourage the philosophy that all new Ramsar Sites should have effective management planning in place before designation, as well as resources for implementing such management. **STRATEGY 2.4 Ramsar Site ecological character.** Maintain the ecological character of all designated Ramsar Sites, through planning and management. **STRATEGY 2.5 Ramsar Site management effectiveness.** Review all existing Ramsar Sites to determine the effectiveness of management arrangements, in line with the *Strategic Framework and guidelines for the future development of the List of Wetlands of International Importance.* **STRATEGY 2.6 Ramsar Site status.** Monitor the condition of Ramsar Sites and address negative changes in their ecological character, notify the Ramsar Secretariat of changes affecting Ramsar Sites, and apply the Montreux Record, if appropriate, and Ramsar Advisory Mission as tools to address problems. **STRATEGY 2.7 Management of other internationally important wetlands.** Appropriate management and wise use achieved for those internationally important wetlands that have not yet been formally designated as Ramsar Sites but have been identified through domestic application of the *Strategic Framework* or an equivalent process.

Target 12: By 2020 the extinction of known threatened species has been prevented and their conservation status, particularly of those most in decline, has been improved and sustained.	**STRATEGY 2.1 Ramsar Site designation.** Apply the *Strategic Framework and guidelines for the future development of the List of Wetlands of International Importance* (Ramsar Handbook 14, 4th ed.). **STRATEGY 2.3 Management planning – new Ramsar Sites.** While recognizing that Ramsar Site designation can act as a stimulus for development of effective site management plans, generally encourage the philosophy that all new Ramsar Sites should have effective management planning in place before designation, as well as resources for implementing such management. **STRATEGY 2.4 Ramsar Site ecological character.** Maintain the ecological character of all designated Ramsar Sites, through planning and management. **STRATEGY 2.7 Management of other internationally important wetlands.** Appropriate management and wise use achieved for those internationally important wetlands that have not yet been formally designated as Ramsar Sites but have been identified through domestic application of the *Strategic Framework* or an equivalent process. **STRATEGY 3.5 Shared wetlands, river basins and migratory species.** Promote inventory and cooperation for the management of shared wetlands and hydrological basins, including cooperative monitoring and management of shared wetland-dependent species.
Target 13: By 2020, the genetic diversity of cultivated plants and farmed and domesticated animals and of wild relatives, including other socio-economically as well as culturally valuable species, is maintained, and strategies have been developed and implemented for minimizing genetic erosion and safeguarding their genetic diversity.	
Strategic goal D: Enhance the benefits to all from biodiversity and ecosystem services	**Strategies 1.4, 1.5 & 1.8**

Target 14: By 2020, ecosystems that provide essential services, including services related to water, and contribute to health, livelihoods and well-being, are restored and safeguarded, taking into account the needs of women, indigenous and local communities, and the poor and vulnerable.	**STRATEGY 1.4 Cross-sectoral recognition of wetland services.** Increase recognition of and attention in decision-making to the significance of wetlands for reasons of biodiversity conservation, water supply and quality, coastal protection, integrated coastal zone management, environmental flows, environmental integrity, flood defense, climate change mitigation and/or adaptation, food security, poverty eradication, tourism, cultural heritage, and scientific research, by developing and disseminating methodologies to achieve wise use of wetlands. **STRATEGY 1.5 Recognition of role of the Convention.** Raise the profile of the Convention by highlighting its capacity as a unique mechanism for wetland ecosystem management at all levels; promote the usefulness of the Convention as a possible implementation mechanism to meet the goals and targets of other global conventions and processes. **STRATEGY 1.8 Wetland restoration.** Identify priority wetlands and wetland systems where restoration or rehabilitation would be beneficial and yield long-term environmental, social, or economic benefits, and implement the necessary measures to recover these sites and systems.
Target 15: By 2020, ecosystem resilience and the contribution of biodiversity to carbon stocks has been enhanced, through conservation and restoration, including restoration of at least 15 per cent of degraded ecosystems, thereby contributing to climate change mitigation and adaptation and to combating desertification.	**STRATEGY 1.4 Cross-sectoral recognition of wetland services.** Increase recognition of and attention in decision-making to the significance of wetlands for reasons of biodiversity conservation, water supply and quality, coastal protection, integrated coastal zone management, environmental flows, environmental integrity, flood defense, climate change mitigation and/or adaptation, food security, poverty eradication, tourism, cultural heritage, and scientific research, by developing and disseminating methodologies to achieve wise use of wetlands. **STRATEGY 1.5 Recognition of role of the Convention.** Raise the profile of the Convention by highlighting its capacity as a unique mechanism for wetland ecosystem management at all levels; promote the usefulness of the Convention as a possible implementation mechanism to meet the goals and targets of other global conventions and processes. **STRATEGY 1.8 Wetland restoration.** Identify priority wetlands and wetland systems where restoration or rehabilitation would be beneficial and yield long-term environmental, social, or economic benefits, and implement the necessary measures to recover these sites and systems.
Target 16: By 2015, the Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilization is in force and operational, consistent with national legislation.	
Strategic goal E. Enhance implementation through participatory planning, knowledge management and capacity-building	**Strategies 1.1, 1.2, 1.3, 1.5, 1.6, 1.7, 2.1, 2.2, 2.4, 3.1, 3.3, 3.4, 3.5, 4.1, 4.2, 4.3 & 4.4**

Target 17: By 2015 each Party has developed, adopted as a policy instrument, and has commenced implementing an effective, participatory and updated national biodiversity strategy and action plan.	**STRATEGY 1.3 Policy, legislation and institutions.** Develop and implement policies, legislation, and practices, including growth and development of appropriate institutions, in all Contracting Parties to ensure that the wise use provisions of the Convention are being effectively applied. **STRATEGY 1.7 Integrated Water Resources Management.** Ensure that policies and implementation of Integrated Water Resources Management (IWRM), applying an ecosystem-based approach, are, included in the planning activities in all Contracting Parties and in their decision-making processes, particularly concerning groundwater management, catchment/river basin management, coastal and nearshore marine zone planning, and climate change mitigation and/or adaptation activities. **STRATEGY 3.1 Synergies and partnerships with MEAs and IGOs.** Work as partners with international and regional multilateral environmental agreements (MEAs) and other intergovernmental agencies (IGOs).
Target 18: By 2020, the traditional knowledge, innovations and practices of indigenous and local communities relevant for the conservation and sustainable use of biodiversity, and their customary use of biological resources, are respected, subject to national legislation and relevant international obligations, and fully integrated and reflected in the implementation of the Convention with the full and effective participation of indigenous and local communities, at all relevant levels	**STRATEGY 1.6 Science-based management of wetlands.** Promote successful implementation of the wise use concept by ensuring that national policies and wetland management plans are based on the best available scientific knowledge, including technical and traditional knowledge. **STRATEGY 4.1 CEPA.** Support, and assist in implementing at all levels, where appropriate, the Convention's Communication, Education, Participation and Awareness Programme (Resolution X.8) for promoting the conservation and wise use of wetlands through communication, education, participation, and awareness (CEPA) and work towards wider awareness of the Convention's goals, mechanisms, and key findings.

Target 19: By 2020, knowledge, the science base and technologies relating to biodiversity, its values, functioning, status and trends, and the consequences of its loss, are improved, widely shared and transferred, and applied.	**STRATEGY 1.1 Wetland inventory and assessment.** Describe, assess and monitor the extent and condition of all types of wetlands as defined by the Ramsar Convention and wetland resources at relevant scales, in order to inform and underpin implementation of the Convention, in particular in the application of its provisions concerning the wise use of all wetlands. **STRATEGY 1.2 Global wetland information.** Develop a global wetland information system, through partnerships, to be covered by voluntary contributions, to increase accessibility of data and information on wetlands. **STRATEGY 1.5 Recognition of role of the Convention.** Raise the profile of the Convention by highlighting its capacity as a unique mechanism for wetland ecosystem management at all levels; promote the usefulness of the Convention as a possible implementation mechanism to meet the goals and targets of other global conventions and processes. **STRATEGY 1.6 Science-based management of wetlands.** Promote successful implementation of the wise use concept by ensuring that national policies and wetland management plans are based on the best available scientific knowledge, including technical and traditional knowledge. **STRATEGY 2.1 Ramsar Site designation.** Apply the *Strategic Framework and guidelines for the future development of the List of Wetlands of International Importance* (Ramsar Handbook 14). **STRATEGY 2.2 Ramsar Site information.** Ensure that the Ramsar Sites Information Service, including the Ramsar Sites Database, is available and enhanced as a tool for guiding the further designation of wetlands for the List of Wetlands of International Importance and for research and assessment, and is effectively managed by the Secretariat. **STRATEGY 2.4 Ramsar Site ecological character.** Maintain the ecological character of all designated Ramsar Sites, through planning and management. **STRATEGY 3.4 Sharing information and expertise.** Promote the sharing of expertise and information concerning the conservation and wise use of wetlands. **STRATEGY 3.5 Shared wetlands, river basins and migratory species.** Promote inventory and cooperation for the management of shared wetlands and hydrological basins, including cooperative monitoring and management of shared wetland-dependent species. **STRATEGY 4.4 Working with IOPs and others.** Maximize the benefits of working with the Convention's International Organization Partners (IOPs) and others.

Target 20: By 2020, at the latest, the mobilization of financial resources for effectively implementing the Strategic Plan for Biodiversity 2011-2020 from all sources, and in accordance with the consolidated and agreed process in the Strategy for Resource Mobilization, should increase substantially from the current levels. This target will be subject to changes contingent to resource needs assessments to be developed and reported by Parties.	**STRATEGY 3.3 International assistance.** Promote international assistance to support the conservation and wise use of wetlands, while ensuring that environmental safeguards and assessments are an integral component of all development projects that affect wetlands, including foreign and domestic investments. **STRATEGY 4.2 Convention financial capacity.** Provide the financial resources necessary for the Convention's governance, mechanisms and programmes to achieve the expectations of the Conference of the Contracting Parties, within the availability of existing resources and by the effective use of such resources; explore and enable options and mechanisms for mobilization of new and additional resources for implementation of the Convention. **STRATEGY 4.3 Convention bodies' effectiveness.** Ensure that the Conference of the Contracting Parties, Standing Committee, Scientific and Technical Review Panel, and Secretariat are operating at a high level of effectiveness to support the implementation of the Convention.

11th Meeting of the Conference of the Parties to the Convention on Wetlands (Ramsar, Iran, 1971)

"Wetlands: home and destination"

Bucharest, Romania, 6-13 July 2012

Resolution XI.4

The status of sites on the List of Wetlands of International Importance

1. RECALLING Article 2.1 of the Convention, which states that "each Contracting Party shall designate suitable wetlands within its territory for inclusion in a List of Wetlands of International Importance", and Resolution VII.11 (1999), in which the Parties established that the Vision of the Ramsar List is to be achieved through the designation of coherent and comprehensive national and international networks of Ramsar Sites;

2. ALSO RECALLING Article 8.2 of the Convention on the duties of the Secretariat concerning reporting on the status of Ramsar Sites for the consideration and recommendations by the Parties at ordinary meetings of the Conference of the Contracting Parties on these matters, and Article 6.2(d) concerning the competence of the Conference of the Contracting Parties to make general or specific recommendations to the Contracting Parties regarding the conservation, management and wise use of wetlands;

3. CONGRATULATING the 55 Contracting Parties that since the close of COP10 (4 November 2008) have designated a total of 217 Ramsar Sites covering a total of 14,679,990 hectares as of 13 July 2012 (Algeria, Argentina, Armenia[1], Austria, Belarus, Bhutan, Brazil, Bulgaria, Burkina Faso, Cameroon, Central African Republic, Chile, China, Congo, Costa Rica, Denmark, Dominican Republic, Ecuador, Egypt, El Salvador, Estonia, France, Gabon, Hungary, Indonesia, Islamic Rep. of Iran, Italy, Jamaica, Japan, Kazakhstan, Korea Rep. of, Kyrgyz Republic, Lao PDR, Lithuania, Madagascar, Mauritania, Mauritius, Mexico, Mozambique, Nicaragua, Norway, Panama, Romania, Serbia, Seychelles, South Africa, Spain, Sri Lanka, Sudan, Thailand, Tunisia, Turkey, UAE, UK, USA, and Viet Nam), and ALSO CONGRATULATING the 28 Contracting Parties that have designated or are preparing to designate a further 78 Ramsar Sites which are being finalized with the Secretariat for adding to the List (Argentina, Australia, Bahamas, Belarus, Benin, Bhutan, Burundi, Cameroon, Chile, Czech Republic, Denmark, Dominican Republic, Ecuador, El Salvador, France, Georgia, Iceland, Iraq, Kenya, Mali, Madagascar, Marshall Islands, Myanmar, Philippines, Romania, United Kingdom, Ukraine, and Yemen);

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[1] Armenia designated one Ramsar Site on 25 January 2007, but sent the finalized documents to the Secretariat for its listing only in September 2011.

4. NOTING, however, that despite the fact that this represents a 10% increase in the number of sites in the List since COP10, there remain significant gaps in the comprehensiveness and representativeness of the global network of Ramsar Sites and that the total of 2026 sites on the Ramsar List as of late June 2012 falls below the target of 2,500 sites by the year 2010 that the Parties established in the *Strategic Framework and guidelines for the development of the Ramsar List* (2005);

5. CONCERNED that for 1385 Ramsar Sites (68% of all Ramsar Sites) in 149 countries (see Annex 1 to this Resolution), Ramsar Information Sheets (RISs) or adequate maps have not been provided or updated RISs and maps have not been supplied to the Secretariat for more than six years, so that information on the current status of these sites is not available;

6. NOTING that changes to Ramsar Site boundaries and areas reported to the Secretariat in the 2009-2012 period in updated Ramsar Information Sheets (RIS) concern only extensions or recalculations of areas including through more precise boundary delineations;

7. AWARE that Article 3.2 of the Convention provides that "each Contracting Party shall arrange to be informed at the earliest possible time if the ecological character of any wetland in its territory and included in the List has changed, is changing or is likely to change as the result of technological developments, pollution or other human interference. Information on such changes shall be passed without delay to the [Ramsar Secretariat]";

8. RECALLING that in Resolution VIII.8 (2002) the Conference of the Parties expressed concern that many Contracting Parties do not have in place the mechanisms to fulfil Article 3.2, and that it urged Parties to promptly "put in place mechanisms in order to be informed at the earliest possible time, including through reports by national authorities, [indigenous peoples and local communities] and NGOs, if the ecological character of any wetland in its territory included in the Ramsar List has changed, is changing or is likely to change, and to report any such change without delay to the Ramsar [Secretariat] so as to fully implement Article 3.2 of the Convention";

9. NOTING that 12 Contracting Parties provided information only in their National Reports to COP11, rather than by reporting to the Ramsar Secretariat without delay as stipulated in Article 3.2 of the Convention, concerning ecological character change issues to a further 15 Ramsar Sites;

10. AWARE, however, that in general few Parties have reported instances of change or likely change in the ecological character of their Ramsar Sites in line with Article 3.2 (11 Parties for 18 sites as listed in Annex 2a to this Resolution), and CONCERNED at the number of reports first received by the Secretariat of Ramsar Sites facing human-induced change or likely change in their ecological character which have come from third parties, as reported to this meeting in the Report of the Secretary General pursuant to Article 8.2 (d);

11. NOTING that some of these sites are parts of transboundary wetlands and river systems, such that change in their ecological character may affect the status of those parts of the wetland, including any Ramsar Sites, lying within the territory of neighbouring countries, and RECALLING that Article 5 of the Convention states that "the Contracting Parties shall consult with each other about implementing obligations arising from the Convention

especially in the case of a wetland extending over the territories of more than one Contracting Party or where a water system is shared by Contracting Parties";

12. CONCERNED that of the 48 Ramsar Sites included in the Montreux Record as of 13 July 2012 only six sites have been removed from the Record since COP10, and NOTING that Contracting Parties have placed one further Ramsar Site on the Montreux Record since COP10 (Iraq); and

13. RECOGNIZING that the pressures on Ramsar Sites are likely to increase and that many Ramsar Sites have undergone or are undergoing change in their ecological character, or are likely to undergo such change, by virtue of the land use and other pressures affecting them;

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14. REAFFIRMS the commitment made by the Parties in Resolution VIII.8 to implement fully the terms of Article 3.2 on reporting change and to maintain or restore the ecological character of their Ramsar Sites, including employing all appropriate mechanisms to address and resolve as soon as possible the matters for which a site may have been the subject of an Article 3.2 report; and, once those matters have been resolved, to submit a further report, so that both positive influences at sites and changes in ecological character may be fully reflected in the reporting to meetings of the Conference of the Parties and establish a clear picture of the status and trends of the Ramsar Site network;

15. CONTINUES TO ENCOURAGE Contracting Parties to adopt and apply, as part of their management planning for Ramsar Sites and other wetlands, a suitable monitoring regime, such as that outlined in the annex to Resolution VI.1 (1996), and to incorporate within these monitoring regimes the Convention's *Wetland Risk Assessment Framework* (Resolution VII.10), in order to be able to report change or likely change in the ecological character of Ramsar Sites in line with Article 3.2;

16. EXPRESSES ITS APPRECIATION to those 11 Contracting Parties that have provided Article 3.2 reports to the Secretariat about 18 Ramsar Sites where human-induced changes in ecological character have occurred, are occurring, or may occur (Annex 2a);

17. ALSO EXPRESSES ITS APPRECIATION to those 12 Contracting Parties that in their National Reports to this meeting provided information on a further 15 Ramsar Sites where human-induced changes in ecological character have occurred, are occurring, or may occur;

18. CONTINUES TO ENCOURAGE Contracting Parties, when submitting a report in fulfilment of Article 3.2, to consider whether the site would benefit from listing on the Montreux Record, and to request such listing as appropriate;

19. REQUESTS Contracting Parties with sites on the Montreux Record to regularly provide the Secretariat with updates on their progress in addressing the issues for which those Ramsar Sites were listed on the Record, including reporting on these matters in their National Reports to each meeting of the Conference of the Parties;

20. REQUESTS the Ramsar Secretariat, in conjunction with the Scientific and Technical Review Panel's task on redesigning the Montreux Record questionnaire, to consider desirable frequencies of progress reporting by Contracting Parties concerning resolution of issues that led to the inclusion of sites in the Montreux Record, and so to allow the Record to be updated before each COP;

21. ALSO REQUESTS the Secretariat and the STRP to set up criteria for, and to streamline the procedure for, reporting cases of human-induced negative changes in the ecological character of a Ramsar Site according to Article 3.2, and ENCOURAGES Contracting Parties to consider limits of acceptable change in ecological character of Ramsar Sites as outlined in the COP11 DOC. 24;

22. REQUESTS the Secretariat and the STRP to streamline the lists of Article 3.2 cases and Sites on the Montreux Record, resulting in one single list of Ramsar Sites with human-induced negative changes in ecological character, and report back through the Standing Committee to COP12;

23. REQUESTS the STRP, with the support of the Secretariat, to promulgate specific examples of the efforts by Contracting Parties to develop and implement a strategic approach to Ramsar Site designation;

24. REQUESTS those Contracting Parties with Ramsar Sites for which the Secretary General has received reports of change or likely change in their ecological character (Annex 2b to this Resolution) to advise the Secretary General at the earliest opportunity of the status of these sites and any steps taken to address any changes, or likely changes, in ecological character;

25. EXPRESSES APPRECIATION to those Contracting Parties that have brought their Information Sheets for Ramsar Wetlands (RISs) up to date for all the Ramsar Sites within their territory, and STRONGLY URGES those Contracting Parties who have not yet updated their Ramsar Information Sheets in the last six years to do so as soon as possible, as agreed in Resolution VI.13 (1996);

26. STRONGLY URGES those Parties within whose territories lie Ramsar Sites for which official descriptions have still not been provided, and/or for which suitable maps have still not yet been submitted, to provide as a matter of the greatest urgency the Ramsar Information Sheets and/or maps in one of the Convention's official working languages, and INSTRUCTS the Ramsar Secretariat to contact the Contracting Parties listed in Annex 1a to this Resolution and request them to do so;

27. WELCOMES the statements made in the National Reports to COP11 or during this meeting concerning planned extensions to existing Ramsar Sites and future designations of new or extended Ramsar Sites, from the following 88 Contracting Parties: Albania 1, Algeria 10, Antigua and Barbuda 2, Australia 1, Austria 3, Barbados 1, Belarus 3, Benin 1, Bolivia 1, Botswana 2, Brazil 6, Cameroon 5, Canada 1, Central African Republic 3, Chile 3, China 5, Colombia 3, Congo 3, Croatia 1, Cuba 3, Czech Republic 2, Dominican Republic 4, Ecuador 4, El Salvador 2, Estonia 9, Fiji 2, Finland 11, France 10, Gambia 3, Georgia 1, Ghana 5, Guatemala 2, Guinea-Bissau 2, Iceland 1, Indonesia 3, Iran, Islamic Republic of 3, Italy 8, Jamaica 1, Kenya 2, Lao People's Democratic Republic 1, Lebanon

5, Lesotho 1, Libya 20, Madagascar 2, Malawi 3, Malaysia 1, Marshall Islands 2, Mauritania 10, Mongolia 1, Montenegro 1, Mozambique 1, Myanmar 1, Namibia 2, Nepal 10, New Zealand 2, Pakistan 5, Panama 1, Paraguay 3, Philippines 4, Portugal 2, Republic of Moldova 1, Romania 15, Rwanda 2, Senegal 2, Serbia 2, Seychelles 2, Sierra Leone 3, Slovakia 1, South Africa 3, Spain 4, Sri Lanka 3, Sudan 3, Suriname 2, Sweden 15, Switzerland 10, Thailand 6, The former Yugoslav Republic of Macedonia 6, Togo 1, Tunisia 20, Turkey 17, Turkmenistan 5, Uganda 3, Ukraine 13, United Kingdom 4, Uruguay 5, Venezuela 3,Viet Nam 4, and Yemen 3); and

28. INSTRUCTS the Ramsar Secretariat to consider options for assisting and encouraging Parties in their actions in response to change or likely change in ecological character.

Annex 1a

List of Ramsar Sites for which no RIS and/or adequate map has been submitted to the Secretariat

COUNTRY	Site number	Site name	Date of designation	RIS	MAP
AZERBAIJAN	1075	Agh-Ghol	21/05/2001	No	No
	1076	Ghizil-Agai	21/05/2001	No	No
BHUTAN	2032	Bumdeling	05/07/2012	No	No
	2033	Khotokha	05/07/2012	No	No
CAPE VERDE	1575	Curral Velho	18/07/2005	Yes	No
	1576	Lagoa de Rabil	18/07/2005	No	No
	1577	Lagoa de Pedra Badejo	18/07/2005	No	No
CENTRAL AFRICAN REPUBLIC	1590	Les Rivières de Mbaéré-Bodingué	05/12/2005	Yes	No
DJIBOUTI	1239	Haramous-Loyada	22/11/2002	Yes	No
FIJI	1612	Upper Navua Conservation Area	11/04/2006	No	No
GERMANY	174	Unteres Odertal, Schwedt	31/07/1978	No	No
	175	Peitzer Teichgebiet	31/07/1978	No	No
IRAQ	1718	Hawizeh Marsh (Haur Al-Hawizeh)	10/07/2007	Yes	No
IRELAND	440	Tralee Bay	10/07/1989	No	Yes
	840	Bannow Bay	11/06/1996	No	Yes
	841	Trawbreaga Bay	11/06/1996	No	Yes
	842	Cummeen Strand	11/06/1996	No	Yes
KAZAKHSTAN	108	Lakes of the lower Turgay & Irgiz	11/10/1976	Yes	No
KYRGYZ REPUBLIC	1231	Isyk-Kul State Reserve with the Lake Isyk-Kul	10/11/1976	No	No
MYANMAR	1431	Moyingyi Wetland Wildlife Sanctuary	17/11/2004	No	No
NETHERLANDS	198	Het Spaans Lagoen	23/05/1980	No	Yes
	578	Alde Feanen	07/01/1993	No	Yes
	579	De Deelen	07/01/1993	No	Yes
	580	Deurnese Peelgebieden	07/01/1993	No	Yes
	581	Bargerveen	07/01/1993	No	Yes
PAKISTAN	97	Thanedar Wala	23/07/1976	Yes	No
	98	Tanda Dam	23/07/1976	Yes	No
	99	Kinjhar (Kalri) Lake	23/07/1976	Yes	No
	100	Drigh Lake	23/07/1976	Yes	No
	101	Haleji Lake	23/07/1976	Yes	No
	816	Chashma Barrage	22/03/1996	No	No
	817	Taunsa Barrage	22/07/1976	No	No
PALAU	1232	Lake Ngardok	18/10/2002	No	No
SAMOA	1412	Lake Lanoto'o	10/07/2004	No	No
SAO TOME AND PRINCIPE	1632	Ilots Tinhosas	21/08/2006	Yes	No
TAJIKISTAN	1082	Karakul Lake	18/07/2001	No	No

COUNTRY	Site number	Site name	Date of designation	RIS	MAP
	1083	Kayrakum Reservoir	18/07/2001	No	No
	1084	Lower part of Pyandj River	18/07/2001	No	No
	1085	Shorkul and Rangkul Lakes	18/07/2001	No	No
	1086	Zorkul Lake	18/07/2001	No	No
YEMEN	1736	[Detwah Lagoon]	08/10/2007	No	No

Annex 1b

List of Contracting Parties from which one or more updated Ramsar Information Sheets are needed as a matter of priority

(as at 13 July 2012)

COUNTRY	Number of sites with outdated information	*Number of sites for which updated information has been submitted	Total number of sites per country
ALBANIA	3	0	3
ALGERIA	42	26	50
ANTIGUA AND BARBUDA	1	0	1
ARGENTINA	11	2	20
AUSTRALIA	24	28	64
AUSTRIA	14	7	20
AZERBAIJAN	2	0	2
BAHRAIN	2	0	2
BANGLADESH	2	0	2
BARBADOS	1	0	1
BELARUS	7	0	9
BELGIUM	9	0	9
BELIZE	2	0	2
BENIN	2	2	4
BOLIVIA	7	1	8
BOSNIA AND HERZEGOVINA	1	1	3
BULGARIA	9	1	11
BURKINA FASO	3	0	15
BURUNDI	1	1	1
CAMBODIA	3	3	3
CAMEROON	1	0	7
CANADA	36	1	37
CAPE VERDE	3	3	3
CENTRAL AFRICAN REPUBLIC	1	0	2
CHAD	5	0	6
CHINA	0	31	41
COLOMBIA	3	0	5
COMOROS	1	0	3
CONGO	1	0	7
CÔTE D'IVOIRE	6	0	6
CROATIA	3	0	4
CZECH REPUBLIC	10	7	12

COUNTRY	**Number of sites with outdated information**	***Number of sites for which updated information has been submitted**	**Total number of sites per country**
DEMOCRATIC REPUBLIC OF CONGO	1	0	3
DENMARK	38	38	42
DJIBOUTI	1	0	1
DOMINICAN REPUBLIC	1	0	2
ECUADOR	3	11	14
EGYPT	2	2	4
EL SALVADOR	2	4	6
EQUATORIAL GUINEA	3	0	3
ESTONIA	6	0	17
FIJI†	1	0	1
FINLAND	49	0	49
FRANCE	16	9	41
GAMBIA	2	1	3
GEORGIA	1	0	2
GERMANY	32	1	34
GHANA	6	6	6
GREECE	10	0	10
GUATEMALA	4	2	7
GUINEA	14	0	16
GUINEA-BISSAU	1	0	1
HONDURAS	6	5	6
HUNGARY†	6	0	29
ICELAND	3	0	3
INDIA	25	0	25
INDONESIA	3	3	6
IRAN, ISLAMIC REP. OF	21	0	24
IRAQ	1	0	1
IRELAND	45	0	45
ISRAEL	2	0	2
ITALY	44	44	52
JAMAICA	2	1	4
JAPAN	32	3	37
JORDAN	1	0	1
KAZAKHSTAN	1	0	9
KENYA	5	0	5
KYRGYZ REPUBLIC	1	0	3
LATVIA	4	0	6
LEBANON	1	0	4
LESOTHO	1	0	1
LIBERIA	1	0	5

COUNTRY	**Number of sites with outdated information**	***Number of sites for which updated information has been submitted**	**Total number of sites per country**
LIBYA	2	0	2
LIECHTENSTEIN	1	0	1
LITHUANIA	1	1	7
LUXEMBOURG	2	0	2
MADAGASCAR	5	0	9
MALAWI	1	1	1
MALAYSIA	5	3	6
MALI	1	1	1
MALTA	2	0	2
MARSHALL ISLANDS	1	0	1
MAURITANIA	4	1	4
MAURITIUS	1	0	3
MEXICO	55	9	138
MONGOLIA	11	0	11
MONTENEGRO	1	0	1
MOROCCO	24	0	24
MYANMAR	1	0	1
NAMIBIA	4	4	4
NEPAL	4	1	9
NETHERLANDS	49	21	49
NEW ZEALAND[†]	6	0	6
NICARAGUA	8	7	9
NIGER	12	0	12
NIGERIA	1	0	11
NORWAY	19	19	51
PAKISTAN	12	0	19
PANAMA	3	1	5
PAPUA NEW GUINEA	2	0	2
PARAGUAY	6	0	6
PERU	9	2	13
PHILIPPINES	3	0	4
POLAND	5	0	13
PORTUGAL	17	0	28
REPUBLIC OF KOREA	4	1	17
REPUBLIC OF MOLDOVA	3	0	3
ROMANIA	5	0	12
RUSSIAN FEDERATION	35	21	35
RWANDA	1	0	1
SAINT LUCIA	2	0	2
SAMOA	1	0	1
SENEGAL	4	0	4

COUNTRY	**Number of sites with outdated information**	***Number of sites for which updated information has been submitted**	**Total number of sites per country**
SERBIA	4	0	10
SEYCHELLES	1	1	3
SIERRA LEONE	1	0	1
SLOVAKIA	7	0	14
SLOVENIA	3	0	3
SOUTH AFRICA	17	8	20
SPAIN	47	2	74
SRI LANKA	3	0	5
SURINAME	1	0	1
SWEDEN	32	0	51
SWITZERLAND	10	0	11
SYRIAN ARAB REPUBLIC	1	0	1
TAJIKISTAN	5	0	5
THAILAND	10	10	11
THE FYR OF MACEDONIA	1	0	2
TOGO	2	0	4
TRINIDAD AND TOBAGO	3	0	3
TUNISIA	1	0	35
TURKEY	3	0	13
UGANDA	2	0	12
UKRAINE	33	33	33
UNITED KINGDOM†	163	1	169
UNITED REPUBLIC OF TANZANIA	4	0	4
UNITED STATES OF AMERICA	14	8	34
URUGUAY	2	1	2
UZBEKISTAN	1	0	2
VENEZUELA	5	0	5
VIET NAM	2	0	4
ZAMBIA	1	0	8

*** Numbers refer to the number of sites (included in the number of sites with outdated information) for which the Administrative Authorities have submitted updated information that is currently being checked by the Secretariat or for which further details are needed from the country.**

† **The Contracting Party has advised the Secretariat that it will update its Ramsar Site information subsequent to any adoption of the RIS – 2012 revision at COP11 becoming operational.**

Annex 2a

Ramsar Sites with reports of human-induced negative changes having occurred, occurring or likely to occur (Article 3.2)

Open files[2] where information was first received by the Secretariat from the Administrative Authority, and which have been followed up by the Secretariat. Files closed during the triennium are not included.

Armenia	Lake Sevan
Australia	Coorong and Lower Lakes, Gwydir Wetlands, Macquarie Marshes
Austria	Untere Lobau
Costa Rica	Caribe Nordeste
Germany	Mühlenberger Loch
Nicaragua	Refugio de Vida Silvestre del Rio San Juan
Norway	Giske Wetland System (new case based on information from 2012), Ilene & Pesterødkilen, Nordre Øyeren
Romania	Danube Delta, Small Island of Braila
Slovenia	Skocjan Caves, Secovlje salt pans
Thailand	Kuan Ki Sian of the Thale Noi Non Hunting Area Wetlands
The Former Yugoslav Republic of Macedonia	Dojran Lake (Dojransko Ezero), Prespa Lake

[2] "Open files" refer to cases where there is on-going dialogue between the Secretariat and a Contracting Party about a Ramsar Site in respect of which a report has been received of human-induced negative change that has occurred, is occurring or is likely to likely to occur.

Annex 2b

Ramsar Sites with reports of human-induced negative changes having occurred, occurring or likely to occur

Open files where information has been received by the Secretariat from sources other than Contracting Parties, and where this has been followed up with the Administrative Authorities concerned. Inclusion here does not imply that the Conference of the Contracting Parties, Secretariat, or Party concerned considers that any given site is facing negative change. Files closed during the triennium are not included.

Albania	Butrint, Lake Shkodra and River Buna
Australia	Central Murray State Forests, Gippsland Lakes
Bangladesh	Sundarbans Reserved Forest
Belgium	Marais d'Harchies
Belize	Sarstoon Temash National Park
Colombia	Sistema Lagunar Ciénaga Grande de Santa Marta
Bosnia and Herzegovina	Hutovo Blato
Congo	Cayo-Loufoualeba
Congo, Democratic Republic of	Parc National des Virunga
Croatia	Delta Neretve
Czech Republic	Sumava peatlands
Denmark	Nissum Fjord, Ulvedybet & Nibee Bredning, Vadehavet, Heden on Jameson Land (Greenland)
France	Rhin supérieur
Georgia	Wetlands of Central Kolkheti
Greece	Artificial lake Kerkini, Evros Delta, Lake Mikri Prespa
Honduras	Parque Nacional Jeannette Kawas
Iceland	Gunnafjördur, Myvatn-Laxá region, Thjörsárver
India	East Calcutta Wetlands, Sambhar Lake
Iran	Urmia Lake
Italy	Laguna di Marano: Foci dello Stella, Stagno di Molentargius
Jamaica	Palisadoes
Kazakhstan	Ural River Delta and adjacent Caspian Sea coast
Mexico	Xcalcel, Xcalcelito, Parque Nacional Cabo Pulmo, Manglares y Humedales de la Isla de Cozumel
Moldova, Republic of	Lower Prut Lakes
Montenegro	Skadarsko Jezero
Mozambique	Marromeu Complex
Netherlands	Bargerveen, Naardermeer
Norway	Aakersvika, Froan Nature Reserve & Landscape Protection Area
Pakistan	Kinjhar (Kalri) Lake, Haleji Lake,
Panama	Bahia de Panama
Portugal	Ria Formosa
Russian Federation	Kandalaksha Bay, Moroshechnaya River, Selenga Delta, Torey Lakes, Volga Delta
Serbia	Slano Kopova, Stari Begi/Carska Bara Special Nature Reserve
Slovenia	Lake Cerknica and its environ
South Africa	Ndumo Game Reserve
Spain	Aiguamolls de l'Empordà , Albufera de Valencia, Laguna y Arenal de Valdoviño, Mar Menor, Ria del Eo, Saladar de Jandía, S'Albufera de Mallorca, Txingudi

Syria	Sabkhat al-Jabbul Nature Reserve
Thailand	Kuan Ki Sian of the Thale Noi Non-Hunting Area Wetlands
United Kingdom	South East Coast of Jersey

11th Meeting of the Conference of the Parties to the Convention on Wetlands (Ramsar, Iran, 1971)

"Wetlands: home and destination"

Bucharest, Romania, 6-13 July 2012

Resolution XI.5

Regional initiatives 2013-2015 in the framework of the Ramsar Convention

1. RECALLING that Regional Initiatives under the Ramsar Convention are intended as operational means to provide effective support for an improved implementation of the objectives of the Convention and its Strategic Plan in specific geographical regions, through international cooperation on wetland-related issues of common concern;

2. AWARE that the *Guidelines for international cooperation under the Ramsar Convention* (Resolution VII.19, 1999) provide the appropriate framework for promoting international collaboration amongst Contracting Parties and other partners;

3. ALSO RECALLING that the Contracting Parties recognized the importance of Regional Initiatives in promoting the objectives of the Convention in Resolution VIII.30 (2002), and that Resolution IX.7 (2005) both endorsed a number of Regional Initiatives as operating within the framework of the Convention in 2006-2008 and recognized the potential of a number of other initiatives to become operational within the framework of the Convention;

4. FURTHER RECALLING that Resolution X.6 (2008) adopted "Operational Guidelines" for Regional Initiatives to support the implementation of the Convention, and that these serve as a reference for assessing the operation of Regional Initiatives and their success (replacing the *Guidelines for the development of Regional Initiatives in the framework of the Convention on Wetlands* annexed to Resolution VIII.30);

5. NOTING that during the years 2009-2012, the Standing Committee has examined and approved a number of active Regional Initiatives as fully meeting the Operational Guidelines and noted the substantial progress made by many of the initiatives during those years, based on their annual reports submitted to the Standing Committee; and

6. TAKING INTO ACCOUNT the experience gained through the operational years of those initiatives, both the regional networks and the Ramsar Regional Centres (RRCs); the successful application of the Operational Guidelines in selecting and supporting Regional Initiatives operating in the framework of the Convention; and the conclusions derived

from the review of their success with a strategic view for the future development of Regional Initiatives;

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7. REAFFIRMS the usefulness of cooperation at regional level through networks and centres for training and capacity building in providing effective support for improved implementation of the objectives and approaches of the Convention;

8. APPROVES the continued validity and use of the Operational Guidelines for Regional Initiatives to support the implementation of the Convention, as adopted for 2009-2012 and annexed to Resolution X.6, for the period 2013 to 2015;

9. INSTRUCTS all initiatives approved by the Convention to submit to the Standing Committee annual reports on their progress and operations, and specifically on their success in fulfilling the Operational Guidelines, as well as to forward annual work and finance plans in the format adopted by the Standing Committee;

10. INSTRUCTS the Standing Committee to continue to assess annually, based on formal reports submitted on time, the extent to which the existing Regional Initiatives continue to meet the standards of the Operational Guidelines and actively contribute to the implementation of the Convention;

11. INSTRUCTS the Standing Committee to revise the guidelines on Regional Initiatives in such a manner that a precise evaluation of their activities and their administrative and financial management and long-term sustainability is possible and to use these new guidelines to determine the level of support (financial or otherwise) in the coming triennium;

12. AGREES to earmark financial support in the Convention core budget line "Support to Regional Initiatives", as listed in Resolution XI.2 on financial and budgetary matters, to be allocated to existing Regional Initiatives for development activities during the period 2013-2015, provided that they are determined by the Standing Committee to fully meet the Operational Guidelines;

13. DECIDES that the levels of financial support to individual Regional Initiatives for the years 2013, 2014, and 2015 through that budget line will be determined by the Standing Committee during its annual meetings, based upon updated financial and work plans to be submitted in the required format not later than two months prior to its annual meetings, and with the benefit of the specific recommendations made by the Subgroup on Finance;

14. STRONGLY URGES those Regional Initiatives that receive initial financial support from the core budget to use this support *inter alia* to seek alternative flows of sustainable funding, for example through trust funds, to strengthen their financial sustainability;

15. REAFFIRMS that, in accordance with Resolution X.6, financial support for Regional Initiatives from the Convention's core budget will, in principle, only be provided for a period corresponding to the interval between two meetings of COP;

16. DECIDES that financial support for Ramsar Regional Centres that meet the Operational Guidelines can be obtained for a period of up to six years in total;

17. DECIDES that Regional Initiative Networks that have already received financial support from the Convention's core budget for one triennium may have a three-year phasing out period, giving them the opportunity to find complementary means of financing their activities, and that financial support from the Convention's core budget will then cease;

18. ENCOURAGES Contracting Parties, intergovernmental agencies, International Organization Partners, national NGOs, private businesses, regional institutions and programmes of relevance to wetlands and other potential donors to support Regional Initiatives seeking financial assistance from the Ramsar Convention with additional voluntary contributions, to match Ramsar funding and ensure the financial sustainability of the initiatives;

19. INSTRUCTS both Regional Centres and Regional Networks operating in the framework of the Convention to describe themselves as an operational means to provide support for the implementation of the objectives of the Ramsar Convention, but to present themselves with their own independent and individual identities to the public and other partners, in order to avoid any confusion in the public mind between these Initiatives and the different roles of the Ramsar Administrative Authorities at national level and the Ramsar Secretariat at international level, and REQUESTS the Secretariat to support and promote the value of the Regional Centres and Networks and facilitate those efforts to the extent possible;

20. INVITES all Regional Initiatives to sign a hosting agreement or similar appropriate instrument with their host organizations or countries within one year of their establishment, for the coming years in order to clarify the responsibilities in accordance with the Operational Guidelines;

21. ENCOURAGES the Regional Initiatives to maintain active and regular contacts and exchanges with the Secretariat, *inter alia* to assist in ensuring that the global Ramsar guidelines are applied and that the strategic and operational objectives of Regional Initiatives are in full harmony with the Convention's Strategic Plan;

22. URGES the Scientific and Technical Review Panel (STRP) to explore ways of making good use of experiences from Regional Initiatives in its work;

23. EMPHASIZES the importance for Regional Initiatives to establish their operational governance structures in a transparent way, based on written terms describing their roles and responsibilities, to ensure that government agencies, research centres, NGOs and all other relevant partners are adequately represented in such structures, and to report on this to the Secretariat;

24. ENCOURAGES Contracting Parties geographically related to a Regional Initiative that have not yet done so to provide support to the initiative and to signal this through the provision of formal letters of support and financial support, as appropriate;

25. ENCOURAGES Contracting Parties, international organizations, international bodies, regional and subregional organizations to identify for possible inclusion among Regional Intiatives particular basins of global importance, such as the Amazon;

26. REQUESTS the CEPA Oversight Panel to work with the representatives of the Ramsar Regional Centres to identify and advise on the capacity building needs for RRC staff to optimize their performance, and REQUESTS the Standing Committee to assess the functioning of Ramsar Regional Centres in relation to the Operational Guidelines and the Ramsar Strategic Plan 2009-2015, requesting support from the CEPA Oversight Panel as required;

27. ENCOURAGES the Secretariat to support Regional Initiatives, to the limit of its means, so as to reinforce their capacity and optimize their management by identifying and providing support by official supporting letters, advice, and orientations about fundraising and implementation; and

28. REQUESTS the Standing Committee to prepare a summary report, based on its annual assessments, which reviews the operations and success of the Regional Initiatives operating during the period 2013-2015, for Contracting Parties' consideration at the 12th meeting of the Conference of the Contracting Parties.

11th Meeting of the Conference of the Parties to the Convention on Wetlands (Ramsar, Iran, 1971)

"Wetlands: home and destination"

Bucharest, Romania, 6-13 July 2012

Resolution XI.6

Partnerships and synergies with Multilateral Environmental Agreements and other institutions

1. NOTING the benefits to be gained from mutually supportive collaboration amongst all relevant players, as affirmed in Ramsar Resolutions VII.4 (1999), VIII.5 (2002), IX.5 (2005) and X.11 (2008), while also RESPECTING the independence of the mandates embodied in each convention;

2. WELCOMING the progress made by the Ramsar Convention in the past triennium in updating and expanding its cooperation with other Multilateral Environmental Agreements (MEAs) and with other institutions working in fields relevant to the conservation and wise use of wetlands;

3. ACKNOWLEDGING that partnerships can successfully be made with governments, the private sector, MEAs, nongovernmental organizations, civil society, academia, other international institutions, funds, facilities and other bodies in a position to assist and promote the Convention and its mission and help increase its visibility;

4. RECOGNIZING the opportunities that the celebrations in 2011 of the 40th anniversary of the signing of the Convention have provided for increasing the profile of the Convention and the public's awareness of the importance of wetlands and their benefits to people and nature, as well as the opportunity that the 40th anniversary has provided to take stock of progress in the implementation of the Convention over the past 40 years, as a basis for looking forward to the Convention's implementation over the next 40 years and establishing further partnerships to support Contracting Parties' capacities;

5. WELCOMING the preparation by the Ramsar Secretariat of a "Strategic Framework for Ramsar Partnerships" (COP11 DOC. 18), which provides a basis for the future focus and priorities for engagement with institutional and private sector organizations in order to enhance national and international resourcing and for attention to the achievement of the wise use of wetlands, taking into account the *Principles for partnerships between the Ramsar Convention and the business sector* adopted by Resolution X.12;

6. EXPRESSING APPRECIATION to the Secretariats of the Convention on Biological Diversity and the Ramsar Convention for their report on achievements in implementing

the CBD/Ramsar 4th Joint Work Plan provided in UNEP/CBD/COP/10/INF/38 to CBD COP10 and Ramsar COP11 DOC.20, and NOTING the CBD's Decision X/20 which "expresses its appreciation to the Ramsar Convention, and its Scientific and Technical Review Panel, for the continued cooperation and welcomes the extension of the joint work plan for the period beyond 2010";

7. NOTING that CBD COP10 Decisions X/28 on inland waters, X/29 on marine and coastal biodiversity, and X/31 on protected areas reaffirm the role of the Ramsar Convention as the CBD's lead implementation partner for wetlands, and ALSO NOTING the establishment through CBD Decision X/28 of a joint CBD/Ramsar expert working group to provide policy-relevant messages on maintaining the ability of biodiversity to continue to support the water cycle;

8. ALSO NOTING that the CBD in Decision X/20 invited the scientific bodies of the biodiversity-related conventions (CSAB) and the Liaison Group of Biodiversity-related Conventions (BLG) to address at their future meetings options for enhanced cooperation with regard to work on cross-cutting issues, such as climate change, scientific criteria for the identification of ecologically or biologically significant areas in need of protection, and invasive alien species;

9. WELCOMING the 5th CBD/Ramsar Joint Work Plan, for 2011-2020, through which Ramsar delivers it lead implementation role for wetlands in CBD programmes of work, including *inter alia* on inland waters, marine and coastal biodiversity and protected areas, as well as the revised CMS/Ramsar Joint Work Plan, as flexible frameworks for collaboration with the CBD, the CMS, and its wetland-relevant Agreements and Memoranda;

10. NOTING the adoption by the Convention on Biological Diversity's 10th meeting of its Conference of the Contracting Parties, in Nagoya, Japan, in October 2010 of the *Strategic Plan for Biodiversity 2011-2020* (Decision X/2), which provides a "a useful flexible framework that is relevant to all biodiversity-related conventions" and includes 20 "Aichi Biodiversity Targets", ALSO NOTING the "Memorandum of Cooperation between International Agencies and Organisations and the Secretariat of the Convention on Biological Diversity on the Implementation of the Strategic Plan for Biodiversity 2011-2020 and the Achievement of the 2020 Aichi Biodiversity Targets" agreed in September 2011, and STRESSING the significant contribution the Ramsar Convention can make to the implementation of the Strategic Plan for Biodiversity through implementation of the Strategies of the Ramsar Strategic Plan 2009-2015, as outlined in Appendix 1 of Ramsar Resolution XI.3;

11. RECALLING the contribution of the 2010 Biodiversity Indicators Partnership in tracking progress towards the 2010 Biodiversity Target, and NOTING the ongoing role of the Biodiversity Indicators Partnership (BIP) in relation to the Strategic Plan for Biodiversity 2011-2020 in tracking progress towards the Aichi Targets;

12. AWARE that the United Nations has declared 2011-2020 to be the Decade on Biodiversity;

13. FURTHER NOTING Resolution 10.21 of the Convention on Migratory Species (CMS) which welcomed the revised CMS/Ramsar Memorandum of Cooperation and Joint Work Plan as a flexible framework for collaboration with the CMS and its wetland-relevant sister Agreements and Memoranda;

14. WELCOMING Resolution 5.19 adopted by AEWA MOP5 on the 'Encouragement of further Joint Implementation of the African Eurasian Waterbird Agreement and the Ramsar Convention', as well as other opportunities for synergy between Ramsar and AEWA, including the African Initiative under AEWA and related projects supported by the government of France;

15. RECOGNIZING the facilitation by the United Nations Environment Programme (UNEP) for the "MEA Information and Knowledge Management (IKM) Initiative" (www.informea.org), which brings together 13 Global Multilateral Environmental Agreements, including the Ramsar Convention, to develop harmonized and interoperable information systems in support of knowledge management activities among MEAs for the benefit of Parties and the environment community at large, and WELCOMING the launch of its *InforMEA* project, which provides a web-portal for access to aggregated data and information harvested from participating MEAs;

16. AWARE of the outcomes of the "Rio+20" United Nations Conference on Sustainable Development, which took place on 20-22 June 2012, concerning its two themes of relevance to the Ramsar Convention, namely a green economy in the context of sustainable development and poverty eradication, and the institutional framework for sustainable development and international environmental governance;

17. WELCOMING the establishment of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES), EXPRESSING APPRECIATION to the Ramsar Secretariat and the Chair of the Scientific and Technical Review Panel for their contributions to the planning and preparatory processes to establish IPBES, and ACKNOWLEDGING the potential for IPBES to serve as a mechanism to strengthen the science-policy interface with respect to biodiversity and ecosystem services, including wetland biodiversity and ecosystem services, and to make information available to the Ramsar Convention and its Contracting Parties to support decision-making related to implementation;

18. WECOMING the establishment by the Ramsar Secretariat of new Memoranda of Cooperation with the European Space Agency (ESA, concerning the "Globwetland-II" wetland observing system), the Japan Aerospace Exploration Agency (JAXA), the Japan International Cooperation Agency (JICA), the Organisation of American States (OAS), the Society for Ecological Restoration (SER), Stetson University College of Law, the Wings over Wetlands (WOW) Partnership, the UNEP-World Conservation Monitoring Centre (UNEP-WCMC), the Wildfowl & Wetlands Trust (WWT), the World Association of Zoos and Aquariums (WAZA), the World Bank, the World Tourism Organisation (UNWTO), and the World Health Organisation (concerning publication of the report "Healthy wetlands, healthy people") and the Resolution on Cooperation (RoC) with the Conservation of Arctic Flora and Fauna Working Group of the Arctic Council (CAFF), ALSO WELCOMING the renewal of Memoranda of Cooperation with Danone-Evian (Fonds Danone-Evian pour l'Eau), Ducks Unlimited (DU), the Society of Wetland

Scientists (SWS), The Nature Conservancy (TNC), the Secretariat of the Pacific Regional Environment Programme (SPREP), Star Alliance – Biosphere Connections, the USA "Wetlands for the Future" Initiative, and RECOGNIZING the opportunities that such MOCs provide for raising the visibility of the Convention;

19. EXPRESSING appreciation to the Danone Group for its continued generous support to the Convention and to the Biosphere Connection Partnership for its continued support in providing sponsored delegate travel to Ramsar-related meetings;

20. RECALLING Resolution X.12 on *Principles for partnerships between the Ramsar Convention and the business sector*, which requested the Ramsar Secretariat, in all cases of developing projects or activities in partnership with the private sector in the territory of one or more Contracting Parties, to inform and consult in advance with the applicable Administrative Authorities for their agreement; and

21. REITERATING APPRECIATION to the five International Organization Partners (BirdLife International, IUCN, the International Water Management Institute, Wetlands International, and WWF International) for their invaluable efforts in the past triennium in support of the Ramsar Convention, and WELCOMING the signing in May 2011 of a new joint Memorandum of Cooperation between the Ramsar Secretariat and the five IOPs which reaffirms their shared commitment to collaborate in support of Convention implementation;

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22. REQUESTS the Secretariat to continue to cooperate closely with relevant conventions through its participation in the Joint Liaison Group of the three Rio Conventions – the UN Framework Convention on Climate Change (UNFCCC), the Convention on Biological Diversity (CBD), and UN Convention to Combat Desertification (UNCCD) – and through its work as a member of the UN Environment Management Group (EMG);

23. ALSO REQUESTS the Secretariat to remain closely involved in the work of the Biodiversity Liaison Group (BLG) established under the aegis of the CBD and to report regularly to the Standing Committee on progress achieved by this group, and FURTHER REQUESTS the Secretariat to facilitate the continuing participation of the Chairperson of the Scientific and Technical Review Panel (STRP) in the work of the scientific bodies of the biodiversity-related conventions (CSAB);

24. REQUESTS the Ramsar Secretariat to liaise with the AEWA Secretariat to strengthen the implementation of joint activities;

25. ACKNOWLEDGES the outcomes of the United Nations Conference on Sustainable Development (Rio+20) related to enhancing policy coherence at all levels, improving efficiency, reducing unnecessary overlap and duplication, and working to enhance coordination and cooperation among the biodiversity-related MEAs;

26. INVITES Contracting Parties to take into account the report by the UNEP World Conservation Monitoring Centre published in 2012 and supported by Finland, and to

consider its important recommendations towards promoting synergies within the cluster of biodiversity-related Multilateral Environmental Agreements;

27. URGES the Secretariat to continue its joint review with UNESCO of opportunities for enhancing collaboration on its programmes of work with the Man and the Biosphere Programme (MAB), the International Hydrological Programme (IHP), and the World Heritage Centre with a view to reinvigorating those collaborative mechanisms;

28. URGES Parties and other governments to take part in the current review, update and revision process for National Biodiversity Strategies and Action Plans, in order to include Ramsar objectives in order to promote the implementation of the Ramsar Convention and also to mainstream biodiversity at the national level, taking into account synergies among the biodiversity-related conventions in a manner consistent with their respective mandates;

29. EXPRESSES APPRECIATION to the Ramsar Secretariat and the Chair of the Scientific and Technical Review Panel for their participation in the IPBES process, ACCEPTS the invitation by IPBES for the Chair of the STRP to participate as an observer in the IPBES Multidisciplinary Expert Panel, and REQUESTS the Secretariat and the Chair of the STRP to continue to engage in the future IPBES process and explore further ways of collaboration as appropriate;

30. INVITES IPBES to address science-policy linkages relating to conservation and wise use of wetlands and, when establishing and implementing its modalities and work programme, to take into account the needs of the Ramsar Convention and its Contracting Parties by integrating scientific, technical and technological information relevant to the Convention;

31. REQUESTS the Contracting Parties, the Standing Committee, the Secretariat and the STRP to implement the actions set out in Annex 2 of this Resolution;

32. INVITES Contracting Parties to provide relevant expertise to IPBES and IPCC to help in developing information on wetlands;

33. WELCOMES the recent development of further Ramsar cooperative relations with UNEP, the World Bank (Global Partnership for Oceans), the World Tourism Organization (UNWTO), UNEP-WCMC, and the World Health Organization (WHO), and REQUESTS the Secretariat to continue to develop cooperative relations with these UN agencies and others such as UNESCO, the UN Food and Agriculture Organization (FAO), UN-Water, and the UN Economic Commission for Europe's Convention on the Protection and Use of Transboundary Watercourses and International Lakes, as well as with other relevant intergovernmental organizations such as the Global Biodiversity Information Facility (GBIF) and the CGIAR networks, to seek membership in the Collaborative Partnership on Forests, and to seek to reduce duplicative activities, noting the benefit to Ramsar's international visibility of such relationships;

34. WELCOMES continuing collaboration with the Biodiversity Indicators Partnership, in particular in contributing to the Global Wetlands Observing System (GWOS) and in reporting Ramsar contributions to achieving the Aichi Targets at national, regional and global scales;

35. INSTRUCTS the Ramsar Secretariat to use the *Principles for partnerships between the Ramsar Convention and the business sector* adopted in Resolution X.12 (2008) as its basis for the focus and priorities for future engagements with institutional and private sector organizations, including through innovative partnerships that will enhance national and international resourcing and capacity for the achieving the wise use of wetlands, and to report on progress in implementing the Principles to the Conference of the Parties;

36. REQUESTS the Secretariat to continue to review its memoranda of cooperation with other global and regional environment agreements and other organizations with a view to reinvigorating those most likely to be beneficial to the work of the Convention and its international profile within the time and resources available, taking into account the approach and priorities established in the "Strategic Framework for Partnerships for the Ramsar Convention", and FURTHER ENCOURAGES the Secretariat to continue to establish and strengthen partnerships and closer working relations with intergovernmental regional and subregional groups, notably with regional and subregional organizations and especially with Regional Initiatives, with a view to enhancing the role and visibility of the Convention in those regions;

37. URGES Contracting Parties to continue to support the development and implementation of the Convention's partnership programme, including through providing the Secretariat with information and contacts for potential business and other partnerships and prospective donor contacts, and ENCOURAGES the Secretariat to further promote the development of partnerships with the private sector as possible income generation sources, in order to enhance the overall implementation of the Convention;

38. REQUESTS the Secretariat to develop closer consultative relationships with a number of environment funding organizations, including but not limited to financial institutions such as the Global Environment Facility), bilateral funds for the global environment, regional development banks, bilateral donors, and other institutions such as the European Commission and its relevant divisions for environment and biodiversity funding, with a view to mobilizing resources for the implementation of the Convention;

39. URGES the Secretariat to continue its valuable collaboration with the five International Organization Partners in the context of Joint Work Plans prepared with the Ramsar Secretariat and INVITES the IOP representatives to take steps to increase awareness of Ramsar and its objectives and the collaborative relationship with the Convention to the greatest possible extent throughout their organizations, including by coordination with IOPs' country and regional offices, where appropriate;

40. WELCOMES in particular the role of the IOPs in providing information on the state of the world's wetlands and their services to people, and on the Convention's effectiveness, for example through initiatives such as the *Waterbird Population Estimates*, now in its 5th edition;

41. FURTHER URGES the Secretariat to seek opportunities for developing similarly fruitful relationships with other non-governmental organizations and civil society, and, following a review of memoranda of cooperation already in place with other NGOs, to foster increased cooperation with those NGOs that can give most benefit to and gain most benefit from the work of the Convention and elevate its profile, including through the

World Wetland Network, which was launched at Ramsar COP10 to increase involvement and representation of smaller NGOs and civil society groups;

42. REQUESTS the STRP, subject to the availability of resources, to exchange information and expertise with the equivalent subsidiary bodies of other MEAs and relevant regional fora, to continue to participate in meetings of the chairs of scientific and technical subsidiary bodies (CSAB), and to report through the Standing Committee to the Conference of the Parties on these activities;

43. REQUESTS the Secretariat to continue its participation in the UNEP-WCMC's work on developing tools for on-line use by the biodiversity-related conventions, including exploring the opportunity for on-line reporting applications relevant to Ramsar, such as the CMS Family On-line Reporting System, and FURTHER REQUESTS the preparation of a users' guide or training guidelines for any such applications, resources permitting;

44. CALLS UPON Contracting Parties, other governments, International Organization Partners, and other relevant organizations to make a special effort to contribute to the 2011-2020 UN Decade on Biodiversity , including by drawing increased attention to the critical role of wetlands in supporting many components of biodiversity in the terrestrial, freshwater, and marine biomes; raising awareness of the linkages between wetlands, biodiversity, and the achievement of Millennium Development Goals; highlighting the role of wetlands in responding to climate change; and reinforcing the contribution of the wise use of wetlands to the conservation and sustainable use of biodiversity;

45. URGES Contracting Parties to take active steps at national level to improve regular liaison and collaboration among Ramsar Administrative Authorities and focal points and the focal points of related conventions and agreements, including as appropriate through their inclusion in National Ramsar/Wetland Committees, in order to ensure that national responses to global environmental issues will be as consistent as possible with the objectives and values of the Ramsar Convention, and ALSO URGES Parties to make good use of the *InforMEA* web portal to access aggregated data and information across MEAs in their efforts to enhance in-country collaboration and coherent implementation of MEAs;

46. ENCOURAGES Contracting Parties and other governments and organizations also to make use, as appropriate, of the web-based "TEMATEA" issue-based modules resource when developing mutually supportive activities among biodiversity-related conventions;

47. URGES the Secretariat to support the work of the STRP in further implementing Resolution VIII.26 (2002) on developing biological indicators on the results of the Convention's activities, in collaboration with other biodiversity MEAs so as to achieve a coherent approach to indicator development, such that the evaluation of the effectiveness of the Convention may occur at least once in each reporting cycle, and REQUESTS the Secretariat and STRP to provide advice on how reporting on these indicators may be incorporated into the National Reports of the Parties; and

48. ENCOURAGES the Secretariat to collaborate with the Secretariats of other biodiversity related MEAs in order to improve the streamlining of reporting.

Annex 1

Summary of Ramsar Convention partnerships and synergies with multilateral environmental agreements (MEAs) and institutions

Convention on Biological Diversity (CBD):

- Memorandum of Cooperation (1996; renewed 2011)
- 5th Joint Work Plan (2011-2020)

Convention on the Conservation of Migratory Species of Wild Animals (CMS):

- Memorandum of Understanding (1997; renewed 2011)
- 2nd Joint Work Plan (2012-2014)

UN Convention to Combat Desertification (UNCCD):

- Memorandum of Cooperation (1998)

World Heritage Convention (WHC):

- Memorandum of Understanding (1999)

Convention for the Protection and Development of the Marine Environment of the Wider Caribbean Region (Cartagena Convention):

- Memorandum of Cooperation (2000; renewed 2005)

Coordinating Unit of the Mediterranean Action Plan of the Secretariat of the Convention for the Protection of the Marine Environment and the Coastal Region of the Mediterranean (Barcelona Convention):

- Memorandum of Cooperation (2001; renewed 2006)

Framework Convention on the Protection and Sustainable Development of the Carpathians ("Carpathian Convention"):

- Memorandum of Cooperation (2006)

The Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES)

- Ramsar Preparation and Engagement with the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES)

The Conservation of Arctic Flora and Fauna Working Group of the Arctic Council (CAFF)

- Resolution on Cooperation (2012)

Annex 2

Ramsar preparation and engagement with the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES)

1. The Busan Outcome states: "Focusing on government needs and based on priorities established by the plenary, the platform should respond to requests from Governments, including those conveyed to it by multilateral environmental agreements related to biodiversity and ecosystem services as determined by their respective governing bodies." The biodiversity-related conventions have an important role to play in setting the global agenda on biodiversity and ecosystem services, and it is noted that the scientific processes informing policy under each of the conventions may provide useful inputs to the work of IPBES.

2. Ramsar Contracting Parties anticipate that the work of IPBES will strengthen the science-policy interfaces at global, regional and subregional levels and that IPBES could support the integration of conservation and sustainable use of wetlands as well as the implementation of the Ramsar Convention by providing scientific information to the Convention and its Contracting Parties, in order to support decision-making related to the wise use of wetlands.

Contracting Parties:

3. Contracting Parties will work through the Standing Committee assisted by the Secretariat, the STRP and the CEPA panel to identify and articulate Ramsar implementation needs at global, regional, and subregional levels relevant to IPBES.

4. The Contracting Parties, through the Standing Committee, will adopt the interim guidelines prepared by the STRP with the assistance of the Secretariat, referred to in paragraph 10.

5. Contracting Parties will seek to enhance communication and coordination between counterparts, including relevant focal points at the national level responsible for matters related to Ramsar and for IPBES, to ensure that the needs related to the wise use of wetlands are being considered by IPBES.

The Secretariat:

6. The Secretariat will maintain cooperative working relationships with IPBES and participate as appropriate in IPBES meetings;

7. The Secretariat will assist the STRP in preparing the guidelines referred to in paragraph 10 below.

8. The Secretariat will also support the work of the Contracting Parties, the CEPA Oversight Panel, and the STRP to identify and articulate Ramsar implementation needs which are relevant to IPBES.

The STRP:

9. The STRP will assess its work plan and if appropriate identify the needs and opportunities for improving the interface between science and policy in relation to the wise use of wetlands and identify gaps in scientific, technical and technological information that could assist Parties in identifying priority requests to be submitted to IPBES while it establishes its work plan, to further the implementation of the Convention.

10. The STRP assisted by the Secretariat will prepare interim guidelines to be adopted by the Standing Committee on timely and efficient processes for formulation, approval and transmission of requests from Ramsar to IPBES, taking into account that IPBES is an independent body, and will establish the procedures for receiving and prioritizing requests. The interim guidelines could be revised in consideration of the future development of IPBES and Ramsar, and the most current guidelines will be submitted to the next Conference of the Contracting Parties for adoption.

11. The STRP will continue to work together with the other MEAs' scientific subsidiary bodies on IPBES-related issues, through the Chairs of the Scientific Advisory Bodies (CSAB), including in the preparation of any joint MEA requests proposed to be submitted to IPBES.

12. The STRP will report to each Standing Committee and Conference of the Parties on the engagement with IPBES and make recommendations on decisions and resolutions to be taken by the Parties, as appropriate.

13. The STRP will provide available relevant wetland information to IPBES in response to notifications and will advise the Secretariat when doing so, and it will report to the Standing Committee's 46th meeting on any actions taken to respond to IPBES notifications. When the response to IPBES notifications has any substantial implications for STRP resources, the STRP Chair will consult with the Standing Committee Executive Team before taking action.

11th Meeting of the Conference of the Parties to the Convention on Wetlands (Ramsar, Iran, 1971)

"Wetlands: home and destination"

Bucharest, Romania, 6-13 July 2012

Resolution XI.7

Tourism, recreation and wetlands

1. RECOGNIZING that wetlands are amongst the most productive of the world's ecosystems; that many wetlands worldwide, both coastal and inland, natural and artificial, offer significant ecosystem services including opportunities for sustainable tourism and recreation necessary for human well-being, and that these services can offer both material and non-material value to governments, the tourism industry, indigenous peoples and local communities;

2. AWARE of the additional sustainable tourism opportunities and attractions provided through the internationally acknowledged importance of Ramsar Sites (Wetlands of International Importance), and RECOGNIZING the value of sustainable tourism and recreation in and around wetlands for development, poverty alleviation, local empowerment, human health, wetland conservation and wise use, and for providing a meaningful experience for visitors;

3. AWARE that sustainable tourism and recreation can contribute to the achievement of public policy objectives and can bring economic opportunities for securing wetland conservation and wise use and the maintenance of key socio-economic wetland values and functions, both in Ramsar Sites and in other wetlands;

4. NOTING that sustainable tourism and recreation can both benefit wetlands and contribute to the conservation of global biodiversity and sustainable development goals and targets, including the Millennium Development Goals (MDGs), climate change adaptation and mitigation, the Aichi targets established in the Strategic Plan for Biodiversity 2011-2020 adopted by the Convention on Biological Diversity, and the Ramsar Strategic Plan 2009-2015;

5. CONCERNED that, whilst many countries have established national tourism and recreation strategies, policies and plans, these do not always adequately address the role of wetlands and the potential or actual impacts of tourism and recreation, and may not be linked with national wetland policies and strategies;

6. AWARE of the negative impacts of tourism on wetlands that can be both direct *(in situ)*, such as unregulated infrastructure development, disturbance of wetland species, or

ecosystem degradation by tourism and recreation activities, and indirect (*ex situ*), such as through unsustainable land and water use, and CONCERNED that uncontrolled tourism and recreation can result in negative changes to the vital services provided to human societies by Ramsar Sites and other wetlands;

7. RECOGNIZING that well-managed protected areas can support wetland conservation, sustainable tourism, education and community strengthening in ways which balance the relationship between tourism and wetlands.

8. RECOGNIZING that whilst sustainable wetland tourism can be a positive alternative to other land uses, tourism does not always bring socio-economic and cultural benefits to local communities and other stakeholders, and that in some cases it may lead to the exacerbation of existing problems and the creation of new inequalities in access to resources and distribution of benefits;

9. AWARE of the role of the United Nations World Tourism Organization (UNWTO) in addressing issues of tourism and wetlands, RECOGNIZING that the UNWTO conceptual definitions for "sustainable tourism" (annex 1 of this Resolution) are consistent with application of the Ramsar wise use principle, and WELCOMING the report and analysis of case studies provided in the joint Ramsar-UNWTO publication on *Wetlands and sustainable tourism* launched at this meeting of the Conference of the Contracting Parties;

10. INFORMED of existing sustainable tourism and biodiversity guidelines that are useful for addressing tourism in and around Ramsar Sites and other wetlands, including among others the UNWTO publication *Tourism congestion management at natural and cultural sites* (2005), the CBD *Guidelines on Biodiversity and Tourism Development* (2004), the IUCN-WCPA *Sustainable tourism in protected areas: guidelines for planning and management* (2002), the Ramsar Secretariat/Spanish Ministry of Environment's *Herramientas para la gestión del Turismo sostenible en Humedales* (2002) presented at COP8, the World Heritage Convention's *Managing tourism at World Heritage Sites: a practical manual for World Heritage site managers* (2002), and the Wetlands International brochure *Wetlands, Poverty Reduction and Sustainable Tourism* (2007);

11. ALSO AWARE of the attention paid to tourism in multilateral environmental agreements, including through the World Heritage Sustainable Tourism Programme, the CBD's Biodiversity and Tourism Network, the Convention on Migratory Species' publication *Wildlife watching and tourism: A study on the benefits and risks of a fast growing tourism activity and its impacts on species* (2006), and the African-Eurasian Migratory Waterbird Agreement (AEWA) *Guideline No. 7: Guidelines on the development of ecotourism at wetlands* (2002);

12. ALSO AWARE of the existence of many successful wetland examples around the world of implementing recreational and tourism activities which are of social and economic benefit to indigenous peoples and local communities, and which also provide satisfying experiences to visitors,

13. CONVINCED of the relevance of sustainable tourism in poverty eradication strategies and policies and as a potential contributor to sustainable development by promoting jobs and livelihoods for local communities;

14. RECALLING that the Rio +20 Conference (Brazil 2012) emphasized that well designed and managed tourism can make a significant contribution to sustainable development, recognized that there is a need to support sustainable tourism activities and relevant capacity building, encouraged "the promotion of investment in sustainable tourism", and underlined "the importance of establishing, where necessary, appropriate guidelines and regulations in accordance with national priorities and legislation for promoting and supporting sustainable tourism"; and

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15. AFFIRMS that the key messages on "Planning, decision-making, finance and economics" in the *Changwon Declaration on human well-being and wetlands*, which was adopted by the Conference of the Parties as Resolution X.3 (2008), are relevant to issues of planning and decision making for tourism and wetlands;

16. RECOGNIZES that concerted efforts are needed to increase awareness and facilitate dialogue amongst all stakeholders about the role of wetlands in providing key services for maintaining ecological balance and sustainable tourism and recreation and in supporting indigenous peoples and local communities and their livelihoods and increasing visitors' awareness, and ENCOURAGES:

    i) improved integration and recognition of wetland values and wetland wise use approaches into tourism and recreation policies and planning, including national tourism strategies, in order to ensure effective implementation of sustainable tourism in wetlands and necessary safeguards for maintaining the ecological character of wetlands;

    ii) closer collaboration between the tourism and wetland conservation and wise use sectors in order to maximize and sustain the long-term benefits derived from each other's expertise;

    iii) development of technical tools for managing recreational issues in wetlands, especially those devoted to the conservation of resources (such as recreational carrying capacity and impact prevention) and others dealing with visitor management (including visitor congestion and overcrowding, audience profile studies, interpretation programmes, codes of ethics and etiquette, and recreational facility design), and development of activity zoning systems to direct and manage tourism activities to appropriate localities within or in relation to wetlands;

    iv) development of concepts and practices for planning sustainable tourism in relation to wetlands;

    v) development of marketable and responsible tourism products in order to reach intended tourist customers, to identify service providers, and to choose the most appropriate means of communication;

    vi) support for the active participation of indigenous peoples, local communities, municipalities and public-private partnerships in tourism decision making,

development planning, tourism service provision and management as well as the provision of financial resources for capacity-building;

vii) taking fully into account the ethical implications of cultural and historical issues of indigenous peoples and local communities in planning for sustainable tourism and the optimum use of environmental resources;

viii) social inclusion and equitable sharing of the benefits of tourism *inter alia* for indigenous peoples and local communities as well as national conservation and tourism activities in support of wetland conservation, and the involvement of such communities in decision-making; and

ix) sharing of best practices in sustainable tourism within and around wetlands;

x) promotion of quality tourist products and services that encourage responsible behavior by the actors involved and help to promote awareness and understanding of the significance of Ramsar Sites and other wetlands;

xi) generation of relevant information, such as visitor statistics, and identification and sharing of methodologies and techniques for measuring and monitoring capacity for and impact of tourism in relation to Ramsar Sites;

xii) researching success stories and good practices in respect of policy, regulatory frameworks, institutional arrangements, and development strategies; and

xiii) broad involvement of planners, developers and managers of sustainable tourism and recreation activities in approaches which treat Ramsar Sites as heritage destinations, with a focus on conservation and empowerment of local communities;

17. ENCOURAGES Contracting Parties, and especially their Ramsar CEPA National Focal Points, to help raise awareness of wetland wise use and sustainable tourism in their Ramsar Sites, guided by the the CEPA Programme and paying special attention to this Programme as a key tool for easy understanding of wetland values and functions;

18. URGES Contracting Parties to ensure that sustainable tourism initiatives include criteria for compliance with basic global environmental, social and economic standards;

19. URGES Contracting Parties to collaborate closely with stakeholders at all levels involved in tourism, recreation and wetland management – such as *inter alia*: i) national/regional policy-makers and planners in the tourism, water- and land-use planning sectors; ii) other national/regional wetland policy implementation agencies, protected area management authorities, environment ministries and departments, and municipalities; iii) national and local tourism authorities, the private sector, tourism investors and developers; iv) national and local tourism operators; v) academic experts in the development of recreational activities and thematic interpretation programmes, vi) recreation organizations, vii) wetland site managers; and viii) indigenous peoples and local communities – in order to address the challenges for achieving sustainable tourism in and around wetlands as listed in Annex 2 of this Resolution;

20. ALSO URGES Contracting Parties and other relevant stakeholders to make good use of the Ramsar guidance on the conservation and wise use of wetlands (as compiled in the Ramsar Wise Use Handbooks, 4th edition) and other available tourism, biodiversity and protected areas guidelines, many of which are relevant to addressing aspects of tourism, recreation and wetland management;

21. FURTHER URGES Contracting Parties and relevant stakeholders, when considering restoring degraded wetlands, to recognize the opportunities such restoration provides for enhancing tourism experiences in a sustainable manner;

22. FURTHER ENCOURAGES Contracting Parties and relevant stakeholders to use Ramsar Sites as a branding opportunity to promote sustainable tourism and recreation practices, with a view to increasing appreciation of wetlands by providing meaningful experiences for visitors, for example through birdwatching and cultural activities;

23. REQUESTS Contracting Parties to consider the possibility of strengthening legislative frameworks concerning the balance between attracting tourism and maintaining the ecological character of wetlands;

24. URGES the Parties, the Ramsar Secretariat, the Ramsar Regional Centres and networks and INVITES the UNWTO and others to draw the attention of the tourism sector, both governmental and private, nationally and locally, to the importance of wetlands for tourism and recreation and therefore their need to be managed sustainably;

25. ENCOURAGES the secretariats and the scientific subsidiary bodies of Multilateral Environmental Agreements, as well as their national focal points, to continue to work collaboratively and to share knowledge on sustainable tourism and recreation issues;

26. REQUESTS Contracting Parties and others involved in sustainable tourism and recreation in wetlands to share experiences and best practices for such activities in and around Ramsar Sites and other wetlands, including experiences relating to wetland centres and flyway initiatives, and INVITES the Parties, supported as appropriate by the IOPs and others, to inform the Ramsar Secretariat of any issues concerning sustainable tourism and recreation and wetlands upon which any further advice and guidance would be helpful;

27. ENCOURAGES national environmental authorities to develop scientific knowledge on the sustainable development and wise use of wetland ecosystems;

28. ENCOURAGES Contracting Parties to make use of the Integrated Framework and guidelines for avoiding, mitigating and compensating for wetland losses, annexed to Resolution XI.9, in all aspects of commercial tourism development, particularly those involved with the construction of infrastructures and facilities to accommodate visits to Ramsar Sites and other wetlands, and REQUESTS the Ramsar Secretariat to consult with relevant organizations, including UNWTO, on ways and means to assist Contracting Parties in this matter and to report on progress to the Conference of the Parties;

29. INVITES the UNWTO and other relevant organizations to consider, resources permitting, developing further advice, including key themes or messages, technical recreational management tools and/or guiding principles for tourism and recreation in and

around wetlands, drawing upon, among other sources, the analysis of case studies provided in the joint Ramsar-UNWTO publication on *Wetlands and sustainable tourism*;

30. NOTES the UNWTO definitions of "sustainable tourism" and "ecotourism" and the Convention on Biological Diversity definition of "sustainable use", annexed to this Resolution, for application in addressing tourism issues for Ramsar Sites and other wetlands, as appropriate; and

31. EXRESSES APPRECIATION to the UNWTO and the International Organization Partners for working with the STRP and the Ramsar Secretariat in the preparation of this Resolution, the World Wetlands Day materials for 2012, and the joint Ramsar-UNWTO publication on *Wetlands and sustainable tourism*, and ENCOURAGES Contracting Parties and relevant stakeholders to make good use of these materials and disseminate them widely to tourism and wetlands stakeholders.

Annex 1

Tourism-related definitions and concepts

A. Conceptual definition of "sustainable tourism" (UNWTO, 2004)

"Sustainable tourism development guidelines and management practices are applicable to all forms of tourism in all types of destinations, including mass tourism and the various niche tourism segments. Sustainability principles refer to the **environmental, economic and socio-cultural aspects** of tourism development, and a **suitable balance must be established** between these three dimensions to guarantee its long-term sustainability.

Thus, sustainable tourism should:

1) **Make optimal use of environmental resources** that constitute a key element in tourism development, maintaining essential ecological processes and helping to conserve natural heritage and biodiversity;

2) **Respect the socio-cultural authenticity of host communities**, conserve their built and living cultural heritage and traditional values, and contribute to inter-cultural understanding and tolerance; and

3) Ensure viable, long-term economic operations, **providing socio-economic benefits to all stakeholders** that are fairly distributed, including stable employment and income-earning opportunities and social services to host communities, and contributing to poverty alleviation.

Sustainable tourism development requires the **informed participation of all relevant stakeholders**, as well as **strong political leadership** to ensure wide participation and consensus building. Achieving sustainable tourism is a **continuous process** and it requires **constant monitoring of impacts**, introducing the necessary preventive and/or corrective measures whenever necessary.

Sustainable tourism should also maintain a **high level of tourist satisfaction** and ensure a meaningful experience to the tourists, raising their awareness about sustainability issues and promoting sustainable tourism practices amongst them."

B. Definition of "ecotourism" (UNWTO, 2001)

"Ecotourism" is used, as appropriate, to mean forms of tourism which have the following characteristics:

1) All nature-based forms of tourism in which the main motivation of the tourists is the observation and appreciation of nature as well as the traditional cultures prevailing in natural areas.

2) It contains educational and interpretation features.

3) It is generally, but not exclusively organized by specialized tour operators for small groups. Service provider partners at the destinations tend to be small, locally-owned businesses.

4) It minimizes negative impacts upon the natural and socio-cultural environment.

5) It supports the maintenance of natural areas which are used as ecotourism attractions by:

   - generating economic benefits for host communities, organizations and authorities managing natural areas with conservation purposes,
   - providing alternative employment and income opportunities for local communities,
   - increasing awareness towards the conservation of natural and cultural assets, both among locals and tourists.

C. Definition of "sustainable use" (Convention on Biological Diversity, 1992)

"Sustainable use" means the use of components of biological diversity in a way and at a rate that does not lead to the long-term decline of biological diversity, thereby maintaining its potential to meet the needs and aspirations of present and future generations.

Annex 2

Issues for stakeholders to address in achieving sustainable tourism and recreation in and around wetlands

A. National/regional policy-makers and planners in the tourism and land-use planning sectors should seek to ensure that:

i) tourism and recreation activities and developments do not compromise national commitments to ensuring the wise use of all wetlands under the Ramsar Convention;

ii) policies and decision-making processes, including processes for approval and authorization of tourism developments, recognize that healthy wetlands can sustain tourism over the long term and so generate continued benefits and livelihoods, both locally and more widely;

iii) where national or regional tourism and recreation plans and policies exist or are under development, wetlands and their tourism and recreation values are well integrated into such plans and policies;

iv) there is increased awareness about the mutually beneficial objectives for wetlands and tourism resulting from the key role wetlands play as part of "natural capital", which when maintained makes regions attractive for sustainable tourism and development; and from the importance of effective wetland conservation and management to the success of the tourism business in and around wetlands;

v) incentives for tourism development are not perverse incentives in terms of wetland conservation and wise use;

vi) tourism developments and activities that are authorized in and around wetlands are consistent with the UNWTO principles of sustainable tourism and Ramsar wise use, as well as with management plans for wetland sites; and take into account the views of indigenous peoples and local communities as well as interested and affected parties;

vii) sustainable tourism income provides financial resources for wetland conservation and management through the implementation of adequate economic instruments, so in turn supporting maintenance of the wetland features and functions of importance for tourism; and

viii) the wide range of economic benefits from wetlands for indigenous peoples and local communities are recognized and integrated in tourism planning in order to enhance and not reduce them.

B. Other national/regional wetland policy implementation agencies, protected area management authorities, and environment ministries and departments should seek to ensure that:

i) tourism and recreation issues are integrated into wetland policy and planning, including training opportunities for wetland managers; and

ii) there is full integration of wetlands into tourism policy and planning by engaging with the tourism sector.

C. National and local tourism authorities, the private sector, tourism investors and developers should seek to have:

i) all activities and developments being consistent with sustainable tourism and wise use in relation to tourism and complying with the relevant government plans, processes and regulations;

ii) indigenous peoples and local communities participating in tourism planning and decision-making, and that tourism benefits are equitably shared;

iii) tourism and recreation activities in and around wetlands contributing to the creation of alternative sustainable livelihoods for the indigenous peoples and local communities, including through investment in training and capacity building to enable them to participate in the business and employment opportunities provided by tourism;

iv) tourism developments providing adequate contributions to support maintenance of the wetland features and functions, including financial resources for wetland conservation and management by the implementation of economic instruments; and

v) responsible marketing using the Ramsar logo and Ramsar mission being promoted to tourists who visit Wetlands of International Importance (Ramsar Sites).

D. National and local tourism authorities and local tourism operators offering services to tourists (including guides associations, travel agencies, local communities where they provide tourism services such as guided tours, lodging, accommodation and transport) should seek to ensure that:

i) sufficient resources are invested into local livelihoods to provide a positive incentive for wetland resource custodianship, as well as into the management and conservation of the wetland, in order to maintain its attraction for tourists;

ii) tourists' behavior is positively influenced and controlled by different means including interpretation programs and codes of ethics and etiquette, so as to protect the wetland resource they are visiting;

iii) there is close collaboration with the wetland site managers, in order to optimize the benefits derived from each other's expertise in ensuring that wetlands are well managed to support a long-term meaningful tourism experience; this could include control of tour groups and individual visitors, monitoring of tourism impact and provision of interpretive information;

iv) responsible marketing using the Ramsar logo and Ramsar mission is promoted to tourists who visit Wetlands of International Importance (Ramsar Sites); and

v) the services offered by operators are appropriate in relation to carrying capacity and the quality of the visitor experience.

E. Wetland site managers (including NGOs, private and government agencies) should seek to ensure that:

i) indigenous peoples and local community participation in wetland management is created and strengthened (making use, as appropriate, of Ramsar guidelines on *Establishing and strengthening local communities' and indigenous people's participation in the management of wetlands*, Ramsar Wise Use Handbook 7, 4th edition) and local

communities are assisted in taking advantage of the opportunities presented by sustainable tourism by developing appropriate and responsible tourist products;

ii) tourism's revenue and investment where appropriate help provide management capacity to maintain orimprove the ecological character of the wetland;

iii) assessment, monitoring and management of tourism and recreation impacts are integrated into wetland management planning, including limits of acceptable change of the wetland ecological character; and importantly that this information is communicated to those responsible for tourism policy and planning and used to support adaptive management responses;

iv) assessments of wetland values related to recreation criteria are prepared and made available to national/regional policy-makers and planners in the tourism and land-use planning sectors and other relevant government agencies, and are applied by being incorporated into tourism and land-use planning and decision making;

v) appropriate recreation activities are identified and promoted especially to those dealing with thematic interpretation and are compatible with the wetland's characteristics and its management plan; and visitors are encouraged to follow visiting rules, if necessary through appropriate enforcement of regulations; and

vi) in any Wetland of International Importance (Ramsar Site) visited by tourists, the Ramsar logo is prominently displayed and the Ramsar mission promoted.

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11th Meeting of the Conference of the Parties to the Convention on Wetlands (Ramsar, Iran, 1971)

"Wetlands: home and destination"

Bucharest, Romania, 6-13 July 2012

Resolution XI.8

Streamlining procedures for describing Ramsar Sites at the time of designation and subsequent updates

1. RECALLING that the Final Act of the 1971 International Conference on the Conservation of Wetlands and Waterfowl in Ramsar, Islamic Republic of Iran, noted the value of collecting supplementary descriptive information on sites included in the List of Wetlands of International Importance, and that Resolution 4.7 (1990) established procedures for the collation of standardised information on Ramsar Sites at the time of their listing, and NOTING that the content and structure of this Ramsar Information Sheet (RIS) has been reviewed and revised by the Conference of the Contracting Parties periodically since 1990;

2. ALSO RECALLING that Resolution VI.13 (1996) urged Parties to supply updated information on listed sites whenever there is an actual or potential change in ecological character, and in any case at intervals of no greater than every six years;

3. FURTHER RECALLING that Resolution X.15 (2008) established a standardised format for describing and reporting the ecological character of wetlands and outlined the conceptual linkages and overlaps between information on Ramsar Sites collated by different processes established by the Convention;

4. AWARE of the resource requirements associated with collating and reporting information on Ramsar Sites both at the time of their listing and subsequent updates, especially for countries with limited capacity or economic limitations, and thus the need for reporting requirements to be highly prioritised, streamlined, and efficient;

5. ALSO AWARE, however, that well-organized data and information is fundamental to the delivery of ecologically- and cost-effective wetland management measures, which are necessary for the continued provision of ecosystem services to human populations and direct economic benefits;

6. CONSCIOUS of major advances in information technology and analytical techniques since the establishment of the first RIS format in 1990, and RECALLING that Resolution VIII.13 (2002) requested "the Ramsar [Secretariat] and Wetlands International, working with interested Contracting Parties, to develop protocols for the electronic submission of RISs, where this is possible and desirable, so as to facilitate the supply of data from the

information systems of Contracting Parties to the Ramsar Sites Database", and CONCERNED that no progress has yet been made to that end;

7. RECALLING the adoption of the *Strategic Framework and guidelines for the future development of the List of Wetlands of International Importance of the Convention on Wetlands* by Resolution VII.11 (1999) and the adoption, at subsequent meetings of the COP, of additional guidance related to the selection of Ramsar Sites;

8. ALSO RECALLING that Resolution X.10, *inter alia*, requested the Scientific and Technical Review Panel (STRP) to:

   a) review the consistency, logic, and clarity of the targets and guidelines that support Ramsar's site selection criteria;
   b) seek the views of users of the Convention's guidance on the identification and listing of Wetlands of International Importance;
   c) review options for revising the format of the RIS seeking to ensure linkages and synergies with other Ramsar instruments to collect and report data and information on listed sites; and
   d) further consider data and information needs related to the description of ecological character at the point of designation (and assessment of potential change thereafter);

9. NOTING Decision X/31 of the Convention on Biological Diversity (CBD) which, *inter alia*, called on the Ramsar Convention and other interested parties to consider standard criteria for the identification of sites of global biodiversity conservation significance when developing protected-area systems;

10. DESIRING to promote synergies and harmonisation between international processes through multiple uses of the same data and information, and NOTING the importance of information on the location, status, and ecological character of Ramsar Sites for the World Database on Protected Areas, the CBD's Programme of Work on Protected Areas, and other international processes operating at global or international regional scales; and

11. NOTING the potential utility of the descriptive information sheet in Annex 1 not only for describing Ramsar Sites at designation and subsequently, but also for inventory, ecological character description, assessment and monitoring (including Article 3.2 reporting) at these and other wetlands;

THE CONFERENCE OF THE CONTRACTING PARTIES

12. ADOPTS the *Ramsar Site Information Sheet (RIS) – 2012 revision* as annexed to this Resolution;

13. ADOPTS the *Strategic Framework and guidelines for the future development of the List of Wetlands of International Importance of the Convention on Wetlands – 2012 revision* as annexed to this Resolution as guidance for the future selection and description of Ramsar Sites, both at the time of designation and subsequent updates;

14. CONFIRMS that the *Ramsar Site Information Sheet (RIS) – 2012 revision* and the *Strategic Framework and guidelines for the future development of the List of Wetlands of International Importance of the Convention on Wetlands - 2012 revision* as annexed to this Resolution supersede and

replace the previously adopted *Strategic Framework,* RIS and other associated guidance for completing the RIS;

15. AGREES that this *RIS – 2012 revision* format and its accompanying *Strategic Framework – 2012 revision* will formally enter into use from January 2015 for designations of new sites, extensions to existing sites and updates on existing sites, thus allowing adequate time for:

    a) Contracting Parties to complete any pending Ramsar Site designations or updates that are already in preparation using the previous RIS format;
    b) Contracting Parties to become familiar with the new format and to allow any adjustments, should this be necessary; and
    c) the Ramsar Secretariat to update the Ramsar Sites Database (RSDB) to receive Ramsar Site data and information in the new format, allowing for on-line electronic submission of Ramsar Information Sheets whilst ensuring that new systems allow for the submission of RIS from those areas where there is limited Internet access;

16. ALSO AGREES that under exceptional circumstances, following consultation with the Secretariat, and where sites are in a legal national process towards designation which involves the use of the current format RIS, these may be submitted in support of such designations after 2015 but only until COP12;

17. ENCOURAGES Contracting Parties, on a voluntary basis, to submit new Ramsar Site designations and updates on existing Sites using the *RIS – 2012 revision* format prior to January 2015, as their capacities allow and following discussion with the Secretariat;

18. INSTRUCTS the Secretariat to implement the terms of Resolution VIII.13 (2002) para. 11 regarding upgrading the functionality of the RSDB to allow the on-line electronic submission of RISs by Contracting Parties and, in particular, to ensure that the RSDB captures all data and information provided by Contracting Parties in Ramsar Information Sheets, rather than just a subset of such data and information as at present;

19. REQUESTS the Secretariat to work with the CBD, the UNEP-World Conservation Monitoring Centre (UNEP-WCMC), and other organizations to ensure that data and information on the status of Ramsar Sites are fully integrated into other appropriate databases, international processes and assessments;

20. REQUESTS the STRP to further consider the issue of recognizing the importance of ecosystem benefits/services in the future designation of Ramsar Sites, in relation to the terms of Objective 1 of the *Strategic Framework* and to assess the implications for the RIS, and INVITES Contracting Parties to work with the STRP to develop a more thorough understanding of the nature and extent of ecosystem benefits/services provided by Ramsar Sites individually and at national and global network scales and to report the outcomes of that work to the Standing Committee and the Conference of Parties;

21. FURTHER REQUESTS the STRP, in the context of its work plan for 2013-2015 and resources permitting, to undertake further work related to the RIS and associated guidance as follows:

    i) to develop further practical guidance on the issue of defining Ramsar Site boundaries, reflecting that approaches used may depend *inter alia* of scale of site, the

presence of ecological, national and other boundary situations, landscape type, land tenure, and national spatial planning laws and policies, and REQUESTS Contracting Parties to assist STRP in this task through the provision of information and case studies;

ii) to urgently consider scope for minor modifications to the RIS to support monitoring at Ramsar Sites through possible inclusion of sub-fields related to: change at the site, for example in fields 12a, 12c, and 16 relating to species composition and wetland type; identification of thresholds of change in ecological character; and monitoring indicators. It is suggested that any minor modifications be provided to the Secretariat to provide to the Standing Committee for final endorsement of remaining minor details enabling them to be incorporated within the finalized format, agreed by COP11, by January 2015; and

iii) to prepare additional guidance concerning a) identification, boundary-setting and management issues related to very small wetlands which may nonetheless be of international importance, and b) zoning of sites in the context of management planning and especially in relation to uses of Ramsar Sites by people, including implications for RIS reporting;

22. ALSO REQUESTS the STRP and the Secretariat to collaborate with IUCN's World Commission on Protected Areas, Species Survival Commission, and other interested parties in considering the implications of CBD's Decision X/31 in the context of supporting the application of the Convention's long-established Criteria for the selection of Wetlands of International Importance, including any implications this might have for the identification of important sites for delivery of ecosystem services, whilst noting the undesirability of radical changes for the Convention's established site-selection processes, as well as the delivery of Aichi Target 11 of the Strategic Plan for Biodiversity 2011-2020, and to report outcomes of this work to the Standing Committee and the Conference of Parties; and

23. EXPRESSES APPRECIATION to the STRP, past and current Secretariat staff, and all those Contracting Parties and others (notably UK's Joint Nature Conservation Committee, The Nature Conservancy, and Wetlands International) who have contributed to the delivery of the 2012 revisions to the *Ramsar Site Information Sheet (RIS)* and the *Strategic Framework and guidelines for the future development of the List of Wetlands of International Importance of the Convention on Wetlands*.

Annex 1. *Ramsar Site Information Sheet (RIS) – 2012 revision*

Annex 2. *Strategic Framework and guidelines for the future development of the List of Wetlands of International Importance of the Convention on Wetlands - 2012 revision*

Ramsar Site Information Sheet (RIS) – 2012 revision

NOTES TO COMPILERS

1. The RIS must be completed in one of the Convention's three working languages, namely English, French, or Spanish. The RIS and the accompanying *Strategic Framework and guidelines for the future development of the List of Wetlands of International Importance of the Convention on Wetlands* are available in each of these three working languages. Please **read the guidance in the Strategic Framework before starting to complete the Ramsar Information Sheet**. It provides significant guidance on each section in the Information Sheet.

2. Once completed the RIS and map(s), should be officially submitted to the Ramsar Secretariat by the Administrative Authority of the Contracting Party concerned.

3. The information provided by Contracting Parties in the RIS, including any supplementary information, and held in the Ramsar Sites Database is also made publicly available through the Ramsar Site Information Service website (http://ramsar.wetlands.org).

4. **Important note on completion of RIS fields**. Please note that it is **not** expected that most Contracting Parties will be able to complete all fields for all Ramsar Sites. Data, information and capacity are all variable worldwide and develop through time. Compilers should consider the following principles:

   a) **If no information exists relating to a specific field, please leave this field uncompleted** (or indicate 'unknown'). After completing the RIS, an overall assessment of those issues that are lacking information should guide future priorities for research and survey at the site (for example, within the context of the site's management plan).

   b) **Recording some information – even if this is an incomplete or merely provisional assessment – is more useful than giving no information at all**. Provisional assessments of knowledge are useful and can be expanded in subsequent updates of the RIS, so Parties are urged to complete as much of the form as possible.

   c) Please focus on the following sections as priorities for completion (to the extent that available information allows): Part 1 (fields 1-11), Part 2 (field 12) and the ecological character statement in field 13 of Part 3. Part 4 (fields 28-35) contains important information on site management and should be completed if possible.

5. Examples of completed RISs in this 2012 revision format are available at http://ris-2012.wikispaces.com[1], and it is strongly advised that these are reviewed before compiling this form.

6. Fields back-shaded in light blue relate to data and information required **only** for RIS updates.

7. In order to assist Contracting Parties when they are preparing an RIS update for a designated Ramsar Site, for each of the fields in the 2012 revision format, a cross-reference is provided to the equivalent field in the RIS 2009-2012 version.

8. Note that some fields concerning aspects of Part 3, the ecological character description of the RIS (tinted in purple), are **not** expected to be completed as part of a standard RIS, but are included for completeness so as to provide the requested consistency between the RIS and the format of a 'full' Ecological Character Description, as adopted in Resolution X.15 (2008). If a Contracting Party does have information available that is relevant to these fields (for example from a national format Ecological Character Description) it may, if it wishes to, include information in these additional fields.

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1 Web-link will be replaced by link to relevant page on Ramsar's website in due course

Contents

For Secretariat use only:	**Ramsar Site no.**	**Date of designation by Contracting Party**	**Date of update by Contracting Party *(RIS updates only)***
	XXXX	DD/MM/YYYY	DD/MM/YYYY

	Explanatory notes and cross-references to further guidance
Part 0. Summary paragraph	
0. Summary description of the Ramsar Site Please provide a short paragraph summarising the location and key ecological characteristics of the site. This should give a concise summary of the site. **Name of Ramsar Site:** **Location:** **Key ecological characteristics:** Please provide at least one photograph of the Ramsar Site. Photograph provided? ☐	Text length should be between 100-300 words For further guidance see section 7.1.3 of the *Strategic Framework*. Field #12 from RIS 2009-2012 version
Part 1. Administrative and locational details	
Part 1.1 About this form	
1. Name and address (both postal and e-mail) of those responsible for compiling this form **Name and address:** a) Compiler of the RIS form — Name:	For further guidance see section 7.2.1 of the *Strategic Framework*. Fields #1 and #32 from RIS

		Explanatory notes and cross-references to further guidance
	Institution/agency:	2009-2012 version)
	Postal address:	
	E-mail:	
	Telephone:	
	Fax:	
b) National Administrative Authority for the Ramsar Convention	Name:	
	Institution/agency:	
	Postal address:	
	E-mail:	
	Fax:	
	Telephone:	
	Website (if appropriate):	

	Explanatory notes and cross-references to further guidance
2. Period of collection of data and information used to compile the sheet **Period of data & information collection** a) Period when the data and information for the sheet for a newly designated site was compiled — From Year x: / To Year y: b) Period when the data and information for revision of an existing sheet was updated [for updated RIS only] — From Year x: / To Year y:	For further guidance see section 7.2.2 of the *Strategic Framework*. Fields #2 from RIS 2009-2012 version, with content clarification
3. Country	For further guidance see section 7.2.3 of the *Strategic Framework*. Field #3 from RIS 2009-2012 version
4. Name of the Ramsar Site The official name of the designated site in one of the three official languages (English, French or Spanish) of the Convention. **Official name at designation:** If there is a non-official, alternative name, including for example in a local language, provide it here: **Non-official name:**	For further guidance see section 7.2.4 of the *Strategic Framework*. Field #4 from RIS 2009-2012 version

	Explanatory notes and cross-references to further guidance
5. Designation of new Ramsar Site or update of information related to an existing Site This RIS is for (tick one box only): a) Designation of a new Ramsar Site; or ☐ b) Updated information on an existing Ramsar Site. ☐	For further guidance see section 7.2.5 of the *Strategic Framework*. Field #5 from RIS 2009-2012 version
6. Changes to the site since its designation or earlier update. (FOR RIS UPDATES ONLY) **6a) Site boundary and area** Please indicate all relevant categories that apply to the Site. **A. Changes to Site *boundary*** (tick one box only)**:** i. No change to boundaries; or ☐ ii. the boundary has been delineated more accurately; or ☐ iii. the boundary has been extended; or ☐ iv. the boundary has been restricted (***see Important Note below)*** ☐ **B. Changes to Site *area*** (tick one box only)**:** i. No change to area; or ☐ ii. the area has increased; or ☐ iii. the area has decreased ☐ **C. If the Site *area* has changed, what are the reason(s)?** (complete *only* if B ii. or B.iii. above has	For further guidance see section 7.2.6 of the *Strategic Framework*. Field #6a from RIS 2009-2012 version

	Explanatory notes and cross-references to further guidance
been ticked) **:** i. the Site area has been calculated more accurately; and/or ☐ ii. the Site has been delineated more accurately; and/or ☐ iii. the Site area has increased because of a boundary extension; or ☐ iv. the Site area has decreased because of a boundary restriction (***see Important Note below)*** ☐ *** **Important note:** If the boundary of the designated site is being restricted/reduced, before submitting this updated RIS to the Secretariat the Contracting Party should have followed: • the requirements in Article 2.5 of the Convention; or • the procedures established by the Conference of the Parties in the annex to Resolution VIII.20 (2002); or • where appropriate instead, the procedures in the annex to Resolution IX.6 (2005). Contracting Parties should also have provided to the Secretariat a report on changes prior to the submission of an updated RIS.	

6b) Has the ecological character of the Ramsar Site (including applicable Criteria) changed since the previous RIS? **6b) i** Not evaluated ☐ No ☐ Uncertain ☐ Yes (likely) ☐ Yes (actual) ☐ If Yes, are the changes: Positive ☐ or Negative ☐ or Positive & Negative ☐	For further guidance see section 7.2.6 of the *Strategic Framework*., especially paragraph 287. Field #6b from RIS 2009-2012 version, expanded

If Yes and information is available, what extent (% total area) of the Ramsar Site is affected: Positive ☐ % Negative ☐ % Uncertain ☐ Not available ☐

If Yes (actual), are changes the result of (tick each category which applies):

Changes resulting from causes operating within the existing boundaries? ☐

Changes resulting from causes operating beyond the site's boundaries? ☐

Changes resulting from causes operating both inside and outside the site's boundaries? ☐

Changes consequent upon site boundary reduction alone (e.g., the exclusion of some wetland types formerly included within the site)? ☐

Changes consequent upon site boundary increase alone (e.g., the inclusion of different wetland types in the site)? ☐

If Yes (actual or likely), please also complete field 6b) ii below to describe these changes

6b) ii) Changes to the ecological character of the Ramsar Site

Field #6b from RIS 2009-2012 version

Please describe any changes to the ecological character of the Ramsar Site, including in the application of the Criteria, since the previous RIS for the site.

6b iii. If Yes to 6b) i, is the change in ecological character negative, human-induced AND a significant change (above/below the limit of acceptable change) YES ☐ NO ☐

6b iv. If Yes to 6b iii), has an Article 3.2 report been submitted to the Secretariat?	YES ☐	NO ☐	

Part 1.2 About the site's location

7. Defining the site

For further guidance see section 7.2.7 and especially Appendix C of the *Strategic Framework*.

Field #7 from RIS 2009-2012 version

The provision of a map with clearly defined boundaries is required for Ramsar Site listing. This question is about the format of the map provided.

A map of the site, with clearly delineated boundaries, is provided in both the following formats:

i) **a GIS shape file providing geo-referenced site boundary (preferably World Geodetic System 1984) and attribute table** (see Appendix C of the Strategic Framework for guidance, including if it is not possible to provide a GIS shape file): ☐

ii**) a map in electronic format** (e.g., a JPEG or ArcView image): ☐

At the discretion of the Contracting Party, it would be helpful if an additional written description of the boundary of the site (and any associated defining features such as boundary at the low or high watermark for coastal sites) can be provided here:

8. Geographical coordinates

For further guidance see section 7.2.8 of the *Strategic Framework*.

Field #8 from RIS 2009-2012 version

Provide the coordinates of the approximate centre of the site expressed in degrees, minutes, and seconds of latitude and longitude (e.g., in the format: 01°24'15"S 104°16'12"E or 010°30'15"N 084°51'28"W):

	Degrees (°)	Minutes(')	Seconds (")	N or S; E or W
Latitude				
Longitude				

If the site is composed of more than one separate area, also provide central coordinates for each of these sub-areas:

Sub-area name: [xxx]	Degrees (°)	Minutes(')	Seconds (")	N or S; E or W
Latitude				
Longitude				

Sub-area name: [xxx]	Degrees (°)	Minutes(')	Seconds (")	N or S; E or W
Latitude				
Longitude				

Add further coordinates if more than two sub-areas

9. General location

For further guidance see section 7.2.9 of the *Strategic Framework*.

Field #9 from RIS 2009-2012 version

9a. Geographic location

a) In which large administrative region does the site lie?

b) What is the nearest town or population centre?

9b. For wetlands on national boundaries only

	YES	NO
a) Does the wetland itself extend into the territory of one or more other countries?	☐	☐
b) Is the site adjacent to another designated Ramsar Site in the territory of another Contracting Party?	☐ if so, answer c)	☐
c) Is the site part of a joint transboundary designation with another Contracting Party?	☐ if so, answer d)	☐

d) Transboundary Ramsar Site name if this is different from those given in field 4 above:

10. Area of Ramsar Site

For further guidance see section 7.2.10 of the *Strategic Framework*.

Field #11 from RIS 2009-2012 version

Area, in hectares (ha):	

11. Biogeography

For further guidance see sections 5.3 and 7.2.11 of the *Strategic Framework*.

Field #15 from RIS 2009-2012 version

Name the relevant biogeographic region(s) that include the Ramsar Site, and identify the biogeographic regionalisation system that has been applied when Criteria 1 and/or 3 and/or certain applications of Criterion 2 are used for the designation:

Name of biogeographic regionalisation scheme used to select Ramsar Site	Tick which regionalisation scheme(s) used	Name of biogeographic region containing Ramsar Site
Marine/coastal sites		
Marine Ecoregions of the World (MEOW)	☐	
Terrestrial sites		
Udvardy's Biogeographical Provinces	☐	
Bailey's Ecoregions	☐	
WWF Terrestrial Ecoregions	☐	
EU's biogeographic regionalisation	☐	
Other biogeographic regionalisation scheme (including *Freshwater Ecoregions of the World* - FEOW) (include reference citation for any other schemes used)	☐	

Part 2. Why is this site internationally important? (Criteria for designation)

12. Ramsar Criteria and their justification

Refer to section 6.1 of the *Strategic Framework* for further information about Criteria and their justification.

Refer to Appendix B of the *Strategic Framework* for the Ramsar Classification System for Wetland Type

Field #14 from RIS 2009-2012 version

Tick the box against each Criterion applied to the designation of the Ramsar Site. All Criteria which apply should be ticked.

PLEASE NOTE that this section gives an overall summary of which Criteria apply to the site. After completing the first part, please add further information concerning specific plant species (12a), plant communities (12b), animal species (12c) and animal communities (12d), as appropriate, to provide further details on the detailed reasons why each of the Criteria is fulfilled.

Criterion	Abbreviated description		Justification for use of Criterion:
1	Representative, rare or unique natural or near natural wetland types	☐	Please give names of those wetland types which are the basis for the site meeting Criterion 1 and indicate whether they are representative, rare or unique:

Wetland type	Representative?	Rare?	Unique?
	☐	☐	☐
	☐	☐	☐
	☐	☐	☐
(Add more rows as necessary)	☐	☐	☐

Justification:

Please provide justification in the context of the Objectives (Section 3.2) of the *Strategic Framework*

			Hydrological services In the context of Objective 1.2 of the *Strategic Framework*, as relevant, please provide a short text summarising the importance of the wetland in providing hydrological ecosystem services (i.e., the benefits to people), derived from information in Part 3.3 below.	
			Other ecosystem services In the context of Objective 1.2 of the *Strategic Framework*, as relevant, please provide a short text summarising the importance of the wetland in ecosystem services (i.e., the benefits to people) other than hydrological services, derived from information in Part 3.3 below.	
2	Rare species and threatened ecological communities	☐	Please give details in fields 12a – plant species, 12b – plant communities, 12c – animal species and 12d – animal communities	
3	Biological diversity	☐	Please give details in fields 12a - plant species and/or 12c – animal species	
4	Critical stage of life cycles	☐	Please give details in fields 12a - plant species and/or 12c – animal species	
5	>20,000 waterbirds	☐	Please give details of relevant bird species in field 12c and information on total numbers and data period below:	
			Overall waterbird numbers:	
			Period data relates to:	
			Start year:	End year:
			Source of data:	
6	>1% waterbird	☐	Please give details of relevant bird species in field 12c	

	population		
7	Fish	☐	Please give details of relevant fish species in field 12c
8	Fish spawning grounds, etc.	☐	Please give details here:
			(Add more rows as necessary)
9	>1% non-avian population	☐	Please give details of relevant non-avian animals in section 12c

12a. Plant species whose presence relates to the international importance of the site

For further guidance see section 7.3.5 of the *Strategic Framework*.

Fields #14 and #21 from RIS 2009-2012 version

Species name		**Species qualifies under Criterion:**			**IUCN Red List status (CR, EN or VU only)**	**CITES Appendix listed?**	**Other status** e.g. National Red List (please name)	**Justification** (including e.g. position in range / endemism / other including national threat categorisations; see *Strategic Framework* for guidance)
scientific name	**common name**	**2**	**3**	**4**				
		☐	☐	☐		☐		
		☐	☐	☐		☐		
		☐	☐	☐		☐		

[add more rows as necessary]

Optional text box to provide further information on plant species of international importance:

12b. Plant communities whose presence relates to the international importance of the site

For further guidance see section 7.3.4 of the *Strategic Framework*.

Field #14 from RIS 2009-2012 version

Name of plant community	**Community qualifies under Criterion 2?**	**Description**	**Justification:** (including biogeographic context; see *Strategic Framework*. National and local significance can also be noted).

	☐		
	☐		
	☐		

[add more rows as necessary]

12c. Animal species whose presence relates to the international importance of the site

Phylum (e.g., mammal, bird, reptile, amphibian, fish, invertebrate)	**Species name**		**Species qualifies under Criterion:**						**Pop'n size in site**	**Year of pop'n estimate**	**% occurrence (biogeographic population) in site**	**IUCN Red List status (CR, EN or VU only)**	**CITES Appendix listed?**	**Other status** e.g. National Red List (please name)	**Justification**: (including position in range / endemism / other; see *Strategic Framework*)
	scientific name	**common name**	**2**	**3**	**4**	**6**	**7**	**9**							
			☐	☐	☐	☐	☐	☐					☐		
			☐	☐	☐	☐	☐	☐					☐		
			☐	☐	☐	☐	☐	☐					☐		
			☐	☐	☐	☐	☐	☐					☐		
			☐	☐	☐	☐	☐	☐					☐		
			☐	☐	☐	☐	☐	☐					☐		
			☐	☐	☐	☐	☐	☐					☐		

[add more rows as necessary]

Optional text box to provide further information on

For further guidance see section 7.3.7 of the Strategic Framework.

Fields #14 and #22 from RIS 2009-2012 version

animal species of international importance:

12d. Animal communities whose presence relates to the international importance of the site

Field #14 from RIS 2009-2012 version

For further guidance see section 7.3.6 of the Strategic Framework.

Name of animal community	Qualifies under criterion?		Description
	2	5	
	☐	☐	
	☐	☐	
	☐	☐	

[add more rows as necessary]

Part 3. What is the site like? (Ecological character description)

13. What are the critical ecological components, processes and services that determine the ecological character of this Ramsar Site?

Please describe which of the ecological components described in Part 3.1 below, together with the ecological processes described in Part 3.3 below, are critical to determining the ecological character of this Ramsar Site. Please also describe natural variability in the ecological character of the site (either seasonally, or longer-term if known), and any known past and current trends in ecological character in part, or all, of the site.

Please see section 7.3.1 of the *Strategic Framework* for further information on completing this section and http://ris-2012.wikispaces.com for worked examples.

Part 3.1 Ecological components

14. Climate

Please indicate the prevailing climate type, using the widely adopted Köppen-Gieger Climate Classification System as appropriate.

Please tick all climatic categories that apply to the site:

For further guidance see section 7.3.2 of the *Strategic Framework*.

Field #16 from RIS 2009-2012 version; and 2008 Ecological Character Description Sheet (#2.2)

	Climatic region		Subregion	Description of region	
A	Tropical humid climate	Af	Tropical wet	No dry season	☐
		Am	Tropical monsoonal	Short dry season; heavy monsoonal rains in other months	☐
		Aw	Tropical savanna	Winter dry season	☐
B	Dry climate	BWh	Subtropical desert	Low-latitude desert	☐
		BSh	Subtropical steppe	Low-latitude dry	☐
		BWk	Mid-latitude desert	Mid-latitude desert	☐

	BSk	Mid-latitude steppe	Mid-latitude dry	☐
C Moist Mid-Latitude climate with mild winters	Csa	Mediterranean	Mild with dry, hot summer	☐
	Csb	Mediterranean	Mild with dry, warm summer	☐
	Cfa	Humid subtropical	Mild with no dry season, hot summer	☐
	Cwa	Humid subtropical	Mild with dry winter, hot summer	☐
	Cfb	Marine west coast	Mild with no dry season, warm summer	☐
	Cfc	Marine west coast	Mild with no dry season, cool summer	☐
D Moist Mid-Latitude climate with cold winters	Dfa	Humid continental	Humid with severe winter, no dry season, hot summer	☐
	Dfb	Humid continental	Humid with severe winter, no dry season, warm summer	☐
	Dwa	Humid continental	Humid with severe, dry winter, hot summer	☐
	Dwb	Humid continental	Humid with severe, dry winter, warm summer	☐
	Dfc	Subarctic	Severe winter, no dry season, cool summer	☐
	Dfd	Subarctic	Severe, very cold winter, no dry season, cool summer	☐
	Dwc	Subarctic	Severe, dry winter, cool summer	☐
	Dwd	Subarctic	Severe, very cold and dry winter, cool summer	☐
E Polar climate with extremely cold winters and summers	ET	Tundra	Polar tundra, no true summer	☐
	EF	Ice Cap	Perennial ice	☐
H Highland				☐

If changing climatic conditions are affecting the site, please indicate the nature of these changes:

15. Geomorphic setting

For further guidance see section 7.3.3 of the *Strategic Framework*.

Fields #10 (elevation) & #17 (position in landscape) from RIS 2009-2012 version

a) Elevation above sea level (in metres)

Minimum:	Maximum:

b) Position in landscape/river basin

(Please tick all that apply):

- ☐ Entire river basin
- ☐ Upper part of river basin
- ☐ Middle part of river basin
- ☐ Lower part of river basin
- ☐ More than one river basin
- ☐ Not in river basin
- ☐ Coastal
- ☐ Other — If 'Other', give type of river basin:

Name of river basin, as appropriate. (For wholly coastal/ marine sites please give name of sea/ocean. If the site lies in a sub-basin, also provide the larger river basin name):

16. What wetland type(s) are in the site?

For further guidance see section 5.2.1 of the *Strategic Framework*.

Field #19 from RIS 2009-2012 version.

Please indicate:

a) the presence of ***all*** the wetland types which occur on the site in column a);

b) if possible, those wetlands which cover the greatest extent of the total area of the site ranked from 1 (greatest extent) to 4 (least extent) in column b);

and

c) if measurements are available, the area (in hectares) of each wetland type present, in column c).

This section should also adequately address 2008 Ecological Character Description Sheet #2.3 "Habitat types (including comments on particular rarity, etc.) and Ramsar wetland types"

Wetland types			**Code and name of wetland type**	**Wetland type** (local name national classification type if differing from Ramsar's classification)	**a) Wetland types present ?**	**b) Ranking of extent of wetland types present (ranks 1 - 4)**	**c) Area (ha) of wetland type (if known)**
Marine or coastal wetlands							
Saline water	Permanent		A: **Permanent shallow marine waters**		☐		
		Underwater vegetation	B: **Marine subtidal aquatic beds**		☐		
		Coral reefs	C: **Coral reefs**		☐		
	Shores	Rocky	D: **Rocky marine shores**		☐		
		Sand, shingle or pebble	E: **Sand, shingle or pebble shores**		☐		
Saline or brackish water	Intertidal	Flats (mud, sand or salt)	G: **Intertidal mud, sand or salt flats**		☐		
		Bivalve (shell-fish) reefs	Ga: **Bivalve (shell-fish) reefs**		☐		
		Marshes	H: **Intertidal marshes**		☐		
		Forested	I: **Intertidal forested wetlands**		☐		
	Lagoons		J: **Coastal brackish/ saline lagoons**		☐		
	Estuarine waters		F: **Estuarine waters**		☐		
Saline, brackish or fresh water	Subterranean		Zk(a): **Karst and other subterranean**		☐		

				hydrological systems				
Fresh water	Lagoons			K: **Coastal freshwater lagoons**		☐		
Inland wetlands								
Fresh water	Flowing water	Permanent	Rivers, streams, creeks	M: **Permanent rivers/ streams/ creeks**		☐		
			Deltas	L: **Permanent inland deltas**		☐		
			Springs, oases	Y: **Freshwater springs; oases**		☐		
		Seasonal/ intermittent	Rivers, streams, creeks	N: **Seasonal/ intermittent/ irregular rivers/ streams/ creeks**		☐		
	Lakes and pools	Permanent	> or = 8 ha	O: **Permanent freshwater lakes**		☐		
			< 8 ha	Tp: **Permanent freshwater marshes/ pools**		☐		
		Seasonal/ intermittent	> or = 8 ha	P: **Seasonal/ intermittent freshwater lakes**		☐		
			< 8 ha	Ts: **Seasonal/ intermittent freshwater marshes/ pools on inorganic soils**		☐		
	Marshes on inorganic soils	Permanent	Herb-dominated	Tp: **Permanent freshwater marshes/ pools**		☐		
		Permanent/ seasonal/ intermittent	Shrub-dominated	W: **Shrub-dominated wetlands**		☐		
			Tree-dominated	Xf: **Freshwater, tree-dominated**		☐		

				wetlands					
		Seasonal/ intermittent	Herb-dominated	Ts: **Seasonal/ intermittent freshwater marshes/ pools on inorganic soils**		☐			
	Marshes on peat soils	Permanent	Non-forested	U: **Non-forested peatlands**		☐			
			Forested	Xp: **Forested peatlands**		☐			
	Marshes on inorganic or peat soils	High altitude (montane)		Va: **Montane wetlands**		☐			
		Tundra		Vt: **Tundra wetlands**		☐			
Saline, brackish or alkaline water	Lakes	Permanent		Q: **Permanent saline/ brackish/ alkaline lakes**		☐			
		Seasonal/ intermittent		R: **Seasonal/ intermittent saline/ brackish/ alkaline lakes and flats**		☐			
	Marshes & pools	Permanent		Sp: **Permanent saline/ brackish/ alkaline marshes/ pools**		☐			
		Seasonal/ intermittent		Ss: **Seasonal/ intermittent saline/ brackish/ alkaline marshes/ pools**		☐			
Fresh, saline, brackish or alkaline water	Geothermal			Zg: **Geothermal wetlands**		☐			
	Subterranean			Zk(b): **Karst and other subterranean hydrological systems**		☐			

	Human-made wetlands					
Aquaculture ponds	1		☐			
Ponds	2		☐			
Irrigated land	3		☐			
Seasonally flooded agricultural land	4		☐			
Salt exploitation sites	5		☐			
Water storage areas/Reservoirs	6		☐			
Excavations	7		☐			
Wastewater treatment areas	8		☐			
Canals and drainage channels or ditches	9		☐			
Man-made subterranean hydrological systems	Zk(c)		☐			

What non-wetland habitats are within the site?

For further guidance see section 5.2.1 of the *Strategic Framework*.

Other non-wetland habitats within the site (add text of each such habitat type as a separate row):		**Area (ha) of non-wetland type, if known**
[e.g., Human habitation]		
[e.g., Dryland forests]		

Habitat connectivity
[Ecological Character Description (2008) field not intended for completion as part of a standard RIS submission.]

Field #2.4 from 2008 Ecological Character Description Sheet

17. Plant species

Fields #14 and #21 from RIS 2009-2012 version

This section relates to ***plant species*** and their attributes. Provide additional information on particular species and why they are noteworthy, e.g., which species are unique, rare, endangered or biogeographically important, etc. *Do not include here taxonomic lists of species present – these may be supplied as supplementary information to the RIS.*

Plant species whose presence relates to the international importance of the site *should be summarised in field 12a.*

17a. Other noteworthy plant species

For further guidance see section 7.3.5 of the *Strategic Framework*.

Species name		Position in range/ endemism/ other
scientific name	**common name**	

[add more rows as necessary]

17b. Invasive alien plant species

For further guidance see section 7.3.5 of the *Strategic Framework*. **If species are indicated as actually or potentially influencing the ecological character of the site, then please also indicate Invasive Alien Species as**

Species name		Species actually or potentially influencing the ecological character of the site?			Changes at RIS update No change/ increase/ decrease/ unknown
scientific name	**common name**	Actually (major impacts)	Actually (minor impacts)	Potentially	
		☐	☐	☐	☐ / ☐ / ☐ / ☐

		☐	☐	☐	☐ / ☐ / ☐ / ☐	**a threat in RIS field 30.**
		☐	☐	☐	☐ / ☐ / ☐ / ☐	

[add more rows as necessary]

18. Animal species

Fields #14 and #22 from RIS 2009-2012 version

This section relates to ***animal species*** and their attributes. Provide additional information on particular species and why they are noteworthy, e.g., which species are unique, rare, endangered or biogeographically important, etc., including count data. *Do not include here taxonomic lists of species present – these may be supplied as supplementary information to the RIS.*

Animal species whose presence relates to the international importance of the site *should be summarised in field 12c.*

18a. Other noteworthy animal species

For further guidance see section 7.3.7 of the *Strategic Framework*.

Phylum (e.g. mammal, bird, reptile, amphibian, fish, invertebrate)	**Species name**		**Pop'n size in site**	**Date of population estimate**	**% occurrence (biogeographic population)**	**Position in range / endemism / other**
	scientific name	**common name**				

[add more rows as necessary]

18b. Invasive alien animal species

For further guidance see section 7.3.7 of the *Strategic Framework*. **If species are indicated as actually or potentially influencing the ecological character of the site, then please also indicate**

[add more rows as necessary]

Phylum (e.g. mammal, bird, reptile, amphibian, fish, invertebrate)	Species name		Species actually or potentially influencing the ecological character of the site?			Changes at RIS update No change/ increase/ decrease/ unknown
	scientific name	**common name**	Actually (major impacts)	Actually (minor impacts)	Potentially	
			☐	☐	☐	☐ / ☐ / ☐ / ☐
			☐	☐	☐	☐ / ☐ / ☐ / ☐
			☐	☐	☐	☐ / ☐ / ☐ / ☐

Invasive Alien Species as a threat in RIS field 30.

19. Soil

For further guidance see section 7.3.8 of the *Strategic Framework*.

Field #2.9 from 2008 from Ecological Character Description Sheet

Please tick categories that apply:

Soil type		**Changes at RIS update** **No change/ increase/ decrease/ unknown**
Predominantly mineral	☐	☐ / ☐ / ☐ / ☐
Predominantly organic	☐	☐ / ☐ / ☐ / ☐
Mixed organic and mineral soils	☐	☐ / ☐ / ☐ / ☐
No available information	☐	☐ / ☐ / ☐ / ☐

Are soil types subject to change as a result of changing hydrological conditions (e.g., increased salinity or acidification?

YES? ☐

NO? ☐

Optional text box to provide further information on soil

20. Water regime

For further guidance see section 7.3.9 of the

Water sources, destination, permanence and stability of water regimes. Please tick all options that apply under each heading below:

	Presence?	Predominant water source?	Changes at RIS update No change/ increase/ decrease/ unknown
Water permanence			
Usually permanent water present; or	☐		☐ / ☐ / ☐ / ☐
Usually seasonal, ephemeral or intermittent water present	☐		☐ / ☐ / ☐ / ☐
Unknown	☐		☐ / ☐ / ☐ / ☐
Source of water that maintains character of the site			
Water inputs from rainfall	☐	☐	☐ / ☐ / ☐ / ☐
Water inputs from surface water	☐	☐	☐ / ☐ / ☐ / ☐
Water inputs from groundwater	☐	☐	☐ / ☐ / ☐ / ☐
Marine water	☐	☐	☐ / ☐ / ☐ / ☐
Unknown	☐		☐ / ☐ / ☐ / ☐
Water destination			
Feeds groundwater	☐		☐ / ☐ / ☐ / ☐
To downstream catchment	☐		☐ / ☐ / ☐ / ☐
Marine	☐		☐ / ☐ / ☐ / ☐
Unknown	☐		☐ / ☐ / ☐ / ☐
Stability of water regime			
Water levels largely stable; or	☐		☐ / ☐ / ☐ / ☐
Water levels fluctuating (including tidal)	☐		☐ / ☐ / ☐ / ☐
Unknown	☐		☐ / ☐ / ☐ / ☐

Strategic Framework.

Field #2.10 from 2008 Ecological Character Description Sheet

Other comments on the water regime and its determinants (if relevant). Please use this box to explain sites with complex hydrology:	

Connectivity of surface waters and of groundwater
[Ecological Character Description (2008) field not intended for completion as part of a standard RIS submission.]

Field #2.11 from 2008 Ecological Character Description Sheet

Stratification and mixing regime
[Ecological Character Description (2008) field not intended for completion as part of a standard RIS submission.]

Field #2.12 from 2008 Ecological Character Description Sheet

21. Sediment regime

For further guidance see section 7.3.10 of the *Strategic Framework*.

Please tick each category that apply:

Field #2.13 from 2008 Ecological Character Description Sheet

	Presence?	**Changes at RIS update** **No change/ increase/ decrease/ unknown**
Significant **erosion** of sediments occurs on the site	☐	☐ / ☐ / ☐ / ☐
Significant **accretion** or **deposition** of sediments occurs on the site	☐	☐ / ☐ / ☐ / ☐
Significant **transportation** of sediments occurs on or through the site	☐	☐ / ☐ / ☐ / ☐
Sediment regime is **highly variable**, either seasonally or inter-annually	☐	☐ / ☐ / ☐ / ☐
Sediment regime unknown	☐	☐ / ☐ / ☐ / ☐

Optional text box to provide further information on sediment	

Water turbidity and colour
[Ecological Character Description (2008) field not intended for completion as part of a standard RIS submission.]

Field #2.14 from 2008 Ecological Character Description Sheet

Light - reaching wetland
[Ecological Character Description (2008) field not intended for completion as part of a standard RIS submission.]

Field #2.15 from 2008 Ecological Character Description Sheet

Water temperature
[Ecological Character Description (2008) field not intended for completion as part of a standard RIS submission.]

Field #2.16 from 2008 Ecological Character Description Sheet

22. Water pH

For further guidance see section 7.3.11 of the *Strategic Framework*.

Please tick categories present as appropriate:

Field #2.17 from 2008 Ecological Character Description Sheet

	pH	**Presence?**	**Changes at RIS update No change/ increase/ decrease/ unknown**
Acid	<5.5	☐	☐ / ☐ / ☐ / ☐
Circumneutral	5.5-7.4	☐	☐ / ☐ / ☐ / ☐
Alkaline	>7.4	☐	☐ / ☐ / ☐ / ☐
Unknown		☐	☐ / ☐ / ☐ / ☐

Optional text box to provide further information on pH

23. Water salinity

For further guidance see section 7.3.12 of the *Strategic Framework*.

Field #2.18 from 2008 Ecological Character Description Sheet

Please tick categories present as appropriate:

	Salinity	**Presence?**	**Changes at RIS update** **No change/ increase/ decrease/ unknown**
Fresh	<0.5 g/l	☐	☐ / ☐ / ☐ / ☐
Mixohaline (brackish)/Mixosaline	0.5-30 g/l	☐	☐ / ☐ / ☐ / ☐
Euhaline/Eusaline	30-40 g/l	☐	☐ / ☐ / ☐ / ☐
Hyperhaline/Hypersaline	>40 g/l	☐	☐ / ☐ / ☐ / ☐
Unknown		☐	☐ / ☐ / ☐ / ☐

Optional text box to provide further information on salinity

Dissolved gases in water

Field #2.19 from 2008 Ecological Character Description Sheet

[Ecological Character Description (2008) field not intended for completion as part of a standard RIS submission.]

24. Dissolved or suspended nutrients in water

For further guidance see section 7.3.13 of the *Strategic Framework*.

Field #2.20 from 2008 Ecological Character Description Sheet

Please tick categories present, as appropriate:

		Presence?	**Changes at RIS update** **No change/ increase/ decrease/ unknown**
Eutrophic	Nutrient-rich waters with high primary productivity	☐	☐ / ☐ / ☐ / ☐
Mesotrophic	Waters with medium levels of nutrients (between those of oligotrophic and eutrophic waters	☐	☐ / ☐ / ☐ / ☐
Oligotrophic	Waters poor in nutrients and with low primary productivity	☐	☐ / ☐ / ☐ / ☐

Dystrophic	Applied to acidic lakes and ponds with peat-stained water. Rich in humic acids produced by peatland vegetation	☐	☐ / ☐ / ☐ / ☐
Unknown		☐	☐ / ☐ / ☐ / ☐

Optional text box to provide further information on dissolved or suspended nutrients

Dissolved organic carbon
[Ecological Character Description (2008) field not intended for completion as part of a standard RIS submission.]

Field #2.21 from 2008 Ecological Character Description Sheet

Redox potential of water and sediments
[Ecological Character Description (2008) field not intended for completion as part of a standard RIS submission.]

Field #2.22 from 2008 Ecological Character Description Sheet

Water conductivity
[Ecological Character Description (2008) field not intended for completion as part of a standard RIS submission.]

Field #2.23 from 2008 Ecological Character Description Sheet

25. Physical features of the surrounding area from which influences may affect the Ramsar Site

For further guidance see section 7.3.14 of the *Strategic Framework*.

Reorganized from Field #17 from RIS 2009-2012 version.

Please describe whether, and if so how, the landscape and ecological characteristics in the area surrounding the Ramsar Site differ from the site itself:

Landscape and ecological characteristics of the surrounding area are: i) broadly similar to those of the Ramsar Site, or ☐

ii) significantly different to those of the Ramsar Site ☐

If the surrounding area differs from the Ramsar Site, please indicate how: (Please tick all categories that apply)

Surrounding area has greater urbanisation or development ☐

Surrounding area has higher human population density ☐

Surrounding area has more intensive agricultural use ☐ Surrounding area has significantly different land cover or habitat types ☐ Surrounding area is different in other ways. Please describe how:	
	Fields from 2008 Ecological Character Description Sheet (Resolution X.15)
Part 3.2 Ecological processes	
This section is not intended for completion as part of a standard RIS, but is included for completeness as part of the agreed format of a 'full' Ecological Character Description (ECD) outlined by Resolution X.15	
Primary production [Ecological Character Description (2008) field not intended for completion as part of a standard RIS submission.]	Field #3.1 from 2008 Ecological Character Description Sheet
Nutrient cycling [Ecological Character Description (2008) field not intended for completion as part of a standard RIS submission.]	Field #3.2 from 2008 Ecological Character Description Sheet
Carbon cycling [Ecological Character Description (2008) field not intended for completion as part of a standard RIS submission.]	Field #3.3 from 2008 Ecological Character Description Sheet
Animal reproductive productivity [Ecological Character Description (2008) field not intended for completion as part of a standard RIS submission.]	Field #3.4 from 2008 Ecological Character Description Sheet
Vegetational productivity, pollination, regeneration processes, succession, role of fire, *etc.* [Ecological Character Description (2008) field not intended for completion as part of a standard RIS submission.]	Field #3.5 from 2008 Ecological Character Description Sheet
Notable species interactions*, including grazing, predation, competition, diseases and pathogens* [Ecological Character Description (2008) field not intended for completion as part of a standard RIS submission.]	Field #3.6 from 2008 Ecological Character Description Sheet

Notable aspects concerning animal and plant dispersal
[Ecological Character Description (2008) field not intended for completion as part of a standard RIS submission.]

Field #3.7 from 2008 Ecological Character Description Sheet

Notable aspects concerning migration
[Ecological Character Description (2008) field not intended for completion as part of a standard RIS submission.]

Field #3.8 from 2008 Ecological Character Description Sheet

Pressures and trends *concerning any of the above, and/or concerning ecosystem integrity*
[Ecological Character Description (2008) field not intended for completion as part of a standard RIS submission.]

Field #3.9 from 2008 Ecological Character Description Sheet

Part 3.3 Ecosystem services

26. Ecosystem services/benefits

For further guidance see section 7.3.16 of the *Strategic Framework*.

Fields from Section 4 of from 2008 Ecological Character Description Sheet

Fields #18, #25, #29, #30 & #31 from RIS 2009-2012 version relate to aspects of this Part

Please indicate the presence or absence of all relevant ecosystem services/benefits currently provided by the site in column a). If it is possible to assess the relative importance of each ecosystem service provided by the site, this can be scored 0-3 in column b) as follows:

0 = not relevant for site
1 = present but low importance/extent or significance
2 = present, medium importance/extent or significance
3 = present, high importance/extent or significance

Ecosystem service	**Examples**	**a) Presence/ absence of service**	**b) if possible, score 0-3 for each service provided by the site**
Provisioning Services – products obtained from the ecosystem such as food, fuel and fresh water			
Food for humans	Sustenance for humans (e.g., fish, molluscs, grains)	☐	
Fresh water	Drinking water for humans and/or livestock	☐	
	Water for irrigated agriculture	☐	

	Water for industry	☐	
	Water for energy production (hydro-electricity)	☐	
Wetland non-food products	Timber	☐	
	Fuel wood/fibre	☐	
	Peat	☐	
	Livestock fodder	☐	
	Reeds and fibre	☐	
	Other	☐	
Biochemical products	Extraction of material from biota	☐	
Genetic materials	Medicinal products	☐	
	Genes for tolerance to certain conditions (e.g., salinity)	☐	
	Genes for resistance to plant pathogens	☐	
	Ornamental species (live and dead)	☐	
Regulating Services – benefits obtained from the regulation of ecosystem processes such as climate regulation, water regulation, and natural hazard regulation			
Maintenance of hydrological regimes	Groundwater recharge and discharge	☐	
	Storage and delivery of water as part of water supply systems for agriculture and industry	☐	
Erosion protection	Soil, sediment and nutrient retention	☐	
Pollution control and detoxification	Water purification/waste treatment or dilution	☐	
Climate regulation	Local climate regulation/buffering of change	☐	
	Regulation of greenhouse gases, temperature, precipitation and other climactic processes	☐	
Biological control of pests and disease	Support of predators of agricultural pests (e.g., birds feeding on locusts)	☐	
Hazard reduction	Flood control, flood storage	☐	
	Coastal shoreline and river bank stabilization and storm protection	☐	
Cultural Services – the nonmaterial benefits people obtain from ecosystems such as through spiritual enrichment, cognitive development, reflection, recreation, and aesthetic experiences			

Recreation and tourism	Recreational hunting and fishing	☐	
	Water sports and activities	☐	
	Picnics, outings, touring	☐	
	Nature observation and nature-based tourism	☐	
Spiritual and inspirational	Inspiration	☐	
	Cultural heritage (historical and archaeological)	☐	
	Contemporary cultural significance, including for arts and creative inspiration, and including existence values	☐	
	Spiritual and religious values	☐	
	Aesthetic and "sense of place" values	☐	
Scientific and educational	Educational activities and opportunities	☐	
	Important knowledge systems, importance for research (scientific reference area or site)	☐	
	Long-term monitoring site	☐	
	Major scientific study site	☐	
	'Type location' for a taxon	☐	
Supporting Services – services necessary for the production of all other ecosystem services such as water cycling, nutrient cycling and habitat for biota. These services will generally have an indirect benefit to humans or a direct benefit over a long period of time.			
Biodiversity	Supports a variety of all life forms including plants, animals and microorganizms, the genes they contain, and the ecosystems of which they form a part	☐	
Soil formation	Sediment retention	☐	
	Accumulation of organic matter	☐	
Nutrient cycling	Storage, recycling, processing and acquisition of nutrients	☐	
	Carbon storage/sequestration	☐	
Pollination	Support for pollinators	☐	

Other ecosystem service(s) not included above:

Please 'guestimate' the approximate number of people who directly benefit from the ecological	**Within the site:**	**Outside the site:**

services provided by this site (in orders of magnitude: 10s, 100s, 1000s, 10 000s etc.)		

Have studies or assessments been made of the economic valuation of ecosystem services provided by this Ramsar Site? YES ☐ NO ☐ UNKNOWN ☐

Where economic studies or assessments of economic valuation have been undertaken at the site, it would be helpful to provide information on where the results of such studies may be located (e.g. website links, citation of published literature):	

27. Social or cultural values

For further guidance see section 7.3.17 of the *Strategic Framework*.

Field #23 from RIS 2009-2012 version

Is the site considered internationally important for holding, in addition to relevant ecological values, examples of significant cultural values, whether material or non-material, linked to its origin, conservation and/or ecological functioning? If so, please describe this importance under one or more of the following categories:

Type of social or cultural importance	Applicable?	Description if applicable
i) sites which provide a model of wetland wise use, demonstrating the application of traditional knowledge and methods of management and use that maintain the ecological character of the wetland	☐	
ii) sites which have exceptional cultural traditions or records of former civilizations that have influenced the ecological character of the wetland	☐	
iii) sites where the ecological character of the wetland depends on the interaction with local communities or indigenous peoples	☐	
iv) sites where relevant non-material values such as sacred sites are present and their existence is strongly linked with the maintenance of the ecological character of the wetland	☐	

Part 4. How is the site managed? (Conservation and management)

Part 4.1 Land tenure and responsibilities ('Managers')

28. Land tenure/ownership

For further guidance see section 7.4.1 of the *Strategic Framework*.

Field #24 from RIS 2009-2012 version

Please indicate all relevant categories that apply to the site:

	Within the Ramsar Site	In the surrounding area
Public ownership		
Public land (unspecified)	☐	☐
National/Federal government	☐	☐
Provincial/region/state government	☐	☐
Local authority, municipality, (sub)district, etc.	☐	☐
Other public ownership	☐	☐
Private ownership		
Cooperative/collective (e.g., farmers cooperative)	☐	☐
Commercial (company)	☐	☐
Foundation/non-governmental organization/trust	☐	☐
Religious body/organization	☐	☐
Other types of private/individual owner(s)	☐	☐
Other		
Unspecified mixed ownership	☐	☐
No information available	☐	☐
Rights of use		
Commoners/customary rights	☐	☐

Optional text box to explain complex land tenure/ ownerships:	

29. Management authority

For further guidance see section 7.4.2 of the *Strategic Framework*.

Field #33 from RIS 2009-2012 version

Name and address of the local office(s) of the agency(ies) or organization(s) that have functional responsibility for oversight of the site's management:	
Title and/or name of the person or persons in this office with responsibility for the wetland:	
Postal address:	
E-mail address:	

Part 4.2 Ecological character threats and responses ('Management')

30. Factors (actual or likely) adversely affecting the site's ecological character, including changes in land and water use and development projects

For further guidance see section 7.4.3 and Appendix F of the *Strategic Framework*.

Field #26 from RIS 2009-2012 version

Factors adversely affecting the site's ecological character:		Is the threat:		Within the Ramsar Site	Changes at RIS update No change/ increase/ decrease/ unknown	In the surrounding area	Changes at RIS update No change/ increase/ decrease/ unknown
		actual (happening) (Indicate high, medium or low impact on ecological character)	potential (likely) (Indicate high, medium or low impact on ecological character)				
Human settlements (non agricultural)							

	Housing and urban areas	☐	☐	☐	☐ / ☐ / ☐ / ☐	☐	☐ / ☐ / ☐ / ☐	
	Commercial and industrial areas	☐	☐	☐	☐ / ☐ / ☐ / ☐	☐	☐ / ☐ / ☐ / ☐	
	Tourism and recreation areas	☐	☐	☐	☐ / ☐ / ☐ / ☐	☐	☐ / ☐ / ☐ / ☐	
	Unspecified development	☐	☐	☐	☐ / ☐ / ☐ / ☐	☐	☐ / ☐ / ☐ / ☐	
Water regulation								
	Drainage	☐	☐	☐	☐ / ☐ / ☐ / ☐	☐	☐ / ☐ / ☐ / ☐	
	Water abstraction	☐	☐	☐	☐ / ☐ / ☐ / ☐	☐	☐ / ☐ / ☐ / ☐	
	Dredging	☐	☐	☐	☐ / ☐ / ☐ / ☐	☐	☐ / ☐ / ☐ / ☐	
	Salinisation	☐	☐	☐	☐ / ☐ / ☐ / ☐	☐	☐ / ☐ / ☐ / ☐	
	Water releases	☐	☐	☐	☐ / ☐ / ☐ / ☐	☐	☐ / ☐ / ☐ / ☐	
	Canalisation and river regulation	☐	☐	☐	☐ / ☐ / ☐ / ☐	☐	☐ / ☐ / ☐ / ☐	
Agriculture & aquaculture								
	Annual and perennial non-timber crops	☐	☐	☐	☐ / ☐ / ☐ / ☐	☐	☐ / ☐ / ☐ / ☐	
	Wood and pulp plantations	☐	☐	☐	☐ / ☐ / ☐ / ☐	☐	☐ / ☐ / ☐ / ☐	
	Livestock farming and ranching	☐	☐	☐	☐ / ☐ / ☐ / ☐	☐	☐ / ☐ / ☐ / ☐	
	Marine and freshwater aquaculture	☐	☐	☐	☐ / ☐ / ☐ / ☐	☐	☐ / ☐ / ☐ / ☐	
	Non specified	☐	☐	☐	☐ / ☐ / ☐ / ☐	☐	☐ / ☐ / ☐ / ☐	
Energy production and mining								
	Oil and gas drilling	☐	☐	☐	☐ / ☐ / ☐ / ☐	☐	☐ / ☐ / ☐ / ☐	
	Mining and quarrying	☐	☐	☐	☐ / ☐ / ☐ / ☐	☐	☐ / ☐ / ☐ / ☐	
	Renewable energy	☐	☐	☐	☐ / ☐ / ☐ / ☐	☐	☐ / ☐ / ☐ / ☐	

	Unspecified	☐	☐	☐	☐ / ☐ / ☐ / ☐	☐	☐ / ☐ / ☐ / ☐	
Transportation and service corridors								
	Roads and railroads	☐	☐	☐	☐ / ☐ / ☐ / ☐	☐	☐ / ☐ / ☐ / ☐	
	Utility and service lines (e.g., pipelines)	☐	☐	☐	☐ / ☐ / ☐ / ☐	☐	☐ / ☐ / ☐ / ☐	
	Shipping lanes	☐	☐	☐	☐ / ☐ / ☐ / ☐	☐	☐ / ☐ / ☐ / ☐	
	Aircraft flight paths	☐	☐	☐	☐ / ☐ / ☐ / ☐	☐	☐ / ☐ / ☐ / ☐	
	Unspecified	☐	☐	☐	☐ / ☐ / ☐ / ☐	☐	☐ / ☐ / ☐ / ☐	
Biological resource use								
	Hunting and collecting terrestrial animals	☐	☐	☐	☐ / ☐ / ☐ / ☐	☐	☐ / ☐ / ☐ / ☐	
	Gathering terrestrial plants	☐	☐	☐	☐ / ☐ / ☐ / ☐	☐	☐ / ☐ / ☐ / ☐	
	Logging and wood harvesting	☐	☐	☐	☐ / ☐ / ☐ / ☐	☐	☐ / ☐ / ☐ / ☐	
	Fishing and harvesting aquatic resources	☐	☐	☐	☐ / ☐ / ☐ / ☐	☐	☐ / ☐ / ☐ / ☐	
	Unspecified	☐	☐	☐	☐ / ☐ / ☐ / ☐	☐	☐ / ☐ / ☐ / ☐	
Human intrusions & disturbance								
	Recreational and tourism activities	☐	☐	☐	☐ / ☐ / ☐ / ☐	☐	☐ / ☐ / ☐ / ☐	
	(Para)military activities	☐	☐	☐	☐ / ☐ / ☐ / ☐	☐	☐ / ☐ / ☐ / ☐	
	Unspecified/others	☐	☐	☐	☐ / ☐ / ☐ / ☐	☐	☐ / ☐ / ☐ / ☐	
Natural system modifications								
	Fire and fire suppression	☐	☐	☐	☐ / ☐ / ☐ / ☐	☐	☐ / ☐ / ☐ / ☐	
	Dams and water	☐	☐	☐	☐ / ☐ / ☐ / ☐	☐	☐ / ☐ / ☐ / ☐	

	management/use							
	Vegetation clearance/ land conversion	☐	☐	☐	☐ / ☐ / ☐ / ☐	☐	☐ / ☐ / ☐ / ☐	
	Unspecified/others	☐	☐	☐	☐ / ☐ / ☐ / ☐	☐	☐ / ☐ / ☐ / ☐	
Invasive and other problematic species and genes								
	Invasive non-native/ alien species	☐	☐	☐	☐ / ☐ / ☐ / ☐	☐	☐ / ☐ / ☐ / ☐	
	Problematic native species	☐	☐	☐	☐ / ☐ / ☐ / ☐	☐	☐ / ☐ / ☐ / ☐	
	Introduced genetic material	☐	☐	☐	☐ / ☐ / ☐ / ☐	☐	☐ / ☐ / ☐ / ☐	
	Unspecified	☐	☐	☐	☐ / ☐ / ☐ / ☐	☐	☐ / ☐ / ☐ / ☐	
Pollution								
	Household sewage, urban waste water	☐	☐	☐	☐ / ☐ / ☐ / ☐	☐	☐ / ☐ / ☐ / ☐	
	Industrial and military effluents	☐	☐	☐	☐ / ☐ / ☐ / ☐	☐	☐ / ☐ / ☐ / ☐	
	Agricultural and forestry effluents	☐	☐	☐	☐ / ☐ / ☐ / ☐	☐	☐ / ☐ / ☐ / ☐	
	Garbage and solid waste	☐	☐	☐	☐ / ☐ / ☐ / ☐	☐	☐ / ☐ / ☐ / ☐	
	Air-borne pollutants	☐	☐	☐	☐ / ☐ / ☐ / ☐	☐	☐ / ☐ / ☐ / ☐	
	Excess heat, sound, light	☐	☐	☐	☐ / ☐ / ☐ / ☐	☐	☐ / ☐ / ☐ / ☐	
	Unspecified	☐	☐	☐	☐ / ☐ / ☐ / ☐	☐	☐ / ☐ / ☐ / ☐	
Geological events								
	Volcanoes	☐	☐	☐	☐ / ☐ / ☐ / ☐	☐	☐ / ☐ / ☐ / ☐	
	Earthquakes/tsunamis	☐	☐	☐	☐ / ☐ / ☐ / ☐	☐	☐ / ☐ / ☐ / ☐	
	Avalanches/landslides	☐	☐	☐	☐ / ☐ / ☐ / ☐	☐	☐ / ☐ / ☐ / ☐	
	Unspecified	☐	☐	☐	☐ / ☐ / ☐ / ☐	☐	☐ / ☐ / ☐ / ☐	

Climate change & severe weather							
	Habitat shifting and alteration	☐	☐	☐	☐ / ☐ / ☐ / ☐	☐	☐ / ☐ / ☐ / ☐
	Droughts	☐	☐	☐	☐ / ☐ / ☐ / ☐	☐	☐ / ☐ / ☐ / ☐
	Temperature extremes	☐	☐	☐	☐ / ☐ / ☐ / ☐	☐	☐ / ☐ / ☐ / ☐
	Storms and flooding	☐	☐	☐	☐ / ☐ / ☐ / ☐	☐	☐ / ☐ / ☐ / ☐
	Unspecified	☐	☐	☐	☐ / ☐ / ☐ / ☐	☐	☐ / ☐ / ☐ / ☐
Other (please name):		☐	☐	☐	☐ / ☐ / ☐ / ☐	☐	☐ / ☐ / ☐ / ☐
No threats		☐	☐	☐	☐ / ☐ / ☐ / ☐	☐	☐ / ☐ / ☐ / ☐
No information available		☐	☐	☐	☐ / ☐ / ☐ / ☐	☐	☐ / ☐ / ☐ / ☐

Optional text box to explain complex threats:

Further information on the definition of the above categories to be provided as part of the implementation of this version of the Information Sheet.

31. Conservation measures taken

31a) Legal status: list national and/or international category and legal status of protected areas, including boundary relationships with the Ramsar Site:

For further guidance see section 7.4.4 of the *Strategic Framework*.

Field #27a from RIS 2009-2012 version

	Name of area	Give URL for source of online information on designation, if possible	Area wholly overlapping with Ramsar Site?	Area partly overlapping with Ramsar Site?
Global international legal and other formal designations (please add further rows and categories as necessary)				
World Heritage site	{name of World Heritage site}		☐	☐
UNESCO Biosphere Reserve	{name of Biosphere Reserve}		☐	☐
{Other global designation}	{name of site}		☐	☐
			☐	☐
Regional international legal and other formal designations (please add further rows and categories as necessary)				
EU Natura 2000	{name of Natura 2000 site}		☐	☐
{Other international designation}	{name of site}		☐	☐
			☐	☐
National legal and other formal designations (please add further rows and categories as necessary)				
{Nationally designated site}	{name of site}		☐	☐
			☐	☐
			☐	☐
Non-statutory designations (please add further rows and categories as necessary)				
Important Bird Area	{name of Important Bird Area}		☐	☐
Important Plant Area	{name of Important Plant Area}		☐	☐
{Other non-statutory	{name of site}		☐	☐

designation}			☐	☐

31b) If known, list the **IUCN (2008) protected areas category/ies** which apply to the site (tick the box or boxes as appropriate):

For further guidance see section 7.4.4 of the *Strategic Framework* or http://data.iucn.org/dbtw-wpd/edocs/PAPS-016.pdf.

Field #27b from RIS 2009-2012 version

- **Ia Strict Nature Reserve:** protected area managed mainly for science ☐
- **Ib Wilderness Area:** protected area managed mainly for wilderness protection ☐
- **II National Park:** protected area managed mainly for ecosystem protection and recreation ☐
- **III Natural Monument:** protected area managed mainly for conservation of specific natural features ☐
- **IV Habitat/Species Management Area**: protected area managed mainly for conservation through management intervention ☐
- **V Protected Landscape/Seascape**: protected area managed mainly for landscape/seascape conservation and recreation ☐
- **VI Managed Resource Protected Area:** protected area managed mainly for the sustainable use of natural ecosystems ☐

31c) Key conservation (including restoration) measures being implemented at, or affecting, the site

For further guidance see section 7.4.4 of the *Strategic Framework*.

	Measure proposed	**Measure partially implemented**	**Measure implemented**
LEGAL PROTECTION			
Legal protection	☐	☐	☐
HABITAT			
Catchment management initiatives/controls	☐	☐	☐
Improvement of water quality	☐	☐	☐
Other pollution control	☐	☐	☐
Habitat manipulation/enhancement	☐	☐	☐

Hydrology management/restoration	☐	☐	☐	
Re-vegetation	☐	☐	☐	
Soil management	☐	☐	☐	
Land conversion controls	☐	☐	☐	
Faunal corridors/passage	☐	☐	☐	
SPECIES				
Threatened/rare species management programmes	☐	☐	☐	
Other specific single species or species group management programmes	☐	☐	☐	
Reintroductions	☐	☐	☐	
Control of invasive alien plants	☐	☐	☐	
Control of invasive alien animals	☐	☐	☐	
HUMAN ACTIVITIES				
Management of water abstraction/takes	☐	☐	☐	
Regulation/management of wastes	☐	☐	☐	
Livestock management/exclusion (excluding fisheries)	☐	☐	☐	
Fisheries management/regulation	☐	☐	☐	
Harvest controls/poaching enforcement	☐	☐	☐	
Regulation/management of recreational activities	☐	☐	☐	
Communication, education, and participation and awareness activities	☐	☐	☐	
Research	☐	☐	☐	
Other (please specify)				

32. Management planning

For further guidance see section 7.4.5 of the

Please indicate which of the following apply to the site. If more than one category applies to the site, please indicate all that are relevant.

- Site-specific plan or management planning being implemented ☐
- Site-specific plan or management planning exists but has not yet been implemented ☐
- Site-specific plan or management planning in preparation ☐
- Current site-specific plan or management planning subject to review and update ☐
- No site-specific plan or management planning exists at present ☐
- No information available ☐

Management plan/planning covers:

- All of Ramsar Site; or ☐
- Part of Ramsar Site ☐

Has a management effectiveness assessment been undertaken for the site? Yes ☐ No ☐

Please give link to site-specific plan or other relevant management planning if this is available via the Internet:

If the site is a formal transboundary site as indicated in RIS field 9b above, are there shared management planning processes with another Contracting Party? Yes ☐ No ☐

Please indicate if a Ramsar centre, other educational/visitor facility, or educational/visitor programme is associated with the site?

URL of site-related webpage (if relevant): http://

Strategic Framework.

Field #27c from RIS 2009-2012 version

33. Planning for restoration

For further guidance see section 7.4.6 of the

Please indicate which of the following apply to the site:

Strategic Framework.

New field

- Site previously subject to restoration ☐
- Current restoration plan subject to review and update ☐
- Implementing approved site-specific restoration plan ☐
- Site-specific restoration plan exists but has not yet been implemented ☐
- Site-specific restoration plan or planning in preparation ☐
- No site-specific restoration plan exists at present ☐
- Not applicable/no need for restoration identified ☐
- No information available ☐

Plan covers:

- All of Ramsar Site; or ☐
- Part of Ramsar Site ☐

Where restoration is being undertaken in response to, or in mitigation of a threat identified in field no. 30 (e.g., through the creation of ecological flows in response to negative hydrological impacts), please indicate the threat(s) which restoration is addressing:

34. Monitoring implemented or proposed at the site

For further guidance see section 7.4.7 of the *Strategic Framework*.

	Implemented	**Proposed**
Water regime monitoring	☐	☐
Water quality	☐	☐
Soil quality	☐	☐
Plant community	☐	☐
Plant species	☐	☐
Animal community	☐	☐

Animal species (please specify)	☐	☐	
Birds	☐	☐	
[Add further aspects of monitoring as necessary]			

35. Bibliographical references

For further guidance see section 7.4.8 of the *Strategic Framework*.

Field #234 from RIS 2009-2012 version

Part 5 Providing additional information relevant to this Ramsar Site

Are any of the following available for this Ramsar Site?

	Yes	**No**
i. taxonomic lists of plant and animal species occurring in the site (see RIS Fields 17 & 18)	☐	☐
ii. a detailed Ecological Character Description (ECD) (in a national format)	☐	☐
iii. a description of the site in a national or regional wetland inventory	☐	☐
iv. relevant Article 3.2 reports	☐	☐
v. site management plan	☐	☐
vi. other published literature	☐	☐

If "Yes" to any of these, please provide the additional information to the Secretariat as separate electronic documents (giving file names) when this RIS is submitted.

11th Meeting of the Conference of the Parties to the Convention on Wetlands (Ramsar, Iran, 1971)

"Wetlands: home and destination"

Bucharest, Romania, 6-13 July 2012

Resolution XI.8 Annex 2 (Rev. COP13)

Strategic Framework and guidelines for the future development of the List of Wetlands of International Importance of the Convention on Wetlands (Ramsar, Iran, 1971) – 2012 revision

Adopted by Resolution XI.8 on *Streamlining procedures for describing Ramsar Sites at the time of designation and subsequent updates* (2012); Appendix E2 updated by Resolution XIII.12 on *Guidance on identifying peatlands as Wetlands of International Importance (Ramsar Sites) for global climate change regulation as an additional argument to existing Ramsar criteria* (2018)

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1. Summary

1. This document is intended to provide the necessary guidance for Contracting Parties to identify Wetlands of International Importance (Ramsar Sites) and describe them at the time of their designation as Ramsar Sites.

2. In particular, the present document:

- outlines the rationale for the selection of Ramsar Sites;
- presents the Convention's vision for an international network (or List) of Ramsar Sites and presents targets for the development of that network;
- presents and explains the Convention's criteria by which Ramsar Sites can be identified;
- describes the Convention's official Information Sheet through the use of which Contracting Parties describe sites at the time of their designation and subsequently; and
- provides guidance on the preparation of the official map of Ramsar Sites required to be produced at the time of designation.

3. The document builds upon and consolidates earlier guidance adopted by the Ramsar Parties, most substantively on the *Strategic Framework and guidelines for the future development of the List of Wetlands of International Importance,* first adopted by the 7th meeting of the Conference of the Contracting Parties (COP7) in 1999, and on the advice for completing Ramsar Information Sheets (RIS) that was first adopted by COP4 in 1990.

4. Although formatted somewhat differently as a consequence of merging these two into one document here, much of the content is unchanged, but it has been re-ordered and edited to improve its clarity and accessibility to users.

2. Introduction

What does this section do? Explains the need for Ramsar Site designation, providing necessary background and context

5. At the time of signing, or when depositing their instrument of ratification or accession to the Convention on Wetlands (Ramsar, Iran, 1971), sovereign states are required under Article 2.4 to designate at least one site as a Wetland of International Importance. Thereafter, as prescribed by Article 2.1, "each Contracting Party shall designate suitable wetlands within its territory for inclusion in the List of Wetlands of International Importance".

6. Assistance with interpreting the key word 'suitable', as used in Article 2.1, is provided in part by Article 2.2, which states that "wetlands should be selected for the List on account of their international significance in terms of ecology, botany, zoology, limnology or hydrology. In the first instance wetlands of international importance to waterfowl at any season should be included".

7. Throughout its evolution, the Convention on Wetlands has developed Criteria for the designation of Wetlands of International Importance (Ramsar Sites) which have been kept under constant review. It has supplemented these with regularly updated Guidelines to assist Contracting Parties in their interpretation and application of the Criteria reflecting the development of conservation science.

8. The strategic direction given to the development of the List of Wetlands of International Importance has previously been rather limited. Most notably, the 6th meeting of the Conference of the Contracting Parties (COP6) urged Parties through the Convention's Strategic Plan 1997-2002 to "increase the area of wetland designated for the List of Wetlands of International Importance particularly for wetland types that are under-represented either at the global or national levels".

Purpose

9. At the time of COP7 in 1999, as the number of wetlands designated for the Ramsar List was fast approaching 1,000, the Convention on Wetlands first adopted the *Strategic Framework and guidelines for the future development of the List of Wetlands of International Importance,* and it has amended and added to it regularly since then. Its purpose is to provide a clearer view, or vision, of the long-term targets or outcomes which the Convention is seeking to achieve through the Ramsar List. Advice is also offered to assist Contracting Parties in taking a systematic approach to identifying their priorities for future designations, in order to create comprehensive national networks of Ramsar Sites which, when considered at the global level, fulfil the stated vision for the Ramsar List.

3. The Vision, objectives and short-term target for the List of Wetlands of International Importance (the Ramsar List)

What does this section do? Explains the purpose of the List of Wetlands of International Importance (Ramsar Sites)

3.1 The Vision for the Ramsar List

10. The Convention on Wetlands has adopted[1] the following vision for the List of Wetlands of International Importance:

The Vision

To develop and maintain an international network of wetlands which are important for the conservation of global biological diversity and for sustaining human life through the maintenance of their ecosystem components, processes and benefits/services.

(In this context, 'ecosystem benefits' are defined in accordance with the Millennium Ecosystem Assessment definition of ecosystem services as "the benefits that people receive from ecosystems".)

1 As amended by Resolution IX.1 Annex B (2005).

11. Such an international network of wetland sites has to be built from coherent and comprehensive networks of Wetlands of International Importance established within the territory of each Contracting Party to the Convention.

3.2 Objectives for the Ramsar List

12. In order to realize the vision for the Ramsar List, the Contracting Parties, the Convention's International Organization Partners, local stakeholders, and the Ramsar Secretariat work cooperatively towards accomplishing the following five objectives (not in priority order).

Objective 1
To establish national networks of Ramsar Sites in each Contracting Party which fully represent the diversity of wetlands and their key ecological and hydrological functions

13. **1.1**) To have included in the Ramsar List at least one suitable (i.e., internationally important) representative of every natural or near-natural wetland type present in each "biogeographic region" (see Glossary in Appendix G). These biogeographical regions are defined globally, supranationally/regionally, or nationally and applied by the Contracting Party in a form appropriate to that Party.

14. **1.2**) To give priority in determining suitable sites in relation to wetland type to those wetlands that play a substantial ecological or hydrological role in the natural functioning of a major river basin, lake, or coastal system.

15. **1.3)** To use national networks of Ramsar Sites to help achieve the target established by the Convention on Biological Diversity (CBD) (Aichi Target 11)[2] to have conserved, by 2020, at least 17% of terrestrial and inland water areas and 10% of coastal and marine areas.

Objective 2
To contribute to maintaining global biological diversity through the designation and management of appropriate wetland sites

16. **2.1**) To continue to review the development of the Ramsar List and further refine the Criteria for identification and selection of Ramsar Sites, as appropriate, to best promote conservation of biological diversity and wise use of wetlands at the local, subnational, national, supranational/regional, and international levels.

17. **2.2**) To include in the Ramsar List wetlands that support threatened ecological communities or are critical to the survival of endemic species identified as vulnerable, endangered or critically endangered under national endangered species legislation or programmes or within international frameworks such as the IUCN Red List, Appendix I of the Convention on International Trade in Endangered Species of Wild Flora and Fauna (CITES), and the Appendices of the Convention on Migratory Species (CMS or Bonn Convention) and thus to help achieve CBD Aichi Target 12 to prevent the extinction of known threatened species and so improve and sustain their conservation status by 2020.

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2 Convention on Biological Diversity 2010. *The Strategic Plan for Biodiversity 2011-2020 and the Aichi Biodiversity Targets.* Decision X/2.

18. **2.3**) To include in the Ramsar List wetlands critical to the conservation of biological diversity in each biogeographic region.

19. **2.4**) To include in the Ramsar List wetlands that provide important habitat for plant and animal species at critical stages in their life cycle or during adverse conditions.

20. **2.5**) To include in the Ramsar List wetlands that are significant for waterbird and fish species or stocks, as well as other taxa, as determined by the relevant Ramsar Site selection Criteria (see section 6).

Objective 3
To foster cooperation among Contracting Parties, the Convention's International Organization Partners, and local stakeholders in the selection, designation, and management of Ramsar Sites

21. **3.1**) To pursue opportunities between two (or more) Contracting Parties for Ramsar Site "twinning" or cooperative management agreements for wetlands along migratory species routes, across common borders, or with similar wetland types or species (Resolution VII.19).[3]

22. **3.2**) To undertake other forms of cooperative venture between two or more Contracting Parties that can demonstrate or assist in achieving long-term conservation and sustainable use of Ramsar Sites and wetlands in general.

23. **3.3**) To encourage and support, where appropriate, a stronger role for and contribution from non-government and community-based organizations in the strategic development of the Ramsar List and subsequent management of Ramsar Sites locally, subnationally, nationally, supranationally/ regionally, and internationally (Resolution VII.8).

Objective 4
To use the Ramsar Site network as a tool to promote national, supranational/regional, and international cooperation in relation to complementary environment treaties

24. **4.1**) To use Ramsar Sites, alongside other appropriate wetlands, as baseline and reference areas for national, supranational/ regional, and international environmental monitoring to detect trends in changes in biological diversity, climate change, and the processes of desertification.

25. **4.2**) To implement conservation and sustainable use demonstration projects at Ramsar Sites which will also provide tangible illustrations of cooperation with appropriate international environment treaties[4], notably the achievement of the targets established by CBD's Strategic Plan for Biodiversity 2011-2020.

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[3] Turkey entered a reservation to the adoption by consensus of this paragraph of the Resolution. The text of the reservation appears in paragraph 453 of the COP11 Conference Report.

[4] Among such MEAs are the Convention on Biological Diversity, the United Nations Framework Convention on Climate Change, the Convention to Combat Desertification, the Convention on International Trade in Endangered Species of Wild Flora and Fauna, the World Heritage Convention, and the Convention on Migratory Species and its Agreements such as the African-Eurasian (Migratory) Waterbirds Agreement, and regional agreements and cooperative initiatives

26. **4.3**) To use networks of Ramsar Sites as policy mechanisms and tools for the implementation of national strategic plans for biodiversity especially in, but not restricted to, the context of the Strategic Plan for Biodiversity 2011-2020.

Objective 5
To use of national Ramsar Site networks to provide essential ecosystem services/benefits, especially related to water, that contribute to human health, livelihoods and well-being

27. **5.1**) To use Ramsar Sites as demonstration areas for the provision of ecosystem services/benefits related especially to water and to their contribution to human health, livelihoods and well-being, if necessary involving restoration, thus contributing to the achievement of CBD Aichi Target 14.

3.3 Short-term target for the Ramsar List

28. The Convention stresses the importance of wetlands as rich centres of biological diversity and productivity and as systems that support the health, livelihoods and well-being of human populations, and the Parties are concerned at the continuing loss and degradation of wetlands in many parts of the world. In response to this concern, the Parties set the following short-term target for the Ramsar List, as Key Result Area (KRA) 2.1.iii in the Strategic Plan 2009-2015 (Resolution X.1, 2008):

By 2015, at least 2,500 Ramsar sites designated worldwide, covering at least 250 million hectares.

3.4 Wetlands of International Importance and the Ramsar principle of wise use

29. Under the Ramsar Convention on Wetlands the two concepts of wise use and site designation are fully compatible and mutually reinforcing. Contracting Parties are expected to designate sites for the List of Wetlands of International Importance "on account of their international significance in terms of ecology, botany, zoology, limnology or hydrology" (Article 2.2), **AND** to "formulate and implement their planning so as to promote the conservation of the wetlands included in the List, and as far as possible the wise use of wetlands in their territory" (Article 3.1).

30. The Ramsar Strategic Plan adopted at COP6 (1996), following on from the definition adopted by COP3 in 1987, equated "wise use" with sustainable use. Contracting Parties to the Convention also recognize that wetlands, through their ecological and hydrological

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such as the North American Waterfowl Management Plan, the Western Hemisphere Shorebird Reserve Network, the Asia-Pacific Migratory Waterbird Conservation Strategy 2001-2005, the Mediterranean Wetlands Initiative (MedWet), the Secretariat of the Pacific Regional Environment Programme (SPREP), Southern Africa Development Community (SADC), Association of the South East Asian Nations (ASEAN), the European Union's Natura 2000 network, the Emerald Network of the Bern Convention on the Conservation of European Wildlife and Natural Habitats, the Pan-European Biological and Landscape Diversity Strategy, the Wetlands Programme for the High Andes, the Treaty on Amazon Cooperation, the Central American Commission on Environment and Development (CCAD), amongst others.

functions, provide invaluable services, products and benefits enjoyed by, and sustaining, human populations. Therefore, the Convention promotes practices that will ensure that all wetlands, and especially those designated for the Ramsar List, will continue to provide these functions and values for future generations as well as for the conservation of biological diversity.

31. Ramsar COP9 (2005) updated the definition of wise use of wetlands to:

"the maintenance of their ecological character, achieved through the implementation of ecosystem approaches, within the context of sustainable development"
(Resolution IX.1 Annex A)

Note: Two footnotes were attached to the this definition:

i) Including *inter alia* the Convention on Biological Diversity's "Ecosystem Approach" (CBD COP5 Decision V/6) and that applied by HELCOM and OSPAR (Declaration of the First Joint Ministerial Meeting of the Helsinki and OSPAR Commissions, Bremen 25-26 June 2003).

ii) The phrase "in the context of sustainable development" is intended to recognize that whilst some wetland development is inevitable and that many developments have important benefits to society, developments can be facilitated in sustainable ways by approaches elaborated under the Convention, and it is not appropriate to imply that 'development' is an objective for every wetland.

Ramsar Sites and the wise use principle

The act of designating (listing) a wetland as internationally important under the Convention is an appropriate first step along a conservation and sustainable use pathway, the endpoint of which is achieving the long-term wise (sustainable) use of the site.

32. Article 3.2 of the Convention determines that "each Contracting Party shall arrange to be informed at the earliest possible time if the ecological character of any wetland in its territory and included in the List has changed, is changing or is likely to change". Accordingly, the Ramsar Convention has developed the concept of "ecological character" for wetlands, which is defined as:

"Ecological character is the combination of the ecosystem components, processes and benefits/services that characterise the wetland at a given point in time."
(Resolution IX.1 Annex A, 2005)

(In this context, 'ecosystem benefits' are defined in accordance with the Millennium Ecosystem Assessment definition of ecosystem services as "the benefits that people receive from ecosystems".)

33. Contracting Parties are expected to manage their Ramsar Sites in such a way as to maintain the ecological character of each site and, in so doing, retain those essential ecological and hydrological functions which ultimately provide its ecosystem services. Ecological character is therefore an indication of the 'health' of the wetland, and Contracting Parties

are expected to describe the site at the time of designation using the approved Ramsar Site Information Sheet (Appendix A) in sufficient detail to provide a baseline for subsequent monitoring to detect any changes to these ecological and hydrological attributes.

34. Changes to ecological character outside its natural range of variation may signal that uses of a site, or externally derived impacts on the site, are unsustainable and may lead to the degradation of natural processes and thus the ultimate breakdown of the ecological, biological and hydrological functioning of the wetland.

35. The Ramsar Convention has developed tools for monitoring ecological character and also for the development of management plans for Wetlands of International Importance. In preparing such management plans, which all Contracting Parties have been strongly urged to do, issues such as the impact of human activities on the ecological character of the wetland, the economic and socio-economic values of the site (especially for local communities), and the cultural values associated with the site need to be considered. Contracting Parties have also committed to including within management plans a regime for regular and rigorous monitoring to detect changes in ecological character (Resolutions VII.10 and X.15).

4. Establishing a national network of Ramsar Sites

4.1 Networks of sites and what they are for

36. Networks of protected areas serve multiple purposes. Created through the protection and management of multiple sites, they can provide for:

    i) the requirements of migratory species as they undertaken their annual cycle of movements;
    ii) the conservation of multiple local populations of a species, thus contributing to the survival of metapopulations of species;
    iii) the conservation of patterns of diversity at scales larger than an individual site – for example, conservation of either several examples of similar wetland types or a range of different wetland types present within a region; and/or
    iv) the support of ecological or hydrological processes operating at wide geographical scales, for example, a network of sites from the headwaters of a river to its terminus in a coastal estuary.

37. In order to minimize vulnerability and risk, a strategy of selecting sites so that the variety of values at stake is spread throughout the largest possible number of sites (geographical spread) may be appropriate. A strategy such as this provides insurance against the total loss of a resource caused by localized impacts such as fire, flooding, disease or inappropriate land-use decisions. This kind of strategy also helps the chances of recovery from such events by offering a spread of gene pools for potential recolonization. In addition, site networks might need to include some "spare" resources for emergencies, such as sheltered refuges for birds in unusually severe weather (Pritchard 2006).

38. Networks of protected areas can be created at several scales, from local or provincial to national or supranational/regional (such as for example the European Union's Natura 2000 network), whilst the Ramsar List itself is an example of a global site network.

39. In developing any network of protected areas, at any scale but especially nationally, it is critical to establish network objectives. These are crucial to any assessment of network 'coherence' – the extent to which the network is considered complete. Useful guidance on objective setting for site networks is given by Schafer (1990), Pritchard (2006), Langhammer *et al.* (2007) as well as elsewhere in this Strategic Framework.

40. The fundamental first step in establishing any network of protected areas is undertaking a national wetland inventory (see section 4.2 below). Inventories provide essential information on the extent and location of wetland types (or wetland species) within a geographic area from which a network of protected areas can be selected according to established objectives (Langhammer 2007, Ramsar Convention Secretariat 2010c).

4.2 The process of undertaking a national review of potential Ramsar Sites

41. This section provides guidance on taking a systematic approach to identifying priorities for future designations, in order to create coherent, comprehensive national networks of Ramsar Sites which, when considered as a global network, will help to fulfil the vision for the Ramsar List. When developing and implementing a systematic approach to identifying the priority wetlands for designation as Ramsar Sites, Contracting Parties should consider the following issues.

42. **Review national objectives**. As a precursor to developing a systematic approach for identifying future Ramsar Sites, Parties should give careful consideration to the Objectives set out in Section 3 of this Strategic Framework. Those objectives provide an essential basis for the creation of a national network of Ramsar Sites and the extent to which that can contribute to the vision for the List of Wetlands of International Importance.

43. **Territory of the Contracting Parties and transfrontier situations**. Wetland inventories should be certain to take into consideration all parts of the territory of the Contracting Party. In accordance with Article 5 of the Convention and the *Guidelines for international cooperation under the Ramsar Convention* (Resolution VII.19, 1999), special consideration should be given to identifying and designating transfrontier wetlands, not just those that occur across national boundaries but also those that straddle internal jurisdictional boundaries such as between neighbouring provinces (see Section 5.11.2 below).[5]

44. **Inventories and data.** Contracting Parties are urged to establish the extent and quality of information that has been collected on wetlands within their territory and take steps to complete an inventory if this has not yet been done. Inventories should be undertaken using accepted models and standards as advocated by the Ramsar Convention (see Resolutions VII.20 and VIII.6 and Ramsar Convention Secretariat 2010c). It is important to stress that the lack of an inventory should not, however, prevent designations where adequate information is already available for some sites.

45. Consistent with the developing scientific knowledge of the status and distribution of wetlands, their associated plants and animals, and their functions and values, national

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5 Turkey entered a reservation to the adoption by consensus of this paragraph of the Resolution. The text of the reservation appears in paragraph 453 of the COP11 Conference Report.

wetland inventories and/or lists of potential Ramsar Sites should be subject to periodic review and updating (Strategy 1.1 of the Ramsar Strategic Plan 2009-2015).

46. **Supranational/regional level guidance.** Contracting Parties should also be aware that in some instances they may require more detailed guidance at the supranational/regional level in establishing the relative importance of sites for possible designations. This may apply in the following situations:

    i) where plant or animals species do not occur in large concentrations (such as migratory waterbirds in northern latitudes) within the country; or
    ii) where collection of data is difficult (particularly in very large countries); or
    iii) where there may be a high degree of spatial and temporal variability of rainfall – particularly in semi-arid or arid zones – resulting in dynamic use of complexes of temporary wetlands within and between years by waterbirds and other mobile species and where the patterns of such dynamic use are insufficiently known; or
    iv) where, for certain types of wetland such as peatlands, coral reefs, karst and other subterranean hydrological systems, there may be limited national expertise as to the range and significance of international variation (see Appendix E for additional guidance on the identification and designation of specific wetland types); or
    v) where several biogeographic regions come together and the transition zones may have high levels of biological diversity.

47. **Considering all of the Ramsar Criteria and all species.** Contracting Parties are urged to consider all of the Criteria fully when developing a systematic approach. Article 2.2 of the Convention indicates that sites should be considered on the basis of their "ecology, botany, zoology, limnology or hydrology". Under the Ramsar Criteria, this is further clarified in terms of wetland type and conservation of biological diversity.

48. Contracting Parties should also aim to use the Criteria appropriately, meaning that although specific criteria have been developed for waterbirds (Criteria 5 and 6), for fish (Criteria 7 and 8) and for non-avian animals (Criterion 9), these are not the only wetland taxa for which Ramsar Sites can and should be listed. Criteria 2, 3 and 4 provide latitude to identify sites for any wetland species, as well as for waterbirds, fish and non-avian animalas, where appropriate. There is also a risk that less obvious species and the microbiota may be overlooked in these considerations, and care should be exercised to ensure that all components of biological diversity are taken into consideration.

49. **Prioritising.** Having systematically applied the Criteria to develop a list of wetlands that qualify for designation, Contracting Parties are encouraged to identify priority candidate sites. Particular weight should be given to designating sites which include wetland types, or wetland species, that are either unique/endemic to the Contracting Party (found nowhere else in the world) or for which that country holds a significant proportion of the total global extent of a wetland type or population of a wetland species.

5. General issues and guidance for Ramsar Site description

5.1 Definition of a wetland

50. For each Contracting Party it is important to reach an understanding at the national level of how the Ramsar definition of a wetland is to be interpreted and of the biogeographic regionalization to be applied. The Ramsar definition of 'wetland' is very broad, reflecting the purpose and global scale of the Convention, and it gives Contracting Parties great scope and flexibility for ensuring compatibility between national, supranational/regional, and international wetland conservation efforts.

The Ramsar definition of 'wetland'

"Wetlands are areas of marsh, fen, peatland or water, whether natural or artificial, permanent or temporary, with water that is static or flowing, fresh, brackish or salt, including areas of marine water the depth of which at low tide does not exceed six metres" (Article 1.1). In addition, Ramsar Sites "may incorporate riparian and coastal zones adjacent to the wetlands, and islands or bodies of marine water deeper than six metres at low tide lying within the wetlands" (Article 2.1).

51. Importantly, the Convention aims at the listing of natural or semi-natural wetlands, but also allows for the designation of purpose-built, or human-made, wetlands, as long as they satisfy at least one of the Criteria specified in section 6 and Appendix D. The Convention's classification system for wetland type (see Appendix B) indicates the full range which Contracting Parties are urged to consider for possible listing under the Ramsar Criteria as representative, rare or unique wetlands (see Section 6.1.1, Criterion 1).

5.2 Ramsar wetland classification system

What does this section do? Explains Ramsar's wetland classification system, how it was derived and what it is for

52. Many national wetland definitions and classifications are in use. They have been developed in response to different national needs and take into account the main biophysical features (generally vegetation, landform and water regime, sometimes also water chemistry such as salinity) and the variety and size of wetlands in the locality or region being considered.

53. The Ramsar Classification System first adopted by COP4 in 1990 and amended in 1996 (Resolution VI.5) has value as a basic internationally applicable habitat description for sites designated for the Ramsar List of Wetlands of International Importance, but does not readily accommodate description of all wetland habitats in the form and level of description that are now commonly included in many wetland inventories. When the Ramsar wetland classification system was first developed it was not anticipated that it would be used for inventory purposes, so its usefulness as a habitat classification for any specific wetland inventory should be carefully assessed (Ramsar Convention Secretariat 2010c).

54. **The following sections give guidance on completing the different parts and fields of the Ramsar Site Information Sheet (RIS). Each is cross-referenced accordingly.**

5.2.1 Wetland type(s) in the Ramsar Site

☞ **RIS field 16**

- **See also: Appendix B, Ramsar classification system for wetland type**
- **See also: Section 7.2.7, Map of the Ramsar Site**
- **See also: Section 7.2.8, Geographical coordinates**
- **See also: Section 7.2.10, Area**

55. When describing wetland types present at a Ramsar Site in the Ramsar Information Sheet (RIS), be sure to indicate the full range of wetland types occurring within the site in column "a" of field 16. In column "b" rank the four most abundant types by area (1 = most abundant, etc.). If wetland types are known by local names or have different names used in national wetland classification systems, these can be added.

56. The Ramsar Classification System for Wetland Type (see Appendix B) provides the description of what types of wetland are covered by each of the wetland type codes. Note that the wetland types are grouped in three major categories: marine-coastal, inland, and human-made wetlands, and that wetland types under two or more of these categories may be present within a Ramsar Site, particularly if it is large.

57. Since some Marine/Coastal wetland types (e.g., Estuarine waters (type *F*) or Intertidal Forested Wetlands (type *I*)) can occur far inland from the coastline, and conversely Inland Wetlands types can occur close to the coastline, please also indicate with additional text in this section the general geographical location of the site relative to the coastline, as either inland or marine/coastal.

58. If the information exists, if possible provide the area of the designated site composed of each wetland type (in column "c"), although it is recognized that this may be difficult for large sites with a wide variety of wetland types.

59. If the designated site includes areas of non-wetland habitat, for example where such parts of a catchment are included, it is helpful here to indicate the presence of these habitats and, if possible, the area of each.

5.3 Biogeographic regionalizations

☞ **RIS field 11**

What does section do? Explains Ramsar's approach to biogeographic regionalizations

60. Under Criterion 1, Contracting Parties are expected to identify sites of international importance within an agreed biogeographic regionalization. The Convention (see Appendix G) defines this term as "a scientifically rigorous determination of regions as established using biological and physical parameters such as climate, soil type, vegetation cover, etc." Note that for many Contracting Parties, biogeographic regions will be transboundary in nature and will require collaboration between countries to define those wetland types which are representative, unique, etc. In some regions and countries, the term 'bioregion' is used as a synonym for 'biogeographic region'.

5.3.1 Marine bioregionalization schemes

61. The major assessment of the Marine Ecoregions of the World (MEOW) (Spalding *et al.* 2007) has developed a new global system of biogeographic regionalization for coastal and shelf areas. It presents a nested system of 12 realms, 62 provinces, and 232 ecoregions (see www.nature.org/ourinitiatives/regions/northamerica/unitedstates/colorado/scienceandstrategy/marine-ecoregions-of-the-world.pdf and http://conserveonline.org/workspaces/ecoregional.shapefile/MEOW/view.html). This system provides considerably better spatial resolution than earlier global systems, yet it preserves many common elements from earlier global and regional systems, so it can be cross-referenced to many existing regional marine biogeographic classifications.

62. As the MEOW classification has been developed through wide international consensus, has received broad international acceptance, and incorporates many pre-existing classifications, it is recommended for application by the Ramsar Convention (at its ecoregional scale) with respect to coastal and near-shore marine areas within the scope of the Convention.

5.3.2 Terrestrial bioregionalization schemes

63. Three principle biogeographic regionalization schemes have been developed for use in conservation planning and assessment in terrestrial environments (Udvardy 1975, Bailey 1998, Olson *et al.* 2001). None of these schemes addresses inland wetland ecosystems, as they are largely derived from the distributions and similarities of other terrestrial ecosystems (forests, grasslands, etc.). They have differing spatial resolutions and have been developed for different purposes based on different types of data.

Udvardy's Biogeographical Provinces (Udvardy 1975)

64. Intended to provide a satisfactory classification of the world's biotic areas and to provide a framework for conserving species as well as ecological areas, the classification is a hierarchical system of geographical areas (Realms, Biomes and Provinces) based on the distribution of species and the distribution of ecosystem units. Realms are based on phylogenetic subdivisions, Biomes on both vegetation and climatic features, and Provinces on fauna, flora and ecology.

Bailey's Ecoregions (Bailey 1998)

65. Originally intended to illustrate how the national forests of the U.S. fit within the global ecoregional scheme, an ecoregion is defined here as any large portion of the Earth's surface over which the ecosystems have characteristics in common. There are three levels within the classification system: Domains, Divisions and Provinces. Ecoregions are based on macroclimate following the theory that macroclimates are among the most significant factors affecting the distribution of life on Earth. Temperature and rainfall along with climatic zones were used to identify the Domains and Divisions. Provinces were based on the physiognomy of the vegetation, modified by climate.

WWF Terrestrial Ecoregions (Olson *et al.* 2001)

66. Derived primarily as a tool for prioritizing areas for conservation, the WWF Terrestrial Ecoregions comprise relatively large units of land or water containing a geographically distinct assemblage of natural communities. These communities share a majority of their species, ecological dynamics and environmental conditions, and they interact in ways that are critical for their long-term persistence. The hierarchical classification system consists of Realms, Biomes, and Ecoregions, which reflect the distribution of distinct biotas.

67. In addition, WWF-US has recently been leading the development of a scheme for Freshwater Ecoregions of the World (FEOW) (Abell *et al.* 2008), which are being derived by aggregating and subdividing watersheds based on the distribution patterns of aquatic species, notably fish.

68. In Europe, a biogeographic regionalization scheme (http://dataservice.eea.europa.eu/atlas/viewdata/viewpub.asp?id=3641) contains 11 biogeographic regions and forms the basis for establishing the Natura 2000 network of the Directive 92/43/EEC on the conservation of natural habitats and of wild fauna and flora and the Emerald Network of the Convention on European Wildlife and Natural Habitats (Bern Convention) (www.eea.europa.eu/data-and-maps/data/biogeographical-regions-europe-2008).

69. As these schemes have been or are being developed for different purposes and using different criteria, and have not been assessed or their common features and differences articulated, it is not proposed at this stage that any single inland/terrestrial classification should be adopted for use by the Convention. Contracting Parties are encouraged to make such use of these schemes as they consider appropriate, or to draw to the attention of the Scientific and Technical Review Panel (STRP) other schemes that better represent the biogeographical distribution of inland wetlands, keeping in mind the differences in scale necessary to present wetland distribution nationally and internationally.

70. Recording precise locational information on the Ramsar Information Sheet (Appendix A) will allow Ramsar Sites to be placed within the context of each or any of these schemes, depending on which is most appropriate for any particular international analytical purpose. It would also allow analyses to be undertaken with respect to international regionalization schemes that do not have global coverage, for example, biogeographic regionalizations used within Europe (above).

71. Additional information and advice relating to the use of biogeographic regionalization schemes in the context of the Ramsar Convention is provided by Rebelo, Finlayson & Stroud (in prep. 2012). This publication includes examples of the use of MEOW in analytical contexts to assess the coverage in the Ramsar List, and gaps in coverage, of specific coastal and near-shore marine wetland types, including mangroves, coral reefs, and saltmarshes.

5.4 Representation

72. The reasons for which such wetland types are as yet under-represented in the Ramsar List are various. They may include:

- lack of recognition of the existence of particular wetland types within a particular territory;
- lack of recognition that coastal and marine wetland types such as mangroves and coral reefs fall within the Ramsar definition of wetlands and so are eligible for designation as Ramsar Sites;
- difficulty in applying the guidance on completing the Information Sheet on Ramsar Wetlands (RIS) for Ramsar Site designation, particularly in relation to the delimitation of appropriate boundaries,
- uncertainty, especially for coral reefs, as to which particular features of these habitat types indicate the best representative examples of such wetlands under Ramsar Criterion 1;
- uncertainty, in the case of peatlands and wet grasslands, as to which wetland types in the Ramsar Classification System for Wetland Type apply, since these habitat types can occur in a number of different categories; and
- for peatlands, a lack of recognition that a wetland is a peat-based system if wetlands are assessed only for their vegetational characteristics (for example, tropical woodland).

73. All Ramsar Criteria (section 6.1) for the designation of Wetlands of International Importance can be applied to the identification and designation of peatland, wet grassland, mangrove, coral reef, and temporary pond wetland types.

5.5 Legal status and complementary conservation frameworks

☞ **RIS field 31**
♦ **See also: Section 7.4.4, Conservation measures taken**

74. **Legal protected area status.** Contracting Parties should be aware that Ramsar Site designation does not require that the wetland in question must enjoy any type of previously conferred protected area status or must necessarily acquire this after designation. Likewise, wetlands being considered for designation need not be pristine areas which have not been subjected to impacts from human activities.

75. In fact, Ramsar designation can be used to confer a special type of recognition on these areas by virtue of elevating them to the status of sites recognized as internationally important. In this way, Ramsar designation could represent the starting point for a process of recovery and rehabilitation of a particular site, provided the site meets the Criteria for listing under the Convention when it is designated.

76. While the existing protected area status of a site should not be a factor in determining priorities for listing, Contracting Parties are urged to be mindful of the need for consistency in approach when officially designating wetland sites under international conventions and treaties as well as national policy or legal instruments. If a wetland site gains national protected area status because it provides critical habitat for an endemic wetland-dependent species, the Criterion indicates that it will qualify as a Ramsar Site. Contracting Parties are therefore urged to review all of their current, proposed and future protected areas to ensure that consistency is applied (see Section 4 above).

77. **Complementary international frameworks.** When considering Ramsar Site designations Contracting Parties are urged, as specified in Objective 4.2 (see paragraph 25 above), to consider the opportunities this may also provide for contributing to other established and developing initiatives under related international and regional environment conventions and programmes. This applies in particular to the Convention on Biological Diversity and the Convention on Migratory Species and its Agreements, such as the African-Eurasian Waterbirds Agreement. Regionally, this may apply to cooperative initiatives such as the North American Waterfowl Management Plan, the Western Hemisphere Shorebird Reserve Network, the Asia-Pacific Migratory Waterbird Conservation Strategy 2001-2005, the Mediterranean Wetlands Initiative (MedWet), the Secretariat of the Pacific Regional Environment Programme (SPREP), the Southern Africa Development Community (SADC), the Association of the South East Asian Nations (ASEAN)**,** the European Union's Natura 2000 network, the Emerald Network of the Bern Convention on the Conservation of European Wildlife and Natural Habitats, the Pan-European Biological and Landscape Diversity Strategy, the Wetlands Programme for the High Andes, the Treaty on Amazon Cooperation, the Central American Commission on Environment and Development (CCAD), etc.

5.6 Site delineation and boundary definition

♦ **See also: Appendix C: Additional guidelines for the provision of maps and other spatial data for Ramsar Sites**

78. **Smaller sites should not be overlooked**. In developing a systematic approach to Ramsar Site designation, Contracting Parties are encouraged to recognize that potential Ramsar Sites are not necessarily the largest wetlands within the territory. Some wetland types either never were or are no longer found as large wetland systems, and these should not be overlooked. They may be especially important in maintaining habitat or ecological community-level biological diversity.

79. **Boundary definition of sites.** When designating sites, Contracting Parties are encouraged to take a management-oriented approach to determining boundaries, recognizing that these should allow management of the site to be undertaken at the appropriate scale for maintaining the ecological character of the wetland. Article 2.1 of the Convention indicates that Ramsar Sites "may incorporate riparian and coastal zones adjacent to the wetlands, and islands or bodies of marine water deeper than six metres at low tide lying within the wetlands". For very small and therefore potentially vulnerable sites, Contracting Parties are encouraged to include buffer zones around the wetland but within the designated Ramsar Site boundary. These may also be a useful management tool for subterranean system wetlands as well as for larger sites.

80. In determining the boundaries of sites identified as habitat for animal species, these should be established so as to provide adequately for all the ecological and conservation requirements of those populations. In particular, large animals, species at the top of food chains, those with large home ranges, or with feeding and resting areas that are widely separated, will generally require substantial areas to support viable populations. If it is not possible to designate a site extending to the entire range used or accommodating viable (self-sustaining) populations, then additional measures relating to both the species and its

habitat should be adopted in the surrounding areas (or the buffer zone). These measures will complement the protection of the core habitat within the Ramsar Site.

81. While some sites considered for designation will be identified at landscape scale, containing substantial elements of whole wetland ecosystems, others may be smaller. In selecting and delimiting such more restricted wetlands, the following guidance may assist in determining their extent:

    i) As far as possible, sites should include complexes or mosaics of vegetation communities, not just single communities of importance. Note that wetlands with naturally nutrient poor (oligotrophic) conditions generally exhibit low diversity of species and habitats. In these wetlands, high diversity may be associated with low conservation quality (indicated by markedly altered conditions). Thus, diversity must always be considered within the context of the norms of the wetland type.

    ii) Zonations of communities should be included as completely as possible in the site. Important are communities showing natural gradients (transitions), for instance from wet to dry, from salt to brackish, from brackish to fresh, from oligotrophic to eutrophic, from rivers to their associated banks, shingle bars and sediment systems, etc.

    iii) Natural succession of vegetation communities often proceeds rapidly in wetlands. To the greatest extent possible and where these exist, all phases of succession (for example, from open shallow water, to communities of emergent vegetation, to reedswamp, to marshland or peatland, to wet forest) should be included in designated sites. Where dynamic changes are occurring, it is important that the site is large enough so that pioneer stages can continue to develop within the Ramsar Site.

    iv) Continuity of a wetland with a terrestrial habitat of high conservation value will enhance its own conservation value.

82. The smaller the site, the more vulnerable it is likely to be to outside influences. In determining boundaries of Ramsar Sites, particular attention should be given to ensuring that wherever possible the limits of the sites serve to protect them from potentially damaging activities, especially those likely to cause hydrological disturbance. Ideally, boundaries should include those areas of land necessary to provide and maintain the hydrological functions needed to conserve the international importance and integrity of the site. Alternatively, it is important that planning processes are operating to ensure that potential negative impacts arising from land-use practices on adjoining land or within the drainage basin are suitably regulated and monitored to provide confidence that the ecological character of the Ramsar Site will not be compromised.

83. The degree to which buffer zones are included with a site boundary is a national decision and will typically depend on national policies to land-use planning and control. The objective of a buffer zone is to ensure that land-use influences just outside a site do not have negative impacts on the ecological character of the site. Sometimes this is achieved by including buffer zones with the site boundary, in other cases it can be achieved through policies related to land uses. The most appropriate approach will vary from site to site and will also depend on national legislative frameworks.

84 Further guidance on protected area boundary delineation is given by Langhammer *et al.* (2007).

5.7 Species

What does this section do? Emphasizes general considerations about species (including alien invasive species)

5.7.1 Flagship and keystone species

85. The concepts of indicator, flagship, and keystone species are important for Contracting Parties to consider. The presence of "indicator" species can be a useful measure of good wetland quality. Well-known "flagship" species can also have great symbolic and awareness-raising value for wetland conservation and wise use, whereas "keystone" species play vital ecological roles. Wetlands with significant populations of indicator, flagship and/or keystone species may merit special consideration as sites of international importance.

5.7.2 Contexts for species

86. **Species presence in perspective.** When applying population figures to establish the relative importance of sites for designation, Contracting Parties should take care to put these within an appropriate context. It may be that in terms of relative importance for biological diversity conservation, a site providing habitat for a rare species is a higher priority for listing and subsequent management action than a site which has larger numbers of a more common species.

87. **Less visible interests should not be overlooked**. Fish are not only an integral part of aquatic ecosystems, but are a vital source of food and income for people throughout the world. However, the production of fisheries in many parts of the world is declining as a consequence of unsustainable harvest regimes and the loss and degradation of habitats, including spawning and nursery areas. Underwater species such as fish and other aquatic fauna and flora can often be overlooked in the development of cases for Ramsar Site designation, unlike more visible animals and plants. Such aquatic interests should be carefully and systematically reviewed.

5.7.3 Non-native species

88. The introduction and spread of non-native species is of great concern due to the impact they can have on the biological diversity and natural functioning of wetland ecosystems (see Resolutions VII.14 and VIII.18 on invasive species and wetlands). It follows, therefore, that the presence of introduced or non-native species should **not** be used to support a case for designating a site as a Wetland of International Importance. In some circumstances native species can also be considered invasive to wetlands due to the disruption and imbalances they can introduce into the ecosystem. It is possible for introduced non-native species to be rare or endangered in their native habitats. Such situations need to be carefully assessed by the Contracting Party.

5.7.4 Species taxonomy

☞ **RIS fields 12, 17 & 18**
♦ **See also: Section 7.3.5, Plant species**
♦ **See also: Section 7.3.7, Animal species**

89. In describing species occurrence within Ramsar Sites in the Ramsar Information Sheet (especially in RIS fields 12, 17 and 18), please use the international taxonomic standards adopted by the Convention on International Trade in Endangered Species (CITES) for all species other than waterbirds. The most recent reference source is at CITES Resolution 12.11 (Rev. COP15) (www.cites.org/eng/res/12/12-11R15.php) and this is revised following each CITES COP.

90. For waterbirds, please use Wetland International's *Waterbird Population Estimates* as the definitive source of information on populations and species taxonomy (see also sections 6.1.5 and 6.1.6 below). (Note that there are only a few differences between the nomenclatures adopted by *Waterbird Population Estimates* and CITES). The most recent reference source is *Waterbird Population Estimates,* 4th edition (http://tinyurl.com/3nynbpd).

5.8 Wetlands in the landscape: connectivity and site clusters

91. **Site clusters.** Clusters of small sites, or individual small "satellite" sites associated with larger areas, should be considered for listing where these are:

i) component parts of a hydrologically linked system (e.g., a complex of valley mires, a system of groundwater-fed wetlands along a spring line, or karst and subterranean wetland systems); and/or
ii) linked in their use by a common population of animal (e.g., a group of alternative roost or feeding areas used by one population of waterbirds); and/or
iii) formerly geographically continuous areas now separated by human activity; and/or
iv) otherwise ecologically interdependent (e.g., sites forming part of a distinct wetland district/landscape with a common developmental history and/or supporting discrete species populations); and/or
v) found in arid or semi-arid zones, where complexes of dispersed wetlands (sometimes of a non-permanent nature) can both individually and collectively be of very great importance for both biological diversity and human populations (e.g., essential links in incompletely known chains).

92. Where a cluster of sites is designated, the Ramsar Information Sheet should state clearly the rationale for treating the component parts collectively as one listed site.

5.9 Hydrology

☞ **RIS fields 12 & 26**
♦ **See also: Section 7.3.16, Ecosystem services**

93. **Hydrological values**: A description of the principal hydrological values of the wetland, for example, the ecosystem services that they provide to people. This may include, but not necessarily be limited to, the site's role in flood control, groundwater replenishment,

shoreline stabilization, sediment and nutrient retention and export, climate change modification, and water purification and maintenance of water quality. The hydrology of the site (as opposed to its hydrological values and functions) should be covered under RIS field 20, Water regime.

5.10 Social and cultural values

☞ **RIS field 27**

♦ **See also: Section 7.4.17, Social or cultural values**

94. The Convention has acknowledged (Resolution VIII.19) the intimate links of traditional societies to wetlands and water which have given rise to important cultural values relevant to wetland conservation and wise use, and which have been recognized in the diverse cosmologies of different civilizations and cultures throughout history. Specific physical features of wetlands have contributed to particular ways of managing traditional activities which are of great cultural significance, whilst sustainable traditional uses of wetland resources have frequently created cultural landscapes of significant value to wetland conservation and wise use.

95. Where a Ramsar Site is considered internationally important for holding, in addition to relevant ecological values, examples of significant cultural values, whether material or non-material, linked to its origin, conservation and/or ecological functioning, this can be described in field 27 of the Ramsar Information Sheet.

5.11 Sites on borders

☞ **RIS field 9b**

5.11.1 Internationally shared sites

96. Increasingly, Ramsar Contracting Parties are designating their new and existing Ramsar Sites as Transboundary Ramsar Sites, meaning that an ecologically coherent wetland extends across national borders and the Ramsar Site authorities on both or all sides of the border have formally agreed to collaborate in its management, and have notified the Secretariat of this intent.

97. This is a cooperative management arrangement and not a distinct legal status for the Ramsar Sites involved.

98. A list of such examples is maintained on Ramsar's website (www.ramsar.org/trs).

5.11.2 Trans-provincial sites

99. In identifying potential sites for designation, Contracting Parties are urged not to neglect wetland sites that straddle internal boundaries between different subnational jurisdictions (for example, between provinces, states, or other forms of administrations). The case for ecologically coherent wetland designations extending across such internal boundaries between different administrations is the same as for internationally shared sites (above).

6. Why is the wetland internationally important?

What does this section do? Introduces the Criteria. What they are for and how to use them. How to document them in a Ramsar Information Sheet.

☞ **RIS field 12**

6.1 Assessing the site against Ramsar's Criteria

100. In this section, the Criteria for identifying internationally important sites are presented, with guidelines for their application, in order to assist Contracting Parties in taking a systematic approach to identifying their priority sites that qualify for designation. These guidelines should be considered in conjunction with the more general guidelines given in section 5 above.

101. Guidance on the appropriate documentation of relevant Criteria is provided in section 6.2.

102. Many sites qualify for Ramsar designation under more than one Criterion: be thorough and precise in selecting all of the Criteria that apply. The specific reasons justifying the application of each Criterion selected should be provided in relevant parts of field 12 of the RIS.

Criteria for the designation of Wetlands of International Importance

<table>
<tr><td>Group A of the criteria

Sites containing representative, rare or unique wetland types</td><td></td><td>Criterion 1:
A wetland should be considered internationally important if it contains a representative, rare, or unique example of a natural or near-natural wetland type found within the appropriate biogeographic region.</td></tr>
<tr><td rowspan="3">Group B of the criteria

Sites of international importance for conserving biodiversity</td><td rowspan="3">Criteria based on species and ecological communities</td><td>Criterion 2:
A wetland should be considered internationally important if it supports vulnerable, endangered, or critically endangered species or threatened ecological communities.</td></tr>
<tr><td>Criterion 3:
A wetland should be considered internationally important if it supports populations of plant and/or animal species important for maintaining the biological diversity of a particular biogeographic region.</td></tr>
<tr><td>Criterion 4:
A wetland should be considered internationally important if it supports plant and/or animal species at a critical stage in their life cycles, or provides refuge during adverse conditions.</td></tr>
</table>

	Specific criteria based on waterbirds	**Criterion 5:** A wetland should be considered internationally important if it regularly supports 20,000 or more waterbirds.
		Criterion 6: A wetland should be considered internationally important if it regularly supports 1% of the individuals in a population of one species or subspecies of waterbird.
	Specific criteria based on fish	**Criterion 7:** A wetland should be considered internationally important if it supports a significant proportion of indigenous fish subspecies, species or families, life-history stages, species interactions and/or populations that are representative of wetland benefits and/or values and thereby contributes to global biological diversity.
		Criterion 8: A wetland should be considered internationally important if it is an important source of food for fishes, spawning ground, nursery and/or migration path on which fish stocks, either within the wetland or elsewhere, depend.
	Specific criteria based on other taxa	**Criterion 9:** A wetland should be considered internationally important if it regularly supports 1% of the individuals in a population of one species or subspecies of wetland-dependent non-avian animal species.

Group A of the Criteria: Sites containing representative, rare or unique wetland types

6.1.1 Criterion 1

A wetland should be considered internationally important if it contains a representative, rare, or unique example of a natural or near-natural wetland type found within the appropriate biogeographic region.

What this Criterion is seeking to achieve

103. Criterion 1 identifies wetlands that are of international importance, within a biogeographical context, as examples of wetland types or habitats (rather than for the species contained within the wetland).

104. The Criterion relates to sites which contain one or more natural or near-natural wetland types which are – nationally - either:

    a) **representative** examples;

b) **rare** examples or
c) **unique.**

105. Objective 1, and in particular Objective 1.2 (paragraph 14 above), indicates that another consideration under this Criterion is to give priority to those wetlands whose ecological character plays a substantial role in the natural functioning of a major river basin or coastal system. Contracting Parties should consider the hydrological functioning of wetlands in determining priority sites under this Criterion. For guidance relevant to biological and ecological roles refer to Criteria 3 and 4.

How to interpret this Criterion – what it means

106. In applying this Criterion systematically, Contracting Parties are encouraged to:

i) determine biogeographic regions within their territory or at the supranational/ regional level using the Convention's recommended regionalization schemes (see Section 5.3);
ii) within each biogeographic region, determine the range of wetland types present (using the Ramsar Classification System for Wetland Type, Appendix B), noting in particular any rare or unique wetland types; and
iii) for each wetland type within each biogeographic region, identify for designation under the Convention those sites which are the best examples.

107. The Criterion refers to the Ramsar Site "containing" the wetland type concerned. This is an important pointer to the fact that the boundary of the site should, where possible, be drawn widely so as to contain the whole hydrological units, rather than defining the Ramsar Site as only a small element of a larger wetland. (See also Section 5.6.)

Guidelines on specific wetland types

108. Peatlands, mangroves, and coral reefs were recognized by the *Global Review of Wetland Resources and Priorities for Wetland Inventory* report to COP7 (1999) as being amongst the wetland ecosystems that are most vulnerable and threatened by habitat loss and degradation, and thus in need of urgent priority action to ensure their conservation and wise use.

109. Additional guidance has been developed (Appendix E) to provide clarification of aspects of the application of this Strategic Framework as they apply to peatlands, wet grasslands, mangroves, and coral reefs, karst and other subterranean wetland types, temporary pools, and bivalve (shellfish) reefs, in particular on the identification and designation of representative wetlands of these habitat types in accordance with the application of this Criterion 1.

What data and information are needed to apply this Criterion?

110. A national wetland inventory is the fundamental requirement for the application of this Criterion, since it is only with such information that it is possible to assess whether a wetland is representative, rare or unique. Guidance on wetland inventory processes is given

in Ramsar Handbooks 13 and 15 (Ramsar Convention Secretariat 2010c, 2010d; see also Appendix H).

111. Information on recommended biogeographical regionalizations is given in section 5.3.

Potential ambiguities and pitfalls

112. Note that as this Criterion relates only to natural or near-natural wetlands, it cannot be applied to types of human-made wetlands.

113. When interpreting the phrase "within the biogeographic region", this should be read as "within that part of the biogeographic region that is within the relevant Contracting Party". In other words, the Criterion is seeking to identify 'best' national examples of particular wetland types.

More detail

114. **Definition of 'representative':** A wetland that is a typical example of a particular wetland type found in a region. Wetland types are defined in Appendix B.

115. **Definition of 'unique':** The only one of its type within a specified biogeographic region.

116. **Definition of 'natural':** When used in Criterion 1, natural (or unmodified) areas are those that still retain a complete or almost complete complement of species native to the area, within a more or less naturally functioning ecosystem.

117. **Definition of 'near natural':** When used in Criterion 1, this means those wetlands which continue to function in what is considered an almost natural way. This clarification is provided in the Criterion to allow for the listing of sites which are not pristine, yet retain ecological values that nonetheless make them internationally important.

118. **Definition of 'wetland types'**: As defined by the Convention's wetland classification system, see Appendix B.

119. **Definition of 'appropriate'**: When applied to the term 'biogeographic region' as here, this means the regionalization which is determined by the Contracting Party to provide the most scientifically rigorous approach possible at the time.

120. **Definition of 'biogeographic region'**: A scientifically rigorous determination of regions as established using biological and physical parameters such as climate, soil type, vegetation cover, etc. Note that for non-island Contracting Parties, in many cases biogeographic regions will be transboundary in nature and will require collaboration between countries to establish representative, unique, etc., wetland types. In some cases, the term bioregion is used synonymously with biogeographic region. See Section 5.3.

121. **Hydrological importance.** As indicated by Article 2 of the Convention, wetlands can be selected for their hydrological importance which, *inter alia*, may include the following attributes. They may:

i) play a major role in the natural control, amelioration or prevention of flooding;
ii) be important for seasonal water retention for wetlands or other areas of conservation importance downstream;
iii) be important for the recharge of aquifers;
iv) form part of karst or underground hydrological or spring systems that supply major surface wetlands;
v) be major natural floodplain systems;
vi) have a major hydrological influence in the context of at least regional climate regulation or stability (e.g., certain areas of cloud-forest or rainforest, wetlands or wetland complexes in semi-arid, arid or desert areas, tundra, peatland, coastal or other wetland systems acting as sinks for carbon, etc.);
vii) have a major role in maintaining high water quality standards.

Where to go for further help or information

122. Although not restricted to wetland ecosystems, IUCN's guidance related to proposed Red List criteria for threatened ecosystems (Rodríguez *et al.* 2010) may be useful in undertaking national assessments of wetland type rarity.

Group B of the Criteria: Sites of international importance for conserving biological diversity

Criteria based on species and ecological communities

6.1.2 Criterion 2

A wetland should be considered internationally important if it supports vulnerable, endangered, or critically endangered species or threatened ecological communities.

What this Criterion is seeking to achieve

123. Criterion 2 identifies wetlands that are important for the conservation of such dependent species, either individually or as communities, and reflects the important role that Ramsar Sites have in the conservation of globally threatened species and ecological communities.

124. Objective 2.2 of this Strategic Framework urges Contracting Parties to seek to include in the Ramsar List wetlands that support threatened ecological communities or, through the wetland habitats contained within the site, provide ecological support which is critical to the survival of wetland dependent species identified as vulnerable, endangered or critically endangered under:

a) national endangered species legislation/programmes; and/or
b) international frameworks such as the IUCN Red Lists; and/or
c) Appendix I of CITES and the Appendix I of CMS.

How to interpret this Criterion – what it means

125. The Criterion is non-quantitative and merely requires that the Ramsar Site support threatened species in the categories given. It provides no numerical threshold for the numbers supported in the site concerned, and thus the Criterion is particularly valuable in those cases where a site is known to be important for the species concerned but population assessments are not available.

126. Notwithstanding that small absolute numbers of individuals or sites may be involved, or that only poor quality quantitative data or information may be available, particular consideration should be given to listing wetlands that support globally threatened communities or species at any stage of their life cycle using this Criterion.

127. In accordance with the Convention on Biological Diversity's definition of biological diversity as including "diversity within species, between species and of ecosystems" (CBD Article 2), and in line with guidance related to other Ramsar Criteria which apply to subspecies and populations, where appropriate Criterion 2 can be applied to subspecies and biogeographic populations of threatened species.

128. The Convention has emphasized peatlands, wet grasslands, mangroves, and coral reefs, karst and other subterranean wetland types, temporary pools, and bivalve (shellfish) reefs, as under-represented on the Ramsar List. Since each of these wetland types has been identified as being particularly vulnerable and threatened by habitat loss and degradation, the identification and designation of threatened ecological communities, as well as threatened species, under Ramsar Criterion 2 will often be particularly important.

129. When reviewing candidate sites for listing under this Criterion, greatest conservation value will be achieved through the selection of a network of sites providing habitat for rare, vulnerable, endangered, or critically endangered species. Ideally, the sites in the network will have the following characteristics. They will:

    i) support a mobile population of a species at different stages of its life cycle; and/or
    ii) support a population of a species along a migratory pathway or flyway – noting that different species have different migratory strategies with different maximum distances needed between staging areas; and/or
    iii) be ecologically linked in other ways, such as by providing refuge areas to populations during adverse conditions; and/or
    iv) be adjacent to or in close proximity to other wetlands included in the Ramsar List, the conservation of which enhances the viability of threatened species' population by increasing the size of habitat that is protected; and/or
    v) hold a high proportion of the population of a dispersed sedentary species that occupies a restricted habitat type.

130. Those sites which contribute most to the survival of species or ecological communities locally and as a whole are those which enable its geographic range to be maintained on a long-term basis. The long-term persistence of species is most likely to occur where:

    i) population dynamics data on the species concerned indicate that it is self-sustaining on a long-term basis as a viable component of its natural habitats, and

ii) the natural range of the species is neither being reduced nor is likely to be reduced for the foreseeable future, and
iii) there is, and will probably continue to be, a sufficiently large habitat to maintain its populations on a long-term basis.

131. For identifying sites with threatened ecological communities, greatest conservation value will be achieved through the selection of sites with ecological communities that have one or more of the following characteristics. They:

i) are globally threatened communities or communities at risk from direct or indirect drivers of change, particularly where these are of high quality or particularly typical of the biogeographic region; and/or
ii) are rare communities within a biogeographic region; and/or
iii) include ecotones, seral stages, and communities which exemplify particular processes; and/or
iv) can no longer develop under contemporary conditions (because of climate change or anthropogenic interference, for example); and/or
v) are at the contemporary stage of a long developmental history and support a well-preserved paleoenvironmental archive; and/or
vi) are functionally critical to the survival of other (perhaps rarer) communities or particular species; and/or
vii) have been the subject of significant decline in extent or occurrence.

What data and information are needed to apply this Criterion?

132. The biogeographical region context can also apply to certain reasons for the designation of threatened ecological communities under Criterion 2. The biogeographic region encompassing the Ramsar Site and the biogeographic regionalization scheme applied should be provided in RIS field 11, Biogeography.

Potential ambiguities and pitfalls

133. Note also the issues concerning habitat diversity and succession in section 5.6 above, Site delineation and boundary definition.

134. Also be aware of the biological importance of many karst and other subterranean hydrological systems (see specific guidance in Appendix E below).

135. See section 5.7.4 for guidance on species nomenclature and taxonomy.

More detail

136. **Definition of 'critically endangered':** As used by the Species Survival Commission of IUCN. A taxon is Critically Endangered when it is facing an extremely high risk of extinction in the wild in the immediate future, as defined for both animals and plants by the criteria laid out in the *IUCN Red List Categories and Criteria: Version 3.1* (IUCN 2001). See also 'globally threatened species' in Appendix G.

137. **Definition of 'endangered'**: As used by the Species Survival Commission of IUCN. A taxon is Endangered when it is not Critically Endangered but is facing a very high risk of extinction in the wild in the near future, as defined for both animals and plants by the criteria laid out in the *IUCN Red List Categories and Criteria: Version 3.1*. See also 'globally threatened species' in Appendix G.

138. **Definition of 'vulnerable'**: As used by the Species Survival Commission of IUCN. A taxon is Vulnerable when it is not either Critically Endangered or Endangered but is facing a high risk of extinction in the wild in the medium-term future, as defined for both animals and plants by the criteria laid out in the *IUCN Red List Categories and Criteria: Version 3.1*. See also 'globally threatened species' in Appendix G.

139. **Definition of 'ecological communities'**: Any naturally occurring group of species inhabiting a common environment, interacting with each other especially through food relationships and relatively independent of other groups. Ecological communities may be of varying sizes, and larger ones may contain smaller ones.

140. **Definition of 'ecotone'**: A narrow and fairly sharply defined transition zone between two or more different communities. Such edge communities are typically rich in species.

141. **Definition of 'seral stage':** A phase in the sequential development of a climax community of plant succession.

142. **Definition of 'flyway'** (Guideline for Criterion 2): The concept developed to describe areas of the world used by migratory waterbirds and defined as the migration routes(s) and areas used by waterbird populations in moving between their breeding and wintering grounds (Boere & Stroud 2006). Each individual species and population migrates in a different way and uses a different suite of breeding, migration staging and wintering sites. Hence a single flyway is composed of many overlapping migration systems of individual waterbird populations and species, each of which has different habitat preferences and migration strategies. From knowledge of these various migration systems it is possible to group the migration routes used by waterbirds into broad flyways, each of which is used by many species, often in a similar way, during their annual migrations. Recent research into the migrations of many wader or shorebird species, for example, indicates that the migrations of waders can broadly be grouped into eight flyways: the East Atlantic Flyway, the Mediterranean/Black Sea Flyway, the West Asia/Africa Flyway, the Central Asia/Indian sub-continent Flyway, the East Asia/Australasia Flyway, and three flyways in the Americas and the Neotropics.

143. There are no clear separations between flyways, and the use of the term is not intended to imply major biological significance; rather it is a valuable concept for permitting the biology and conservation of waterbirds, as well as other migratory species, to be considered in broad geographical units into which the migrations of species and populations can be more or less readily grouped.

144. **Definition of 'threatened ecological community'**: An ecological community which is likely to become extinct in nature if the circumstances and factors threatening its extent, survival or evolutionary development continue to operate.

145. Guidelines for a threatened ecological community are that the community is subject to current and continuing threats likely to lead to extinction as demonstrated by one or more of the following phenomena:

    i) Marked decrease in geographic distribution. A marked decrease in distribution is considered to be a measurable change whereby the distribution of the ecological community has contracted to less than 10% of its former range, or the total area of the ecological community is less than 10% of its former area, or where less than 10% of the area of the ecological community is in patches of a size sufficiently large for them to be likely to persist for more than 25 years. (The figure of 10% is indicative only and for some communities, especially those which originally covered a relatively large area, it may be appropriate to use a different figure).

    ii) Marked alteration of community structure. Community structure includes the identity and number of component species that make up an ecological community, the relative and absolute abundance of those species and the number, type and strength of biotic and abiotic processes that operate within the community. A marked alteration of community structure is a measurable change whereby component species abundance, abiotic interactions, or biotic interactions are altered to the extent that rehabilitation of the ecological community is unlikely to occur within 25 years.

    iii) Loss or decline of native species that are believed to play a major role in the community. This guideline refers to species that are important structural components of a community or are important in the processes that sustain or play a major role in the community, e.g., seagrass, bivalve (shellfish) reefs, termite nests, kelp, or dominant tree species.

    iv) Restricted geographic distribution (determined at national level) such that the community could be lost rapidly by the action of a threatening process.

    v) Community processes being altered to the extent that a marked alteration of community structure will occur. Community processes can be abiotic (e.g., fire, flooding, altered hydrology, salinity, nutrient change) or biotic (e.g., pollinators, seed dispersers, soil disturbance by vertebrates which affect plant germination). This guideline recognizes that ecological processes are important to maintain an ecological community, e.g., fire regimes, flooding, cyclone damage, and that disruption to those processes can lead to the decline of the ecological community.

146. Definitions of **'**globally threatened species', 'importance', and 'species' are also given in Appendix G.

Where to go for further help or information

147. Information on species status is available from IUCN, CITES and CMS as follows:

	Web-link
IUCN Red List	www.iucnredlist.org
CITES Appendices	www.cites.org/eng/resources/species.html
CMS Appendices	www.cms.int/documents/appendix/cms_app1_2.htm

Information on waterbird flyways and their definition is given by Boere & Stroud (2006) and Hagemeijer (2006).

148. Guidance on identifying Important Plant Areas is given by Anderson (2002, 2005) for Europe, and Plantlife International (2004) more widely.

6.1.3 Criterion 3

A wetland should be considered internationally important if it supports populations of plant and/or animal species important for maintaining the biological diversity of a particular biogeographic region.

What this Criterion is seeking to achieve

149. Criterion 3 identifies wetlands that are important in maintaining the characteristic biological diversity of a particular biogeographic region through support of regionally typical species or habitats.

How to interpret this Criterion – what it means

150. The interpretation of this Criterion must consider the significance of the wetland for biodiversity support within its wider regional context. It should particularly consider the role of the site as a 'source' of wetland dependent species dispersing to surrounding areas as well as its significance in the definition and maintenance of characteristic regional biodiversity.

151. Although not necessarily required, the Criterion can typically be used to recognize the importance of large-scale wetlands extending across landscapes (or of broad coastal/inshore waters). These large-scale sites define regional biodiversity. Examples include the blanket peatlands of Caithness and Sutherland (UK), the diverse tropical wetlands of the Okavango Delta (Botswana), and the Ngiri-Tumba-Maindombe wetlands (Democratic Republic of Congo).

152. When Contracting Parties are reviewing candidate sites for listing under this Criterion, greatest conservation value will be achieved through the selection of a suite of sites that have the following characteristics. They:

i) are "hotspots" of biological diversity and are evidently species-rich even though the number of species present may not be accurately known; and/or
ii) are centres of endemism or otherwise contain significant numbers of endemic species; and/or
iii) contain the range of biological diversity (including habitat types) occurring in a region; and/or
iv) contain a significant proportion of wetland dependent species adapted to special environmental conditions (such as temporary wetlands in semi-arid or arid areas); and/or
v) support particular elements of biological diversity that are rare or particularly characteristic of the biogeographic region.

153. Notwithstanding that small absolute numbers of individuals or sites may be involved, or that only poor quality quantitative data or information may be available, particular consideration should be given to using this Criterion for listing wetlands that support globally threatened communities or species at any stage of their life cycle.

What data and information are needed to apply this Criterion?

154. The following minimum information is needed to apply this Criterion:

- an inventory of plant and/or animal species present at the site;
- a broad understanding of the elements which define the characteristic plant and animal diversity of the biogeographic region in which the wetland occurs; and
- a broad understanding of the significance of the specific wetland in the context of the wider regional biodiversity assessment.

Potential ambiguities and pitfalls

155. See section 5.7.4 for guidance on species nomenclature and taxonomy.

156. See section 5.3 for guidance on biogeographic regionalizations.

157. Be aware also of the biological importance of many karst and other subterranean hydrological systems (see specific guidance in Appendix E1).

More detail

158. **Definition of 'populations':** In the context of Criterion 3, this means the population of a species within the specified biogeographical region.

159. **Definition of 'biogeographic region'**: - See definition in section 5.3.

Where to go for further help or information?

160. Conserving hotspots of endemism is particularly important in the context of Criterion 3. Information on centres of endemism for a number of taxa is readily available; for example, Appendix II of Langhammer et al. (2007) lists many online sources of relevant data and information. These include:

- *Centres of Plant Diversity: a guide and strategy for their conservation* (WWF & IUCN 1994-1997)
- BirdLife International's Endemic Bird Areas of the World (Stattersfield *et al.* 1998) and other data available at www.birdlife.org/datazone;
- Alliance for Zero Extinction (AZE) sites (www.zeroextinction.org);
- Biodiversity Hotspots species database (www.biodiversityhotspots.org); and
- Global Amphibian Assessment (www.globalamphibians.org).

161. Guidance on identifying Important Plant Areas is given by Anderson (2002, 2005) for Europe, and Plantlife International (2004) more widely.

6.1.4 Criterion 4

A wetland should be considered internationally important if it supports plant and/or animal species at a critical stage in their life cycles, or provides refuge during adverse conditions.

What this Criterion is seeking to achieve

162. This Criterion identifies those wetlands that are critically important in enabling plant and/or animal species to fulfil life cycles by providing necessary ecological support (for example, essential food resources) on a basis that is either regular and annual or is more infrequent though nonetheless predictable.

How to interpret this Criterion – what it means

163. All aspects of the environment provide support or refuge to those plants and animals that live within it. A test of 'international importance' needs to be applied in the application of this Criterion. Thus, its use typically (though not necessarily always) occurs in conjunction with one or more of Ramsar's other Criteria.

164. The life-cycle support, or refuge, being acknowledged by the application of this Criterion should thus apply to internationally important (or nearly internationally important) numbers of a species (Criteria 5, 6, 7 or 9) and/or to species or communities that are important by virtue of their presence or rarity (Criteria 2, 3 or 8). Some examples of the possible application of the Criteria are given below.

165. The Criterion can especially be used to identify sites whose loss would be critical in the context of the life-cycle of the species occurring there.

What data and information are needed to apply this Criterion?

166. The following minimum information is needed to apply this Criterion:

- an inventory of plant and/or animal species present at the site;
- knowledge of the ecological functions (either seasonally or periodically) provided by the site for the species present (e.g., food resources, physical shelter, etc.); and
- a broad understanding of the significance of the ecological support functions of the site in the context of the overall life-cycle of the species concerned (for example, that the site is an important staging area for specified migratory species).

Potential ambiguities and pitfalls

167. The main pitfall of interpretation relates to ensuring that, in its application, sites selected are of international importance for either types of species (e.g., rarity) or numbers of species (e.g., population sizes). It is thus recommended that the Criterion be applied in association with one or more other Criteria (although this is not formally required).

168. See section 5.7.4 for guidance on species nomenclature and taxonomy.

More detail

169. This Criterion may be applied in these circumstances:

    i) Critical sites for mobile or migratory species are those which contain particularly high proportions of populations gathered in relatively small areas at particular stages of life cycles. This may be at particular times of the year or, in semi-arid or arid areas, during years with a particular rainfall pattern. For example, many waterbirds use relatively small areas as key staging points (to eat and rest) on their long-distance migrations between breeding and non-breeding areas. For Anatidae species, moulting sites are also critical. Sites in semi-arid or arid areas may hold very important concentrations of waterbirds and other mobile wetland species and be crucial to the survival of populations, yet may vary greatly in apparent importance from year to year as a consequence of considerable variability in rainfall patterns.

    ii) Non-migratory wetland species are unable to move away when climatic or other conditions become unfavourable and only some sites may feature the special ecological characteristics to sustain species' populations in the medium or long term. Thus in dry periods, some crocodile and fish species retreat to deeper areas or pools within wetland complexes, as the extent of suitable aquatic habitat diminishes. These restricted areas are critical for the survival of animals at that site until rains come and increase the extent of wetland habitat once more. Sites (often with complex ecological, geomorphological and physical structures) which perform such functions for non-migratory species are especially important for the persistence of populations and should be considered as priority candidates for designation.

170. Information on the role of wetlands as refuges or otherwise in their support of species during climatically adverse conditions will become increasingly important as the global climate changes.

171. **Definition of 'adverse conditions':** Ecological conditions unusually hostile to the survival of plant or animal species, such as occur during severe weather like prolonged drought, flooding, cold, etc.

172. **Definition of 'critical stage':** Critical stages of the life cycle of wetland-dependent species are those in which occur those activities (breeding, migration stopovers, etc.) which, if interrupted or prevented from occurring, may threaten long-term conservation of the species. For some species (Anatidae – ducks, geese and swans – for example), areas where moulting occurs are vitally important.

173. **Definition of 'provides refuge':** Refer also to the definition for 'critical stage', which is related. Refuges should be interpreted to mean those locations where such critical stages gain some degree of protection during adverse condition such as drought.

Where to go for further help or information

174. Ridgill & Fox (1990) reviewed the movements of waterbirds in periods of extreme cold weather and identified European wetlands that are periodically of critical importance as refuges. That work is a good example of a regional scale analysis valuable in informing understanding of site criticality to mobile species during periodic adverse conditions.

175. Information on life cycles and influencing factors for all bird species is available at www.birdlife.org/datazone/. For all IUCN Red-listed species, information is available at www.iucnredlist.org/.

Specific criteria based on waterbirds

6.1.5 Criterion 5

A wetland should be considered internationally important if it regularly supports 20,000 or more waterbirds.

What this Criterion is seeking to achieve

176. This Criterion identifies those wetlands which are of numerical importance for waterbirds through their support of internationally important numbers, either of one or more species, and often the total numbers of the waterbird species assemblage.

177. When Contracting Parties are reviewing candidate sites for listing under this Criterion, greatest conservation value will be achieved through the selection of a network of sites that provide habitat for waterbird assemblages containing globally threatened species or subspecies. These are currently poorly represented in the Ramsar List. (Refer also to paragraph 86 above, "Species presence in perspective".)

How to interpret this Criterion – what it means

178. The Criterion is unambiguous and has been widely applied throughout the world. The Criterion can be applied only when regular waterbird count information is available for the site being designated. Also see below (and Appendix G) for the definition of 'regularly' as in 'regularly supports 20,000 or more waterbirds' in applying this Criterion.

What data and information are needed to apply this Criterion?

179. This Criterion can be simply applied using data from regular counts of waterbirds at a site. Typically data from national level waterbird monitoring schemes and the International Waterbird Census collated by Wetlands International are the key reference sources, although other site-specific survey data may also be used where it exists. Contact Wetlands International for details of availability of relevant data (see below).

Potential ambiguities and pitfalls

180. In completing the RIS, indicate the actual total number of waterbirds present, and preferably, when available, the average total number from several recent years. It is not sufficient simply to restate the Criterion, i.e., that the site supports >20,000 waterbirds.

181. **Non-native waterbirds** should not be included within the totals for a particular site (refer also to section 5.7.3 above, "Non-native species").

182. Where a site being designated is only part of a wetland or wetland complex, it is important that the waterbird counts used must be from within only that part of the site being designated, and not from a broader wetland area.

183. Criterion 5 should be applied not only to multi-species assemblages, but also to sites regularly holding more than 20,000 waterbirds of any one species. For populations of waterbirds of more than 2,000,000 individuals, a 1% threshold of 20,000 is adopted on the basis that sites holding this number are of importance under Criterion 5. To reflect the importance of the site for the species concerned, it is also appropriate to list such a site under Criterion 6.

184. See section 5.7.4 for guidance on species nomenclature and taxonomy.

More detail

185. **Definition of 'waterfowl':** The Convention functionally defines waterfowl (a term which, for the purposes of these Criteria and Guidelines, is considered to be synonymous with "waterbirds") as "birds ecologically dependent on wetlands" (Article 1.2). This definition thus includes any wetland bird species. However, at the broad level of taxonomic order, it includes especially:

- penguins: *Sphenisciformes*.
- divers: *Gaviiformes*;
- grebes: *Podicipediformes*;
- wetland related pelicans, cormorants, darters and allies: *Pelecaniformes*;
- herons, bitterns, storks, ibises and spoonbills: *Ciconiiformes*;
- flamingos: *Phoenicopteriformes*:
- screamers, swans, geese and ducks (wildfowl): *Anseriformes*;
- wetland related raptors: *Accipitriformes* and *Falconiformes*;
- wetland related cranes, rails and allies: *Gruiformes*;
- Hoatzin: *Opisthocomiformes*;
- wetland related jacanas, waders (or shorebirds), gulls, skimmers and terns: *Charadriiformes;*
- coucals*: Cuculiformes;* and
- wetland related owls: *Strigiformes*.

186. **Definition of 'regularly'** (Criteria 5 & 6): As in 'supports regularly'. A wetland regularly supports a population of a given size if:

i) the requisite number of birds is known to have occurred in two thirds of the seasons for which adequate data are available, the total number of seasons being not less than three; or

ii) the mean of the maxima of those seasons in which the site is internationally important, taken over at least five years, amounts to the required level (means based on three or four years may be quoted in provisional assessments only).

187. In establishing long-term 'use' of a site by birds, natural variability in population levels should be considered especially in relation to the ecological needs of the populations present. Thus in some situations (e.g., sites of importance as drought or cold weather refuges or temporary wetlands in semi-arid or arid areas – which may be quite variable in extent between years), the simple arithmetical average number of birds using a site over several years may not adequately reflect the true ecological importance of the site. In these instances, a site may be of crucial importance at certain times ('ecological bottlenecks'), but hold lesser numbers at other times. In such situations, there is a need for interpretation of data from an appropriate time period in order to ensure that the importance of sites is accurately assessed.

188. In some instances, however, for species occurring in very remote areas or which are particularly rare, or where there are particular constraints on national capacity to undertake surveys, areas may be considered suitable on the basis of fewer counts. For some countries or sites where there is very little information, single counts can help establish the relative importance of the site for a species.

189. **Turnover** of individuals, especially during migration periods, leads to more waterbirds using particular wetlands than are counted at any one point in time, such that the importance of such a wetland for supporting waterbird populations will often be greater than is apparent from simple census information. See Appendix G for the definition of the term 'turnover'. The following considerations in relation to 'turnover' in the application of Criterion 5 apply:

i) Accurate estimation of turnover and total number of individuals of a population or populations using a wetland is difficult, and several methods (e.g., cohort marking and resighting, or summing increases in a count time-series) which have sometimes been applied do not yield statistically reliable or accurate estimates.

ii) The only currently available method that is considered to provide reliable estimates of turnover is that of unique capture/marking and resighting/recapture of individually-marked birds in a population at a migratory staging site. But it is important to recognize that for this method to generate a reliable estimate of migration volume, its application usually requires significant capacity and resources, and for large and/or inaccessible staging areas (especially where birds in a population are widely dispersed) use of this method can present insuperable practical difficulties.

iii) When turnover is known to occur in a wetland but it is not possible to acquire accurate information on migration volume, Parties should continue to consider recognizing the importance of the wetland as a migratory staging area through the

application of Criterion 4 as the basis for ensuring that their management planning for the site fully recognizes this importance.

190. **Size of sites.** This Criterion will apply to wetlands of varying size in different Contracting Parties. While it is impossible to give precise guidance on the size of an area in which these numbers may occur, wetlands identified as being of international importance under Criterion 5 should form an ecological unit, and may thus be made up of one big area or a group of smaller wetlands. Refer also to section 5.8 above, "Wetlands in the landscape: connectivity and site clusters".

Where to go for further help or information

191. International Waterbird Census: Wetlands International, http://tinyurl.com/323yycf.

6.1.6 Criterion 6

A wetland should be considered internationally important if it regularly supports 1% of the individuals in a population of one species or subspecies of waterbird.

What this Criterion is seeking to achieve

192. This Criterion identifies wetlands of numerical importance for waterbirds through their support of a significant proportion of specific biogeographic populations (more than 1%), noting that in most cases the biogeographic range of waterbird populations is larger than the territory of one Contracting Party.

193. When Contracting Parties are reviewing candidate sites for listing under this Criterion, greatest conservation value will be achieved through the selection of a suite of sites that hold populations of globally threatened species or subspecies. Refer also to paragraph 86 above, "Species presence in perspective", and section 5.5, "Legal status and complementary conservation frameworks". Consideration may also be given to turnover of waterbirds at migration periods, so that a cumulative total is reached, if such data are available (see paragraph 189 above).

How to interpret this Criterion – what it means

194. The Criterion is unambiguous and has been widely applied throughout the world. The term 'population' in this Criterion refers to the relevant biogeographic population, as defined below. For each population listed under Criterion 6, the name of the biogeographic population, as well as the number of birds of this population regularly occurring in the site, should be listed.

What data and information are needed to apply this Criterion?

195. This Criterion can be simply applied with just two elements of information, but both these elements are essential for its application:

i) a count of the total number of the waterbirds of a particular population of a species or subspecies using the wetland; and
ii) 1% threshold from the current estimate of the size of the relevant biogeographic population of the waterbird concerned.

196. Site-related population data are available for many wetlands from the International Waterbird Census (IWC) of Wetlands International, from national waterbird monitoring schemes contributing to the IWC, or indeed from specific surveys undertaken at the site concerned. Contact Wetlands International for details of availability of relevant data held by the IWC (see below).

197. Current estimates of the sizes of all waterbird species' populations and 1% thresholds for those populations for which there is a reliable population size estimate are also available in Wetland International's periodic publication *Waterbird Population Estimates*. If this Criterion is being applied to a waterbird species or population which is either not covered in *Waterbird Population Estimates* or for which that publication does not provide a 1% threshold, the source of the population size estimate must be provided.

Potential ambiguities and pitfalls

198. In completing the RIS, indicate the actual total number of waterbirds present, and preferably, when available, the average total number from several recent years, and the percentage this represents of the population size of the relevant biogeographic population. It is not sufficient simply to restate the Criterion, i.e., that the site supports >1% of a biogeographic population.

199. **Non-native waterbirds** are not applicable under this Criterion (refer also to section 5.7.3 above, "Non-native species").

200. Where a site being designated is only part of a wetland or wetland complex, it is important that the waterbird counts used must be from within only that part of the site being designated, and not from a broader wetland area.

201. **Mixed populations**. At some sites, more than one biogeographical population of the same species can occur, especially during migration periods and/or where flyway systems of different populations intersect at major wetlands. Where such populations are indistinguishable in the field, as is usually the case, this can present practical problems as to which 1% threshold to apply. Where such mixed populations occur (and these are inseparable in the field), it is suggested that the larger 1% threshold be used in the evaluation of sites.

202. However, particularly where one of the populations concerned is of high conservation status, this guidance should be applied flexibly and Parties should consider recognizing the overall importance of the wetland for both populations through the application of Criterion 4, as the basis for ensuring that their management planning for the site fully recognizes this importance. This guidance should not be applied to the detriment of smaller, high conservation status populations.

203. Note that this guidance applies just during the period of population mixing (which is often, but not exclusively, during periods of migration). At other times, it is generally possible to assign a 1% threshold accurately to the single population that is present.

204. See section 5.7.4 for guidance on species nomenclature and taxonomy.

More detail

205. **Biogeographical population.** Several types of 'populations' are recognized:

i) the entire population of a monotypic species;
ii) the entire population of a recognized subspecies;
iii) a discrete migratory population of a species or subspecies, i.e., a population which rarely if ever mixes with other populations of the same species or subspecies;
iv) that 'population' of birds from one hemisphere which spends the non-breeding season in a relatively discrete portion of another hemisphere or region. In many cases, these 'populations' may mix extensively with other populations on the breeding grounds or mix with sedentary populations of the same species during the migration seasons and/or on the non-breeding grounds;
v) a regional group of sedentary, nomadic or dispersive birds with an apparently rather continuous distribution and no major gaps between breeding units sufficient to prohibit interchange of individuals during their normal nomadic wanderings and/or post-breeding dispersal.

206. **Waterbird population size.** To ensure international comparability, Contracting Parties should use the international population estimates and 1% thresholds published and updated approximately every three years by Wetlands International as the basis for evaluating sites for the List using this Criterion. Most recent 1% thresholds are given in *Waterbird Population Estimates,* 4th Edition (2006), which also provides a description of the biogeographic range of each population. Earlier editions of *Waterbird Population Estimates* are now superseded and should not be used for Criterion 6 application.

207. Note that this Criterion should be applied only to those waterbird populations for which a 1% threshold is available. However, for populations of waterbird species in taxa not presently covered by *Waterbird Population Estimates,* this Criterion may be applied if a reliable population estimate and 1% threshold is available from another source and if that information source is clearly specified. It is not sufficient simply to restate the Criterion, that the site supports >1% of a population, nor is it a correct justification to list populations with numbers in the site >1% of their *national* population, except when the population is endemic to that country.

208. As urged by Resolutions VI.4 (1996) and VIII.38 (2002) for the better application of this Criterion, Contracting Parties should not only supply data for the future update and revision of international waterbird population estimates, but should also support the national implementation and development of Wetlands International's International Waterbird Census, which is the source of many of these data.

209. **Turnover** of individuals, especially during migration periods, leads to more waterbirds using particular wetlands than are counted at any one point in time, such that the

importance of such a wetland for supporting waterbird populations will often be greater than is apparent from simple census information. For further guidance on estimation of turnover, see the guidance above under Criterion 5, paragraph 189.

Where to go for further help or information?

210. International Waterbird Census: Wetlands International, http://tinyurl.com/323yycf, and the publication *Waterbird Population Estimates,* http://tinyurl.com/3nynbpd.

211. Further detailed information on the distribution and range of biogeographic populations of some groups of waterbirds are available as follows:

Waterbird taxa	**Geographical area**	**Source of information**
Anatidae	Africa and western Eurasia	Scott & Rose (1996)
Anatidae	Eastern Eurasia	Miyabayashi & Mundkur (1999)
Waders	Africa and western Eurasia	Delany *et al.* (2009)

Specific criteria based on fish

6.1.7 Criterion 7

A wetland should be considered internationally important if it supports a significant proportion of indigenous fish subspecies, species or families, life-history stages, species interactions and/or populations that are representative of wetland benefits and/or values and thereby contributes to global biological diversity.

What this Criterion is seeking to achieve

212. Fishes are the most diverse and abundant vertebrates associated with wetlands. Worldwide, it is estimated that over 18,000 species of fishes are resident for all or part of their life cycles in wetlands.

213. Criterion 7 identifies those wetlands important to the maintenance of biodiversity through their support of fish species (which include shellfishes). It emphasizes the different forms that diversity might take, including the number of taxa, different life-history stages, species interactions, and the complexity of interactions between the above taxa and the external environment. In addition, the different ecological roles that species may play at different stages in their life cycles needs to be considered.

How to interpret this Criterion – what it means

214. Criterion 7 has a very complex formulation. It can best be interpreted as:

'A wetland should be considered internationally important if it supports a significant proportion of:
indigenous fish subspecies, species or families;
and/or life-history stages [of fish];
and/or species interactions;

and which are characteristic of a biogeographical region.'

215. The Criterion sets out a number of categories of assessment (indigenous species, life history stages, etc.) and states that a 'significant proportion' of these should be present. Elaboration of what is a 'significant proportion' is given in the definitions below. Assessment of significant proportionality should ideally be undertaken on the scale of the appropriate biogeographic region.

What data and information are needed to apply this Criterion?

216. The following information is needed *ideally* to apply this Criterion. However, it may be applied even with partial information:

- an inventory of the species (and ideally subspecies) of fish present at the wetland (and from which can be derived a list of the fish families present);
- knowledge of the extent to which fish subspecies, species or families are indigenous to the wetland concerned (within the context of a biogeographic region);
- an understanding of the life history stages of fish present at the site;
- an understanding of the interactions between fish present at the site; and
- contextual information about fish to enable attributes of the site to be placed in a regional context.

Potential ambiguities and pitfalls

217. A species list alone is not sufficient justification for the use of this Criterion, and information on other measures of diversity, including life-history stages, species interactions, and level of endemism is required.

218. See section 5.7.4 for guidance on species nomenclature and taxonomy.

More detail

219. The Criteria refers directly to the contribution of sites important to fish in terms of global biodiversity. Implicit in this understanding of biological diversity is the importance of high levels of endemism. Many wetlands are characterized by the highly endemic nature of their fish fauna.

220. Some measure of **the level of endemism** should be used to distinguish sites of international importance. If at least 10% of fish are endemic to a wetland or to wetlands in a natural grouping, that site should be recognized as internationally important, but the absence of endemic fishes from a site should not disqualify it if it has other qualifying characteristics. In some wetlands, such as the African Great Lakes, Lake Baikal in the Russian Federation, Lake Titicaca in Bolivia/Peru, sinkholes and cave lakes in arid regions, and lakes on islands, endemism levels as high as 90-100% may be reached, but 10% is a practical figure for worldwide application. In areas with no endemic fish species, the endemism of genetically-distinct infraspecific categories, such as geographical races, should be used.

221. According to the 2006 IUCN Red List, 1,173 species of fish are globally threatened and 93 species are extinct or extinct in the wild. The occurrence of rare or threatened fish is also included within the scope of Criterion 2.

222. **Definition of 'supports':** Provides habitat for; areas which can be shown to be important to a species or an assemblage of species for any period of time are said to support that species. Occupation of an area need not be continuous, but may be dependent on natural phenomena such as flooding or (local) drought conditions.

223. **Definition of 'significant proportion'** (Criteria 7 and 8): In polar biogeographical regions a "significant proportion" may be 3-8 subspecies, species, families, life-history stages or species interactions; in temperate zones 15-20 subspecies, species, families, etc.; and in tropical areas 40 or more subspecies, species, families, etc., but these figures will vary among regions.

- A "significant proportion" of species includes all species and is not limited to those of economic interest.
- Some wetlands with a "significant proportion" of species may be marginal habitats for fish and may only contain a few fish species, even in tropical areas, e.g., the backwaters of mangrove swamps, cave lakes, the highly saline marginal pools of the Dead Sea.
- The potential of a degraded wetland to support a "significant proportion" of species if it were to be restored also needs to be taken into account. In areas where fish diversity is naturally low, e.g., at high latitudes, in recently glaciated areas or in marginal fish habitats, genetically distinct infraspecific groups of fishes could also be counted.

224. **Definition of 'species interaction'**: Exchanges of information or energy between species that are of particular interest or significance, e.g., symbiosis, commensalism, mutual resource defence, communal brooding, cuckoo behaviour, advanced parental care, social hunting, unusual predator-prey relationships, parasitism and hyperparasitism. Species interactions occur in all ecosystems but are particularly developed in species-rich climax communities, such as coral reefs and ancient lakes, where they are an important component of biological diversity.

225. **Definition of 'biological diversity'**: The variability among living organisms from all sources including, *inter alia*, terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are part. This includes diversity within species (genetic diversity), between species (species diversity), of ecosystems (ecosystem diversity), and of ecological processes. (This definition is largely based on the one contained in Article 2 of the Convention on Biological Diversity.)

226. **Definition of 'endemic species':** A species that is unique to one biogeographical region, i.e., it is found nowhere else in the world. A group of fishes may be indigenous to a subcontinent with some species endemic to a part of that subcontinent.

227. **Definition of 'indigenous species'**: A species that originates and occurs naturally in a particular country.

228. **Definition of 'family':** An assemblage of genera and species that have a common phylogenetic origin, e.g., pilchards, sardines and herrings in the family *Clupeidae*

229. **Definition of 'fish'**: Any finfish, including jawless fishes (hagfishes and lampreys), cartilaginous fishes (sharks, rays, skates and their allies, *Chondrichthyes*) and bony fishes (*Osteichthyes*), as well as certain shellfish or other aquatic invertebrates (see below).

230. **Definition of 'life-history stage':** A stage in the development of a finfish or shellfish, e.g., egg, embryo, larva, leptocephalus, zoea, zooplankton stage, juvenile, adult, or post-adult.

231. **Definition of 'population':** In this case, a group of fishes comprising members of the same species.

232. **Definition of 'wetland benefits':** The services that wetlands provide to people, e.g., flood control, surface water purification, supplies of potable water, fishes, plants, building materials and water for livestock, outdoor recreation and education. See also Resolution VI.1.

233. **Definition of 'wetland values':** The roles that wetlands play in natural ecosystem functioning, e.g, flood attenuation and control, maintenance of underground and surface water supplies, sediment trapping, erosion control, pollution abatement and provision of habitat.

Where to go for further help or information

234. Useful sources of online data and information on fish include:

- **A Catalog of the Species of Fishes** (http://research.calacademy.org/ichthyology/catalog)
- **Fishbase** (www.fishbase.org/home.htm)
- **Inter-Institutional Database of Fish Biodiversity in theNeotropics** (NEODAT) (www.neodat.org/)
- **ReefBase** (www.reefbase.org)

6.1.8 Criterion 8

A wetland should be considered internationally important if it is an important source of food for fishes, spawning ground, nursery and/or migration path on which fish stocks, either within the wetland or elsewhere, depend.

What this Criterion is seeking to achieve

235. Criterion 8 identifies those wetlands which support internationally important fish stocks (including bivalves/shellfish) through aspects of their ecological functioning. This includes via the role of the wetland in providing food and/or as a spawning ground, a nursery area, or a migration path.

How to interpret this Criterion – what it means

236. The emphasis of this Criterion is not on the fish themselves (the subject of Criterion 7) but rather on the ecological functions provided by the wetland, notably as a source of food, or as a spawning ground or nursery, or as a migration path. The Criterion notes that the importance of these functions need not just be for fish within the wetland itself but may also be for fish stocks further afield. For example, many coastal wetlands such as estuaries or mangrove swamps are crucially important as nursery areas for fish stocks living in deeper waters offshore.

237. Many wetlands support functions for fish stocks. An assessment of overall significance is relevant in determining whether or not these functions are of *international* importance. The following attributes are likely to be associated with a wetland that is internationally important under Criterion 8. These include functions that support fish stocks:

- across extensive areas or multiple wetlands;
- across national borders;
- of multiple species (including, but not restricted to those that are of high conservation status and/or are endemic within a biogeographic region); and/or
- which further support significant ecosystem services related to fish.

238. The guidance for Criterion 8 does not interfere with the rights of Contracting Parties to regulate fisheries within specific wetlands and/or elsewhere.

What data and information are needed to apply this Criterion?

239. The following information is *ideally* needed to apply this Criterion, but it may be applied even with partial information:

i) Site-related data on the role of the site in supporting fish populations either through provision of food or in providing supporting functions such as a spawning and/or nursery area or migration path.

ii) The context and significance of functions of the site for fish populations at wider scales (nationally or internationally).

Potential ambiguities and pitfalls

240. Note that the emphasis of this Criterion is not on the fish themselves (the subject of Criterion 7) but rather on the ecological functions provided by the wetland, notably as a source of food, or as a spawning ground or nursery, or as a migration path (see above).

241. In applying this Criterion, give special consideration to assessing whether the features of the site are of *international* importance, as described in paragraph 237 above.

More detail

242. Many fishes (including shellfishes) have complex life histories, with spawning, nursery and feeding grounds widely separated and long migrations necessary between them. It is

important to conserve all those areas that are essential for the completion of a fish's life cycle if the fish species or stock is to be maintained. The productive, shallow habitats offered by coastal wetlands (including coastal lagoons, estuaries, saltmarshes, inshore rocky reefs, and sandy slopes) are extensively used as feeding and spawning grounds and nurseries by fishes with adult stages in open water. These wetlands therefore support essential ecological processes for fish stocks, even if they do not necessarily harbour large adult fish populations themselves.

243. Furthermore, many fishes in rivers, swamps or lakes spawn in one part of the ecosystem but spend their adult lives in other inland waters or in the sea. It is common for fishes in lakes to migrate up rivers to spawn, and for fishes in rivers to migrate downstream to a lake or estuary, or beyond the estuary to the sea, to spawn. Many swamp fishes migrate from deeper, more permanent waters to shallow, temporarily inundated areas for spawning. Wetlands, even apparently insignificant ones in one part of a river system, may therefore be vital for the proper functioning of extensive river reaches up- or downstream of the wetland.

244. **Definition of 'fishes':** 'Fishes' is used as the plural of 'fish' when more than one species is involved. Fish orders that typically inhabit wetlands (as defined by the Ramsar Convention) and which are indicative of wetland benefits, values, productivity or biological diversity, include:

i) **Jawless fishes - *Agnatha***
- hagfishes (*Myxiniformes*)
- lampreys (*Petromyzontiformes*)

ii) **Cartilaginous fishes - *Chondrichthyes***
- dogfishes, sharks and allies (*Squaliformes*)
- skates (*Rajiformes*)
- stingrays and allies (*Myliobatiformes*)

iii) **Bony fishes - *Osteichthyes***
- Australian lungfish (*Ceratodontiformes*)
- South American and African lungfishes (*Lepidosireniformes*)
- bichirs (*Polypteriformes*)
- sturgeons and allies (*Acipenseriforme*s)
- gars (*Lepisosteiformes*)
- bowfins (*Amiiformes*)
- bonytongues, elephant fishes and allies (*Osteoglossiformes*)
- tarpons, bonefishes and allies (*Elopiformes*)
- eels (*Anguilliformes*)
- pilchards, sardines and herrings (*Clupeiformes*)
- milkfishes (*Gonorhynchiformes*)
- carps, minnows and allies (*Cypriniformes*)
- characins and allies (*Characiformes*)
- catfishes and knifefishes (*Siluriformes*)
- pikes, smelts, salmons and allies (*Salmoniforme*s)

- mullets (*Mugiliformes*)
- silversides (*Atheriniformes*)
- halfbeaks (*Beloniformes*)
- killifishes and allies (*Cyprinodontiformes*)
- sticklebacks and allies (*Gasterosteiformes*)
- pipefishes and allies (*Syngnathiforme*s)
- cichlids, perches and allies (*Perciformes*)
- flatfishes (*Pleuronectiforme*s)

iv) **Several groups of shellfishes:**

- shrimps, lobsters, freshwater crayfishes, prawns and crabs (*Crustacea*)
- mussels, oysters, pencil baits, razor shells, limpets, winkles, whelks, scallops, cockles, clams,
- abalone, octopus, squid and cuttlefish (*Mollusca*)

v) **Certain other aquatic invertebrates:**

- sponges (*Porifera*)
- hard corals (*Cnidaria*)
- lugworms and ragworms (*Annelida*)
- sea urchins and sea cucumbers (*Echinodermata*)
- sea squirts (*Ascidiacea*)

245. **Definition of 'fish stock':** The potentially exploitable component of a fish population.

246. **Definition of 'spawning ground':** That part of a wetland used by fishes for courting, mating, gamete release, gamete fertilization and/or the release of the fertilized eggs, e.g., herring, shad, flounder, cockles, and many fishes in freshwater wetlands. The spawning ground may be part of a river course, a stream bed, inshore or deep water zone of a lake, floodplain, mangrove, saltmarsh, reed bed, estuary or the shallow edge of the sea. The freshwater outflow from a river may provide suitable spawning conditions on the adjacent marine coast.

247. **Definition of 'migration path':** The route along which fishes, such as salmon and eels, swim when moving to or from a spawning or feeding ground or nursery. Migration paths often cross international boundaries or boundaries between management zones within a country.

248. **Definition of 'nursery':** That part of a wetland used by fishes for providing shelter, oxygen and food for the early developmental stages of their young. In some fishes, e.g., nest-guarding tilapias, the parent/s remain at the nursery to protect the young whereas in others the young are not protected by the parent/s except by virtue of the shelter provided by the habitat in which they are deposited, e.g., non-guarding catfishes. The ability of wetlands to act as nurseries depends on the extent to which their natural cycles of inundation, tidal exchange, water temperature fluctuation and/or nutrient pulses are retained. Welcomme (1979) showed that 92% of the variation in catch from a wetland-recruited fishery could be explained by the recent flood history of the wetland.

Where to go for further help or information

249. Useful sources of online data and information on fish are given under Criterion 7.

Specific Criterion based on other taxa

6.1.9 Criterion 9

A wetland should be considered internationally important if it regularly supports 1% of the individuals in a population of one species or subspecies of wetland-dependent non-avian animal species.

What this Criterion is seeking to achieve

250. This Criterion identifies wetlands of numerical importance for non-avian wetland dependent animals through their support of a significant proportion of specific biogeographic populations (more than 1%), noting that in most cases the biogeographic range of such populations is larger than the territory of one Contracting Party.

How to interpret this Criterion – what it means

251. When Contracting Parties are reviewing candidate sites for listing under this Criterion, greatest conservation value will be achieved through the selection of a suite of sites that hold populations of globally threatened species or subspecies.

252. Refer also to paragraph 86 above, "Species presence in perspective", and section 5.5 above, "Legal status and complementary conservation frameworks". Consideration may also be given to turnover of waterbirds at migration periods, so that a cumulative total is reached, if such data are available (comments on turnover in paragraph 189 related to waterbirds are also applicable in relation to non-avian animals).

253. To ensure international comparability, wherever possible Contracting Parties should use the most current international population estimates and 1% thresholds provided and regularly updated by IUCN's Specialist Groups though the IUCN Species Information Service (SIS) and being published in the Ramsar Technical Report series, as the basis for evaluating sites for the List using this Criterion. (Note: An initial listing is provided in the paper *Population estimates and 1% thresholds for wetland-dependent non-avian species, for the application of Criterion 9*.)

254. This Criterion can also be applied to nationally endemic species or populations, where reliable national population size estimates exist. When making such an application of the Criterion, information concerning the published source of the population size estimate should be included in the justification for the application of this Criterion. Such information can also contribute to expanding the taxonomic coverage of the information on population estimates and 1% thresholds published in the Ramsar Technical Report series.

What data and information are needed to apply this Criterion?

255. This Criterion is applicable to populations and species in a range of non-avian taxa including, *inter alia,* mammals, reptiles, amphibians, fish and aquatic macro-invertebrates. However, only species or subspecies for which reliable population estimates have been provided and published should be included in the justification for the application of this Criterion. Where no such information exists, Contracting Parties should give consideration to designation for important non-avian animal species under Criterion 4.

256. For better application of this Criterion, Contracting Parties should assist, wherever possible, in the supply of such data to the IUCN-Species Survival Commission and its Specialist Groups in support of the future updating and revision of international population estimates.

Potential ambiguities and pitfalls

257. Note that this Criterion should be applied only to those animal populations for which a 1% threshold is available. However, for populations of species in taxa not presently covered by the paper *Population estimates and 1% thresholds for wetland-dependent non-avian species, for the application of Criterion 9,* the guidelines indicate that this Criterion may be applied if a reliable population estimate and 1% threshold is available from another source, and in such cases the information source should be clearly specified. In the application of this Criterion, it is not sufficient simply to restate the Criterion, that the site supports >1% of a population, nor is it a correct justification to list populations with numbers in the site >1% of their *national* population, except when the population is endemic to that country.

258. See section 5.7.4 for guidance on species nomenclature and taxonomy.

259. The guidance for the application of Criterion 9 for non-avian animal species is similar to that provided above for Criterion 6 for waterbirds. In particular, this Criterion must be applied to the regular occurrence of >1% of a biogeographic population of a species or subspecies of wetland-dependent animal, and it should be recognized that in many cases the biogeographic range of the population is larger than the territory of one Contracting Party.

260. For each population listed under Criterion 9 the name of the biogeographic population, as well as the number of individuals of this population regularly occurring in the site, should be listed. An initial list of recommended 1% thresholds for the application of Criterion 9 is provided in the paper *Population estimates and 1% thresholds for wetland-dependent non-avian species, for the application of Criterion 9* (www.ramsar.org/pdf/ris/key_ris _criterion9_2006.pdf), which also provides a description of the biogeographic range of each population.

Where to go for further help or information?

261. Langhammer *et al.* (2007) lists many online sources of relevant species data and information. These include:

- **Alliance for Zero Extinction (AZE) sites:** www.zeroextinction.org

- **World Turtle Database:** http://emys.geo.orst.edu/main_pages/database.html
- **Global Amphibian Assessment:** www.amphibians.org/redlist/
- **HerpNet:** www.herpnet.org
- **Biodiversity Hotspots Vertebrate Species Database:** www.biodiversityhotspots.org/xp/Hotspots/search/Pages/search.aspx
- **Mammal Species of the World:** www.bucknell.edu/msw3/
- **Mammal Networked Information System:** http://manisnet.org/

6.2 Documenting selected Criteria in the Ramsar Site Information Sheet (RIS)

262. Each Criterion for which the proposed site qualifies should be indicated in the RIS, with accompanying information as to how that Criterion applies to the site. Part 2 of the RIS (Criteria for designation) is central to the concept of "international importance". It is essential to provide sufficiently precise descriptions to explain and support each of the Ramsar Criteria selected. This should provide the necessary details to describe the way in which a particular Criterion applies specifically at the site being designated.

7. Ramsar Site description: Guidance on describing the site at designation

7.1 The Ramsar Site Information Sheet

7.1.1 The history of the Ramsar Site Information Sheet

263. Recommendation 4.7 (1990) of the Conference of Contracting Parties established that the "data sheet developed for the description of Ramsar Sites be used by Contracting Parties and the Secretariat in presenting information for the Ramsar database, and as appropriate in other contexts". The Recommendation listed the information categories covered by the "data sheet", including the "reasons for inclusion" (the Ramsar Criteria) and the Ramsar "Classification system for wetland type".

264. Resolution 5.3 (1993) reaffirmed that a completed "Ramsar datasheet" and site map should be provided upon designation of a Ramsar Site for the List of Wetlands of International Importance (the Ramsar List). This was subsequently reiterated in Resolutions VI.13, VI.16, and VII.12. This datasheet, formally entitled the "Information Sheet on Ramsar Wetlands" and abbreviated "RIS", provides a standardized format for recording information and data about the Ramsar Site.

265. Resolution 5.3 also stressed that information concerning criteria for inclusion on the Ramsar List, the functions and values (hydrological, biophysical, floral, faunal, social and cultural) of the site, and conservation measures taken or planned were particularly important categories of information, and it emphasized the importance of applying the "Ramsar Classification System for Wetland Type" when describing the wetland in the RIS.

266. "Criteria for Identifying Wetlands of International Importance" were first adopted by the Heiligenhafen Conference in 1974 and refined by subsequent meetings of the Conference of the Parties. The form of the present Criteria was established by Recommendation 4.2 (1990), with additional criteria based upon fish adopted by Resolution VI.2 (1996). The

Criteria were again substantively revised and, together with detailed guidance for their application, adopted by Resolution VII.11 (2002) as part of the *Strategic Framework and guidelines for the future development of the List of Wetlands of International Importance*. An additional Criterion (Criterion 9) and amendments to the guidance for the application of other Criteria were adopted by COP9 (2005) in Resolution IX.1 Annex B.

267. A review of the RIS and this Strategic Framework was requested by COP10 and brought to COP11. Key changes include:

    i) The part of the revised RIS dealing with the ecological character of the wetland being designated was changed to be consistent with the format for Ecological Character Description (as well as for baseline wetland inventory) that was approved by the Parties in Resolution X.15 (2008). This means for Parties that, prior to designation (or to updating), have made an ecological character description in line with the Resolution X.15 format, it should be straightforward to transfer the relevant data and information into the revised RIS format.

    ii) The revised formats and updated mechanisms are designed to streamline significantly the compiling, checking, and entering of data at all stages of the designation of Ramsar Sites and updating of Site information, for Contracting Parties, the Secretariat and others. They also permit greater consistency and availability of the full range of data and information contained in the RIS.

7.1.2 General guidance about Ramsar Information Sheets

268. The Ramsar Site Information Sheet (RIS) is completed and supplied to the Ramsar Secretariat when a Ramsar Site is designated by a Contracting Party. In recognition that the status of Ramsar Sites can and often does change, both in terms of their ecological character, the threats to this character, and the conservation management process and actions underway, Resolution VI.13 (1996) urged Parties to review and update the data provided in the RIS at least every six years.

269. The RISs including their accompanying maps are held by the Ramsar Secretariat. The data and information provided by Parties in the RIS are entered into the Ramsar Sites Database, managed on behalf of the Convention by Wetlands International under contract from the Ramsar Secretariat as a core component of the Ramsar Sites Information Service (http://ramsar.wetlands.org).

270. The Database and its associated information on Ramsar Sites is managed so as to provide an information service on Ramsar Sites, including undertaking analysis and reporting to meetings of the Conference of the Parties on progress in implementing the *Strategic Framework and Vision for the List of Wetlands of International Importance* and other Resolutions of the Conferences of the Parties.

271. The information provided by Contracting Parties in the RIS, including any supplementary information provided, and held in the Ramsar Sites Database is made publicly available through the Ramsar Site Information Service website.

272. The RIS must be completed in one of the Convention's three working languages, namely English, French, or Spanish. The RIS form is available in each of those languages.

273. The information provided in the RIS should be clear and succinct and the format adopted by COP11 is designed to this effect. The overall structure and format of the RIS is shown in Box 1.

Box 1. Structure of Ramsar Information Sheet – 2012 revision

Part 0. Summary Paragraph

0. Summary description of the Ramsar Site

Part 1. Administrative and locational details

Part 1.1 About this form

1. Name and address of those responsible for compiling this form
2. Period of collection of data and information used to compile the sheet
3. Country
4. Name of Ramsar Site
5. Designation of new ramsar Site or update of information related to an existing site
6. Changes to the site since its designation or earlier update

Part 1.2 About the Site's location

7. Defining the site
8. Geographical coordinates
9. General location
10. Area of Ramsar Site
11. Biogeography

Part 2. Why is this site internationally important? (Criteria for designation)

12. Ramsar Criteria and their justification

Part 3. What is the site like? (Ecological character description)

13. What are the critical ecological components, processes and services that determine the ecological character of this Ramsar Site?

Part 3.1 Ecological components

14. Climate
15. Geomorphic setting
16. What wetland type(s) are in the site?
17. Plant species
18. Animal species
19. Soil
20. Water regime
21. Sediment regime
22. Water pH
23. Water salinity
24. Dissolved or suspended nutrients in water
25. Physical features of the surrounding area from which influences may affect the Ramsar Site

Part 3.2 Ecological processes
Part 3.3 Ecosystem services
26. Ecosystem services/benefits
27. Social or cultural values

Part 4. How is the site managed? (Conservation and management)
Part 4.1 Land tenure and responsibilities ('Managers')
28. Land tenure/ownership
29. Management authority

Part 4.2 Ecological character threats and responses ('Management')
30. Factors (actual or likely) adversely affecting the site's ecological character, including changes in land and water use and development projects
31. Conservation measures taken
32. Management planning
33. Planning for restoration
34. Conservation measures proposed but not yet implemented
35. Bibliographic references

Part 5. Providing additional information relevant to this Ramsar Site

274. In the case of a wetland that has been well-studied and well-documented, or which is the subject of special field investigations, far more information may be available than can be accommodated in the RIS. Additional information, such as taxonomic lists of species' status, management plans, copies of published papers or photocopied reports on the site, can be appended to the RIS and are treated as part of the official record of the site. Photographs of the wetland, with permission to make public use of them, are also especially welcome. It is essential that the source providing any such additional information be noted.

275. Where the Ramsar Site being designated is a very large and complex wetland system, or consists of a suite of separate sub-sites, two levels of approach may be advisable: a broad approach for the system as a whole and a more detailed approach for each key locality or sub-site within the system. Thus for a particularly large wetland complex it may be appropriate to complete an overall RIS for the whole site and a series of separate RIS datasheets for each key area or sub-site within the complex.

276. Resolution VI.1 highlights the importance of clearly defining the ecological character of Ramsar Sites as the basis for monitoring these wetlands in order to maintain their ecological character. Key features of the ecological character of the site to be maintained should include those identified as the justification for designation under each Ramsar Criterion applied to the designation. Further guidance on defining and describing ecological character features is provided in the *New Guidelines for management planning for Ramsar Sites and other wetlands* (Resolution VIII.14).

277. The format of the RIS adopted by Ramsar COP11 emphasizes the importance of ecological character with Part 3 of the sheet structured to mirror the format of the ecological character description agreed by Resolution X.15: *Describing the ecological character of wetlands, and data needs and formats for core inventory: harmonized scientific and technical guidance.*

278. The annex to Resolution VI.1 notes that there is a need to increase the value of the information collected for describing and assessing the ecological character of listed sites, and it urges that emphasis should be given to:

- establishing a baseline by describing the ecological character of the site from which derive the ecosystem services of international importance (necessary because the existing Ramsar Criteria do not cover the full range of wetland benefits and values that should be considered when assessing the possible impact of changes at a site) – Part 3 of the RIS – 2012 revision applies; and

- providing information on human-induced factors that have affected or could significantly affect the benefits and values of international importance – field 30 of the RIS – 2012 revision applies.

279. The following sections provide guidance on completing sections of the RIS. Each is cross-referenced to the relevant RIS field.

7.1.3 Summary Description of the Ramsar Site

☞ **RIS Section 0**

280. Provide a short (100-300 word) descriptive text which encapsulates the key characteristics and internationally important aspects of the site. This text may also form the basis of the "Annontated List" summary text prepared by the Secretariat when the Site is placed on the Ramsar List.

7.2 Recording administrative and locational details

7.2.1 Name and address of the RIS compiler

☞ **RIS field 1**

281. Please provide the full name, institution/agency, postal address, telephone and fax numbers, and e-mail address of:

a) the person(s) who compiled the RIS; and
b) the Contracting Party's national Administrative Authority for the Convention.

7.2.2 Key dates

☞ **RIS field 2**

282. Please record the period over which the data and information used in RIS was collected, either a) at the time of designation or b) for RIS update. Note that this is **not** the date of compilation of the form, but rather the period (broadly) from which research and data and information gathering has been undertaken to inform the completion of the RIS.

283. Additional dates associated with the RIS will be recorded directly in the Ramsar Sites Database by the Secretariat.

7.2.3 Country

☞ **RIS field 3**

284. The official (short) version of the Contracting Party/country name.

7.2.4 Name of the Ramsar Site

☞ **RIS field 4**

♦ **See also: Appendix C Additional guidelines for the provision of maps**

285. The official name of the designated site in one of the three official languages (English, French or Spanish) of the Convention. Ensure that the site name used is the same in this section and on the maps provided (see also Appendix C). **This official name will be used precisely as given when the site is added to the Ramsar List.**

286. If appropriate, an alternative name, for example in a local language, can be given following the official name.

7.2.5 Designation of new Ramsar Site or update of existing site

☞ **RIS field 5**

287. Indicate in this field if the RIS is being provided for the designation of a new Ramsar Site or if it is an update for an existing Ramsar Site. If the RIS is an update for an existing site, please also complete field 6 of the RIS (see below).

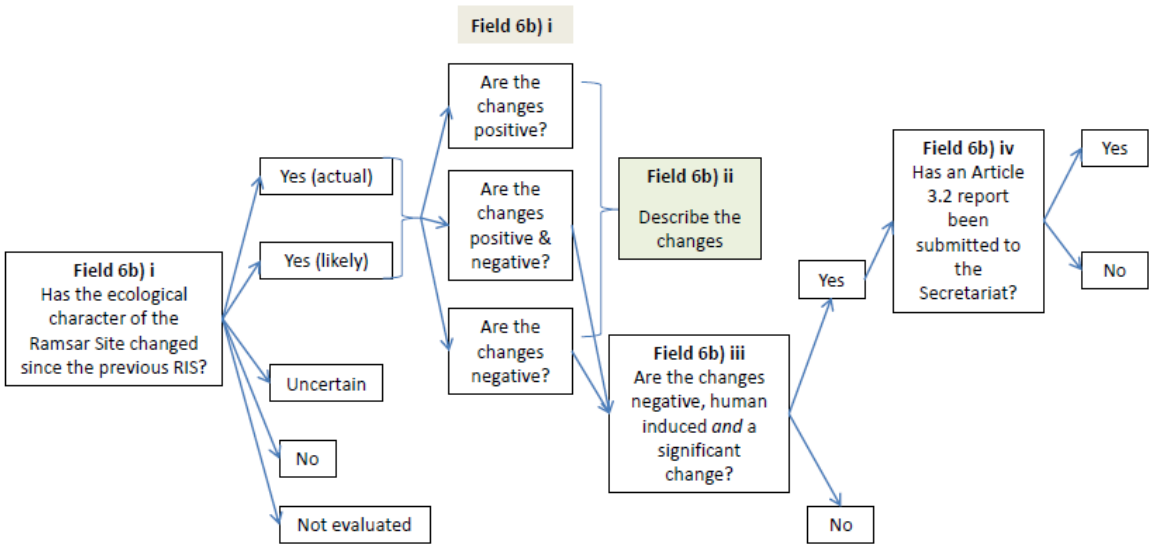
7.2.6 Updating the RIS: recording changes to the site since its designation or earlier update

☞ **RIS field 6**

288. RIS field 6 applies only when an RIS for an existing Ramsar Site is being updated and should be filled in only for such updates.

289. Field 6a seeks information on whether there have been any changes to the boundaries and/or the area of the site since the previous RIS was supplied. If there are any changes to the designated site boundary and/or site area, please tick the appropriate box or boxes to indicate the type of change that has occurred. The figure below summarises simply the logical sequence of the multiple choices in field 6b.

A summary of the questions related to ecological character in field 6b



290. The Convention text makes provision for the designation of new sites and the extension of existing sites, but the reduction in area (through a boundary restriction) or deletion from the List of sites already designated are governed by the terms of Article 2.5 concerning "urgent national interest". The annex to Resolution IX.6 (2005), *Guidance for addressing Ramsar Sites or parts of sites which no longer meet the Criteria for designation,* established procedures to follow should the deletion or reduction of a site be contemplated under circumstances which are not in the "urgent national interest". If the boundary and/or the area of the listed site is being contemplated for restriction/reduction, the Contracting Party should have followed the procedures established in Resolution IX.6 and provided a report in line with paragraph 28 of that annex, in addition to the provision of an updated RIS.

291. Field 6b) i seeks information as to whether the ecological character of the wetland has changed, or is likely to change, since the previously submitted RIS. There may be several reasons why the ecological character may have changed or be likely to change including influences within the site, the influence of factors beyond the site's boundaries (e.g., upstream water abstraction), or changes to the site's boundaries that lead to redefinition of its character. The options in the RIS allow the recording of a range of different scenarios as appropriate.

292. Field 6b) ii asks for a description of any changes in the ecological character of the Ramsar Site, including in the application of the Criteria (additions or deletions) since the previous RIS for the site was submitted. If change of ecological character is negative, human-induced, and is a significant change (outside defined limits of acceptable change) please indicate this in field 6b) iii as well as whether an Article 3.2 report has been submitted to the Secretariat (in field 6b iv).

7.2.7 Defining the Site (map of the Ramsar Site)

☞ **RIS field 7**

♦ **See also: Appendix C, Additional guidelines for the provision of maps**

293. At designation, the most up-to-date map of the wetland should be submitted to the Secretariat with the RIS. This is a requirement for the inclusion of the site in the List of Wetlands of International Importance. The map must clearly show the boundary of the proposed Ramsar Site and be geo-referenced such that the location of the Site can be clearly identified.

294. The map must be provided in electronic format, using one of the common image formats (TIFF, BMP, JPEG, GIF, tc.).

295. A GIS file must be provided with the geo-referenced site boundary in vector form as one or more polygons (preferably using the World Geodetic System 1984 and the shape format) with an accompanying attribute table. The geographical/projected coordinate system used must be clearly specified.

296. Appendix C provides more detailed guidance on the provision of suitable Ramsar Site maps, GIS files, and other spatial data, including what to do if it is not possible to provide a GIS file.

297. Very exceptionally a hardcopy map will be accepted if it is not possible to submit a map in electronic format. In such a situation, this should be discussed and agreed with the Secretariat before submitting the site designation.

298. A list of the maps supplied and any other relevant maps of the Ramsar Site that are available should be included in a note annexed to the RIS.

7.2.8 Geographical coordinates

☞ **RIS field 8**

♦ **See also: Section 7.2.7 Defining the site (map of the Ramsar Site)**
Section 7.2.10 Area

299. The geographical coordinates of the *approximate* centre of the site should be given expressed in *degrees, minutes and seconds of latitude and longitude* (e.g., in the format: 01°24'12"S 104°16'25"E). If relevant, specify the number of discrete units forming the site, if there is more than one geographically separate part to the site.

300. If any such disjunct units are situated at least 1.6 km apart (approximately equivalent to one minute of latitude or longitude, at the equator in the case of longitude), the coordinates of the approximate centres of each of these units should be given separately (along with individual names or differentiating labels, e.g., "A, B, C"…, etc.). Any discrete units so identified in an RIS should also be clearly labeled on the site map(s). A single site occupying less than 1,000 hectares needs only one central set of coordinates.

301. If the site is shaped in such a way that the approximate centre point cannot be easily specified, or if such a point falls outside the site or within a very narrow portion of the site,

please explain this with a note, and provide the coordinates for the approximate centre point of the largest part of the site.

7.2.9 General location

☞ **RIS field 9**

302. Information about the general location of the wetland should include:

a) the name of the large administrative region(s) (i.e., state, province, territory, canton, etc.) within which the site lies (e.g., Alberta, Canada; Punjab, Pakistan; Andalucía, Spain); and
b) the nearest "provincial", "district" or other significant administrative centre, town, or city.

303. For wetlands on national boundaries, please also note in this field whether:

a) the wetland system extends into one or more other countries;
b) whether the site is adjacent to existing Ramsar Sites in the territory of another Contracting Party;
c) whether the site is part of a formal transboundary designation with another Contracting Party; and
d) in the case of formally designated Transboundary Ramsar Sites, whether the official name given differs from the Transboundary Ramsar Site name, in which case the different name should be reported.

7.2.10 Area

☞ **RIS field 10**

♦ **See also: Section 7.2.7 Defining the site (map of the Ramsar Site)**

304. The total area of the designated Ramsar Site should be given in hectares.

305. If the areas of any discrete site units are known, please also list each of these together with the names (or labels) used to identify and differentiate these units.

7.2.11 Biogeography

☞ **RIS field 11**

♦ **See also: Section 5.3 Biogeographic regionalizations**

306. The *biogeographic region* encompassing the Ramsar Site and the *biogeographic regionalization scheme* applied (with full reference citation) should be provided.

307. Biogeographical specification is essential for the correct application of Criteria 1 and 3 and certain applications of Criterion 2 (see also field 12 - Ramsar Criteria and their justification). In this context the guidelines for the application of the Ramsar Criteria (see Appendix G) define "bio(geographic) region" as "a scientifically rigorous determination of regions as established using biological and physical parameters such as climate, soil type, vegetation cover, etc." Note that for non-island Contracting Parties, in many cases biogeographic regions will be transboundary in nature and will require collaboration

between countries to establish the locations of representative, rare or unique examples of different wetland types.

308. Section 5.3 explains the Convention's approach to biogeographical regionalization in more detail. For coastal and near-shore marine areas, the Marine Ecoregions of the World (MEOW) regionalization should be used, as agreed by the Parties in Resolution X.20 (2008), recording the relevant Eco-region Province and Realm.

309. For terrestrial Ramsar Sites, one or more of the three alternative global schemes listed in Section 5.3 should be used (recording the smallest scale region that is appropriate).

310. Please give a citation of any other biogeographical regionalization scheme and other details if none of these four global schemes is appropriate.

7.3 What is the site like? (Ecological character description)

☞ **RIS Part 3**

311. General points of guidance for filling in this part of the RIS are as follows:

i) **Start with data and information is available.** In developing a description of the ecological character of a wetland, it is important to start with whatever data and information are currently available, even if information is not comprehensively available for all fields in the description sheet. Starting with compiling what is currently available helps to identify gaps and priorities for further data and information collection to enhance the description.

ii) **Start with a qualitative description if quantitative data are not available.** Even if detailed quantitative data are not available, begin by compiling qualitative data and information and do not underestimate the value of expert and local knowledge as a source of such information. Often, bringing together those who know the wetland best to share their knowledge can be an important and effective start to compiling the ecological character description.

iii) Simple **'conceptual models'** can be a powerful tool. Developing simple two- or three-dimensional 'conceptual models' accompanied by summary descriptions of key features, processes and functioning can be a powerful tool supporting the ecological character description. Further guidance on approaches to developing such conceptual models will be developed by the Scientific and Technical Review Panel. See Davis & Brock (2008) for one example of this approach for a Ramsar Site.

7.3.1 The key ecological components that determine the ecological character of the site

☞ **RIS field 13**

♦ **See also: worked examples of completed RIS at http://ris-2012.wikispaces.com/.**

312. Field 13 provides a key summary evaluation in the process of ecological character description. This field should record which of the ecological components described in Part 3.1, together with ecological processes (Part 3.2) and ecological services in Part 3.3, are critical to determining the ecological character of the Ramsar Site. The ecological character may be determined, for example, by aspects of climate, geology, anthropogenic

management, or other features described in the various parts of the ecological character description.

313. It will usually be easier to complete this field *after* Parts 3.1 and 3.3 have been completed. Please see also the worked examples published at http://ris-2012.wikispaces.com/, which illustrate the type and level of information expected.

314. This section should aim to encapsulate all the information in Part 3 of the RIS so as to provide a simple description of what features are critical in determining the ecological character of the wetland. It may also be used as a source of information in preparing the Summary Description for Part 0 of the RIS. For further guidance see Ramsar Handbook 19: *Addressing change in wetland ecological character* (4th ed., 2010).

315.s This section should also be used to summarise the natural variability in the ecological character of the site (either seasonally, or longer-term if known), and any known past and current trends in ecological character, such as seral vegetation succession in part or all of the site.

7.3.2 Climate

☞ **RIS field 14**

316. Please indicate the prevailing climate type(s) occurring at the Site, using the widely adopted Köppen-Gieger Climate Classification System: http://en.wikipedia.org/wiki/K%C3%B6ppen_climate_classification.

317. If changing climatic conditions are affecting the site, please indicate the nature of these changes, in terms of how they are influencing the wetland, in a short descriptive paragraph.

7.3.3 Geomorphic setting

☞ **RIS field 15**

318. In part a), please record the minimum and maximum elevation of the wetland in metres above mean sea level. Elevations can be obtained via the Google Earth mapping programme for those without access to Geographical Information Systems.

319. In part b), please indicate the location of the Ramsar Site in relation to wider catchments by ticking all of the options which apply. If none of these categories apply, please describe the situation in the text box.

320. It is helpful to give the name of the catchment or basin if known – or in the case of coastal or near-coastal sites, the name of the sea or ocean within which the site is placed.

7.3.4 Plant communities

☞ **RIS field 12b**

321. This field relates to plant communities and their attributes, especially (but not exclusively) in the context of their international importance in the application of Criterion 2 for which the wetland is particularly important or significant. In the description box, please briefly specify *why* each community listed is considered noteworthy (e.g., if it has particular rarity

or is economically important), if appropriate, also indicating that the plant community is of national or local significance. Note specifically whether each plant community qualifies under Criterion 2.

7.3.5 Plant species

☞ **RIS fields 12a, 17a and 17b**

♦ **See also: Section 6.1 Assessing the site against Ramsar's Criteria**

322. RIS field 12a documents those species that are recognized as internationally important in support of the qualification of the site through either Criteria 2, 3 or 4.

323. RIS field 17a documents other plants that are 'noteworthy' but do not directly support the qualification of the site as internationally important.

324. In field 12a, for each individual plant species please indicate its IUCN Red list status as follows:

    Critically Endangered: CR
    Endangered: EN
    Vulnerable: VU

    Note that other categories of IUCN Red List status (Near Threatened – NT; Least Concern – LC; Data Deficient – DD) do not qualify the species as internationally important for Ramsar Site designation. The Red List status of species can be accessed at www.iucnredlist.org/.

325. Please also indicate in the appropriate columns of field 12a if the species is either:

    a) listed in Appendix I of CITES; and/or
    b) considered as vulnerable, endangered or critically endangered under national endangered species legislation, programmes or Red Lists. In this case, please add the relevant citation details of such national legislation, programmes or Red Lists to field 35 (Bibliographic references).

326. In fields 12a and 17a, where relevant and if possible, specify why each animal species (or assemblage) is zoogeographically significant (e.g., relict populations, unusual range extensions or significant position within the overall geographic range, for instance that a site may be the most northerly occurrence of a certain species, etc.).

327. If endemic plant species have not been considered towards the application of Criterion 3 at the site (e.g., if the *number* of endemic species was not considered "significant", following the guidance for that Criterion), they can be listed in field 17a.

328. General species (occurrence) lists should not be included here or under other RIS fields, but such lists (properly labeled with site details) can be appended to the RIS when they are available, and this can be indicated in Part 5 of the RIS.

329. Field 17b should be completed to record the presence of any invasive alien plant species, as requested by the Parties in Resolution VII.14 and VIII.18. Please indicate whether the

impacts of the invasive alien species are such as to actually (in which case, to what degree) or potentially threaten the ecological character of the Ramsar Site. If this is the case, please also record this in field 30 (Factors adversely affecting the ecological character of the site) and, for an updated RIS, also note it in field 6c. For RIS updates, please also note significant changes in the abundance and/or ecological impacts of invasive alien plant species

330. The scientific name, and the vernacular name (if one exists) in English, French or Spanish, should be given for each species listed. See section 5.7.4 for guidance on species nomenclature and taxonomy.

331. Where a very large number of species of importance occur, then those listed should include the most significant or important species in the context of the ecological character of the site.

7.3.6 Animal communities

☞ **RIS field 12d**

♦ **See also: Section 6.1 Assessing the site against Ramsar's Criteria**

332. This field relates to animal communities and their attributes, especially (but not exclusively) in the context of the application of Criteria 2 and/or 5. In the description box, please briefly specify why each community listed is considered noteworthy (e.g., if it has particular rarity or is economically important). Note specifically whether the community is significant in the context of Criteria 2 and/or 5, i.e., if it is grounds for the designation of the Site.

7.3.7 Animal species

☞ **RIS fields 12c, 18a and 18b**

333. RIS field 12c documents those animal species that are recognized as internationally important in support of the qualification of the site through either Criteria 2, 3, 4, 6, 7 or 9.

334. RIS field 17b documents other animal species that are 'noteworthy' but do not directly support the qualification of the site as internationally important.

335. If data are available, please give the most recent assessment of the population size of the species within the site, also providing units of assessment (e.g., pairs, individuals, etc.), the date of the assessment, and (for the application of Criteria 6 and 9) the proportion (percentage) of the relevant biogeographical population.

336. In field 12c, for each individual animal species please indicate its IUCN Red list status as follows:

Critically Endangered: CR
Endangered: EN
Vulnerable: VU

Note that other categories of IUCN Red List status (Near Threatened – NT; Least Concern – LC; Data Deficient – DD) do not qualify the species as internationally

important for Ramsar Site designation. The Red List status of species can be accessed at www.iucnredlist.org/.

337. Please also indicate in the appropriate columns of field 12c if the species is either:

    a) listed in Appendix I of CITES; and/or
    b) considered as vulnerable, endangered or critically endangered under national endangered species legislation, programmes or Red Lists. In that case, please add the relevant citation details of such national legislation, programmes or Red Lists to field 35 (Bibliographic references).

338. In fields 12c and 18a, where relevant and if possible, specify why each animal species (or assemblage) listed is considered noteworthy (e.g., if it is an economically important species, or a "keystone" species, or a species associated with high wetland biodiversity values, e.g., turtles, crocodiles, otters, dolphins) or is zoogeographically significant (e.g., relict populations, unusual range extensions or significant position within the overall geographic range, for instance that a site may be the most southerly occurrence of a certain species, etc.).

339. Endemic animal species that have not been considered towards the application of relevant Criteria at the site (e.g., because either the number of endemic species was not considered "significant" (Criterion 3) or the percentage of endemic fish did not reach the threshold percentage for the application of Criterion 7) should be listed in field 18a.

340. General species (occurrence) lists should not be included here or under other RIS fields, but such lists (properly labeled with site details) can be appended to the RIS when they are available, and this may be indicated in Part 5 of the RIS.

341. Where a very large number of species of importance occur, then those listed should include the most significant or important species in the context of the ecological character of the site.

342. Field 18b should be completed to record the presence of any invasive alien animal species, as requested by the Parties in Resolution VII.14 and VIII.18. Please indicate whether the impacts of the invasive alien species are such as to actually (in which case, to what degree) or potentially threaten the ecological character of the Ramsar Site. If this is the case, please also record this in field 30 (Factors adversely affecting the ecological character of the site) and, for an updated RIS, also note this in field 6c. For RIS updates, please also note significant changes in the abundance and/or ecological impacts of invasive alien animal species.

343. The scientific name, and the vernacular name (if one exists) in English, French or Spanish, should be given for each species listed. See section 5.7.4 for guidance on species nomenclature and taxonomy.

7.3.8 Soil

☞ **RIS field 19**

344. Please indicate the predominant soil types across the site as *a whole*. Also indicate whether soil types are subject to change as a result of changing hydrological conditions (e.g., increased salinity or acidification).

7.3.9 Water regime

☞ **RIS field 20**

345. Field 20 provides information about the hydrology of the site, and specifically the permanence of water at the site, its source and destination, and the stability of the water regime. Please tick all options that apply under each heading.

346. Information about other key hydrological features such as evaporation, flooding frequency, seasonality and duration of water flows; magnitude of flow and/or tidal regimes, and links with groundwater can be added in the text box if appropriate.

347. For RIS updates, please also note significant change in any of these hydrological elements.

348. Other RIS fields cover other aspects of the hydrology of site: field 22 (water pH); field 23 (water salinity); field 24 (nutrients in water) and field 26 (ecosystem services/benefits).

7.3.10 Sediment regime

☞ **RIS field 21**

349. If known, please indicate whether significant erosion, accretion or deposition, or transportation of sediments occurs on or through the site.

350. For RIS updates, please also note significant change in sediment regimes.

7.3.11 Water pH

☞ **RIS field 22**

351. If known, please note the approximate pH regime averaged across the site as a whole.

352. For RIS updates, please also note significant change in pH.

7.3.12 Water salinity

☞ **RIS field 23**

353. If known, please note the water salinity averaged across the site as a whole.

354. For RIS updates, please also note significant change in salinity.

7.3.13 Dissolved or suspended nutrients in water

☞ **RIS field 24**

355. If known, please note the relevant categories of dissolved or suspended nutrients in water, averaged across the site as a whole.

356. For RIS updates, please also note significant change in dissolved or suspended nutrients.

7.3.14 Physical features of the surrounding area

☞ **RIS field 25**

357. Please describe whether, and if so how, the landscape and ecological characteristics in the wider catchment or area surrounding the Ramsar Site differ from the Ramsar Site itself. Indicate all the categories which apply.

7.3.15 Ecological processes

☞ **RIS Part 3.2**

358. Ecological processes are an important component of the definition of ecological character. The main ecological processes – as included in the Convention's format for describing ecological character (Resolution X.15) – are listed here for the sake of completeness and compatibility.

359. It is **not** envisaged that information on ecological processes should need to be reported as part of a normal RIS submission. However, if a Contracting Party does have information available that is relevant to these fields (for example, from a national Ecological Character Description form) it may, if it wishes to, include information in these additional fields.

7.3.16 Ecosystem services

☞ **RIS field 26**

360. Wetlands exist within landscapes in which people's activities are influenced by the wetlands and the delivery of their ecosystem services, and in which the wetlands themselves are influenced by the use of such services by dependent local communities (e.g., by forms of traditional management). There are many examples where the ecosystem structure and functioning of the wetland have developed as a result of cultural features or legacies. There are also many examples where the maintenance of the ecosystem structure and functioning of wetlands depends upon the interaction between human activities and the wetland's biological, chemical, and physical components.

361. Field 26 of the RIS requests a summary of the main ecosystem services currently provided by the site. These are organized against the Millennium Ecosystem Assessment's (2003) classification of Provisioning, Regulating, Cultural and Supporting Services. If there are other ecosystem services occurring on the site which do not fit against this classification or the examples given, then please also describe them.

362. First, please indicate each service known to occur on the site. Then, if possible, indicate the relative importance of services provided by the site as follows:

0 = not relevant for the site
1 = present but low importance/extent or significance
2 = present, medium importance/extent or significance
3 = present, high importance/extent or significance

363. It is also helpful to record in this field whether or not there have been studies or assessments of the economic valuation of ecosystem provided by the Ramsar Site, whether published or unpublished.

7.3.17 Social or cultural values

☞ **RIS field 27**

♦ **See also: Section 7.4.3 Factors adversely affecting the site's ecological character**

364. Indicate here whether the site is considered of international importance for holding, in addition to relevant ecological values, examples of significant cultural values, whether material or non-material, linked to its origin, conservation, and/or ecological functioning. If so, provide information about this importance according to the categories adopted by Resolution IX.21 (www.ramsar.org/pdf/res/key_res_ix_21_e.pdf).

365. Details about values derived from non-sustainable exploitation or which result in detrimental ecological changes should be described in field 30 (Factors adversely affecting the site's ecological character).

7.4 How is the site managed (Conservation and management) – RIS part 4

7.4.1 Land tenure/ownership

☞ **RIS field 28**

366. Field 28 summarizes details of land ownership/tenure both of the Ramsar Site and the surrounding areas. Please indicate all the categories which apply at the site or in the surrounding area (which should be interpreted as that area around the Site where land-use or other human factors might influence the ecological character of the wetland).

7.4.2 Management authority

☞ **RIS field 29**

367. Please provide the name and address of the local office(s) of the agency(ies) or organization(s) directly responsible for managing the wetland. Wherever possible, provide also the title and/or name of the person or persons in this office with responsibility for the wetland.

7.4.3 Factors adversely affecting the site's ecological character

☞ **RIS field 30**

♦ **See also: Appendix F, Explanation of categories of factors adversely affecting the site's ecological character**

368. Field 30 requests a summary of the human and natural factors affecting the ecological character of the site, both within and around the site (including the greater catchment, if relevant). These may include new or changing activities/uses, major development projects,

etc., which have had, are having, or may have a detrimental effect on the natural ecological character of the wetland.

369. It is important to specify both the agent for the change (e.g., diversion of water, drainage, reclamation, pollution, over-grazing, excessive human disturbance, or excessive hunting and fishing, etc.) and the resulting change and its impact (e.g., siltation, erosion, fish mortality, change in vegetation structure, habitat fragmentation, disturbed reproduction of species, physical or ecological change due to climate change, etc.). It is also important to differentiate between factors coming from within the site itself and those factors emanating from outside the site, but which are having or may have an impact on the site. Please distinguish between actual (currently occurring) and potential (likely to occur) adverse factors.

370. When reporting on pollution, special notice should be taken of toxic chemical pollutants and their sources. These should include industrial and agricultural-based chemical effluents and other emissions.

371. There can be occasions when more than one factors impacting on a site occur together, and act in combination or synergistically to result in severe impacts. In instances where an adverse combination of impacts may be affecting the ecological character of a site, details should be provided in the relevant text box.

372. Please also detail significant natural events, including episodic catastrophes (e.g., an earthquake or volcanic eruption) or natural vegetative succession which have had, are having, or are likely to have an impact on the ecological character of the site, in order to facilitate monitoring.

373. Further information on what is covered by each category of factor listed in RIS field 30 is provided in Appendix F.

7.4.4 Conservation measures taken

☞ **RIS field 31**

374. In field 31a, please provide details of any other relevant conservation status which either wholly or partly overlaps with the Ramsar Site as follows:

- Global international legal and other formal designations;
- Regional international legal and other formal designations;
- National legal and other formal designations; and
- Non-statutory designations.

375. If a reserve has been established, give the date of establishment and size of the protected area.

376. In field 31b, list the IUCN (Dudley 2008) protected areas management category/ies which apply to the site. These are as follows:

Category	Definition
Ia Strict Nature Reserve: protected area managed mainly for science	Area of land and/or sea possessing some outstanding or representative ecosystems, geological or physiological features and/or species, available primarily for scientific research and/or environmental monitoring.
Ib Wilderness Area: protected area managed mainly for wilderness protection	Large area of unmodified or slightly modified land, and/or sea, retaining its natural character and influence, without permanent or significant habitation, which is protected and managed so as to preserve its natural condition.
II National Park: protected area managed mainly for ecosystem protection and recreation	Natural area of land and/or sea, designated to (a) protect the ecological integrity of one or more ecosystems for present and future generations, (b) exclude exploitation or occupation inimical to the purposes of designation of the area and (c) provide a foundation for spiritual, scientific, educational, recreational and visitor opportunities, all of which must be environmentally and culturally compatible.
III Natural Monument: protected area managed mainly for conservation of specific natural features	Area containing one, or more, specific natural or natural/cultural feature which is of outstanding or unique value because of its inherent rarity, representative or aesthetic qualities or cultural significance.
IV Habitat/Species Management Area: protected area managed mainly for conservation through management intervention	Area of land and/or sea subject to active intervention for management purposes so as to ensure the maintenance of habitats and/or to meet the requirements of specific species.
V Protected Landscape/ Seascape: protected area managed mainly for landscape/seascape conservation and recreation	Area of land, with coast and sea as appropriate, where the interaction of people and nature over time has produced an area of distinct character with significant aesthetic, ecological and/or cultural value, and often with high biological diversity. Safeguarding the integrity of this traditional interaction is vital to the protection, maintenance and evolution of such an area.
VI Managed Resource Protected Area: protected area managed mainly for the sustainable use of natural ecosystems	Area containing predominantly unmodified natural systems, managed to ensure long term protection and maintenance of biological diversity, while providing at the same time a sustainable flow of natural products and services to meet community needs.

377. IUCN defines a "protected area" as "a clearly defined geographical space, recognized, dedicated and managed, through legal or other effective means, to achieve the long-term conservation of nature with associated ecosystem services and cultural values" (Dudley 2008).

378. Field 34 summarizes the conservation measures (including and beyond restoration) that are either proposed or being currently undertaken at a site. Please indicate those key measures that are proposed or being undertaken to maintain ecological character. Indicate those measures not currently implemented but proposed, those measures that are partially implemented, and those measures being fully implemented. Partial implementation may involve, for example, a measure being implemented across part of the site only (yet with

the intention for wider implementation), or measures only partly implemented such as a restriction which is currently voluntary but for which formal regulation is anticipated/desired. Note that there may be overlap between the categories.

379. In the 'other' category please describe those measures that are not covered by the above categories.

7.4.5 Management planning

☞ **RIS field 32**

♦ **See also: Ramsar Handbook 18, *Managing wetlands: Frameworks for managing Wetlands of International Importance and other wetland sites* (4th ed., 2010)**

380. Where a management plan has been prepared for the site being designated, the information provided in the RIS should be consistent with the plan's description of ecological character features, the values and functions of the wetland, the factors affecting or likely to affect its character, values and functions, and the management planning process, including monitoring.

381. Describe the management planning process for the site in field 32 of the RIS, including any plan developed and being implemented, including whether it has been officially approved.

382. Record whether a management effectiveness assessment e.g., www.wdpa.org/ME/tools.aspx has been undertaken for the site in field 32.

383. Cite the management plan document(s) in field 35 (Bibliographic references) and if possible provide a copy of the plan as supplementary information to the RIS.

384. When a management plan is prepared as part of the management planning process for the site after it has been designated as a Ramsar Site, the information in the RIS should be checked and, if necessary, a revised RIS should be completed and sent to the Ramsar Secretariat.

7.4.6 Planning for restoration

☞ **RIS field 33**

385. Field 33 summarizes any activities, if relevant, related to restoration. Where such activity is being undertaken or planned, please indicate whether this affects the whole Ramsar Site or just part of it.

7.4.7 Monitoring implemented or proposed at the site

☞ **RIS field 34**

386. Monitoring, as outlined in Ramsar Handbooks 13 (*Inventory, assessment, and monitoring: an Integrated Framework for wetland inventory, assessment, and monitoring* - Ramsar Convention Secretariat 2010c) and 18 (Man*aging wetlands: Frameworks for managing Wetlands of International Importance and other wetland sites* – Ramsar Convention Secretariat 2010e) will be described within the site management plan and is essential to ensure site objectives are met.

387. Please provide information concerning proposed, partial or actual monitoring at the site in field 34. This means either annual or periodic monitoring of features of importance at the site, rather than 'one-off' surveys to define or describe environmental or ecological features of a site.

388. For "partially implemented" monitoring this may refer to, for example, monitoring occurring on part of a site or a low level of monitoring likely to be insufficient to fully effective to achieve its objectives. In the 'other' category please describe those monitoring activities that are not covered by the above categories.

7.4.8 Bibliographic references

☞ **RIS field 35**

389. Please provide here a list of key technical references related to the wetland, including management plans, major scientific reports, and bibliographies, if such exist. Please list any functional/active website addresses dedicated to the Ramsar Site or which prominently feature the site (e.g., a website detailing all of a country's Ramsar Sites), and include the date that the website was most recently updated.

390. When a large body of published material is available about the site, only the most important references need to be cited, with priority being given to recent literature containing extensive bibliographies.

391. Reprints or copies of the most important literature, including a copy of any management plan, should be appended whenever possible or preferably web-links given where such publications are available online.

7.5 Providing additional information relevant to this Ramsar Site

☞ **RIS part 5**

392. If supporting or additional information about the Ramsar Site is available, please indicate that in RIS Part 5, and provide such additional information to the Secretariat as separate documents.

393. Such information might be:

i) taxonomic lists of plant and animal species occurring in the site (see RIS Fields 17 & 18)
ii) a detailed Ecological Character Description (ECD) (in a national format)
iii) a national wetland inventory entry or description
iv) relevant Article 3.2 reports
v) a site management plan (see RIS field 32)
vi) other important published literature (see RIS field 35).

394. All such additional information sources will be made available by the Secretariat through the Ramsar Sites Information Service (RSIS) website.

8. Site description: updating the Ramsar Site Information Sheet

What does this section do? Gives specific guidance on updating Information Sheets about already designated Ramsar Sites

395. In Resolution VI.13 (1996), Contracting Parties have undertaken to provide updated Information Sheets for Ramsar Sites at least every six years (calculated from the date of designation).

396. In the event of actual or potential change in the ecological character of a Ramsar Site, Article 3.2 of the Convention requires Contracting Parties to inform the Secretariat "without delay". Such notifications should typically be accompanied by an updated RIS, but for other sites, the RIS should be updated at least every six years in any case.

397. The process of RIS update should involve the systematic review of all RIS fields. Whilst there may be few or no changes to many of the descriptive fields, typically new data and information will be available through site monitoring programmes. There may also be improved understanding of the ecological character of the site, possibly through research programmes. Such new information should be used to update the RIS.

398. Some of the RIS fields include information that specifically relates to RIS updates (fields 2, 6, 20 and 30). These are specifically designed to track changes in ecological character, and factors influencing it, through time.

399. The central element of an RIS update is a reassessment of the ecological character of the site (field 13). It is recommended that other fields in Parts 3 and 4 of the form be completed before revising field 13. The ecological character of the site may have changed because of:

- improved understanding of ecological processes as a result of new data and information from monitoring or research programmes; and/or
- changes that are the result of factors external to the site (e.g., climate changes influencing the hydrological regime); and/or
- changes that are the result of factors operating within the site (e.g., anthropogenic impacts).

400. Further information about addressing change in ecological character is given in Ramsar Handbook 19 (4th ed., 2010).

401. Should current data and information indicate the need to alter the ecological character description, then field 13 should be revised accordingly. Field 6b should also be completed to indicate the location of factors responsible for the changed ecological character. Finally, field 6c should be completed to *describe* the changes.

402. Updating field 2 – on the date of the data and information used – is an important part of the RIS update process. This field records the period over which the data and information used in the RIS was collected. For a new RIS, this date would typically relate to 'contemporary' data – usually (but not always) for a period of five years or so prior to the designation.

404. For an updated RIS, field 2 should record the period during which the new data and information summarized was collected. Thus for example, for a Ramsar Site designated for its international importance for waterbirds, and where there is an active monitoring programme, this would be the most recent five year period of assessment (which would also be the period given in field 12c alongside the assessments of each waterbird species.

9. Understanding Ramsar Site designation processes and responsibilities

404. The Ramsar Site Information Sheet (RIS) is an official document of the Convention and is made publicly available by the Secretariat.

405. There are three main stages to the designation process:

i) the designation of a Ramsar Site,
ii) the Site being placed on the formal List of Wetlands of International Importance (the Ramsar List), and
iii) the data and information provided in an RIS being entered into the Ramsar Sites Database and, with any additional information, this being made available through the Ramsar Sites Information Service (RSIS) website.

406. The key roles and responsibilities are that:

i) **Contracting Parties** are responsible for identifying, compiling information, and designating wetlands within their territory that qualify as internationally important;
ii) The **Ramsar Secretariat** is responsible for checking and confirming that the RIS and its map(s) confirm that the site qualifies for designation under the Ramsar Criteria, and that the RIS and its map(s) have been correctly completed in line with the adopted guidance for this, and then for placing the designated site on the Ramsar List; and
iii) Under a longstanding arrangement decided by the Standing Committee, **Wetlands International** is responsible for maintaining the Ramsar Sites Database and RSIS, under a contractual arrangement with the Ramsar Secretariat.

9.1 Designating a Ramsar Site (and updating Ramsar Site information)

407. It is solely the role and responsibility of a Contracting Party to **designate** a wetland within its territory as being internationally important under the Ramsar Convention, and to prepare and submit the RIS (including maps) in the correct format to the Secretariat.

408. The RIS for a newly designated Site (or an update to the RIS for a previously designated site) must be officially transmitted to the Secretariat by the Ramsar Administrative Authority (AA) of the Contracting Party concerned, with a letter clearly stating that the wetland is being designated for inclusion in the Ramsar List and specifying the formal date of designation if wished.

409. The RIS (including maps) and supporting materials must be provided to the Secretariat in its electronic format (MS Word), by email or on CD-ROM, or through the online RIS submission system, once available (see below). If the Party so wishes, it may also transmit a

printed copy of the RIS materials under a diplomatic notification or official letter to the Secretariat.

410. There are plans to establish a Web-based online facility for the submission of these materials, and once that has become operational, the Administrative Authority may alternatively prepare and submit the RIS (including maps and any supporting materials) to the Secretariat through that facility. The Secretariat will provide supplementary advice concerning the online submission process for RISs at that time.

411. Some Contracting Party have established formal national procedures to be followed prior to designating a Ramsar Site (for example, gazetting the site under national legislation) which may make it difficult to amend or correct any information in the RIS once it has been submitted to the Secretariat. Since (see below) the Ramsar Secretariat is charged with checking and confirming that the RIS has been correctly compiled in the approved format and that the Site qualifies for designation under the Criteria for international importance, when preparing an RIS such Parties are strongly urged to provide a draft to the Secretariat prior to their formal designation of the Site, so that any clarifications or amendments can be made before the national designation procedures are effected.

Designating a Ramsar Site at the time of the accession of a new Contracting Party

412. Under Article 2.4 of the Convention, as part of its accession a Contracting Party must designate at least one wetland as a Ramsar Site. At the time of accession that Party is required to provide just the name and a map of the site (or sites) being designated, since the RIS process was only later established by the Convention. However, a country preparing for accession is strongly urged to prepare an RIS at that time for each site being designated, and to consult with the Secretariat on the draft RIS, so that the Secretariat can confirm clearly that the site does indeed qualify for designation as internationally important.

Assigning a date of designation of a Ramsar Site

413. The date of designation or update of a Ramsar Site is that indicated or requested by the Ramsar Administrative Authority (AA). The designation date required should be indicated in the designation letter from the AA to the Secretariat that accompanies the RIS.

414. If no designation date is indicated to the Secretariat, the Secretariat assigns the date of the designation letter or email from the Administrative Authority as the designation date of the site.

415. If, following the receipt and review of the RIS by the Secretariat (see below), a significant time-period elapses before any problems with the RIS content are resolved with the Administrative Authority, the Secretariat may propose that, with the agreement of the AA, the date of designation is that on which the RIS is finalised.

416. For a Ramsar Site designated at the time of accession by a new Contracting Party, the date of designation is that of the date of accession, as advised to the Secretariat by UNESCO (which is the Convention's legal depositary).

9.2 Reviewing the RIS content and Listing the Ramsar Site

417. These parts of the Ramsar Site designation process are the responsibility of the Ramsar Secretariat.

418. Under the terms of Resolution VIII.13 (2002) *Enhancing the information on Wetlands of International Importance (Ramsar Sites)*, the Ramsar Secretariat is required to review the RIS (including maps) to confirm that:

i) the correct current approved format of the RIS has been used;

ii) the information provided in the RIS has been included correctly in each of the RIS sections and fields, and that there is an appropriate minimum level of information provided, in line with the guidance provided in the most recently adopted version of the *Strategic Framework and guidelines for the future development of the List of Wetlands of International Importance of the Convention on Wetlands*;

iii) RIS maps have been prepared and provided in conformity with the specific guidance adopted for map preparation (see Appendix C); and

iv) very importantly, the information provided in the RIS concerning the Criteria for the site's international importance and the justifications for each Criterion applied confirm that a) the site does qualify for designation as internationally important, and b) each Criterion has been correctly applied.

419. Following this review, if the Secretariat identifies any problems with the format and content of the RIS (including maps), it discusses these with the Administrative Authority in order to agree and make any adjustments to the RIS for its finalization.

420. Once the Secretariat confirms that the RIS meets the above requirements, the Secretary General approves the Site to be formally placed on the List of Wetlands of International Importance.

421. With that approval confirmed the Secretariat then:

i) allocates a *Ramsar Site number* to the site (which is simply the numerical order in which sites have been added to the Ramsar List, regardless of formal designation dates (www.ramsar.org/pdf/sitelist_order.pdf));

ii) adds the Site to the Ramsar List (www.ramsar.org/pdf/sitelist.pdf), along with a brief summary text describing the site in the Annotated List (www.ramsar.org/anno-list);

iii) posts this information on the Ramsar website and announces the designation on the website and Ramsar Forum and Exchange list-servers;

iv) prepares an official letter of acknowledgement to the Administrative Authority and sends this along with a "Ramsar Site Diploma" (or several copies if requested);

v) prepares and sends an official letter to the Ramsar Site manager identified by the AA in field 29 of the RIS;

vi) enters the data and information from the RIS into the Ramsar Sites Database; and

vii) sends the electronic RIS (including maps and any supplementary information provided by the AA) to Wetlands International for posting on the Ramsar Sites Information Service (RSIS) website.

422. Concerning **updates** to existing Ramsar Sites, the Secretariat follows the same review procedures for updated RISs, but in addition checks that all RIS fields required specifically for updates have been correctly completed. For updates, the Secretariat advises the AA and site manager by e-mail when the updated information has been added to the Ramsar List.

9.3 Maintaining up-to-date and accessible information on Ramsar Sites

423. The Ramsar Secretariat is the custodian of the official Ramsar Sites archive of RISs and any supplementary information on Ramsar Sites provided by Contracting Parties, in both electronic and hard-copy formats.

424. Under a longstanding arrangement decided by the Standing Committee, Wetlands International maintains and develops the *Ramsar Sites Information Service (RSIS)* (http://ramsar.wetlands.org/) under a contractual arrangement with the Secretariat.

425. The RSIS provides online access to the data and information on all designated Ramsar Sites. It includes the searchable Ramsar Sites Database, which holds coded information on designated sites; access to downloadable copies of RISs (including maps and supplementary information) and Annotated List summaries; digital (shape-file) boundaries of sites, where available; interactive maps and the facility to view and access the locations and site information on the Google Earth platform; regularly updated summary Ramsar Site statistics; and a 'Tools for Parties' section which provides links to a range of reports and information helpful for supporting Parties' identification, application of Criteria, and designation of Ramsar Sites.

10. References and further sources of information

Abell, R., Thieme, M.L., Revenga, C., Bryer, M., Kottelat, M., Bogutskaya, N., Coad, B., Mandrak, N., Contreras Balderas, S., Bussing, W., Stiassny, M.L.J., Skelton, P., Allen, G.R., Unmack, P., Naseka, A., Ng, R., Sindorf, N., Robertson, J., Armjio, E., Higgins, J.V., Heibel, T.J., Wikramanayake, E., Olson, D., López, H.L., Reis, R.E., Lundberg, J.G., Sabaj Pérez, M.H. & Petry, P. 2008. Freshwater ecoregions of the world: a new map of biogeographic units for freshwater biodiversity conservation. *Bioscience* 5: 403-414. doi:10.1641/B580507

Anderson, S. 2002. *Identifying Important Plant Areas.* Plantlife International 51 pp.

Anderson, S., Kusik, T. & Radford, E. 2005. *Important Plant Areas in Central and eastern Europe: priority sites for plant conservation.* Plantlife International, Salisbury, UK.

Bailey, R.G. 1998. *Ecoregions: the ecosystem geography of the oceans and continents*. Springer-Verlag. New York. 176 pp.

Beck, M.W., Brumbaugh, R.D., Airoldi, L., Carranza, A., Coen, L.D., Crawford, C., Defeo, O., Edgar, G.J., Hancock, B., Kay, M.C., Lenihan, H.S., Luckenbach, M.W., Toropova, C.L. & Zhang, G. & Guo, X. 2011. Oyster reefs at risk and recommendations for conservation, restoration, and management. *Bioscience* 61(2):107-116.

Boere, G.C. & Stroud, D.A. (2006). The flyway concept: what it is and what it isn't. *Waterbirds around the world*. Eds. G.C. Boere, C.A. Galbraith & D.A. Stroud. The Stationery Office, Edinburgh, UK. Pp. 40-49. (Available at: jncc.defra.gov.uk/PDF/pub07_waterbirds _part1_flywayconcept.pdf).

Cerco, C.F. & Noel, M.R. 2007. Can oyster restoration reverse cultural eutrophication in Chesapeake Bay? *Estuaries and Coasts* 30: 331-343.

Coen, L.D., Brumbaugh, R.D., Bushek, D., Grizzle, R., Luckenbach, M.W., Posey, M.H., Powers, S.P. & Tolley, S.G. 2007. Ecosystem services related to oyster restoration. *Marine Ecology Progress Series* 341: 303-307.

Dame, R.F. 1996. *Ecology of Marine Bivalves: An Ecosystem Approach*. CRC Press. New York, NY.

Davis, J. & Brock, M. 2008. Detecting unacceptable change in the ecological character of Ramsar Wetlands. *Ecological Management & Restoration* 9(1): 26-32.

Delany, S., Scott, D.A., Dodman, T., & Stroud, D.A. (eds.) (2009). *An atlas of wader populations in Africa and western Eurasia*. Wetlands International, Wageningen, The Netherlands. 524 pp.

Dudley, N. (ed.) 2008. *Guidelines for Applying Protected Area Management Categories*. Gland, Switzerland: IUCN. 86 pp. (Available at: http://data.iucn.org/dbtw-wpd/edocs/PAPS-016.pdf)

Fulford, R.S., Breitburg, D.L., Newell, R.I.E., Kemp, W.M. & M. Luchenbach, M. 2007. Effects of oyster population restoration strategies on phytoplankton biomass in Chesapeake Bay: a flexible modeling approach. *Marine Ecology Progress Series* 336: 43-61.

Grizzle, R.E., Greene, J.K., Luckenbach, M.W. & Coen, L.D. 2006. A new in situ method for measuring seston uptake by suspension-feeding bivalve molluscs. *Journal of Shellfish Research* 25(2): 643-649.

Hagemeijer, W. 2006. Site networks for the conservation of waterbirds. *Waterbirds around the world*. Eds. G.C. Boere, C.A. Galbraith & D.A. Stroud. The Stationery Office, Edinburgh, UK. pp. 697-699. (Available at: http://jncc.defra.gov.uk/PDF/pub07_waterbirds _part5.3.9.pdf).

IUCN 2001. *IUCN Red List Categories and Criteria: Version 3.1. (*Available at www.iucnredlist.org/ technical-documents/categories-and-criteria/2001-categories-criteria).

Jackson, J.B.C. 2008. Ecological extinction and evolution in the brave new ocean. *Proceedings of the National Academy of Sciences* 105: 11458-11465.

Jones, C.G., Lawton, J.H. & Shachak, M. 1994. Organisms as ecosystem engineers. *Oikos* 69(3): 373-386.

Kirby, M.X. 2004. Fishing down the coast: historical expansion and collapse of oyster fisheries along continental margins. *Proceedings of the National Academy of Sciences* 101(35):13096-13099.

Langhammer, P.F., Bakarr,M.I., Bennun, L.A., Brooks, T.M., Clay, R.P., Darwall,W., De Silva, N., Edgar, G.J., Eken, G., Fishpool, L.D.C., Fonseca, G.A.B. da, Foster, M.N., Knox, D.H., Matiku, P., Radford, E.A., Rodrigues, A.S.L., Salaman, P., Sechrest, W. & Tordoff, A.W. 2007. *Identification and Gap Analysis of Key Biodiversity Areas: Targets for Comprehensive Protected Area Systems.* Gland, Switzerland: IUCN. (Available at: http://data.iucn.org/dbtw-wpd/edocs/PAG-015.pdf).

Lenihan, H.S. & Peterson, C.H. 1998. How habitat degradation through fishery disturbance enhances impacts of hypoxia on oyster reefs. *Ecological Applications* 8:128-140.

Lotze, H.K., Leniham, H.S., Bourque, B.J., Bradbury, R.H., Cooke, R.G., Kay, M.C., Kidwell, S.M., Kirby, M.X., Peterson, C.H. & Jackson, J.B.C. 2006. Depletion, degradation, and recovery potential of estuaries and coastal seas. *Science* 312:1806-1809.

Mann, R., Harding, J.M. & Southworth, M.J. 2009. Reconstructing pre-colonial oyster demographics in the Chesapeake Bay, USA. *Estuarine Coastal and Shelf Science* 85: 217-222.

McCormick-Ray, M.G. 1998. Oyster reefs in 1878 seascape pattern – Winslow revisited. *Estuaries* 21: 784-800.

McCormick-Ray, J. 2005. Historical oyster reef connections to Chesapeake Bay – a framework for consideration. *Estuarine Coastal and Shelf Science* 64: 119-134.

Meyer, D.L., Townsend, E.C. & Thayer, G.W. 1997. Stabilization and erosion control value of Oyster cultch for intertidal marsh. *Restoration Ecology* 5:93-99.

Millennium Ecosystem Assessment (MEA). 2003. *Ecosystems and Human Well-Being: a Framework for Assessment.* World Resources Institute, Washington, DC.

Millennium Ecosystem Assessment (MEA). 2005. *Ecosystems and Human Well-Being: Wetlands and Water Synthesis.* World Resources Institute, Washington, DC.

Miyabayashi, Y. & Mundkur, T. 1999. *Atlas of Key Sites for Anatidae in the East Asian Flyway.* Wetlands International - Japan, Tokyo, and Wetlands International - Asia Pacific, Kuala Lumpur. 148 pp. (Available at: www.jawgp.org/anet/aaa1999/aaaendx.htm).

Newell, R.I.E. 1988. Ecological changes in Chesapeake Bay: Are they the result of overharvesting the American oyster, *Crassostrea virginica*? In:*Understanding the Estuary: Proceedings of a Conference, 29-31 March 1988*. Chesapeake Research Consortium Publication 129, CBP/TRS 24/88. Baltimore, Maryland.

Newell, R.I.E. 2004. Ecosystem influences of natural and cultivated populations of suspension-feeding bivalve mollusks: a review. *Journal of Shellfish Research* 23(1): 51-61.

Newell, R.I.E., Fisher, T.R., Holyoke, R.R. & Cornwell, J.C. 2005. Influence of eastern oysters on nitrogen and phosphorus regeneration in Chesapeake Bay, USA. Pp. 93-120. In: *The Comparative Roles of Suspension Feeders in Ecosystems.* Dame, R. & Olenin, S. eds. Vol. 47, NATO Science Series IV: Earth and Environmental Sciences. Springer, Netherlands.

Nixon, S.W. 1995. Coastal marine eutrophication: A definition, social causes and future concerns. *Ophelia* 41: 199-219.

Olson, D.M, Dinerstein, E., Wikramanayake, E.D., Burgess, N.D., Powell, G.V.N., Underwood, E.C., D'amico, J.A., Itoua, I., Strand, H.E., Morrison, J.C., Loucks, C.J., Allnutt, T.F., Ricketts, T.H., Kura, Y., Lamoreux, J.F., Wettengel, W.W., Hedao, P. & Kassem, K.R. 2001. Terrestrial ecoregions of the world: a new map of life on Earth. *BioScience* 51:933-938. (Available at: www.worldwildlife.org/science/ecoregions/WWFBinaryitem6498.pdf).

Piazza, B.P., Banks, P.D. &. La Peyre, M.K. 2005. The potential for created oyster shell reefs as a sustainable shoreline protection strategy in Louisiana. *Restoration Ecology* 13:499-506.

Plantlife International 2004. *Identifying and protecting the world's most important plant areas.* Plantlife International. 7 pp.

Pritchard, D.E. 2006. Towards coherence in site networks. *Waterbirds around the world.* Eds. G.C. Boere, C.A. Galbraith & D.A. Stroud. The Stationery Office, Edinburgh, UK. Pp. 673-674. (Available at: http://jncc.defra.gov.uk/PDF/ pub07_waterbirds_part5.3.1.pdf).

Rebelo, L-M., Finlayson, M. & Stroud, D.A. 2012. *Ramsar Site under-representation and the use of biogeographical regionalization schemes to guide the further development of the Ramsar List.* Ramsar Technical Report. Ramsar Convention Secretariat, Gland, Switzerland. [in preparation]

Ramsar Convention Secretariat. 2010a. *Strategic Framework and guidelines for the future development of the List of wetlands of International Importance.* Ramsar Handbooks for the Wise Use of Wetlands, 4th ed., vol. 17 (www.ramsar.org/pdf/lib/hbk4-17.pdf).

Ramsar Convention Secretariat. 2010b. *Addressing change in ecological character: Addressing change in the ecological character of Ramsar Sites and other wetlands.* Ramsar Handbooks for the Wise Use of Wetlands, 4th ed., vol. 19 (www.ramsar.org/pdf/lib/hbk4-19.pdf).

Ramsar Convention Secretariat. 2010c. *Inventory, assessment, and monitoring: an Integrated Framework for wetland inventory, assessment, and monitoring.* Ramsar Handbooks for the Wise Use of Wetlands, 4th ed., vol. 13. (www.ramsar.org/pdf/lib/hbk4-13.pdf).

Ramsar Convention Secretariat. 2010d. *Wetland Inventory.* Ramsar Handbooks for the Wise Use of Wetlands, 4th ed., vol. 15. (www.ramsar.org/pdf/lib/hbk4-15.pdf)

Ramsar Convention Secretariat, 2010e. Man*aging wetlands: Frameworks for managing Wetlands of International Importance and other wetland sites.* Ramsar Handbooks for the Wise Use of Wetlands, 4th edition, vol. 18. (http://www.ramsar.org/pdf/lib/hbk4-18.pdf)

Ridgill, S.C. & Fox, A.D. 1990. *Cold weather movements of waterfowl in Western Europe.* Slimbridge, IWRB. (IWRB Special Publication No. 13)

Rodríguez, J.P., Rodríguez-Clark, K.M., Baillie, J.E.M., Ash, N., Benson, J., Boucher, T., Brown, C., Burgess, N.D., Collen, B., Jennings, M., Keith, D.A., Nicholson, E., Revenga, C., Reyers, B., Rouget, M., Smith, T., Spalding, M., Taber, A., Walpole, M., Zager, I. & Zamin, T. 2010. Establishing IUCN Red List criteria for threatened ecosystems. *Conservation Biology* 25(1): 21-29. DOI: 10.1111/j.1523-1739.2010.01598.x

Schafer, C.L. 1990. *Nature reserves. Island theory and conservation practice.* Washington and London, Smithsonian Institution Press. 189 pp. (www.amazon.co.uk/Nature-Reserves-Island-Conservation-Practice/dp/0874743842)

Scott, D.A. & Rose, P.M. 1996. *Atlas of Anatidae Populations in Africa and Western Eurasia.* Wetlands International Publication No.41, Wageningen, The Netherlands. 336pp.

Spalding, M.D., Ravilious, C. & Green, E.P. 2001. *World Atlas of Coral Reefs.* UNEP World Conservation Monitoring Centre. University of California Press, Berkeley, USA. (Available at: www.unep-wcmc.org/world-atlas-of-coral-reefs_524.html)

Spalding, M.D., Fox, H.E., Allen, G.R., Davidson, N., Ferdaña, Z.A., Finlayson, M., Halpern, B.S., Jorge, M.A., Lombana, A., Lourie, S.A., Martin, K.D., McManus, E., Molnar, J., Recchia, C.A., & Roberston, J. 2007. Marine Ecoregions of the World: a bioregionalization of coastal and shelf areas. *BioScience* 57(7): 573-583.

Spalding, M.D , Kainuma, M. & Collins, L. 2010. *World Atlas of Mangroves.* Earthscan Publications. 336 pp.

Stattersfield, A.J., Crosby, M.J., Long, A.J. & Wege, D.C. 1998. *Endemic bird areas of the world. Priorities for biodiversity conservation.* BirdLife Conservation Series No. 7. 846 pp. Cambridge, UK.

Udvardy, M.D.F. 1975. *A classification of the biogeographical provinces of the world.* Occasional Paper no. 18. World Conservation Union, Gland, Switzerland. (Available at: http://cmsdata .iucn.org/downloads/udvardy.pdf).

Welcomme, R. L. 1979. *Fisheries ecology of floodplain rivers.* Longman, London. 317 pp.

WWF & IUCN. 1994-1997. *Centres of Plant Diversity. A guide and strategy for their conservation.* 3 volumes. IUCN Publications Unit, Cambridge, UK.
Volume 1. *Europe, Africa, South-west Asia and the Middle East.* 354 pp. (1994)
Volume 2. *Asia, Australasia and the Pacific.*
Volume 3. *The Americas.* 562 pp. (1997)

Appendix A
Ramsar Information Sheet

The Ramsar Site Information Sheet (RIS) - 2012 revision (COP11 Resolution XI.8 Annex 1) is available at http://www.ramsar.org/doc/cop11/res/cop11-res08-e-anx1.doc and http://www.ramsar.org/pdf/cop11/res/cop11-res08-e-anx1.pdf.

Appendix B
Ramsar Classification System for Wetland Type

The codes are based upon the Ramsar Classification System for Wetland Type as approved by Recommendation 4.7 and amended by Resolutions VI.5 and VII.11 of the Conference of the Contracting Parties. The categories listed here are intended to provide only a very broad framework to aid rapid identification of the main wetland habitats represented at each site.

To assist in identification of the correct Wetland Types to list in field 16 of the RIS, the table below outlines some of the characteristics of each Wetland Type.

Marine/Coastal Wetlands

A -- **Permanent shallow marine waters** in most cases less than six metres deep at low tide; includes sea bays and straits.
B -- **Marine subtidal aquatic beds**; includes kelp beds, sea-grass beds, tropical marine meadows.
C -- **Coral reefs**.
D -- **Rocky marine shores**; includes rocky offshore islands, sea cliffs.
E -- **Sand, shingle or pebble shores**; includes sand bars, spits and sandy islets; includes dune systems and humid dune slacks.
F -- **Estuarine waters**; permanent water of estuaries and estuarine systems of deltas.
G -- **Intertidal mud, sand or salt flats**.
Ga -- **Bivalve (shellfish) reefs.**
H -- **Intertidal marshes**; includes salt marshes, salt meadows, saltings, raised salt marshes; includes tidal brackish and freshwater marshes.
I -- **Intertidal forested wetlands**; includes mangrove swamps, nipah swamps and tidal freshwater swamp forests.
J -- **Coastal brackish/saline lagoons**; brackish to saline lagoons with at least one relatively narrow connection to the sea.
K -- **Coastal freshwater lagoons**; includes freshwater delta lagoons.
Zk(a) – **Karst and other subterranean hydrological systems**, marine/coastal

Inland Wetlands

L -- **Permanent inland deltas**.
M -- **Permanent rivers/streams/creeks**; includes waterfalls.
N -- **Seasonal/intermittent/irregular rivers/streams/creeks**.
O -- **Permanent freshwater lakes** (over 8 ha); includes large oxbow lakes.
P -- **Seasonal/intermittent freshwater lakes** (over 8 ha); includes floodplain lakes.
Q -- **Permanent saline/brackish/alkaline lakes**.

R -- **Seasonal/intermittent saline/brackish/alkaline lakes and flats**.
Sp -- **Permanent saline/brackish/alkaline marshes/pools**.
Ss -- **Seasonal/intermittent saline/brackish/alkaline marshes/pools**.
Tp -- **Permanent freshwater marshes/pools**; ponds (below 8 ha), marshes and swamps on inorganic soils; with emergent vegetation water-logged for at least most of the growing season.
Ts -- **Seasonal/intermittent freshwater marshes/pools on inorganic soils**; includes sloughs, potholes, seasonally flooded meadows, sedge marshes.
U -- **Non-forested peatlands**; includes shrub or open bogs, swamps, fens.
Va -- **Alpine wetlands**; includes alpine meadows, temporary waters from snowmelt.
Vt -- **Tundra wetlands**; includes tundra pools, temporary waters from snowmelt.
W -- **Shrub-dominated wetlands**; shrub swamps, shrub-dominated freshwater marshes, shrub carr, alder thicket on inorganic soils.
Xf -- **Freshwater, tree-dominated wetlands**; includes freshwater swamp forests, seasonally flooded forests, wooded swamps on inorganic soils.
Xp -- **Forested peatlands**; peatswamp forests.
Y -- **Freshwater springs; oases**.
Zg -- **Geothermal wetlands**
Zk(b) – **Karst and other subterranean hydrological systems**, inland

Note: "**floodplain**" is a broad term used to refer to one or more wetland types, which may include examples from the R, Ss, Ts, W, Xf, Xp, or other wetland types. Some examples of floodplain wetlands are seasonally inundated grassland (including natural wet meadows), shrublands, woodlands and forests. Floodplain wetlands are not listed as a specific wetland type herein.

Human-made wetlands

1 -- **Aquaculture** (e.g., fish/shrimp) **ponds**
2 -- **Ponds**; includes farm ponds, stock ponds, small tanks; (generally below 8 ha).
3 -- **Irrigated land**; includes irrigation channels and rice fields.
4 -- **Seasonally flooded agricultural land** (including intensively managed or grazed wet meadow or pasture).
5 -- **Salt exploitation sites**; salt pans, salines, etc.
6 -- **Water storage areas**; reservoirs/barrages/dams/impoundments (generally over 8 ha).
7 -- **Excavations**; gravel/brick/clay pits; borrow pits, mining pools.
8 -- **Wastewater treatment areas**; sewage farms, settling ponds, oxidation basins, etc.
9 -- **Canals and drainage channels, ditches.**
Zk(c) – **Karst and other subterranean hydrological systems**, human-made

Tabulations of Wetland Type characteristics

Marine / Coastal Wetlands:

Saline water	Permanent	< 6 m deep	A
		Underwater vegetation	B
		Coral reefs	C
	Shores	Rocky	D
		Sand, shingle or pebble	E
Saline or brackish water	Intertidal	Flats (mud, sand or salt)	G
		Bivalve (shellfish) reefs	Ga
		Marshes	H
		Forested	I
	Lagoons		J
	Estuarine waters		F
Saline, brackish or fresh water	Subterranean		Zk(a)
Fresh water	Lagoons		K

Inland Wetlands:

Fresh water	Flowing water	Permanent	Rivers, streams, creeks	M
			Deltas	L
			Springs, oases	Y
		Seasonal/intermittent	Rivers, streams, creeks	N
	Lakes and pools	Permanent	> 8 ha	O
			< 8 ha	Tp
		Seasonal/intermittent	> 8 ha	P
			< 8 ha	Ts
	Marshes on inorganic soils	Permanent	Herb-dominated	Tp
		Permanent/ Seasonal/intermittent	Shrub-dominated	W
			Tree-dominated	Xf
		Seasonal/intermittent	Herb-dominated	Ts
	Marshes on peat soils	Permanent	Non-forested	U
			Forested	Xp
	Marshes on inorganic or peat soils	High altitude (montane)		Va
		Tundra		Vt
Saline, brackish or alkaline water	Lakes	Permanent		Q
		Seasonal/intermittent		R
	Marshes & pools	Permanent		Sp
		Seasonal/intermittent		Ss
Fresh, saline, brackish or alkaline water	Geothermal			Zg
	Subterranean			Zk(b)

Appendix C
Additional guidelines for the provision of maps and other spatial data for Ramsar Sites

The following guidance has drawn from the experience of Wetlands International and the Ramsar Secretariat, the World Heritage Convention, and the UNEP-World Conservation Monitoring Centre, as well as from the guidance provided in: World Heritage Convention 1999. *Meeting to recommend digital and cartographic guidelines for World Heritage site nominations and state of conservation reports.* In: WHC-99/CONF.209/INF.19. Paris, 15 November 1999. WWW document: www.unesco.org/whc/archive/99-209-inf19.pdf

1. The provision of a suitable map or maps is a requirement under Article 2.1 of the Convention – it is fundamental to the process of designating a Wetland of International Importance (Ramsar Site), and is an essential part of the information supplied in the *Information Sheet on Ramsar Wetlands (RIS).* Clear mapped information about the site is also vital for its management.

2. This additional guidance recognizes that Contracting Parties have increasing capacity to prepare and supply Ramsar Site maps in digital formats (for example, through the use of electronic Geographical Information System (GIS) software) and to delineate site boundaries through the establishment of precise Global Positioning System (GPS) way-points.

3. Maps provided by a Contracting Party on designation (or update) of a Ramsar Site should as high priority attributes:

   i) **clearly show the precise boundary of the Ramsar Site**;

   ii) **be prepared to professional cartographic standards**: maps not prepared to professional cartographic standards are problematic, since even moderately-opaque hand-drawn site boundaries or cross-hatching (e.g., to indicate zonation) often obscure other important map features. Although coloured annotations may appear distinguishable from the underlying map features on the map original, it is important to remember that most colours cannot be differentiated in any black and white photocopies. Such additional information should be provided on additional outline maps;

   iii) **show the Ramsar Site in its natural or modified environment and should be within the scale ranges specified below**, depending upon the size of the site;

   iv) **if the site is adjacent to, or now includes, a previously designated Ramsar Site, the (former or active) boundaries of all of such sites should be shown**, making clear the current status of all such previously designated areas;

   v) **include a key or legend that clearly identifies the Ramsar Site boundary and each other category of feature** shown on the map and relevant to the designation of the site;

vi) **show the map's scale, an indication of geographical coordinates** (latitude and longitude), **an indication of compass bearing** (north arrow) and**information on the map's projection**; and

vii) **include a title that explicitly cites the official name for the Ramsar Site** (as given in RIS field 4).

4. The most suitable map or set of maps for the designation of a Ramsar Site will also clearly show the following, although provision of such information is of lower priority than the attributes listed above in paragraph 3 of this Appendix:

i) basic topographical information;

ii) the boundaries of relevant protected area designations (e.g. National Park, nature reserve, etc.) and administrative boundaries (e.g., province, district, etc.);

iii) clearly delineated wetland and non-wetland parts of the site, and depiction of the wetland boundary with respect to the site's boundary, especially where the wetland extends beyond the site being designated. Where available, information on the distribution of the main wetland habitat types and key hydrological features is also useful. Where there is substantial seasonal variation in the extent of the wetland, separate maps showing the wetland extent in the wet and in the dry seasons are helpful;

iv) major landmarks (towns, roads, etc.); and

v) distribution of land uses in the same catchment.

5. A general location map, showing the location of the Ramsar Site within the territory of the Contracting Party, is also extremely useful.

6. Maps should not be trimmed, so that data managers and Ramsar Secretariat staff can consult any printed marginal notes or coordinate tick marks.

7. Maps should be provided in digital format using one of the common image format (TIFF, BMP, JPG, GIF, etc.).

8. Exceptionally, for Contracting Parties with no easy access to software (such as GIS) and data (such as topographic layers) allowing the preparation of digital maps, Google Earth and ArcGIS online (http://www.arcgis.com/home/) can be useful tools to help draw the digital boundaries of the proposed Ramsar Site. These should be used only where the resolution of the background topographic layer proposed by these free online tools is sufficient to show clearly the wetland and important other features. Very exceptionally, hardcopy maps – A4 or A3 size- can be accepted, if it is not possible to submit an electronic or digital map.

Guidelines for the provision GIS Ramsar Site boundaries

9. In light of the increasing importance of GIS technologies in decision-making processes (e.g., for land use management, development projects, etc), it is essential for the Ramsar Convention to be able to display publicly Ramsar Sites GIS boundaries in addition to the digital map. Hence, for any GIS-derived digital map provided, the corresponding GIS files including at least the GIS boundaries in vector form should also be sent to the Ramsar Secretariat.

10. Other information, for example on wetland types and land uses, whether vector- or raster-based, should be submitted on one or more separate layers at the highest resolution possible.

11. GIS boundaries are geo-referenced polygons of the Ramsar Site boundaries, prepared at the finest scale possible.. For Ramsar Sites made of several units, the boundaries of each unit should be stored as different records in the same GIS file.

12. The format should preferably follow the World Geodetic System (WGS) 1984 standard and should ideally be a shapefile (ESRI Corporation) but other formats, if easily convertible to shapefiles, are also acceptable. The formal name of the Ramsar Site (as given in RIS field 4) should be clearly given as an attribute in the attribute table and in the file name. The geographical coordinate system (projection system) is a mandatory part of the file metadata: the GIS file is useless without such information. The source of the GIS data, the resolution, the lineage process (whether from GPS, a digitized hardcopy map, from field surveys, etc.), i.e., the process that has been used to create the data, are other useful metadata to be provided, but not mandatory.

13. For Contracting Parties without access to GIS technology, if an International Organisation Partner (IOP) has supported the RIS preparation, it is recommended to contact that IOP to request help from their GIS staff. If this is not the case, please consult the Secretariat in advance of formally designating the Ramsar Site and submitting the RIS.

Scale of maps

14. The optimum scale for a map depends on the size of the site depicted. The optimal scales of maps for different sizes of Ramsar Sites are:

Size of site (ha)	Preferred (minimum) scale of map
>1,000,000	1:1,000,000
100,000 to 1,000,000	1:500,000
50,000 to 100,000	1:250,000
25,000 to 50,000	1:100,000
10,000 to 25,000	1:50,000
1,000 to 10,000	1:25,000
< 1,000	1:5,000

15. In summary, the map should be of suitable scale to depict the detail necessary to clearly indicate the features of the site described in the RIS and, particularly, to show a precise boundary.

16. For moderate to large sites, it is often difficult to show sufficient detail on standard A4 (210 mm x 297 mm) or Letter-format (8.5" x 11") sheets at the desired scale, so generally a sheet larger than this format is more appropriate. However, whenever possible, each map should be no larger than A3 (420 mm x 297 mm) as larger formats present difficulties for subsequent copying.

17. When the site is large or complex and/or when it is composed of several sub-sites with discrete boundaries, a finer-scale map of each section or sub-site should be provided, accompanied by a broader scale location map of the whole site which indicates the location of each sector or sub-site relative to the others. All such maps should follow the scale guidance above.

Boundary description (text)

18. A description of the boundaries of the site should be separately provided to accompany the map(s), indicating topographic and other legally defined national, regional, or international boundaries followed by the site boundaries, together with the relationship of the Ramsar Site boundary with the boundaries of any other existing protected area designations which cover part or all of the Ramsar Site.

19. If the precise position of the site boundary has been determined using a Global Positioning System (GPS), Contracting Parties are encouraged to include an electronic file listing each GPS latitude/longitude way-point determined and identifying these on the site map.

20. Where a revision to the boundary of a designated Ramsar Site is being made in accordance with Resolution VIII.21, *Defining Ramsar Site boundaries more accurately in Ramsar Information Sheets*, under the following circumstances:

    a) the site boundary has been drawn incorrectly and there has been a genuine error; and/or
    b) the site boundary does not accurately match the description of the boundary as defined in the RIS; and/or
    c) technology allows for a higher resolution and more accurate definition of the site boundary than was available at the time of Listing;

    any change should be made clear in the revised RIS and/or on the site map, and the reasons for such refinement should be documented in the RIS.

Good examples of maps

21. Examples of good quality Ramsar Site maps demonstrating desirable features noted above are available at www.ramsar.org/xxxxxxxxxxxxxx [to be added].

Appendix D
Criteria for Identifying Wetlands of International Importance

Adopted by the 7th (1999) and 9th (2005) Meetings of the Conference of the Contracting Parties, superseding earlier Criteria adopted by the 4th and 6th Meetings of the COP (1990 and 1996), to guide implementation of Article 2.1 on designation of Ramsar Sites.

Group A of the Criteria. Sites containing representative, rare or unique wetland types

Criterion 1: A wetland should be considered internationally important if it contains a representative, rare, or unique example of a natural or near-natural wetland type found within the appropriate biogeographic region.

Group B of the Criteria. Sites of international importance for conserving biological diversity

Criteria based on species and ecological communities

Criterion 2: A wetland should be considered internationally important if it supports vulnerable, endangered, or critically endangered species or threatened ecological communities.

Criterion 3: A wetland should be considered internationally important if it supports populations of plant and/or animal species important for maintaining the biological diversity of a particular biogeographic region.

Criterion 4: A wetland should be considered internationally important if it supports plant and/or animal species at a critical stage in their life cycles, or provides refuge during adverse conditions.

Specific criteria based on waterbirds

Criterion 5: A wetland should be considered internationally important if it regularly supports 20,000 or more waterbirds.

Criterion 6: A wetland should be considered internationally important if it regularly supports 1% of the individuals in a population of one species or subspecies of waterbird.

Specific criteria based on fish

Criterion 7: A wetland should be considered internationally important if it supports a significant proportion of indigenous fish subspecies, species or families, life-history stages, species interactions and/or populations that are representative of wetland benefits and/or values and thereby contributes to global biological diversity.

Criterion 8: A wetland should be considered internationally important if it is an important source of food for fishes, spawning ground, nursery and/or migration path on which fish stocks, either within the wetland or elsewhere, depend.

Specific criteria based on other taxa

Criterion 9: A wetland should be considered internationally important if it regularly supports 1% of the individuals in a population of one species or subspecies of wetland-dependent non-avian animal species.

Appendix E
Supplementary guidelines for identifying and designating particular wetland types

Peatlands, mangroves, and coral reefs were recognized by the *Global Review of Wetland Resources and Priorities for Wetland Inventory* report to COP7 (1999) as being amongst the wetland ecosystems that are most vulnerable and threatened by habitat loss and degradation, and thus in need of urgent priority action to ensure their conservation and wise use.

Additional guidance has been developed to provide clarification of aspects of the application of this Strategic Framework as they apply to peatlands, wet grasslands, mangroves, and coral reefs, karst and other subterranean wetland types, temporary pools, and bivalve (shellfish) reefs, in particular on the identification and designation of representative wetlands of these habitat types in accordance with Ramsar Criterion 1.

E1. Karst and other subterranean hydrological systems

1. The **Values** of karst wetlands are numerous. In accordance with Article 2.2 of the Ramsar Convention, "wetlands should be selected for the List on account of their international significance in terms of biology, botany, zoology, limnology or hydrology". From this perspective the principal wetland conservation values of karst and other subterranean hydrological systems include:

   a) uniqueness of karst phenomena/functions and functioning;
   b) inter-dependency and fragility of karst systems and their hydrological and hydrogeological characteristics;
   c) uniqueness of these ecosystems and endemism of their species;
   d) importance for conserving particular taxa of fauna and flora.

2. **Threats** can be generated within or outside of the karst area. In general terms, many "living" karst areas are wetlands, whether surface or subterranean. The subterranean systems are, in many cases, still well-preserved, but due to increasing development pressures they are becoming endangered. The pressures are both direct (visitors to caves, researchers) and indirect, including pollution of all kinds (particularly water pollution; dumping of solid waste, sewage; development of infrastructure, etc.), water abstraction, retention in reservoirs and other uses.

Values, importance and provision of ecosystem services

3. In addition to their many natural values, karst systems also have important socio-economic values, which include (but are not limited to) the supply of drinking water, water for grazing animals or agriculture, tourism and recreation. Karst wetland systems may play an especially vital role in ensuring adequate water supplies for human communities in generally dry surface landscapes.

4. Special consideration should be given to the cultural and socio-economic values of karst and other subterranean hydrological systems and to the fact that their "wise use" must be implemented at both national and local levels. A clear distinction is required between designation, management and monitoring of these wetlands.

Position within Ramsar's classification system

5. The Ramsar definition of wetlands (Article 1.1) should be read/understood to include surface and subterranean wetlands, although the Convention text does not explicitly refer to these systems.

Applying the Ramsar Criteria

6. Information provided for the purposes of Ramsar Site designation and management of subterranean wetlands should be according to:

    a) what is available (in many cases this may be limited, and subject to future research efforts); and

    b) what is appropriate for the scale being considered. For example, local and national management authorities should have access to the full range and detail of information available, whilst a summary will normally suffice for international purposes, notably completion of the Information Sheet on Ramsar Wetlands (RIS).

7. Ramsar designation should be considered as part of a mosaic of national and international instruments. In this way, the most representative part(s) of larger karst/subterranean systems might be designated under the Ramsar Convention, with land-use planning controls, etc., applied to achieve "wise use" of the whole system and its catchment area.

8. In applying the Ramsar Criteria for Identifying Wetlands of International Importance, special attention should be given to unique and representative hydrological, hydrogeological, biological and landscape values. In this regard, intermittent karst and thermal springs can be of special interest.

Boundaries and size

9. Site survey and mapping may present special problems and should be done according to practical possibilities. For example, a two-dimensional ground plan of subterranean features, projected against surface features, would suffice as a Ramsar Site map. It is recognized that many Contracting Parties will not have the resources to generate three-dimensional representations of subterranean sites, and the lack of such resources should not be a barrier to designation.

10. Optimal boundaries for karst/subterranean Ramsar Sites would cover whole catchments, but this is unlikely to be realistic in most cases. Site boundaries should, however, cover the areas which have the most significant direct or indirect impacts on the features of interest.

11. The flexible approach of the Convention allows countries to choose the most appropriate boundaries for national or site-specific situations. In particular, designation of either or both single cave and complex systems (for example, with surface and subterranean wetlands) can be envisaged.

Other considerations

12. To avoid confusion in **terminology**, the formulations "karst and other subterranean hydrological systems" and "subterranean wetlands" should be used throughout. Regardless of genesis, these terms should be used to include all subterranean cavities and voids with water (including ice caves). Such sites would be eligible for inclusion in the Ramsar List whenever the site selection Criteria are fulfilled. These terms should also clearly cover coastal, inland and human-made subterranean sites, following the broad approach of the Ramsar definition of "wetland" and thereby offering a high degree of flexibility for each Contracting Party.

13. The specialised technical terminology used to describe karst and other subterranean phenomena makes a glossary indispensable for non-experts. UNESCO's *Glossary and Multilingual Equivalents of Karst Terms* (UNESCO, 1972) can be used as a detailed source of reference, but a simplified glossary is proposed for Ramsar purposes and is provided in the Glossary (see Appendix G) under "Karst".

E2. Peatlands[6]

Geographic distribution and extent

14. Peatlands are ecosystems with a peat soil. Peat consists of at least 30% dead, partially decomposed plant remains that have accumulated *in situ* under waterlogged and often acidic conditions. Peatlands cover over 400 million hectares worldwide and occur from the high mountains to the sea, and from high to low latitudes.

15. Commonly, many habitats with peat soil are not recognized as "peatlands" even if their peat layer is thick enough. However, some peatland examples include polygonal tundra, salt marshes and mangroves, paludified forests and cloud forests, high-mountain paramos, and dambos and vleis. Peat may be formed by various kinds of vegetation: a) bryophytes, mainly *Sphagnum* mosses and associated herbaceous and dwarf shrub species; b) herbaceous plants such as sedges and grasses; and c) trees such as in alder *Alnus* spp. forests in the temperate zone and in peat swamp forests in the tropics.

Ecological functions, ecosystem services/benefits, and societal values

16. Two main types of peatland are distinguished: bogs, which are rainwater fed and therefore acid and nutrient poor, and fens, which are additionally groundwater fed and thus generally less acidic and more nutrient-rich than bogs. In this guidance the term "peatland" includes both peatland with active peat accumulation ("mire") and peatland that is no longer forming peat and may have lost peat forming vegetation and is degrading naturally or as a result of human intervention. Whereas the presence of peat is the defining characteristic of a peatland, vegetation and hydrology are key defining aspects of the peatland type.

17. Peatlands are important for the ecosystem functions and services they contribute to human well-being and to nature. The Common International Classification for Ecosystem Services

[6] This section provides revised guidelines for identifying and designating peatlands, adopted through Resolution XIII.12 Annex 1 (link), replacing and superseding the original guidelines adopted through Resolution XI.8.

(CICES)[7] , accepted by most Parties as being one relevant non-exclusive source for peatland evaluation for reporting in the Ramsar Information Sheet, distinguishes three main categories of ecosystem services:

a) Provisioning and supporting functions and services: for example, materials and energy, such as biodiversity, wild foods, drinking water and non-fossil and renewable biomass-based energy resources, as well as commercial development for food production;

b) Regulating functions and services: these relate to the maintenance of ecological conditions, such as climate regulation through carbon storage and sequestration, water regulation, maintenance of water quality through removal of pollutants and nutrients, prevention of saline water intrusion, and protection from disasters; and

c) Cultural values: provision of non-material benefits, such as opportunities for recreation and education, culture and heritage, spiritual and aesthetic experiences, and information and knowledge, e.g. from biogeochemical and palaeo-environmental archives.

Peatland degradation

18. The main factors causing peatland degradation locally and globally include: a) drainage; b) vegetation removal or disturbance; c) infrastructure development; d) peat extraction; e) eutrophication and pollution; f) acid rain; g) water abstraction and/or diversion, and h) fire. These factors, which can occur in the peatlands or in their zones of influence, have various consequences, which need to be taken into consideration when defining the boundaries of peatland Ramsar Sites and determining their management:

a) The main drivers of peatland drainage are agriculture and forestry both on peatlands and related catchments. Peatland hydrology may be influenced by hydrological changes (e.g. drainage, erosion and groundwater abstraction) in adjacent land. Peatland drainage leads to increased greenhouse gas (GHG) emissions (carbon dioxide from peat oxidation, methane from drainage ditches, nitrous oxide from nitrification), subsidence (reduction in peat thickness by oxidation and compaction) and increased fire risk. Drainage affects water regulation capacity, and therefore water security of downstream human communities and ecosystems. Many peatlands are located close to sea or river level and subsidence may result in increased and prolonged flooding and salt water intrusion, thereby affecting the ecological character of the peatland. If the peatland is located on acidic sulphate soils, drainage may result in very acidic runoff, rich in metals, that contaminates the waters downstream;

b) Vegetation removal or disturbance (e.g. by land use change) directly reduces biodiversity (flora, fauna, their distribution patterns and population resilience). It exposes the peat to direct solar radiation and wind, water and frost erosion, resulting in changes in micro-climate and desiccation of the surface peat and flooding risk in the surrounding areas;

[7] See: https://cices.eu/cices-structure.

c) Construction of infrastructure (e.g. roads, pipelines, buildings) on peat causes compaction by overburden and vehicles and requires drainage (often resulting in erosion and exacerbating draining in drier climates). This results in habitat and species loss, change in drainage patterns and compaction flooding in wet periods and increased fire risk in dry ones. Construction in permafrost areas may result in ice thawing, thermokarst, flooding and increased GHG emissions, especially of methane;

d) Peat extraction involves drainage and removal of peat (and vegetation), which reduces carbon storage and increases GHG emissions. There may also be local effects on water quality and regulation, and biodiversity, as well as aesthetic impacts potentially affecting the recreational potential;

e) Eutrophication (input of nutrients) is caused by direct on-site fertilization and atmospheric deposition, or (in fens) by input of nutrients in ground or surface water derived from the fertilizer added to surrounding landscape;

f) Acid rain deposition from industrial sources can severely affect wildlife;

g) Peatland fires have led to considerable damage of peatlands around the world, especially in drained and, thereby, dry peatlands, affecting vegetation and emitting in some cases large amounts of GHGs. Peatland fires and related haze have major economic impacts (for example, on transport, tourism, agriculture and forestry) and public health impacts;

h) Specific quantitative and qualitative criteria for classifying peatlands as degraded are to be determined by Contracting Parties based on scientific, legislative and national policy considerations.

Peatland restoration

19. Rewetting of peatlands means restoring the water table or hydrological regime towards a condition where the new ground water level is close to the surface of the peatland, with the aim of partial or total reversal of the effects of drainage. (Subsidence may have made original conditions impossible.)

20. Rewetting of drained peatland restores some ecosystem functions but full recovery may be difficult and a long-term objective. Rehabilitation of fauna and flora, for example, can take a long time, if it is achieved at all, and depends on the peatland type and species available. Some degraded peatlands can still provide ecosystem functions, for example fens that are used for traditional hay making, and former peat extraction fields that have been rewetted and are used for paludiculture. These peatlands may be degraded but can be included in a Ramsar Site designation if they form part of a mosaic that includes pristine peatlands.

21. In addition to peatland rewetting, active restoration techniques that reintroduce peatland plant species are important to restore the vegetation layer.

Position within Ramsar's classification system

22. Since peatlands are characterized by the presence of peat, whereas the Ramsar Classification System is based on vegetation, peatlands occur in most Ramsar Wetland Type categories, especially:

    a) Marine/coastal wetland, mainly under categories H (intertidal marshes), I (intertidal forested wetlands), J (coastal brackish/saline lagoons), and K (coastal freshwater lagoons);

    b) Inland wetland, under categories U (non-forested peatlands) and Xp (forested peatlands); and

    c) All other Inland wetland categories except Tp (permanent freshwater marshes/pools on inorganic soils), Ts (seasonal/intermittent freshwater marshes/pools – inorganic soils), W (shrub-dominated wetlands – inorganic soils), Xf (wooded swamps on inorganic soils) and Zk (b) (subterranean karst systems).

Applying the Ramsar Criteria

23. Peatlands considered for designation under Criterion 1 include pristine, peat-forming peatlands, some human-modified and naturally degrading peatlands that are no longer forming peat, and restored or rehabilitated peatlands that meet the criteria. They may consist of a mosaic of different peatland types with various levels of human impact.

24. Designation of peatlands as Ramsar Sites should pay special attention to peatland areas with at least some of the following attributes:

    a) Intact hydrology and peat-forming vegetation;

    b) Characteristic biodiversity;

    c) Large carbon store and active carbon sequestration;

    d) Well-developed and conserved historical archives of past environmental and human change;

    e) Unique macro- and/or micro-morphological features, such as complexes of peatland habitats or diverse micro-typography (e.g. hummocks and hollows); and/or

    f) Peatlands with high potential as "nature-based solutions" to reduce the risks of impacts related to climate change including climate change effects.

25. Special attention should be paid to the designation of vulnerable peatlands (for example, where minor impacts could lead to major degradation), to degraded peatlands with high potential for restoration and to peatlands that reduce the vulnerability of nearby human populations in the face of climate change. Criterion 2, which refers to vulnerable, endangered, or critically endangered species or threatened ecological communities, may be considered in this regard.

Application of Criterion 1 of the Application Guidelines with respect to carbon storage

26. As acknowledged in Resolutions XII.11 on *Peatlands, climate change and wise use: Implications for the Ramsar Convention* [and XIII.13 on *Restoration of degraded peatlands to mitigate and adapt to climate change and enhance biodiversity and disaster risk reduction*], peatlands are important carbon stores, for carbon sequestration and, in the case of restoration of degraded peatland, in reducing GHG emissions. Peatlands provide opportunities for awareness raising, communication and education. They can be used to demonstrate best practices for wise use and restoration. Peatlands for which the relevance of climate-change adaptation and mitigation is considered in the process of their designation as demonstration sites with respect to Criterion 1 would feature (some of) the following attributes:

    a) Large peat volume that can be preserved, always in proportion to the area of the territory of the Contracting Party, which makes the request/proposal;

    b) Information on the area's history, land use, hydrology, and peat volume, to enable assessment of the effects of restoration, as appropriate, on carbon store capacity and GHG fluxes to be used for communication and awareness raising; and

    c) Accessibility to provide site facilities that enable awareness-raising and education activities to be carried out on site.

Boundaries and size

27. Large peatlands should generally have higher priority for designation than small areas, because their hydrology, carbon stock and historical archives are easier to protect and because they incorporate macro-landscapes (see also Section 5.6 of the *Strategic Framework* on "Site delineation and boundary definition").

28. Safeguarding the hydrological integrity of peatlands designated as Ramsar Sites is critical to their long-term persistence. Site boundaries must be drawn in such a way as to prevent and eliminate as far as possible the impact of off-site hydrological changes on peatland hydrology.

29. Small peatlands can also be important for biodiversity, raising public awareness and providing education on the role of peatlands (see also paragraph 78 of the *Strategic Framework*).

30. Individual peatlands and complexes incorporating several peatland types (also with various levels of human impact) may qualify for designation (see also paragraph 91 of the *Strategic Framework* concerning site clusters).

The importance of peatland inventories

31. A peatland inventory should elaborate and/or collate key information for a wide range of conservation purposes including the designation of Ramsar Sites. A comprehensive overview of the extent, location and distribution of peatlands is necessary for each peatland inventory.

32. Ramsar guidance on wetland inventory (see Ramsar Handbooks 15 *Wetland Inventory* and 13 *Inventory, assessment and monitoring*) also applies to peatlands. According to this guidance, an inventory for the designation of peatlands as Ramsar Sites should use a hierarchy of four mapping scales in GIS format (multi-scale approach):

    a) The identification of peatland regions (at a scale from 1:500,000 to 1:1,000,000) using national and international information on bioclimatic and biogeographical ecoregions and landscape types (such as, for Europe, Moen *et al.* 2017[8]);

    b) Within the identified peatland regions, the assessment of location and rough extent of confirmed and probable peatlands (1:250,000 to 1:500,000);

    c) The validation of these data and the collection of supplementary field and literature data to characterize hydrology and vegetation (1:100,000 to 1:250,000) to determine representativeness, rareness, or uniqueness of peatlands under Criterion 1; and

    d) The mapping of habitats and management issues (1:10,000 to 1:50,000).

33. At all levels of analysis, the usefulness of the information must be assessed to determine if further data collection is necessary.

34. Parallel to this inventory, draft descriptions of specific peatlands in relation to Ramsar Criterion 2 should be prepared through evaluation of information on vulnerable, endangered, or critically endangered species or threatened ecological communities.

Further sources of information on peatlands

35. Much information on peatlands is available on the Internet. For successful information gathering, the use of appropriate search terms is important. Search terms should include any local term related to organic soil or peatland, combined with the country name (be aware of former country names which are no longer in use).

36. Soil data (including in manuscript form) might be available from soil institutions and other authorities. Since organic soils are subject to various kinds of land use, relevant information might be held by various national and regional authorities, including those responsible for geology, land development, environment, agriculture, forestry, resource extraction or energy. The information available from these authorities is sometimes of high resolution, often not available online, and must often be purchased.

37. Maps from digital archives (see below) are generally freely accessible and provide valuable information if geographic information system (GIS) data of appropriate resolution and accuracy are unavailable. Most maps are available as high-resolution images, which can be downloaded, geo-referenced and incorporated in GIS software. A large number of maps of the World Soil Survey Archive, the Sphaera library, and the Laboratory of Soil Science at Ghent University are not digitally available, but can be consulted at the archive sites themselves.

[8] Joosten, H., Tanneberger, F. & Moen, A. (eds.) (2017) *Mires and Peatlands of Europe: Status, Distribution and Conservation.* Schweizerbart Science Publishers, Stuttgart.

38. Spatially explicit soil information of various spatial resolutions is available in the open access online archives listed below at Table 1.

Table 1: Open access soil information archives

Source	Website
International Soil Reference and Information Centre (ISRIC World Soil Information)	http://www.isric.org/
European Union Joint Research Centre	https://ec.europa.eu/jrc/en
FAO Corporate Document Repository	http://www.fao.org/documents/search/en/
Institute de Recherche pour le Développent : Base de données Sphaera du service Cartographie	http://www.cartographie.ird.fr/sphaera
World Soil Survey Archive and Catalogue (WOSSAC)	http://www.wossac.com
Perry-Castañeda Library Map Collection, University of Texas at Austin	http://www.lib.utexas.edu/maps/topo/
Ghent University Laboratory of Soil Science	http://www.labsoilscience.ugent.be/Congo
Commonwealth Scientific and Industrial Research Organization: Land Research Surveys	http://www.publish.csiro.au/nid/289/aid/16088
International Peatland Society: Publications	www.peatlands.org
International Mire Conservation Group: Publications	www.imcg.net/pages/publications/papers.php
Greifswald Mire Centre	http://greifswaldmoor.de/about-us.html
Wetlands International: Peatland Treasures	https://www.wetlands.org/our-approach/peatland-treasures/
Ramsar Recommendation 7.1: A global action plan for the wise use and management of peatlands	https://www.ramsar.org/document/recommendation-71-a-global-action-plan-for-the-wise-use-and-management-of-peatlands
Directory of Soil Institutions and soil experts in Africa	http://www.apipnm.org/swlwpnr/reports/y_sf/sftb221.htm
Canadian Peatland Inventory	http://ftp.geogratis.gc.ca/pub/nrcan_rncan/archive/vector/geology/Peatland/

39. More empirical supplementary data can be obtained from a wide range of sources, including publications and grey literature on: research and protection of wetlands, peatlands and organic soil; paleo-ecological, pedological, geological, hydrological and botanical research; expedition reports; technical reports by companies and environmental organizations; and incidental descriptions.

40. To locate data (including proxy data) on the occurrence of peatland and organic soil, relevant research institutes, ministries or agencies may be contacted. Data on organic soil are generally elaborated by and stored at various authorities, reflecting the multiple land uses applied on them. Relevant national authorities may include those for agriculture, forestry, resource extraction, geology, hydrology or environment. Considering the often very local terms for peatlands and organic soils, it is important to become familiar with local terms and concepts before contacting local authorities and researchers.

E3. Wet grasslands

Geographic distribution and extent

41. Wet grasslands occur throughout the world and are natural and near-natural ecosystems with a vegetation characterized and dominated by lower growing perennial grasses, sedges, reeds, rushes and/or herbs. They appear under periodically flooded or waterlogged conditions and are maintained through mowing, burning, natural or human-induced grazing, or a combination of these.

42. Wet grasslands include: floodplain grasslands, washlands, polders, water meadows, wet grasslands with (intensive) water level management, lakeside grasslands, vegetation dominated by relatively large, perennial, competitive herbs, and groundwater dependent dune slacks. These grasslands occur on different soils: heavy clay, loam, sand, gravel, peat, etc., and occur in freshwater, brackish and saline water systems.

43. Vegetation types that fall under this definition can appear in mosaic with one another or with other wetland types, such as peatlands, reedbeds, water-dependent shrubs, forests and others.

Ecological role and functions

44. Wet grasslands support specific biodiversity, comprising rare and threatened plant and animal species and communities, including internationally important bird populations, a range of mammals, invertebrates, reptiles and amphibians.

Values, importance and ecosystem services

45. In recent years there has been increasing awareness of the value of wet grasslands in performing hydrological and chemical functions, notably:

    a) flood alleviation - since wet grasslands can retain floodwater;
    b) groundwater recharge - wet grasslands retain water within a watershed enabling groundwater to be replenished; and
    c) water quality improvement - riparian wet grasslands retain nutrients, toxic substances and sediment, preventing them from entering watercourses.

46. Economic benefits accrue from these functions. When wet grasslands are destroyed, these functions are lost and have to be replaced at often enormous financial cost. These benefits include:

    a) water supply – wet grasslands can influence both water quantity and quality;
    b) health of freshwater fisheries – backwaters, ditches and other open water habitats within wet grassland areas are important for river fisheries;
    c) agriculture – floodplains provide some of the most fertile agricultural land; and
    d) recreation and sustainable tourism opportunities.

47. From an early stage in human history, floodplains have been subject to modifications. Since the industrial revolution, pressures on rivers and floodplains have increased significantly in many areas. As part of this process, wet grasslands have declined significantly in industrialized areas, but are also exposed to specific threats in other regions. This is being brought about by:

    a) changes in agricultural practices – increased drainage and use of fertilizer, change from hay-making to silage, re-seeding, herbicide use, conversion to arable land, higher stocking densities, neglect or abandonment, use of aquatic herbicides;

    b) land drainage – modification of natural hydrological regimes, isolation of floodplains from river flows, rapid evacuation of winter floods and early fall of spring water tables, maintenance of low water levels in drainage channels;

    c) abstraction for drinking water and crop irrigation – leading to lowered river flows and in-channel water levels, lowered water tables, exacerbation of drought-related problems;

    d) eutrophication – leading to changes in grassland plant communities and increased sward vigour;

    e) threats to coastal wet grasslands from sea-level rise and construction of flood defences;

    f) development and mineral extraction – leading to a decline of routinely flooded area and increased frequency of flooding of the remaining washland; and

    g) site fragmentation – leading to isolation of sites, threatening species restricted to wet grassland and vulnerable to extinction, and to problems with water level control and agricultural management.

Position within Ramsar's classification system

48. Wet grasslands are covered by the following wetland types of the Ramsar Classification System:

    a) They can occur as a *floodplain component*, under Ts (seasonal/intermittent freshwater marshes on inorganic soils, including seasonally flooded meadows and sedge marshes), and U (non-forested peatlands, including swamps and fens).

    b) They can occur as a *human-made* wetland type, under 3 (irrigated land, including irrigation channels and rice fields), and 4 (seasonally flooded agricultural land, including intensively managed or grazed wet meadow or pasture). Irrigation channels with natural vegetation cutting through wet meadows fulfil substantial ecological functions; they are therefore considered part of wet grasslands.

    c) *Wet grassland habitats* can also occur in other wetland types: E (sand, shingle or pebble shores including dune systems and humid dune slacks) and H (intertidal marshes, including salt meadows, raised salt marshes, tidal brackish and freshwater marshes).

They can also occur on the edges of other wetland types, such as J (coastal brackish/saline lagoons), N (seasonal/intermittent/irregular rivers/streams/creeks), P (seasonal/intermittent floodplain lakes), R (seasonal/intermittent saline/brackish/alkaline lakes and flats), and Ss (seasonal/intermittent saline/brackish/alkaline marshes).

Applying the Ramsar Criteria

49. A wet grassland should be considered for designation under Criterion 1 particularly if it performs specific hydrological functions.

50. Since wet grasslands are particularly dynamic ecosystems, special attention should be paid to the designation of those systems that, as part of river or coastal floodplains, are maintained by periodic floods or waterlogged conditions, either natural or human-induced, and demonstrate hydrological integrity.

51. Where wet grasslands are associated with agricultural or other management practices, special attention should be paid to the designation of systems whose ecological character is maintained through specific management measures or traditional forms of land and wetland resource uses (typically including induced grazing, mowing, or burning, or a combination of these), and whose continuation is critical to preventing gradual vegetation succession that may transform wet grasslands to tall reedbeds, peat bogs, or forested wetlands.

52. Many managed wet grasslands support important assemblages of breeding waterbirds and provide habitat for large populations of non-breeding waterbirds, and attention should be given to the designation under Criteria 4, 5 and 6 for these features.

E4. Mangroves

Geographic distribution and extent

53. Mangroves swamps are forested intertidal ecosystems that occupy sediment-rich sheltered tropical coastal environments, occurring from about 32º N (Bermuda, UK) to almost 39º S (Victoria, Australia). Around two-thirds to three-quarters of tropical coastlines are mangrove-lined.

Ecological role and functions

54. Mangrove swamps can form extensive and highly productive systems where there is adequate low-gradient topography, shelter, muddy substrates, and saline water with a large tidal amplitude.

55. Mangrove swamps are characterized by salt-tolerant woody plants with morphological, physiological, and reproductive adaptations that enable them to colonize littoral habitats. The term mangrove is used in at least two different ways:

    a) to refer to the ecosystem composed of these plants, associated flora, fauna and their physico-chemical environment; and

b) to describe those plant species (of different families and genera) that have common adaptations which allow them to cope with salty and oxygen-depleted (anaerobic) substrates.

56. Mangroves carry out critical landscape-level functions related to the regulation of fresh water, nutrients, and sediment inputs into marine areas. By trapping and stabilizing fine sediments they control the quality of marine coastal waters. They are also exceptionally important in maintaining coastal food webs and populations of animals that live as adults elsewhere and live within the mangrove at different stages of their life cycle, such as birds, fish, and crustaceans. Mangroves have an important role in pollution control through their absorptive capacity for organic pollutants and nutrients.

57. Mangroves are key ecosystems whose persistence is critical for the maintenance of landscape and seascape functions well beyond the boundaries of individual forests. Mangroves, coral reefs, and seagrass beds are among the best examples of integrated landscape-level ecosystems. When they occur together, they act as a unit, forming a complex mosaic of interrelated and integrated subsystems linked by physical and biological interactions. They play an important role in storm protection and coastal stabilization.

58. Worldwide, mangrove ecosystems support at least 50 species of mammals, over 600 species of birds, and close to 2,000 species of fish and shellfish, which include shrimps, crabs and oysters. Mangroves are also important for migratory birds and endangered species. A wide variety of species from other taxa make this a highly diverse community with a complex food web that is closely interlinked with adjacent ecosystems.

59. Mangroves are indispensable to the vitality and productivity of marine and estuarine finfish as well as shellfish fisheries. Globally, nearly two thirds of all fish harvested in the marine environment ultimately depend on the health of tropical coastal ecosystems, such as mangroves, seagrass beds, salt marshes and coral reefs, for maintenance of their stocks. The health and integrity of mangroves are critical to maintaining coastal zones and their cultural and heritage assets, and in buffering impacts due to climate change effects, including sea-level rise.

60. Mangroves differ from other forested systems in that they receive large inputs of matter and energy from both land and sea, and more organic carbon is produced than is stored and degraded. They display a high degree of structural and functional diversity, placing mangroves among the most complex ecosystems. Because of the diversity of goods and services provided by mangroves, they should not be managed as a simple forest resource.

61. A large proportion of the world's mangrove resource has been degraded by:

a) unsustainable exploitation practices, such as over-fishing, bark (tannin) extraction, charcoal and fuel wood production, and exploitation for timber and other products;
b) habitat destruction: worldwide, mangroves are threatened by clearing for agriculture, urban, tourism, and industrial development, and particularly to make aquaculture ponds;
c) changes in hydrology due to stream diversions for irrigation and dam construction, causing nutrient deprivation and hypersalinization; and

d) pollution, including industrial and sewage effluents and chronic or catastrophic oil spills.

62. Mangroves are particularly vulnerable to oil pollution and increased coastal erosion, sea-level rise, and natural events such as hurricanes, frosts, tsunamis, and human-induced climate change.

Values, importance and ecosystem services

63. Mangroves have played an important role in the economies of tropical countries for thousands of years, and constitute an important reservoir and refuge for many plants and animals. In tropical countries, mangrove ecosystems support extremely valuable subsistence, commercial and recreational fisheries, while also providing numerous other direct and indirect goods and services to society.

Position within Ramsar's classification system

64. Mangroves occur under *Marine/Coastal Wetlands*: I (Intertidal forested wetlands) in the Ramsar Classification System for Wetland Type.

Applying the Ramsar Criteria

65. In applying Ramsar Criterion 1 it should be recognized that mangroves occur in two broad biogeographic groups: an Indo-Pacific (Old World) group and a western African and American (New World) group, each with a characteristic but different species diversity.

66. Particular priority should be given to the designation of mangroves that form part of an intact and naturally functioning ecosystem which includes other wetland types, such as coral reefs, seagrass beds, tidal flats, coastal lagoons, salt flats, and/or estuarine complexes, since these are essential for maintaining the mangrove parts of the ecosystem. Under most circumstances, the mangrove, i.e., forested part of the site, should not be designated without inclusion of the other linked parts of the coastal ecosystem.

67. In determining the appropriate boundaries for site designation, consideration should be given to the following aspects:

a) inclusion of critical habitat patches, particular communities, or landforms to focus conservation and management actions;
b) provision for conservation actions within the human-dominated portion of the landscape, since a more benign human-dominated landscape can help alleviate negative edge effects;
c) provision for the conservation and wise use of large areas with relatively limited human access;
d) inclusion of whole landscape units (lagoon-estuarine complexes, salt flats, delta or mudflat/tidal flat systems);
e) the maintenance of hydrographical integrity and water quality, including in the context of catchment (river basin) management;
f) provision for the effects of sea-level rise and human-induced climate changes that may otherwise lead to loss of habitat and genetic processes; and

g) consideration of the possible landward migration of mangroves in response to sea-level rise.

68. In applying Criterion 1 to mangrove swamps, special attention should be given to the listing of areas which are in pristine condition or have biogeographic or scientific importance and protection needs.

69. Mangrove conservation should categorize units on the basis of the most appropriate use such as for protection; restoration; understanding and enjoyment of natural heritage, and conservation with emphasis on sustainable use. The minimum size of a site is that which contains the greatest diversity of habitat types, including habitats for endangered, threatened, rare, or sensitive species or biological assemblages. The "naturalness" should be considered when selecting candidate sites, i.e., the extent to which an area has been protected from or has not been subjected to human-induced change. The ecological, demographic and genetic processes should also be considered because these maintain the structural and functional integrity and self-sustaining capacity of the designated site.

70. For mangroves, particular attention should be paid to the application of Criteria 7 and 8 since mangrove systems are of critical importance as breeding and nursery areas for fish and shellfish, and Criterion 4 in recognition of the fact that because of their complex ecological, geomorphological and physical structure they can act as refuges, and are important for the persistence of populations of many migratory and non-migratory species. Designation of such areas should take into account that different habitats of coastal complexes of mangroves, seagrass beds, and coral reefs may be essential for different stages of a species' life-cycle.

Boundaries and size

71. Networks of sites have more value than individual small areas of mangroves, since they contribute to the integrity of whole landscapes and seascapes. Designations that encompass whole landscapes and seascapes are valuable tools to safeguard critical coastal processes, and consideration should be given, where possible, to Ramsar Site designations as part of a nested management framework for the coastal zone.

72. When defining the site boundaries, it must be considered that the more complex a system, the larger the site must be in order to be effective for conservation purposes. However, boundary definition becomes more critical the smaller the unit. If in doubt, the site should be made larger rather than smaller.

Further sources of information on mangroves

73. A wide range of geographical information on mangroves is available via the website of the UNEP-World Conservation Monitoring Centre (www.unep-wcmc.org/datasets-tools--reports_15.html). The 2010 World Atlas of Mangroves (Spalding *et al.* 2010) maps the global extent of mangroves.

E5. Coral reefs

Geographic distribution and extent

74. Coral reefs are massive carbonate structures built by the biological activity of the stony corals (true corals) and the associated complex assemblage of marine organisms that make up the coral reef ecosystem. They are found throughout the world's oceans on mud-free coastlines between latitudes 30°N and 30°S. Their estimated total area is 617,000 km^2, forming about 15% of the marine shallow shelves.

75. There are three general types of coral reefs: fringing reefs, barrier reefs, and atolls. Fringing reefs are found close against the coast; barrier reefs are separated from land by a lagoon; and atolls are ring-shaped coral reefs that enclose a lagoon and have been formed where an island (often volcanic in origin) has progressively sunk below the sea surface. However, coral reefs that develop on continental coastlines are often complex and contain features that are difficult to categorize.

76. Coral reef ecosystems may also occur as a veneer over non-reef substrata. Although geologically these are not "true" coral reefs, they have the same ecological attributes as other coral reefs, and are used by people in the same ways.

Ecological role and functions

77. In terms of sheer beauty of form, colours, and diversity of life, perhaps no other natural area of the world can compare with coral reefs. Coral reefs have the highest species diversity of all marine ecosystems and represent a significant contribution to global biodiversity. There are 4,000 known species of reef fish, and about 10% of these are restricted to island groups or a few hundred kilometres of shoreline. Despite forming a small fraction of marine systems of the world, nearly two thirds of all fish species harvested in the marine environment depend upon coral reefs and associated ecosystems, such as mangroves and seagrass beds.

Values, importance and provision of ecosystem services

78. Corals also provide a vital source of life-saving medicines, including anticoagulants and anticancer agents such as prostaglandins.

79. Coral reefs have been valuable to people for as long as communities have lived in coastal areas adjacent to warm seas. They have been exploited for food, building materials, medicines, and decorative objects, and continue to provide many of the basic needs of millions of people living in tropical coastal regions.

80. In tropical regions, coastal ecosystems and marine biodiversity contribute significantly to the economies of many countries. Coral reefs support tourism and recreation and subsistence, commercial and recreational fisheries. Some countries, including Barbados, the Maldives, and the Seychelles, rely on reef tourism for much of their foreign income. The Caribbean region alone receives over 100 million visitors per year, most of whom are destined for the beaches and reefs.

81. Coral reefs function as natural, self-repairing, and self-sustaining breakwaters, protecting the often low-lying land behind them from the effects of storms and rising sea levels. The

health and integrity of coral reefs are critical to maintaining tropical coastal zones and their cultural and heritage assets.

82. Despite their ecological and economic importance, coral reefs are in serious decline worldwide. They are threatened by numerous human actions that contribute to coral reef degradation, such as sediment, sewage, agriculture run-off and other pollution sources, mining, dredging of coastal areas, and coastal development. A strong correlation has been found between risk of degradation and coastal population density. The severe anthropogenic stresses from growing populations and their activities on the coastal zone are now coupled with die-offs due to coral diseases and epidemics affecting reef species. Over-fishing, blast fishing, fishing with poisons and souvenir collecting for national and international trade are major agents of reef destruction. Rising carbon dioxide levels may reduce the rate of calcification and reef formation.

83. A further and increasing impact on coral reefs is the effect of rising sea surface temperatures linked to global climate change. This causes the phenomenon of coral bleaching – expulsion of symbiotic algae, leading often to the death of the corals themselves with consequent loss of the diverse communities dependent upon them. Coral reefs that are already under stress from other human-induced pressures such as pollution and sediment deposition appear to be most vulnerable to bleaching. Predictions of future sea surface temperatures indicate that bleaching will become increasingly widespread and frequent. Recent results suggest that bleaching of corals by increased UV-B radiation may be adding to the effects of temperature.

84. Once corals have died, reefs are more vulnerable to physical break-up during storms, thus threatening their function in protecting coastal lands and their people from impacts of rising sea levels and storms. The massive worldwide coral bleaching in 1997-98 suggests that coral reefs maybe signaling the first ecosystem-scale damage from human-induced global change. Recovery will depend upon reducing human pressures through sound management and upon whether bleaching events will recur with increased severity and frequency, reversing any coral reef regeneration.

85. As a result of these interacting problems, coral reefs have suffered a dramatic decline in recent years. About 11% of the world's reefs sites have been lost, 27% are under immediate threat, and another 31% are likely to decline in the next 10 - 30 years. At greatest risk are the reefs in the wider Indian Ocean; Southeast and East Asia; the Middle East, mainly in the Arabian-Persian Gulf; and the Caribbean-Atlantic region.

86. Coral reefs support multi-species fisheries. Protected areas are now often used as a tool in fisheries management. Some economically important species may spend part of their life cycle outside the boundaries of the designated area, which should be taken into account in management. On the other hand, fisheries management measures support not only sustainable fisheries but also biodiversity and other valuable characteristics of the site. Many reef fish species need regulatory frameworks beyond the Ramsar Convention to complement Ramsar Site designation. These species need protection under complementary conservation frameworks and authorities.

87. In managing coral reefs, conservation needs must be considered along with the needs of local people who may depend on certain reefs for their livelihoods. Some areas are best

managed using multiple-use and zoning approaches that can accommodate the needs of different stakeholders. Nested protection frameworks at coastal zone level are required, as opposed to using schemes based on the strict protection of just a few areas. Coastal coral reef areas are best managed within the context of Integrated Coastal Zone Management (ICZM) programmes.

Position within Ramsar's classification system

88. Coral reefs falls under *Marine/Coastal Wetlands*: C (Coral reefs) in the Ramsar Classification System for Wetland Type.

89. In many places coral reefs form part of an ecosystem that is functionally and intricately linked to other adjacent marine habitats in the Ramsar Classification System, notably A (Permanent shallow marine waters), B (Marine subtidal aquatic beds – especially seagrass beds), E (Sand, shingle and pebble shores), H (Intertidal marshes), and J (Coastal brackish/saline lagoons).

Applying the Ramsar Criteria

90. Contracting Parties should pay special attention to the listing of coral reef areas that, because of their geographic location ("upstream-reefs"), are sources of pelagic larvae and ensure the seeding of large areas of reefs "downstream".

91. Reefs that buffer coastlines against storm damage, and so protect coastal populations and infrastructure, should also be considered for designation.

92. Consideration should be given to the listing of sites where there is a threat of degradation, and where listing can lead to comprehensive management actions that enhance maintenance of the ecological character of the coral reef.

93. An important consideration in the identification of coral reef sites for designation is the extent to which an area is unaffected by, and can be protected from, human-induced change that alters the quality of coastal waters, since the ecological character of the reefs will be maintained only if the water quality is preserved and coastal zones are appropriately managed.

94. In addition, consideration should be given also to the listing of sites that:

    a) support unusual geologic/biologic formations and/or species of fauna and flora of particular aesthetic, historic or scientific interest;

    b) have a history of documented long-term research and management by local and international institutions; and

    c) can be used for the establishment of long-term monitoring programmes for the assessment of environmental change.

95. Contracting Parties should pay special attention to the listing of coral reef areas that, because of their geographical location, are sources of larvae for other 'downstream' reefs, helping to maintain stable metapopulations of reef organisms over time.

96. The importance of coral reefs for fish species should be recognized through the application of Criteria 7 and 8. In applying Criterion 7 it should be noted that the fish species richness of reefs varies regionally, for example from more than 2,000 species in the Philippines to about 200 - 300 species in the Caribbean. Simple species counts (species inventories) are not sufficient to assess the importance of a particular area, and assessments must take into account the characteristics of the fish fauna in each region. Although endemism in coral reef fish is not common, some islands and shoals may be effectively isolated, with fish populations becoming genetically distinct. Such reef systems should be afforded a priority for listing.

97. Sites that support species of special conservation concern, unique biological assemblages, and flagship or keystone species (such as elkhorn coral forests, sponge and sea fan assemblages), and which are in pristine condition, should be a high priority for designation.

Boundaries and size

98. In determining the boundaries of a coral reef site to be designated, Contracting Parties should take into account Article 2.1 of the Convention. Since the outer parts of many coral reef systems as defined in paragraph 75 of this Appendix and the middle of some lagoon systems extend to below six metres water depth, boundaries of coral reefs sites should include all such parts of the reef. Moreover, since coral reef ecosystems as defined in paragraph 75 extend beyond the boundaries of the reef structure, and activities in adjacent areas can harm them, adjacent waters should, as appropriate, be included in the site designation.

99. The size of a designated coral reef site should be appropriate to the geographic scale of the reef and the management approaches necessary to maintain its ecological character. Wherever possible, the area should be large enough to protect an integral, self-sustaining ecological entity. In the sea, habitats are rarely precisely restricted, and it should be noted that many marine species have large ranges and that ocean currents can carry genetic materials of sedentary species over great distances.

100. Contracting Parties should consider, where appropriate, the listing of composite sites under Criterion 1 that include coral reefs and associated systems, in particular adjacent shallow reef flats, seagrass beds, and mangroves, which normally function as intricately linked ecosystems. The designated coral reef area should contain the greatest diversity of habitat types and successional stages possible, and also include the habitat types and successional stages of the associated systems.

101. Special attention should also be given to the listing of networks of sites rather than to individual reefs. Networks have more value than individual sites, contributing to the preservation of the integrity of whole seascapes.

Further sources of information on coral reefs

102. WCMC's *World Atlas of Coral Reefs* (Spalding *et al.* 2001) contains much relevant information.

E6. Temporary pools

Geographic distribution and extent

103. Temporary pools can occur in many different parts of the world, but are particularly well represented in karstic, arid, semi-arid, and mediterranean-type regions.

Ecological role and functions

104. Temporary pools are usually small (< 10 ha in area) and shallow wetlands which are characterized by an alternation of flooded and dry phases, and whose hydrology is largely autonomous. They occupy depressions, often endorheic, which are flooded for a sufficiently long period to allow the development of hydromorphic soils and wetland-dependent aquatic or amphibious vegetation and fauna communities. However, equally importantly, temporary pools dry out for long enough periods to prevent the development of the more widespread plant and animal communities characteristic of more permanent wetlands.

105. The water supply for temporary ponds usually comes from precipitation, from run-off from their often small and discrete catchment, and/or from the groundwater table. Temporary pools can also be important for groundwater recharge in karstic, arid and semi-arid areas.

106. Pools which are in direct physical contact with permanent, surface wetlands such as lake edges, permanent marshes or large rivers are excluded from this definition.

107. Significant and characteristic features of temporary pools include:

a) the ephemeral nature of their wet phase, normally with shallow waters, which means that they may not appear as obvious wetlands for most of the time;

b) their total dependence upon local hydrology, especially with the absence of any link to permanent aquatic habitats;

c) the uniqueness of their vegetation with, for example, typical communities of aquatic ferns *(Isoetes* species*, Marsilea* species*, Pilularia* species), normally endangered, and other amphibious plants such as *Ranunculus* species and *Calitriche* species;

d) the uniqueness of their invertebrate communities and a particular abundance of endangered faunal groups such as amphibians and branchiopod crustaceans, often due to the absence of fish as predators;

e) their particularly good representation in arid, semi-arid and mediterranean-type zones (including occurring as surface features in karst landscapes);

f) the human-made nature of many temporary pools in different parts of the world, created either as a result of extractive activities or for water retention and storage for use by local communities; and

g) their provision of nesting places for waterbirds.

108. Information on the sustainable management of temporary pools has been adopted by the Convention in Resolution VIII.33 (*Guidance for identifying, sustainably managing, and designating temporary pools as Wetlands of International Importance*).

Values, importance and provision of ecosystem services

109. Temporary ponds are often undervalued as wetlands because of their generally small size and seasonal or ephemeral nature, yet such wetlands can be of critical importance for the maintenance of biodiversity and as sources of water, food and other wetland products for local communities and indigenous peoples and their ways of life, particularly in arid and semi-arid areas and those which are vulnerable to persistent drought.

Position within Ramsar's classification system

110. Since temporary pools are defined by their size and their hydrological functioning, whilst the Ramsar Classification System for Wetland Type is based chiefly on vegetation, temporary pools are covered by a number of categories of wetland types in the Classification System:

a) they can occur as a *Marine/coastal wetland* under category E (Sand, shingle or pebble shores; includes sand bars, spits and sandy islets; includes dune systems and humid dune slacks);

b) they can occur as an *Inland wetland*, under categories N (Seasonal/ intermittent/ irregular rivers/streams/creeks), P (Seasonal/intermittent freshwater lakes (over 8 ha); includes floodplain lakes), Ss (Seasonal/intermittent saline/ brackish/alkaline marshes/pools), Ts (Seasonal/ intermittent freshwater marshes /pools on inorganic soils; includes sloughs, potholes, seasonally flooded meadows, sedge marshes), W (Shrub-dominated wetlands; shrub swamps, shrub-dominated freshwater marshes, shrub carr, alder thicket on inorganic soils), and Xf (Freshwater, tree-dominated wetlands; includes freshwater swamp forests, seasonally flooded forests, wooded swamps on inorganic soils); and

c) they can occur as a *Human-made wetland,* in category 2 (Ponds; includes farm ponds, stock ponds, small tanks; (generally below 8 ha)).

Applying the Ramsar Criteria

111. Ramsar Criteria 1 to 4 of the *Strategic Framework and guidelines for the future development of the List of Wetlands of International Importance* are particularly relevant to the designation of temporary pools as Ramsar Sites. Because of their generally small size, temporary pools seldom regularly support sufficiently large numbers of waterbirds for Criteria 5 and 6 to

apply, although their importance for waterbirds in maintaining the biological diversity of the area can be recognized using Criterion 3, and as critical sites for waterbirds during their life cycle, particularly in arid and semi-arid regions, using Criterion 4. Most fish species do not occur in temporary ponds as they cannot generally survive their dry phases, but Criteria 7 and 8 may apply to temporary pools where they support fish species that are capable of survival in mud or in cysts during dry periods.

112. In applying Criterion 1, Contracting Parties should take into account the particular representation of temporary pools in karstic, arid or sub-arid (including Mediterranean-type) zones: this wetland type is particularly representative of these biogeographic regions.

113. In applying Criteria 2 and 4, it should be recognized that the characteristic plant and animal communities of temporary pools are:

    a) virtually dependent on this wetland type during at least part of, and often for all of, their life cycle; and

    b) very vulnerable by nature, being totally dependent on the very specific hydrological conditions of the pool: by altering the hydrology to drier or wetter conditions, whole plant and animal communities characteristic of temporary pools can be rapidly lost.

114. A number of species typical of temporary pools, for example aquatic ferns *(Isoetes* spp.*, Marsilea* spp.*, Pilularia* spp.), are globally or nationally threatened and listed in Protected Species Lists or Red Data Books. National key sites for such species are appropriate for consideration for designation under Criterion 2.

Boundaries and size

115. Contracting Parties should be aware that the importance of temporary pools is not linked to their size, and that important sites in terms of their contribution to global biodiversity can be only a few hectares, or even square meters, in size. See also guidance in section 5.6 above.

116. Where possible, temporary pools designated as Ramsar Sites should include their entire (usually small) catchments, so as to maintain their hydrological integrity.

117. Concerning the application of Criterion 4, it should be noted that temporary pools often occur as clusters or complexes of pools, sometimes involving hundreds of pools. In areas where rainfall is very localized, at any one time different pools may be dry or filled. When filled they may provide habitats for waterbird populations which move around the entire area. Such waterbird populations are thus dependent upon the whole cluster of pools rather than individual pools. Therefore, wherever possible, designation of a Ramsar Site should include the whole cluster of temporary pools, noting especially the guidance provided in the Strategic Framework and guidelines for the future development of the List of Wetlands of International Importance concerning designating clusters of small sites and especially those in arid or semi-arid zones and of a non-permanent nature.

E7. Bivalve (shell-fish) reefs

(for reference citations see Section 10)

Geographic distribution and extent

118. Oyster reefs and mussel beds (i.e., bivalve reefs) have historically been a dominant ecological feature within estuaries, lagoons, sounds and other coastal embayments throughout the world's subtropical to temperate zones.

Ecological role and functions

119. Bivalve reefs – and oyster reefs in particular – provide many if not all of the ecological services that are commonly associated with other wetland types, and these services are increasingly being invoked as a basis for their restoration and protection (Coen *et al.* 2007; Beck *et al.* 2011). They contribute to nutrient cycling; provide structure that serves as foraging and nursery habitat for other species, including many commercial fisheries; stabilize subtidal and intertidal sediments; and in some instances, provide a structural defence against shoreline erosion. This latter function is of particular value in an era of accelerating sea-level rise. Because of the strong influence they can exert at scales ranging from meters to entire estuarine ecosystems, bivalve aggregations are often referred to as 'ecosystems engineers', modifying local environmental conditions in ways that influence their own growth and survival, as well as a myriad other species (Jones *et al.* 1994).

Values, importance and provision of ecosystem services

120. Using the Millennium Ecosystem Assessment's classification scheme for ecosystem services (MEA 2005), the most obvious ecosystem services provided by bivalve reefs are the *Provisioning* services. Bivalve reefs have long been harvested for food and mined as a mineral resource (e.g., combustion of shell for lime, as well as processing into fertilizer and feed additive). Globally, these extractive services have been almost the singular management focus for centuries, if not millennia. Unfortunately, there are few if any examples of sustainable management for these provisioning services, resulting in global declines of not only the bivalves but, perhaps more importantly, their broader ecological role as functional habitats (Kirby 2004; Lotze *et al.* 2006; Grabowski & Peterson 2007; Jackson 2008; Beck *et al.* 2011).

121. Bivalve reefs and beds provide a much broader array of ecosystem services that, until very recently, have not been particularly well recognized or – importantly – a management objective or conservation priority. Bivalves remove significant fractions of the suspended material ('seston') from waters flowing past their reefs (Grizzle *et al.* 2006) and in doing so can contribute significantly to sustaining good water quality (Cerrato *et al.* 1994). The organic material deposited into surrounding sediments as feces or pseudofeces is processed by bacteria, ultimately increasing rates of denitrification (Newell 2004).

122. Denitrification is a critically important *Regulating* ecosystem service in many estuaries where cultural eutrophication (Nixon 1995) has occurred. Nutrient management and, often, nutrient reduction strategies are increasingly common management objectives within estuarine watersheds and restoration, and conservation of oyster reefs has been invoked as a potentially valuable part of overall management strategy of these wetlands (Newell *et al.* 2005; Fulford *et al.* 2007; Cerco & Noel 2007).

123. A *Supporting* service is the provision of structured habitat for other organisms such as fish, crabs, sponges and other macroinvertebrates. As with coral reefs in tropical systems, and vegetated wetlands such as salt marshes, mangroves (Appendix E4 above), kelp forests and sea grasses, many species of fish and crustaceans use oyster reefs and mussel beds as a foraging ground or nursery habitat. Intact reefs can enhance the overall productivity of estuaries (Grabowski & Peterson 2007); conversely, the degradation of bivalve reef structure through destructive fishing practices, dredging or filling activities can cause cascading ecological impacts and increase the overall impact of hypoxia and anoxia (Newell 1988; Lenihan & Peterson 1999).

124. Shoreline protection is a service that is receiving increasing attention in regions where sea level rise is a concern for both human and ecological communities. Several studies have shown that oyster reefs in the intertidal zone have the potential to help mitigate the impact of sea level rise by stabilizing shorelines and reducing erosion of adjacent salt marsh wetlands (Meyer *et al.* 1997; Piazza *et al.* 2007).

Position within Ramsar's classification system

125. Oyster reefs and mussel beds fall largely within Marine/Coastal Wetlands: A - Permanent shallow marine waters (although, like coral reefs, some oyster reefs and mussel beds may also occur at depths greater than 6 m, and some parts are also intertidal).

126. Bivalve reefs fall under Marine/Coastal Wetlands: Ga (Bivalve (shellfish) reefs) in the Ramsar Classification System for Wetland Type. Bivalve reefs are also functionally linked to adjacent marine habitats in the Ramsar Classification System, notably A (Permanent shallow marine waters), B (Marine subtidal aquatic beds), F (Estuarine waters), G (Intertidal mud, sand or salt flats), and J (Coastal brackish/saline lagoons).

Applying the Ramsar Criteria

127. Contracting Parties should consider, where appropriate, the listing of composite sites under Criterion 1 that include bivalve reefs and associated systems, in particular adjacent mangroves, seagrass beds, and salt marshes which normally function as intricately linked ecosystems. The designated bivalve reef area should contain sufficient reef area to sustain populations of reef-forming bivalves and provide a full array of ecosystem services.

128. Special attention should be given to the listing of networks of sites rather than to individual reefs. Networks have more value than individual sites, contributing to the preservation and integrity of bivalve metapopulations as well as whole estuarine and lagoon ecosystems.

129. Contracting Parties should pay special attention to the listing of bivalve reef areas that, because of their geographical location, are sources of larvae for other 'downstream' reefs, helping to maintain stable bivalve metapopulations over time.

130. Bivalve reefs that buffer coastlines and protect coastal infrastructure against storm damage and anthropogenic waves resulting from commercial and recreational vessels should also be considered for designation.

131. Consideration should be given to the listing of sites where there is a threat of degradation, and where listing can lead to comprehensive management actions that enhance protection of the ecological character and benefits of the bivalve reefs.

Boundaries and size

132. Optimal Ramsar Site boundaries for bivalve reefs would extend beyond the reef structures themselves and include the necessary surrounding areas to ensure ecosystem function and larval dispersion and recruitment. This would likely include reef complexes and identification of local circulation patterns, as well as the underlying geomorphology of the basin. Oyster reefs in some estuaries, for example, can be long sinuous structures many kilometres in length and extending meters off the surrounding substrate. In other estuaries they form extensive 'patch reef' structures in open water away from channels or other bathymetric features. They can also be strongly associated with shorelines, forming fringing reefs that occur from the shallow subtidal zone to the upper intertidal zone.

133. In many locations, their reef structures occur perpendicular to the predominant tidal flow, creating turbulent mixing that brings food and other suspended organic materials into contact with the bivalve reef and enhances their feeding efficiency (McCormick-Ray 1998, 2005). Ultimately, the overall biomass of bivalves in a coastal embayment and, hence, the physical extent of reefs is driven by primary productivity and availability of food resources to support the population in an ecosystem context (Dame 1996; Mann *et al.* 2009).

E8. Artificial wetlands

Applying the Ramsar Criteria

134. Article 1.1 of the Convention states that "for the purpose of this Convention wetlands are areas of marsh, fen, peatland or water, whether natural or artificial, permanent or temporary, with water that is static or flowing, fresh, brackish or salt, including areas of marine water the depth of which at low tide does not exceed six metres."

135. Many existing Ramsar Sites are artificial (in whole or in part) inasmuch as they are human-made wetlands which have, in some parts of the world and especially in anthropogenic landscapes, developed international importance for biodiversity in the period following their creation.

136. However, within the legal context of the Convention, the fact that some artificial wetlands may eventually develop importance for biodiversity should never be used as justification for the destruction, substantial modification, or conversion of natural or near-natural wetlands at a location.

137. Ramsar Site designation Criterion 1 cannot be applied to artificial wetlands, since it specifies application exclusively to "natural or near-natural" wetland types. All other Criteria can, as appropriate, be applied to artificial wetlands.

Appendix F
Explanation of the categories of "Factors (actual or likely) adversely affecting the site's ecological character" (RIS field 30)

Factors adversely affecting the site's ecological character		
Human settlements (non-agricultural)		**human settlements or other non-agricultural land uses with a substantial footprint**
	Housing & urban areas	human cities, towns, & settlements including non-housing development typically integrated with housing *urban areas, suburbs, villages, vacation homes, shopping areas, offices, schools, hospitals*
	Commercial & industrial areas	factories & other commercial centers *manufacturing plants, shopping centers, office parks, military bases, power plants, train & ship yards, airports*
	Tourism & recreation areas	tourism & recreation sites with a substantial footprint *ski areas, golf courses, beach resorts, cricket fields, county parks, campgrounds*
	Unspecified development	
Agriculture & aquaculture		**threats from farming & ranching as a result of agricultural expansion & intensification, including silviculture, mariculture, & aquaculture**
	Annual & perennial non-timber crops	crops planted for food, fodder, fiber, fuel, or other uses *farms, household swidden plots, plantations, orchards, vineyards, mixed agroforestry systems*
	Wood & pulp plantations	stands of trees planted for timber or fiber outside of natural forests, often with non-native species, *teak or eucalyptus plantations, silviculture, christmas tree farms*
	Livestock farming & ranching	domestic terrestrial animals raised in one location on farmed or nonlocal resources (farming); also domestic or semi-domesticated animals allowed to roam in the wild & supported by natural habitats (ranching) *cattle feed lots, dairy farms, cattle ranching, chicken or duck farms, goat, camel, or yak herding*
	Marine & freshwater aquaculture	aquatic animals raised in one location on farmed or nonlocal resources; also hatchery fish allowed to roam in the wild *shrimp or fin fish aquaculture, fish ponds on farms, hatchery salmon, seeded shellfish beds, artificial algal beds*
	Non specified	
Energy production & mining		**threats from production of non-biological resources**
	Oil & gas drilling	exploring for, developing, & producing petroleum & other liquid hydrocarbons *oil wells, deep sea natural gas drilling*
	Mining & quarrying	exploring for, developing, & producing minerals & rocks *coal mines, alluvial gold panning, gold mines, rock quarries, coral mining, deep sea nodules, guano harvesting*

	Renewable energy	exploring, developing, & producing renewable energy *geothermal power production, solar farms, wind farms (including birds flying into wind turbines), tidal farms*
	Unspecified	
Transportation & service corridors		**threats from long, narrow transport corridors & the vehicles that use them including associated wildlife mortality**
	Roads & railroads	surface transport on roadways & dedicated tracks *highways, secondary roads, logging roads, bridges & causeways, road kill, fencing associated with roads, railroads*
	Utility & service lines (e.g., pipelines)	transport of energy & resources *electrical & phone wires, aqueducts, oil & gas pipelines, electrocution of wildlife*
	Shipping lanes	transport on & in freshwater & ocean waterways *dredging, canals, shipping lanes, ships running into whales, wakes from cargo ships*
	Aircraft flight paths	air & space transport *flight paths, jets impacting birds*
	Unspecified	
Biological resource use		**threats from consumptive use of "wild" biological resources including deliberate & unintentional harvesting effects; also persecution or control of specific species**
	Hunting & collecting terrestrial animals	killing or trapping terrestrial wild animals or animal products for commercial, recreation, subsistence, research or cultural purposes, or for control/persecution reasons; includes accidental mortality/bycatch *bushmeat hunting, trophy hunting, fur trapping, insect collecting, honey or bird nest hunting, predator control, pest control, persecution*
	Gathering terrestrial plants	harvesting plants, fungi, & other non-timber/non-animal products for commercial, recreation, subsistence, research or cultural purposes, or for control reasons *wild mushrooms, forage for stall fed animals, orchids, rattan, control of host plants to combat timber diseases*
	Logging & wood harvesting	harvesting trees & other woody vegetation for timber, fiber, or fuel *clear cutting of hardwoods, selective commercial logging of ironwood, pulp operations, fuel wood collection, charcoal production*
	Fishing & harvesting aquatic resources	harvesting aquatic wild animals or plants for commercial, recreation, subsistence, research, or cultural purposes, or for control/persecution reasons; includes accidental mortality/bycatch *trawling, blast fishing, spear fishing, shellfish harvesting, whaling, seal hunting, turtle egg collection, live coral collection, seaweed collection*
	Unspecified	
Human intrusions & disturbance		**threats from human activities that alter, destroy & disturb habitats & species associated with non-consumptive uses of biological resources**

	Recreational & tourism activities	people spending time in nature or traveling in vehicles outside of established transport corridors, usually for recreational reasons *off-road vehicles, motorboats, jet-skis, snowmobiles, ultralight planes, dive boats, whale watching, mountain bikes, hikers, birdwatchers, skiers, pets in rec areas, temporary campsites, caving, rock-climbing*
	(Para)military activities	actions by formal or paramilitary forces without a permanent footprint *armed conflict, mine fields, tanks & other military vehicles, training exercises & ranges, defoliation, munitions testing*
	Unspecified/others	people spending time in or travelling in natural environments for reasons other than recreation or military activities *law enforcement, drug smugglers, illegal immigrants, species research, vandalism*
Natural system modifications		**threats from actions that convert or degrade habitat in service of "managing" natural or seminatural systems, often to improve human welfare**
	Fire & fire suppression	suppression or increase in fire frequency and/or intensity outside of its natural range of variation *fire suppression to protect homes, inappropriate fire management, escaped agricultural fires, arson, campfires, fires for hunting*
	Dams & water management/use	changing water flow patterns from their natural range of variation either deliberately or as a result of other activities *dam construction, dam operations, sediment control, change in salt regime, wetland filling for mosquito control, levees & dikes, surface water diversion, groundwater pumping, channelization, artificial lakes*
	Unspecified/others	other actions that convert or degrade habitat in service of "managing" natural systems to improve human welfare *land reclamation projects, abandonment of managed lands, rip-rap along shoreline, mowing grass, tree thinning in parks, beach construction, removal of snags from streams*
Invasive & other problematic species & genes		**threats from non-native & native plants, animals, pathogens/microbes, or genetic materials that have or are predicted to have harmful effects on biodiversity following their introduction, spread and/or increase in abundance**
	Invasive non-native/alien species	harmful plants, animals, pathogens & other microbes not originally found within the ecosystem(s) in question & directly or indirectly introduced & spread into it by human activities *feral cattle, household pets, zebra mussels, Dutch elm disease or chestnut blight, Miconia tree, introduction of species for biocontrol, Chytrid fungus affecting amphibians outside of Africa*
	Problematic native species	harmful plants, animals, or pathogens & other microbes that are originally found within the ecosystem(s) in question, but have become "out of balance" or "released" directly or indirectly due to human activities *overabundant native deer, overabundant algae due to loss of native grazing fish, native plants that hybridize with other plants, plague affecting rodents*

	Introduced genetic material	Human-altered or transported organisms or genes *pesticide resistant crops, hatchery salmon, restoration projects using nonlocal seed stock, genetically modified insects for biocontrol, genetically modified trees, genetically modified salmon*
	Unspecified	
Pollution		**threats from introduction of exotic and/or excess materials or energy from point & nonpoint sources**
	Household sewage, urban waste water	water-borne sewage & nonpoint runoff from housing & urban areas that include nutrients, toxic chemicals and/or sediments *discharge from municipal waste treatment plants, leaking septic systems, untreated sewage, outhouses, oil or sediment from roads, fertilizers & pesticides from lawns & golf-courses, road salt*
	Industrial & military effluents	water-borne pollutants from industrial & military sources including mining, energy production, & other resource extraction industries that include nutrients, toxic chemicals and/or sediments *toxic chemicals from factories, illegal dumping of chemicals, mine tailings, arsenic from gold mining, leakage from fuel tanks, PCBs in river sediments*
	Agricultural & forestry effluents	water-borne pollutants from agricultural, silvicultural, & aquaculture systems that include nutrients, toxic chemicals and/or sediments including the effects of these pollutants on the site where they are applied *nutrient loading from fertilizer runoff, herbicide runoff, manure from feedlots, nutrients from aquaculture, soil erosion*
	Garbage & solid waste	rubbish & other solid materials including those that entangle wildlife *municipal waste, litter from cars, flotsam & jetsam from recreational boats, waste that entangles wildlife, construction debris*
	Air-borne pollutants	atmospheric pollutants from point & nonpoint sources *acid rain, smog from vehicle emissions, excess nitrogen deposition, radioactive fallout, wind dispersion of pollutants or sediments, smoke from forest fires or wood stoves*
	Excess heat, sound, light	inputs of heat, sound, or light that disturb wildlife or ecosystems *noise from highways or airplanes, sonar from submarines that disturbs whales, heated water from power plants, lamps attracting insects, beach lights disorienting turtles, atmospheric radiation from ozone holes*
	Unspecified	
Geological events		
	Volcanoes	volcanic events *eruptions, emissions of volcanic gasses*
	Earthquakes/tsunamis	earthquakes & associated events *earthquakes, tsunamis*
	Avalanches/landslides	avalanches or landslides *avalanches, landslides, mudslides*
	Unspecified	
Climate change & severe weather		**long-term climatic changes that may be linked to global warming & other severe climatic or weather events outside the natural range of variation that could wipe out a vulnerable species or habitat**

	Habitat shifting & alteration	major changes in habitat composition & location *sea-level rise, desertification, tundra thawing, coral bleaching*
	Droughts	periods in which rainfall falls below the normal range of variation *severe lack of rain, loss of surface water sources*
	Temperature extremes	periods in which temperatures exceed or go below the normal range of variation *heat waves, cold spells, oceanic temperature changes, disappearance of glaciers/sea ice*
	Storms & flooding	extreme precipitation and/or wind events or major shifts in seasonality of storms *thunderstorms, tropical storms, hurricanes, cyclones, tornados, hailstorms, ice storms or blizzards, dust storms, erosion of beaches during storms*
	Unspecified	
Other (please name)		
No threats		
No information available		

Appendix G
Glossary of terms used in the Strategic Framework

adverse conditions (Criterion 4) - ecological conditions unusually hostile to the survival of plant or animal species, such as occur during severe weather like prolonged drought, flooding, cold, etc.

appropriate (Criterion 1) - when applied to the term "biogeographic region" as here, this means the regionalization which is determined by the Contracting Party to provide the most scientifically rigorous approach possible at the time.

biogeographical population - several types of 'populations' are recognized:

i) the entire population of a monotypic species;
ii) the entire population of a recognized subspecies;
iii) a discrete migratory population of a species or subspecies, i.e., a population which rarely if ever mixes with other populations of the same species or subspecies;
iv) that 'population' of birds from one hemisphere which spend the non-breeding season in a relatively discrete portion of another hemisphere or region. In many cases, these 'populations' may mix extensively with other populations on the breeding grounds, or mix with sedentary populations of the same species during the migration seasons and/or on the non-breeding grounds;
v) a regional group of sedentary, nomadic or dispersive birds with an apparently rather continuous distribution and no major gaps between breeding units sufficient to prohibit interchange of individuals during their normal nomadic wanderings and/or post-breeding dispersal.

Guidance on waterbird biogeographical populations (and, where data is available, suggested 1% thresholds for each population) is provided by Wetlands International, most recently in the *Waterbird Population Estimates*, with more detail for Anatidae populations in Africa and western Eurasia given in Scott & Rose (1996).

biogeographic region (Criteria 1 & 3) - a scientifically rigorous determination of regions as established using biological and physical parameters such as climate, soil type, vegetation cover, etc. Note that for non-island Contracting Parties, in many cases biogeographic regions will be transboundary in nature and will require collaboration between countries to establish representative, unique, etc., wetland types. In some cases, the term bioregion is used synonymously with biogeographic region. In some circumstances, the nature of biogeographic regionalization may differ between wetland types according to the nature of the parameters determining natural variation.

biological diversity (Criteria 3 & 7) – the variability among living organisms from all sources including, *inter alia*, terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are part; this includes diversity within species (genetic diversity), between species (species diversity), of ecosystems (ecosystem diversity), and of ecological processes. (This definition is largely based on the one contained in Article 2 of the Convention on Biological Diversity.)

change in ecological character - for the purposes of implementation of Article 3.2, the human-induced adverse alteration of any ecosystem component, process, and/or ecosystem benefit/service. (Resolution IX.1 Annex A)

critically endangered (Criterion 2) - as used by the Species Survival Commission of IUCN. A taxon is Critically Endangered when it is facing an extremely high risk of extinction in the wild in the immediate future, as defined [for both animals and plants by the criteria layed out in the *IUCN Red List Categories and Criteria: Version 3.1*.(IUCN 2001)] See also 'globally threatened species' below.

critical stage (Criterion 4) - meaning stage of the life cycle of wetland-dependent species. Critical stages being those activities (breeding, migration stopovers etc.) which if interrupted or prevented from occurring may threaten long-term conservation of the species. For some species (Anatidae for example), areas where moulting occurs are vitally important.

ecological character - the combination of the ecosystem components, processes and benefits/services that characterise the wetland at a given point in time. [Within this context, ecosystem benefits are defined in accordance with the MA definition of ecosystem services as "the benefits that people receive from ecosystems".] (Resolution IX.1 Annex A)

ecological communities (Criterion 2) - any naturally occurring group of species inhabiting a common environment, interacting with each other especially through food relationships and relatively independent of other groups. Ecological communities may be of varying sizes, and larger ones may contain smaller ones.

ecotone (Criterion 2) – a narrow and fairly sharply defined transition zone between two or more different communities. Such edge communities are typically rich in species.

endangered (Criterion 2) - as used by the Species Survival Commission of IUCN. A taxon is Endangered when it is not Critically Endangered but is facing a very high risk of extinction in the wild in the near future, as defined [for both animals and plants by the criteria layed out in the *IUCN Red List Categories and Criteria: Version 3.1*.(IUCN 2001)]. See also 'globally threatened species' below.

endemic species (Criterion 7) - a species that is unique to one biogeographical region, i.e., it is found nowhere else in the world. A group of fishes may be indigenous to a subcontinent with some species endemic to a part of that subcontinent.

endorheic - a water body which loses water only by evaporation, i.e. no stream or river flows from it.

family (Criterion 7) - an assemblage of genera and species that have a common phylogenetic origin, e.g., pilchards, sardines and herrings in the family *Clupeidae*

fish (Criterion 7) - any finfish, including jawless fishes (hagfishes and lampreys), cartilaginous fishes (sharks, rays, skates and their allies, *Chondrichthyes*) and bony fishes (*Osteichthyes*) as well as certain shellfish or other aquatic invertebrates (see below).

fishes (Criterion 8) - "fishes" is used as the plural of "fish" when more than one species is involved.

Fish orders that typically inhabit wetlands (as defined by the Ramsar Convention) and which are indicative of wetland benefits, values, productivity or biological diversity, include:

i) **Jawless fishes - *Agnatha***
- hagfishes (*Myxiniformes*)
- lampreys (*Petromyzontiformes*)

ii) **Cartilaginous fishes - *Chondrichthyes***
- dogfishes, sharks and allies (*Squaliformes*)
- skates (*Rajiformes*)
- stingrays and allies (*Myliobatiformes*)

iii) **Bony fishes - *Osteichthyes***
- Australian lungfish (*Ceratodontiformes*)
- South American and African lungfishes (*Lepidosireniformes*)
- bichirs (*Polypteriformes*)
- sturgeons and allies (*Acipenseriformes*)
- gars (*Lepisosteiformes*)
- bowfins (*Amiiformes*)
- bonytongues, elephant fishes and allies (*Osteoglossiformes*)
- tarpons, bonefishes and allies (*Elopiformes*)
- eels (*Anguilliformes*)
- pilchards, sardines and herrings (*Clupeiformes*)
- milkfishes (*Gonorhynchiformes*)
- carps, minnows and allies (*Cypriniformes*)
- characins and allies (*Characiformes*)
- catfishes and knifefishes (*Siluriformes*)
- pikes, smelts, salmons and allies (*Salmoniformes*)
- mullets (*Mugiliformes*)
- silversides (*Atheriniformes*)
- halfbeaks (*Beloniformes*)
- killifishes and allies (*Cyprinodontiformes*)
- sticklebacks and allies (*Gasterosteiformes*)
- pipefishes and allies (*Syngnathiformes*)
- cichlids, perches and allies (*Perciformes*)
- flatfishes (*Pleuronectiformes*)

iv) **Several groups of shellfishes:**
- shrimps, lobsters, freshwater crayfishes, prawns and crabs (*Crustacea*)
- mussels, oysters, pencil baits, razor shells, limpets, winkles, whelks, scallops, cockles, clams,

- abalone, octopus, squid and cuttlefish (*Mollusca*)

v) **Certain other aquatic invertebrates:**

- sponges (*Porifera*)
- hard corals (*Cnidaria*)
- lugworms and ragworms (*Annelida*)
- sea urchins and sea cucumbers (*Echinodermata*)
- sea squirts (*Ascidiacea*)

fish stock (Criterion 8) - the potentially exploitable component of a fish population.

flagship species - species that appeal to the public and have other features that make them suitable for communicating conservation concerns.

flyway (Guideline for Criterion 2) - the concept developed to describe areas of the world used by migratory waterbirds and defined as the migration routes(s) and areas used by waterbird populations in moving between their breeding and wintering grounds. Each individual species and population migrates in a different way and uses a different suite of breeding, migration staging and wintering sites. Hence a single flyway is composed of many overlapping migration systems of individual waterbird populations and species, each of which has different habitat preferences and migration strategies. From knowledge of these various migration systems it is possible to group the migration routes used by waterbirds into broad flyways, each of which is used by many species, often in a similar way, during their annual migrations. Recent research into the migrations of many wader or shorebird species, for example, indicates that the migrations of waders can broadly be grouped into eight flyways: the East Atlantic Flyway, the Mediterranean/Black Sea Flyway, the West Asia/Africa flyway, the Central Asia/Indian sub-continent Flyway, the East Asia/Australasia Flyway, and three flyways in the Americas and the Neotropics.

There are no clear separations between flyways, and their use is not intended to imply major biological significance; rather it is a valuable concept for permitting the biology and conservation of waterbirds, as with other migratory species, to be considered in broad geographical units into which the migrations of species and populations can be more or less readily grouped.

globally threatened species (Criteria 2, 5 & 6) - species or subspecies which are listed by IUCN Species Survival Commission's Specialist Groups or Red Data Books as either Critically Endangered, Endangered or Vulnerable. Note that, especially for invertebrate taxa, IUCN's Red Data listings may be both incomplete and dynamic, reflecting poor knowledge of the global status of many taxa. Interpretation of the terms 'vulnerable', 'endangered' or 'critically endangered' species should thus always be undertaken at a national level in the light of the best available scientific knowledge of the status of the relevant taxa.

hydromorphic soils - waterlogged soils which develop under conditions of poor drainage in marshes, swamps, seepage areas, or flats.

importance (long-term target for Criterion 2) - sites, the protection of which will enhance the local and thus global long-term viability of species or ecological communities.

indicator species - species whose status provides information on the overall condition of the ecosystem and of other species in that ecosystem; taxa that are sensitive to environmental conditions and which can therefore be used to assess environmental quality.

indigenous species (Criterion 7) - a species that originates and occurs naturally in a particular country.

introduced (non-native) species - a species that does not originate or occur naturally in a particular country.

karst (see Appendix E1) - a landscape created on soluble rock with efficient underground drainage. Karst is characterised by caves, dolines, a lack of surface drainage and is mainly, but not exclusively, formed on limestone. The name derives from Kras - the Classical Karst from Slovenia. In this original, temperate, karst the dominant landforms are dolines, but contrasting landscapes are the pinnacle, cone, and tower karsts of the tropics, and the fluviokarst and glaciokarst of colder climates. The term "kras" originally denoted bare, stony ground in the Slovene language.

The following subsection of the Glossary is related to Karst.

Allogenic drainage: karst drainage that is derived from surface run-off that originates on adjacent impermeable, rocks. Also known as allochthonous drainage.
Aquiclude: relatively impermeable rock acting as the boundary to an aquifer.
Aquifer: a water-bearing horizon, sufficiently permeable to transmit groundwater and yield such water to wells and springs.
Aquitard: a bed of rock that retards, but does not totally inhibit, the movement of water into or out of an aquifer.
Artesian flow: flow through a confined aquifer where the entire aquifer is saturated and the flow is under hydrostatic pressure.
Autogenic drainage: karst drainage that is derived entirely by absorption of meteoric water into the karst rock surface. Also known as autochthonous drainage.
Backflooding: flooding due to backup of excess flow behind a constriction in a major conduit.
Bedding plane: a depositional lamination in sedimentary rocks.
Bedding plane cave: cave passages guided by bedding.
Blind valley: a valley that terminates where its stream sinks, or once sank, underground.
Breakdown: Synonym for the collapse of caves, or, in American usage, for the debris produced by collapse.
Calcium carbonate: naturally occurring compound with the chemical formula $CaCO_3$, the major component of carbonate rocks including limestone and marble.
Carbonate rock: a rock consisting of one or more carbonate minerals.
Cave: A natural hole in the ground, large enough for human entry. This does not include hydrologically very significant, conduits or fissures. A cave may be a single, short length of accessible passage, or an extensive and complex network of tunnels as long as the hundreds of kilometers in the Flint Mammoth Cave System. Most caves are formed by dissolution in limestone but sandstone caves, lava caves, glacier caves and tectonic caves also occur. In some countries a cave is regarded as being a horizontal

opening, as opposed to a pothole, or jama, which is a vertical opening, or natural vertical shaft.

Cave lake: any underground lake, it may be the entrance to a sump, in vadose caves formed by ponding behind banks of sediment or gour barriers.

Chamber: an enlargement in a cave passage or system. The largest chamber currently known, Sarawak Chamber in Sarawak, is over 700m long, up to 400m wide and 70m high.

Classical Karst: the region called Kras in Slovenia, which gave its name to the karst landscape.

Conduit: dissolutional voids, including enlarged fissures and tubular tunnels; in some usage the term is restricted to voids that are water-filled.

Conduit flow: underground water flow within conduits.

Corrosion: the erosion of rock by chemical activity that leads to dissolution.

Doline: a circular closed depression, saucershaped, conical or in some cases cylindrical. Dolines may form by dissolution, collapse, or a combination of these. They are ubiquitous features of limestone karst, but can form in or above any soluble rock; subsidence dolines are developed in insoluble sediment leached or collapsed into an underlying cavernous limestone. The largest dolines in Slovenia, Smrekova draga for instance, are more than 1 km long and over 100m deep.

Dry valley: valley without a permanent surface stream. It became dry when underground drains formed or were re-opened.

Entrenchment: erosion by a freely flowing stream to form a canyon.

Estavelle: opening that acts as either a sinkhole or a spring, depending upon groundwater level.

Floodwater zone: the zone through which the level of the water table fluctuates, also epiphreatic zone.

Freshwater lens: fresh groundwater found beneath permeable limestone islands or peninsular land masses. It is limited by a water table above and below by a mixing zone between fresh and saline groundwater along the halocline.

Gour: pool formed by calcite deposition. Gours can grow into large dams many metres high and wide. Travertine, gours form in the open air.

Groundwater: a subsurface water that lies below the water table in the saturated or phreatic zone.

Gypsum: mineral or rock composed of the hydrated calcium sulphate, $CaSO_4.2H_20$.

Gypsum cave: gypsum is very soluble and vadose and phreatic caves can form in it. Largest caves are in the Podolie region of the Ukraine, where the Optimisticeskaja only has around 180km of passage.

Halocline: the interface between fresh groundwater and saline groundwater.

Hydraulic gradient: the slope of the water table in an aquifer.

Ice cave: a cave in rock filled with permanent ice.

Input point: the start of underground drainage route or aquifer.

Limestone: sedimentary rock containing at least 50% calcium carbonate by weight.

Meteoric water: water that originates from any form of atmospheric precipitation.

Moonmilk: fine-grained mineral deposit of calcite, aragonite, formed largely by bacterial deposition.

Output point: a point where water exits from an underground drainage route or aquifer.

Passage: any negotiable part of a cave system, horizontal rather than vertical or sub-vertical sections. Cave passages vary in size and shape, the largest known is Deer Cave, which is up to 170m wide and 120m high, in the Mulu karst of Sarawak.

Percolation water: water moving slowly through the fissure network of a limestone. Usually percolation water enters the limestone through a soil cover. Percolation water accounts for most of the storage in a limestone aquifer, responds slowly to flooding in comparison to sinkhole water.

Permeability: the ability of a rock to transmit water. Permeability may be primary, due to the effects of interlinked porosity or open tectonic fractures, or secondary, due to the dissolutional enlargement of fissures developing conduit permeability.

Phreas: the zone of saturated rock below the water table, within which all conduits are water filled.

Phreatic cave: cave developed below the water table, where all voids are water filled within the phreas. Phreatic caves may include loops deep below the water table, karstic maturity encourages shallow phreatic development just below the water table.

Piezometric surface: the level to which a column of water ascends in an observation well (piezometric tube).

Pit: shaft or pothole from the surface or inside a cave, vertical segment of a gallery.

Pocket valley: a valley that begins abruptly and has no headwaters, having formed from and below the site of a karst spring.

Polje: large flat-floored closed karst depression, with commonly alluviated floor. Streams or springs drain into poljes and outflow is underground through ponors. Commonly the ponors cannot transmit flood flows, so many poljes turn into wet-season lakes. The form of some poljes is related to the geological structure, but others are purely the products of lateral dissolution and planation.

Ponor: also a sinkhole or swallowhole.

Pothole: a single shaft, or an entire cave system that is dominantly vertical.

Pseudokarst: a landscape containing karst-like features but not formed by bedrock dissolution.

Relict cave: inactive cave segment, left when the water is diverted elsewhere.

Salt karst: karst landforms developed upon halite or halite-rich rock.

Shaft: natural vertical, or steeply inclined, section of a cave passage, deepest known shaft is the entrance shaft on the Kanin plateau, Slovenia; it is 643m deep, with no ledges.

Sink: a point where a stream or river disappears underground, through a choke, or may flow into an open horizontal cave or vertical shaft. The character of sink water, flowing directly and rapidly into an open cave, distinguishes it from percolation water. Sink water is also referred to as sub-surface runoff.

Speleology: Scientific study of caves, including aspects of sciences, such as geomorphology, geology, hydrology, chemistry and biology, and also the many techniques of cave exploration.

Speleothem: general term for all cave mineral deposits, embracing all stalactites, flowstone, flowers etc.

Spring: point where underground water emerges on to the surface, not exclusive to limestone, but generally larger in cavernous rocks. Among the world's largest is the Dumanli spring, Turkey, with a mean flow of over 50 cubic metres per second.

Subcutaneous zone: a zone of generally highly weathered rock that lies below the soil but above the main, relatively unweathered, rock mass of a karst aquifer.

Sump: a section of flooded passage, also siphon.

Travertine: calcareous mineral deposited by flowing water, where plants and algae cause the precipitation by extracting carbon dioxide from the water and give travertine its porous structure. Capillary forces, loss of head and aeration also influence travertine deposition.

Troglobite: a creature that lives permanently underground beyond the daylight zone of a cave. Many troglobitic species are adapted in some way to living in a totally dark environment.

Troglophile: an animal that enters beyond the daylight zone of a cave intentionally and habitually and generally spends part of its life in the underground environment.

Trogloxene: a creature that will enter a cave on occasions but does not use the cave either for temporary or permanent habitation.

Vadose cave: a cave that underwent most of its development above the water table within the vadose zone, where drainage is free-flowing under gravity. The gravitational control of vadose flow means that all vadose cave passages drain downslope, they exist in the upper part of a karst aquifer, and they ultimately drain into the phreatic zone or out to the surface.

Vadose zone: the zone of rock above the water table, with free downward drainage, only partially water-filled. Also known as unsaturated zone, and comprises the soil, a subcutaneous or epikarstic zone, and a free-draining percolation zone.

Vauclusian rising: a type of rising or spring where direct drainage from the phreas flows up a flooded cave passage under pressure to emerge in daylight. Such risings are named after the Fontaine de Vaucluse in southern France with a mean flow of 26 cubic metres per second. It is vertical and 243m deep. Discharge fluctuates seasonally.

Water table: the top surface of a body of groundwater that fills the pore spaces within a rock mass. Above it lies the freely draining vadose zone, and below it lies the permanently saturated phreas. Individual cave conduits may be above or below the water table, and therefore either vadose or phreatic, and the water table cannot normally be related to them. The water table slope (hydraulic gradient) is low in limestone due to the high permeability, and the level is controlled by outlet springs or local geological features. High flows create steeper hydraulic gradients and hence rises in the water level away from the spring. In France's Grotte de la Luire, the water level in the cave (and therefore the local water table) fluctuates by 450m.

Water tracing: underground drainage links through unexplored caves confirmed by labelling input water and identifying it at points downstream. The common labelling techniques involve the use of fluorescent dyes (uranine, fluorescein, rhodamine, leucophor, pyranine etc.), lycopodium spores, or chemicals such as common salt. The longest successful water trace was in Turkey over a distance of 130km.

keystone species - species whose loss from an ecosystem would cause a greater than average change in other species populations or ecosystem processes; whose continued well-being is vital for the functioning of a whole community, such as the herring in the North Atlantic or krill in Antarctica.

life-history stage (Criterion 7) - a stage in the development of a finfish or shellfish, e.g., egg, embryo, larva, leptocephalus, zoea, zooplankton stage, juvenile, adult, or post-adult.

migration path (Criterion 8) - the route along which fishes, such as salmon and eels, swim when moving to or from a spawning or feeding ground or nursery. Migration paths often cross international boundaries or boundaries between management zones within a country.

natural (Criterion 1) - when used in Criterion 1, natural (or unmodified) areas are those that still retain a complete or almost complete complement of species native to the area, within a more-or-less naturally functioning ecosystem.

near natural (Criterion 1) - when used in Criterion 1 this means those wetlands which continue to function in what is considered an almost natural way. This clarification is provided in the Criteria to allow for the listing of sites which are not pristine, yet retain values making them internationally important.

nursery (Criterion 8) - that part of a wetland used by fishes for providing shelter, oxygen and food for the early developmental stages of their young. In some fishes, e.g., nest-guarding tilapias, the parent/s remain at the nursery to protect the young whereas in others the young are not protected by the parent/s except by virtue of the shelter provided by the habitat in which they are deposited, e.g., non-guarding catfishes. The ability of wetlands to act as nurseries depends on the extent to which their natural cycles of inundation, tidal exchange, water temperature fluctuation and/or nutrient pulses are retained. Welcomme (1979) showed that 92% of the variation in catch from a wetland-recruited fishery could be explained by the recent flood history of the wetland.

plants (Criteria 3 & 4) – meaning vascular plants, bryophytes, algae and fungi (including lichens).

population (Criterion 6) – in this case meaning the relevant biogeographic population.

population (Criterion 7) - in this case meaning a group of fishes comprising members of the same species.

populations (Criterion 3) - in this case meaning the population of a species within the specified biogeographical region.

provides refuge (Criterion 4) - refer also to definition for "critical stage" which is related. Critical stages are defined as being those activities (breeding, non-breeding, migration stopovers, etc.) which if interrupted or prevented from occurring may threaten long-term conservation of the species. Refuges should be interpreted to mean those locations where such critical stages gain some degree of protection during adverse condition such as drought.

regularly (Criteria 5 & 6) - as in supports regularly - a wetland regularly supports a population of a given size if:

i) the requisite number of birds is known to have occurred in two thirds of the seasons for which adequate data are available, the total number of seasons being not less than three; or

ii) the mean of the maxima of those seasons in which the site is internationally important, taken over at least five years, amounts to the required level (means based on three or four years may be quoted in provisional assessments only).

In establishing long-term 'use' of a site by birds, natural variability in population levels should be considered especially in relation to the ecological needs of the populations present. Thus in some situations (e.g., sites of importance as drought or cold weather refuges or temporary wetlands in semi-arid or arid areas – which may be quite variable in extent between years), the simple arithmetical average number of birds using a site over

several years may not adequately reflect the true ecological importance of the site. In these instances, a site may be of crucial importance at certain times ('ecological bottlenecks'), but hold lesser numbers at other times. In such situations, there is a need for interpretation of data from an appropriate time period in order to ensure that the importance of sites is accurately assessed.

In some instances, however, for species occurring in very remote areas or which are particularly rare, or where there are particular constraints on national capacity to undertake surveys, areas may be considered suitable on the basis of fewer counts. For some countries or sites where there is very little information, single counts can help establish the relative importance of the site for a species.

The International Waterbird Census data collated by Wetlands International is the key reference source.

representative (Criterion 1) - a wetland that is a typical example of a particular wetland type found in a region. Wetland types are defined in Appendix B.

seral stage (Criterion 2) – a phase in the sequential development of a climax community of plant succession.

significant proportion (Criterion 7) - for the fish Criteria - in polar biogeographical regions a "significant proportion" may be 3-8 subspecies, species, families, life-history stages or species interactions; in temperate zones 15-20 subspecies, species, families, etc.; and in tropical areas 40 or more subspecies, species, families, etc., but these figures will vary among regions. A "significant proportion" of species includes all species and is not limited to those of economic interest. Some wetlands with a "significant proportion" of species may be marginal habitats for fish and may only contain a few fish species, even in tropical areas, e.g. the backwaters of mangrove swamps, cave lakes, the highly saline marginal pools of the Dead Sea. The potential of a degraded wetland to support a "significant proportion" of species if it were to be restored also needs to be taken into account. In areas where fish diversity is naturally low, e.g., at high latitudes, in recently glaciated areas or in marginal fish habitats, genetically distinct infraspecific groups of fishes could also be counted.

spawning ground (Criterion 8) - that part of a wetland used by fishes for courting, mating, gamete release, gamete fertilization and/or the release of the fertilized eggs, e.g. herring, shad, flounder, cockles, and many fishes in freshwater wetlands. The spawning ground may be part of a river course, a stream bed, inshore or deep water zone of a lake, floodplain, mangrove, saltmarsh, reed bed, estuary or the shallow edge of the sea. The freshwater outflow from a river may provide suitable spawning conditions on the adjacent marine coast.

species (Criteria 2 & 4) - naturally occurring populations that interbreed, or are capable of interbreeding, in the wild. Under these (and other) Criteria, subspecies are also included.

species interaction (Criterion 7) - exchanges of information or energy between species that are of particular interest or significance, e.g., symbiosis, commensalism, mutual resource defence, communal brooding, cuckoo behaviour, advanced parental care, social hunting, unusual predator-prey relationships, parasitism and hyperparasitism. Species interactions

occur in all ecosystems but are particularly developed in species-rich climax communities, such as coral reefs and ancient lakes, where they are an important component of biological diversity.

supports (Criteria 4, 5, 6 & 7) - provides habitat for; areas which can be shown to be important to a species or an assemblage of species for any period of time are said to support that species. Occupation of an area need not be continuous, but may be dependent on natural phenomena such as flooding or (local) drought conditions.

threatened ecological community (Criterion 2) **-** an ecological community which is likely to become extinct in nature if the circumstances and factors threatening its extent, survival or evolutionary development continue to operate.

Guidelines for a threatened ecological community are that the community is subject to current and continuing threats likely to lead to extinction as demonstrated by one or more of the following phenomena:

i) Marked decrease in geographic distribution. A marked decrease in distribution is considered to be a measurable change whereby the distribution of the ecological community has contracted to less than 10% of its former range, or the total area of the ecological community is less than 10% of its former area, or where less than 10% of the area of the ecological community is in patches of a size sufficiently large for them to be likely to persist for more than 25 years. (The figure of 10% is indicative and for some communities, especially those which originally covered a relatively large area, it may be appropriate to use a different figure).

ii) Marked alteration of community structure. Community structure includes the identity and number of component species that make up an ecological community, the relative and absolute abundance of those species and the number, type and strength of biotic and abiotic processes that operate within the community. A marked alteration of community structure is a measurable change whereby component species abundance, abiotic interactions, or biotic interactions are altered to the extent that rehabilitation of the ecological community is unlikely to occur within 25 years.

iii) Loss or decline of native species that are believed to play a major role in the community. This guideline refers to species that are important structural components of a community or that are important in the processes that sustain or play a major role in the community, e.g., seagrass, termite nests, kelp, dominant tree species.

iv) Restricted geographic distribution (determined at national level) such that the community could be lost rapidly by the action of a threatening process.

v) Community processes being altered to the extent that a marked alteration of community structure will occur. Community processes can be abiotic (e.g., fire, flooding, altered hydrology, salinity, nutrient change) or biotic (e.g., pollinators, seed dispersers, soil disturbance by vertebrates which affect plant germination). This guideline recognizes that ecological processes are important to maintain an

ecological community, e.g., fire regimes, flooding, cyclone damage; and that disruption to those processes can lead to the decline of the ecological community.

turnover (Criteria 5 & 6) – the throughput of waterbirds using a wetland during migration periods such that the cumulative total number using the site is greater than the peak count at any one time.

unique (Criterion 1) - the only one of its type within a specified biogeographic region. Wetland types are defined in Appendix B.

vulnerable (Criterion 2) - as used by the Species Survival Commission of IUCN. A taxon is Vulnerable when it is not either Critically Endangered or Endangered but is facing a high risk of extinction in the wild in the medium-term future, as defined for both animals and plants by the criteria layed out in the *IUCN Red List Categories and Criteria: Version 3.1*. (IUCN 2001). See also 'globally threatened species' above.

waterbirds (Criteria 5 & 6) - The Convention functionally defines waterfowl (a term which, for the purposes of these Criteria and Guidelines, is considered to be synonymous with "waterbirds") as "birds ecologically dependent on wetlands" (Article 1.2). This definition thus includes any wetland bird species. However, at the broad level of taxonomic order, it includes especially:

- penguins: *Sphenisciformes*.
- divers: *Gaviiformes*;
- grebes: *Podicipediformes*;
- wetland related pelicans, cormorants, darters and allies: *Pelecaniformes*;
- herons, bitterns, storks, ibises and spoonbills: *Ciconiiformes*;
- flamingos: *Phoenicopteriformes*:
- screamers, swans, geese and ducks (wildfowl): *Anseriformes*;
- wetland related raptors: *Accipitriformes* and *Falconiformes*;
- wetland related cranes, rails and allies: *Gruiformes*;
- Hoatzin: *Opisthocomiformes*;
- wetland related jacanas, waders (or shorebirds), gulls, skimmers and terns: *Charadriiformes;*
- coucals*: Cuculiformes;* and
- wetland related owls: *Strigiformes*;

wetland benefits (Criterion 7) - the services that wetlands provide to people, e.g., flood control, surface water purification, supplies of potable water, fishes, plants, building materials and water for livestock, outdoor recreation and education. See also Resolution VI.1.

wetland types (Criterion 1) - as defined by the Ramsar Convention classification system, see Appendix B.

wetland values (Criterion 7) - the roles that wetlands play in natural ecosystem functioning, e.g. flood attenuation and control, maintenance of underground and surface water supplies, sediment trapping, erosion control, pollution abatement and provision of habitat.

Appendix H
Additional sources of useful Ramsar guidance

Issue	Guidance
Wise use of wetlands	**Handbook 1:** Wise use of wetlands
Hydrology and hydrological management	**Handbook 8:** An integrated framework for the Convention's water-related guidance.
International co-operation	**Handbook 20:** Guidelines and other support for international co-operation under the Convention
Management planning	**Handbook 18:** Frameworks for managing Ramsar Sites and other wetlands **Wetland Management Planning. A guide for site managers.** Chatterjee, A., Phillips, B. & Stroud, D. (eds.) (2008). WWF, Wetlands International, IUCN & Ramsar Convention. 80 pp. (Available at: http://assets.panda.org/downloads/wetlands_management_guide_2008.pdf)
Wetland inventory	**Handbook 13:** An Integrated Framework for wetland inventory, assessment, and monitoring **Handbook 15:** A Ramsar Framework for wetland inventory and ecological character description.

The Ramsar *Handbooks* referred to are the 4th edition (2010). All Ramsar *Handbooks* are available from www.ramsar.org/handbooks4. This Appendix will be updated once a 5th edition of the Handbooks are issued following COP11.

11th Meeting of the Conference of the Parties to the Convention on Wetlands (Ramsar, Iran, 1971)

"Wetlands: home and destination"

Bucharest, Romania, 6-13 July 2012

Resolution XI.9

An Integrated Framework and guidelines for avoiding, mitigating and compensating for wetland losses

1. RECALLING that the objective of Contracting Parties, as set out in the preamble of the Convention text, is to "stem the progressive encroachment on and loss of wetlands now and in the future"; that Article 3.1 of the Convention urges Contracting Parties to "formulate and implement their planning so as to promote the conservation of wetlands included in the List, and as far as possible the wise use of wetlands in their territory"; and that Article 3.2 and subsequent Resolutions of the Conference of the Parties express the Parties' responsibility to detect, report, and respond to adverse human-induced changes in the ecological character of wetlands included in the List of Wetlands of International Importance (Ramsar Sites);

2. NOTING that the term "wetland loss" is taken to cover both loss of wetland area and/or the loss or degradation of the ecological character of a wetland, regardless of whether or not there is any change to its overall area;

3. ALSO RECALLING that the Millennium Ecosystem Assessment (MA) reported that wetlands were being lost and degraded in many parts of the world and at rates faster than other ecosystems, and that such wetland losses and degradation jeopardise the future provision of their ecosystem services to people;

4. CONCERNED that the total area and condition of natural wetlands in many countries, and the species they support, are still declining;

5. NOTING that these wetland losses are occurring despite the provisions of the Ramsar Convention on Wetlands and the existence of wetland protection laws and practices in many countries that require that adverse wetland impacts be avoided, and where this is not possible, mitigated or compensated by offsets such as wetland restoration;

6. REITERATING that, as agreed in Resolution VII.24 on *Compensation for lost wetland habitats and other functions*, effective wetland protection begins with avoidance of adverse wetland impacts;

7. AWARE that the 10th Meeting of the Conference of the Contracting Parties (COP10) instructed the Scientific and Technical Review Panel (STRP) to "develop guidance on

mitigation of and compensation for losses of wetland area and wetland values, in the context of Resolution X.16 on *A Framework for processes of detecting, reporting and responding to change in wetland ecological character*, including lessons learned from available information on implementation of 'no net loss' policies, the 'urgent national interest' test, and other aspects relating to situations in which Article 2.5 and 4.2 and/or Resolution VII.24 are relevant";

8. AWARE of the suite of technical and scientific guidelines and other materials prepared by the STRP to support Contracting Parties in their implementation of wetland conservation and wise use and available as the Ramsar Wise Use Handbooks, 4th edition, 2010;

9. RECOGNIZING the need for countries, in particular developing countries, to design policies that are consistent with their national objectives for the achievement of sustainable development, and aware that these guidelines should be adapted to suit national conditions and circumstances;

10. NOTING that previous Resolutions adopted by the Parties consistently urge that a three-step approach should be taken to responding to current or likely changes in the ecological character of wetlands, whether or not such wetlands are included in the Ramsar List, namely:

    a) avoiding impacts (e.g., systematic assessment of projected negative changes to ecological character of potentially impacted wetlands through strategic planning to systematically identify potential areas for conservation);
    b) mitigating on-site for unavoidable impacts (e.g., through minimizing project impacts and restoring area after the project); and
    c) compensating for, or offsetting, any remaining impacts (e.g., off-site restoration);

11. RECOGNIZING that many Contracting Parties have adopted a similar approach or sequence in their national laws and policies concerning wetlands, as is discussed in COP11 DOC. 27;

12. ALSO RECOGNIZING that changes in the ecological character of wetlands may be due to *in situ* or *ex situ* activities and that appropriate responses to such changes may depend on whether the change is likely to occur, is ongoing, or has occurred; and

13. EXPRESSING APPRECIATION to the government of the United Kingdom and Stetson University College of Law for their support for the STRP's work in preparing the Framework and guidelines;

THE CONFERENCE OF THE CONTRACTING PARTIES

14. REAFFIRMS the Contracting Parties' commitment to avoiding negative impacts on the ecological character of Ramsar Sites and other wetlands as the primary step in strategies for stemming the loss of wetlands, and where such avoidance is not feasible, to applying appropriate mitigation and/or compensation/offset actions, including through wetland restoration. As far as possible these actions should be delivered in advance of negative impacts, taking into account the different contexts and specificities of Contracting Parties;

15. NOTES the *Integrated Framework and guidelines for avoiding, mitigating and compensating for wetland losses* provided in the annex to this Resolution, as a further contribution to the advice available to assist Contracting Parties in their application of these concepts in the management of potential impacts to wetlands within their territories, according to Article 3.1 of the Convention, and ENCOURAGES Contracting Parties to make use of the framework, as appropriate and in accordance with national legislation, adapting it as needed to suit national conditions and circumstances, including within existing National Wetland Policies and plans for wetland conservation, mitigation and restoration;

16. ENCOURAGES Contracting Parties to undertake research, resources permitting, on the feasibility, methodology, and outcomes of mitigation and compensation measures, and to share results of such research with other Contracting Parties and as appropriate with wetland managers and decision makers at national and local levels;

17. URGES Contracting Parties to implement Strategic Environmental Assessments with all related sectors and conduct long-term monitoring of mitigation and compensation projects, as appropriate, and modify and reorient mitigation and compensation projects if necessary, to determine whether such actions mitigate and compensate for adverse wetland impacts as planned, and INVITES Parties to report on this matter, including lessons learned, as part of their future National Reports to the Conference of the Parties;

18. URGES Contracting Parties to integrate the Framework within other relevant policies and regulations adopted by Parties in their local context, and to bring the Framework to the attention of the relevant stakeholders responsible for maintaining the ecological character of Ramsar Sites and other wetlands, including wetland site managers, government agencies and departments, government officials, non-governmental organizations, infrastructure and energy investors, developers, and the public;

19. CALLS UPON the Secretariat to communicate the *Integrated Framework and guidelines for avoiding, mitigating and compensating for wetland losses* annexed to this Resolution to the Secretariat of the Convention on Biological Diversity (CBD), as a contribution to the CBD's voluntary guidelines on environmental impact assessments (EIAs) and strategic environmental assessments (SEAs), particularly for biodiversity of inland waters, at its 11th meeting of the Conference of the Contracting Parties in October 2012; and

20. INSTRUCTS the Ramsar Secretariat to disseminate the Framework widely, including through amendment and updating of the Ramsar Wise Use Handbooks.

Annex

An Integrated Framework and guidelines for avoiding, mitigating and compensating for wetland losses

CONTENTS

1. Introduction

1. This integrated framework and guidance has been developed by the Ramsar Convention's Scientific & Technical Review Panel (STRP) in response to the request from the Contracting Parties in Resolution X.10 (2008) to "develop guidance on mitigation of and compensation for losses of wetland area and wetland values, in the context of Resolution X.16 on *A Framework for processes of detecting, reporting and responding to change in wetland ecological character*, including lessons learned from available information on implementation of 'no net loss' policies, the 'urgent national interest' test, and other aspects relating to situations in which Article 2.5 and 4.2 and/or Resolution VII.24 are relevant".

2. The starting point for understanding mitigation and compensation for wetland losses is the imperative to seek to avoid wetland losses (or degradation) in the first instance. This

imperative to avoid wetland losses applies to all wetlands and is underscored in the Ramsar Convention text and Resolutions subsequently adopted by the Contracting Parties, including the Strategic Plan 2009-2015 (Resolution X.1, 2008).

3. The preamble of the Convention text states that "wetlands constitute a resource of great economic, cultural, scientific, and recreational value, the loss of which would be irreparable" and that the Contracting Parties desire "to stem the progressive encroachment on and loss of wetlands now and in the future". Hence avoiding further wetland losses has been the overall objective of the Ramsar Convention since 1971.

4. Article 3.1 of the Convention mandates that Contracting Parties "promote the conservation" of Ramsar Sites. To that end, Article 3.2 of the Convention emphasizes maintaining the ecological character of Ramsar Sites, providing that:

> Each Contracting Party shall arrange to be informed at the earliest possible time if the ecological character of any wetland in its territory and included in the List has changed, is changing or is likely to change as the result of technological developments, pollution or other human interference. Information on such changes shall be passed without delay to the organization or government responsible for the continuing bureau duties [i.e., the Ramsar Secretariat] specified in Article 8.

5. Article 4.2 states that if a Contracting Party invokes "its urgent national interest" to delete or restrict a Ramsar Site's boundaries, then "it should as far as possible compensate for any loss of wetland resources". Although the Convention contemplates compensation in such a scenario, the overriding and primary duty (in light of Article 3 and the rarity with which Contracting Parties have formally invoked urgent national interest) is to maintain the ecological character of Ramsar Sites and avoid the need for compensation in the first place.

6. Goal 2 of the Strategic Plan 2009-2015 recognizes "those internationally important wetlands that have not yet been formally designated as Ramsar Sites but have been identified through domestic application of the Strategic Framework or an equivalent process" and calls for Ramsar guidance on the maintenance of ecological character to be "applied with a priority upon recognized internationally important wetlands not yet designated as Ramsar Sites." Accordingly, the principle of maintaining ecological character and avoiding wetland losses applies to those sites as well.

7. With respect to all wetlands, Article 3.1 states that "Contracting Parties shall formulate and implement their planning so as to promote . . . as far as possible the wise use of wetlands in their territory." Resolution IX.1 Annex A (2005) linked the concepts of wise use and ecological character such that the present definition of "wise use" of wetlands is:

> "the maintenance of their ecological character, achieved through the implementation of ecosystem approaches, within the context of sustainable development."

Thus, in this context as well, the Contracting Parties have recognized a duty to avoid wetland losses.

8. Resolutions and Recommendations of the Conference of the Parties (COP) that discuss mitigation and compensation for wetland losses uniformly emphasize the need to avoid wetland losses in the first instance. These consistently recognize a three-stage approach to responding to threats to wetland ecological character: first, avoidance; second, if that is not possible, mitigating (or minimizing) loss; and third, compensating for any remaining loss (see Box 1).

Box 1. Ramsar Resolutions and Recommendations which recognize the three-stage sequence of avoiding, mitigating (or minimizing), and compensating for wetland losses

Recommendation 2.3 (Annex) (1984): national policies should include "provision of measures to mitigate or exclude any adverse effects of wetland transformation, including compensation measures, if transformation of wetlands is planned".

Resolution VII.24 (1999): "effective wetland protection involves the conservation of wetlands as a first choice within a three-step mitigation sequence, including avoidance, minimization, and compensation, the latter only as a last resort".

Resolution X.12 (2008): "to avoid negative impacts, and to mitigate unavoidable effects throughout the supply and production chain".

Resolution X.17 (Annex) (2008): "Remedial action can take several forms, i.e., *avoidance* (or prevention), *mitigation* (by considering changes to the scale, design, location, siting, process, sequencing, phasing, management and/or monitoring of the proposed activity, as well as restoration or rehabilitation of sites), and *compensation* (often associated with residual impacts after prevention and mitigation). A 'positive planning approach' should be used, where avoidance has priority and compensation is used as a last resort measure."

Resolution X.19 (Annex) (2008): "avoid, minimize or compensate (for example, through conservation offsets) possible negative effects on wetlands of activities within river basins".

Resolution X.25 (2008): "avoid negative impacts, and where such avoidance is not feasible, to apply as far as possible appropriate mitigation and/or compensation/offset actions, for example through wetland restoration".

Resolution X.26 (2008): "ensure that impacts on wetland ecosystems and their ecosystem services are avoided, remedied or mitigated as far as possible, and that any unavoidable impacts are sufficiently compensated for in accordance with any applicable national legislation".

9. Although many COP Resolutions emphasize the concepts of avoiding, mitigating, and compensating for wetland impacts, besides remarks in Resolution IX.6 on contemplating restriction of the boundaries of a designated Ramsar Site, Contracting Parties have not yet adopted guidance concerning when and how to make the choice between different response options concerning wetland losses – that is, when it is appropriate to conclude that avoidance is not possible and thus move to considering mitigation and compensation options. Neither has the available Ramsar guidance clearly linked each response option to supporting implementation once it has been chosen.

10. This Framework has been prepared to provide guidance to Contracting Parties on selecting the appropriate responses to actual or potential wetland loss, and to identify available guidance for implementing each response.

2. Structure of the Framework

2.1 The elements of the Framework

11. Throughout this Framework, the term "wetland loss" is taken to cover both loss of wetland area and/or the loss or degradation of the ecological character of a wetland, regardless of whether or not there is any change to its overall area.

12. The Framework follows the basic three-stage approach set out in the preamble to Resolution VII.24 and other Resolutions:

    i) **avoidance** of wetland loss, if possible;
    ii) then *in situ* **mitigation** (minimisation), if avoidance is not possible; and finally
    iii) **compensation** for any remaining wetland loss – which usually, but not always, takes some form of *ex situ* action.

13. A key precursor step to choosing appropriate response options is the establishment of a baseline condition describing the ecological character of the wetland. (For guidance on describing ecological character, see Resolution X.15 (2008).) This description of the site needs not only to cover its present state but must also provide this information in the context of its natural variability over time, as well as past and projected future changes to its ecological character, including any long-term changes for which the most likely driver is a changing climate.

14. With respect to Ramsar Sites, this information is required as a baseline so as to be able to identify whether a change in ecological character has occurred (or is likely to occur), and if so, whether such a change is too trivial to need to be reported under Article 3.2 or lies beyond any established specified limits of change, in which case it should be addressed through mitigation and/or compensation responses.

15. Monitoring, in line with appropriate management planning practices, is also central to choosing suitable response options. First, a monitoring regime will help identify whether a change in ecological character is occurring. Second, monitoring is necessary to determine whether mitigation and/or compensation responses have been effective or whether further remedial measures are needed to offset wetland losses.

16. The guidance provided in this Framework expands the application of decision criteria (as highlighted in Figure 1) in order to assist in understanding the trigger mechanisms which exist between avoidance, mitigation, and compensation.

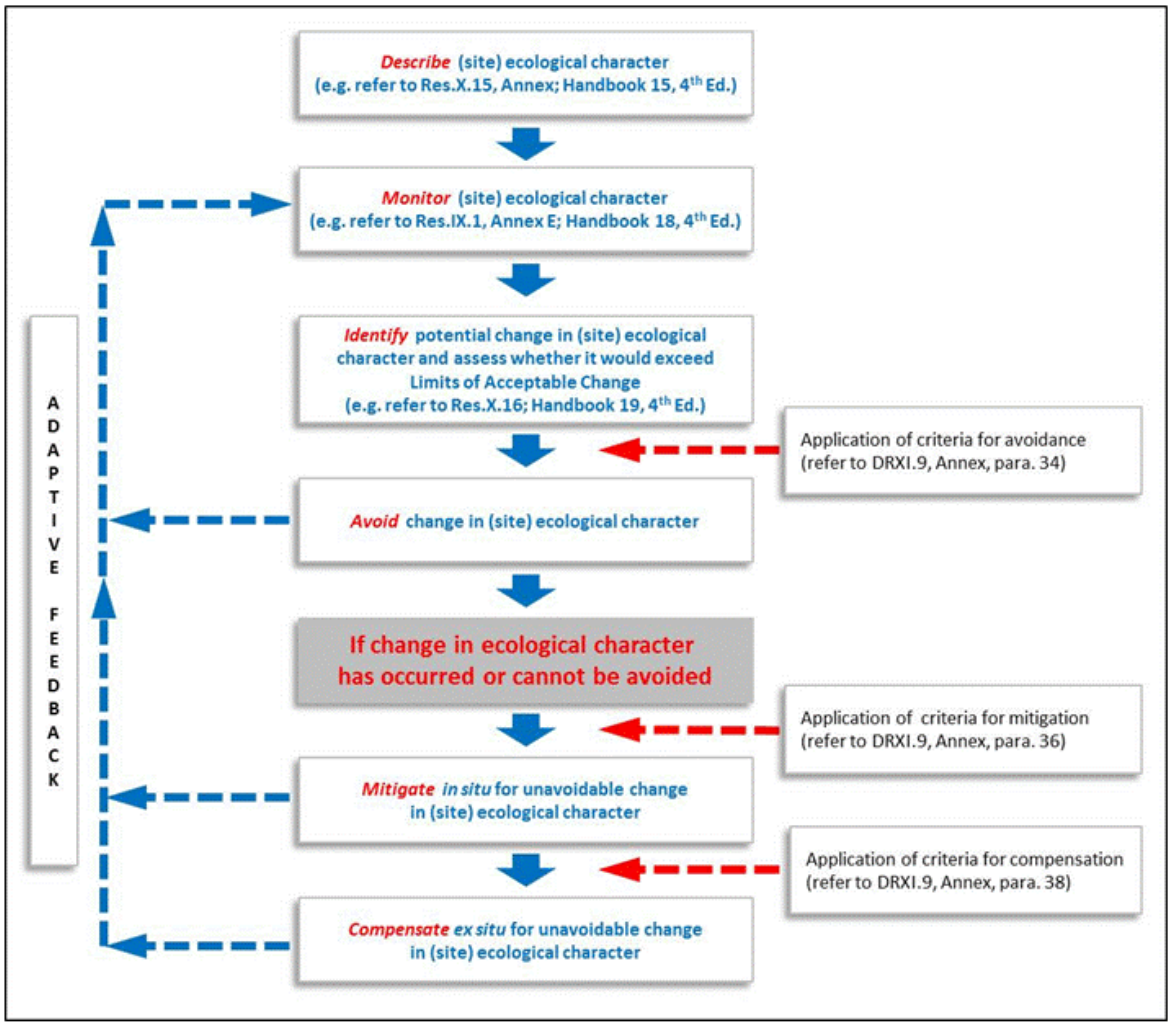


Figure 1. The conceptual framework for avoiding, mitigating and compensating for wetland losses

17. The implications of decisions made at various stages throughout the application of this Framework should follow existing reporting obligations previously adopted by the Convention (Resolution X.16, with further guidance in Handbook 19 (4th Edition)).

2.2 Definitions and descriptions of key terms used in the Framework

18. While COP Resolutions have defined certain key terms relevant to the application of this Framework (e.g., "ecological character", "restoration"), other terms (e.g., "avoidance") have not been specifically addressed. Moreover, certain terms have different connotations depending on their context. For example, the meaning of "mitigation" will vary depending on whether one is discussing minimizing wetland impacts associated with a specific activity or project, or actions specifically to reduce greenhouse gas emissions as climate change mitigation.

19. The following definitions apply in this Framework:

Ecological character: "the combination of the ecosystem components, processes and benefits/services that characterise the wetland at a given point in time" (Resolution IX.1 Annex A). In a footnote, the Resolution states that "within this context, ecosystem benefits are defined in accordance with the MA definition of ecosystem services as '"the benefits that people receive from ecosystems"'.

Change in ecological character: "the human-induced adverse alteration of any ecosystem component, process, and/or ecosystem benefit/service" (Resolution IX.1 Annex A).

Maintenance: the maintenance of the ecological character of a wetland, an affirmative duty that the Ramsar Convention requires with respect to Wetlands of International Importance (Ramsar Sites) and "as far as possible" to all wetlands. To maintain a site's ecological character, Contracting Parties "are expected to establish management planning and monitoring mechanisms" for Ramsar Sites, and to invoke appropriate response options for resolving change or likely change to the ecological character of such sites". (Handbook 19, 4th Edition).

Avoidance: Avoiding wetland impacts involves proactive measures to prevent adverse change in a wetland's ecological character through appropriate regulation, planning or activity design decisions. Examples would include choosing a non-damaging location for a development project, or choosing a "no-project" option where the risks to the maintenance of ecological character are assessed as being too high.

Mitigation: Mitigating wetland impacts refers to reactive practical actions that minimize or reduce *in situ* wetland impacts. Examples of mitigation include "changes to the scale, design, location, siting, process, sequencing, phasing, management and/or monitoring of the proposed activity, as well as restoration or rehabilitation of sites" (Resolution X.17 Annex, paragraph 23). Mitigation actions can take place anywhere, as long as their effect is to reduce the effect on the site where change in ecological character is likely, or the values of the site are affected by those changes. In many cases it may not be appropriate to regard restoration as mitigation, since doing so represents an acknowledgement that impact has already occurred: in such cases the term "compensation" may be a truer reflection of this kind of response.

[*Note:* The interpretation of mitigation in this context does not relate to climate change mitigation.]

Minimization: Minimization is the reduction of effects as far as practicable, taking into account limitations in understanding of the site and effects, techniques for managing effects, ability to alter the impacting activity, and resource availability.

Compensation: Compensating for wetland impacts refers to actions that are intended to offset the residual impacts on wetland ecological character that remain after any mitigation has been achieved. An example of compensation would be an on-site or off-site wetland restoration or creation project, provided it adds value beyond what would have happened otherwise (i.e., relying on an already-planned benefit would not constitute compensation). Contracting Parties have emphasized the fact that it is preferable to compensate for wetland loss with wetlands of a similar type and in the

same local water catchment (Resolution VII.24, 1999), and priority should be given to on-site compensation.

Restoration: As in Resolution VIII.16, *Principles and guidelines for wetland restoration* (2002), these guidelines use the term "restoration" in its broadest sense, which includes both projects that promote a return to or toward original conditions and projects that improve the ecological character of the wetland without necessarily promoting a return to original/reference conditions. Although some Ramsar texts imply a distinction between these two potential scenarios by referring to "rehabilitation" as well as "restoration", such a distinction in practice is not precise and the two terms are often used interchangeably (Resolution VIII.16, para. 3). The term "restoration" applies to locations where wetland habitat has previously existed or where an existing wetland habitat is degraded.

Creation: the establishment of wetland habitat in locations where no wetland habitat existed previously. It is thus distinct from restoration.

Enhancement: a general expression for any augmentation or improvement in wetland components, processes and/or benefits/services. It often refers to "the modification of specific structural features of an existing wetland to increase one or more functions based on management objectives, typically done by modifying site elevations or the proportion of open water. Although this term implies gain or improvement, a positive change in one wetland function may negatively affect other wetland functions"[1].

"No net loss": a government policy or strategy that is expressed in terms of no net loss of wetland area and/or ecological character overall, at a given geographical scale (often national). Wetland impacts may be permitted, but compensation (through restoration or creation) is necessary to counterbalance these impacts, not necessarily site-by-site but at the level of the totality of the wetland resource. A no net loss policy may be limited to a particular programme, subset of wetlands, or jurisdiction.

Risk: a prediction of the likelihood and impact of an outcome; usually referring to the likelihood of a variation from the intended or hoped-for outcome.

Risk-based approach: an approach to decision-making which takes account of context-specific judgments about the relative risks associated with different choice options. It includes processes for assessing the magnitude and likelihood of risks (see Resolution VII.10, *Wetland Risk Assessment Framework*, 1999), but in addition it is a way of making explicit the chosen levels of risk which can or cannot be tolerated in given circumstances (the "risk appetite").

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1 Gwin, S.E., Kentula, M.E. & Schaffer, P.W. 1999. Evaluating the effects of wetland regulation through hydrogeomorphic classification and landscape profiles. *Wetlands* 19(3): 477-489.

3. Deciding on appropriate responses to wetland loss and degradation

3.1 Avoiding wetland loss and degradation

20. Consistent with the philosophy established above, this guidance advocates that avoiding wetland loss and degradation should be the desired outcome, in line with Ramsar Convention commitments.

21. Inherent in this approach is the need to avoid a negative change in the ecological character of a wetland. However, the guidance recognizes that in some instances avoidance may be difficult or impossible to achieve unless a decision is taken to abandon a proposal. Consequently the guidelines set out a risk-based framework to assist in deciding the appropriate response to wetland loss and degradation.

22. Such a framework may be supplemented by undertaking a systematic process to identify and map priority areas for conservation, especially at catchment and river basin levels, in order to promote a more strategic approach to avoidance, mitigation and compensation. However, the absence of such a systematically-derived set of priority areas should not inhibit the application of the guidance on avoidance, mitigation and compensation, nor should it replace the need to undertake detailed assessment of ecological character and value of individual sites.

3.2 Applying risk-based approaches

23. The Framework encourages an overall philosophy for avoiding, mitigating and compensating for loss of wetlands or wetland functions which can be described as a "risk-based approach". Such an approach is designed to ensure that each decision in a sequence is approached at the outset on the basis of a consideration of the full range of risks associated with the existing situation and with all relevant alternative outcomes.

24. An element of this approach involves identification of the risks that apply in a given instance, and an assessment of the magnitude and likelihood of each of them. Further guidance on processes for this is provided in the *Wetland Risk Assessment Framework* adopted by Resolution VII.10 (see Handbook 18, 4th Edition). It needs to be noted, however, that the risk under consideration extends not just to the ecological responses within a wetland but also to wider and longer-term social or economic issues associated with the decision being made.

25. The risk-based approach can be summarized in a simple risk evaluation matrix based upon "likelihood" and "impact". Risks are characterized, for example, as low impact/low likelihood, low impact/high likelihood, high impact/low likelihood, etc., with each of these combinations suggesting a different level of response.

26. Figure 2 provides an example of a matrix tool for visualising risk evaluation judgments. In its simplest form, the matrix characterizes an individual risk, or a suite of risks, as "high" or "low" in terms of likelihood/probability and impact/magnitude. (Note that this characterization can be more fine-grained, for example including a "medium" category or breaking down further to a 5-point scale.)

27. The matrix cells then act as prompts to the appropriate type of response. These range from a significant rethinking of plans or activities for unacceptably high combinations of risk factors (the red cell in Figure 2) to a conscious decision to tolerate risks that are deemed to be acceptably low (the green cell in the figure) but which still require mitigation.

28. The level of response is flexible and can be set according to a choice as to what level of risk can or cannot be tolerated in the given circumstances. If the circumstances change, these tolerance limits may change as well. The assessment of risk must also consider cumulative and in-combination effects and not just single issues.

		Likelihood	
		Low	**High**
Impact	**High**	**Avoid or manage risk** (with mitigation, monitoring and contingency arrangements)	**Avoid, redirect or significantly modify plans/activities**
	Low	**Accept the risk (mitigate/monitor)**	**Avoid or manage risk** (with mitigation, monitoring and contingency arrangements)

Figure 2. An example of a risk evaluation matrix

29. Consider these hypothetical examples of the application of this matrix for specific situations:

    i) An impact assessment for an infrastructure development adjacent to a wetland reveals severe threats of disruption to water flows in the site, which would lead to certain habitat loss and change in ecological character if it were to go ahead. Such risks should prompt the decision-making authority to withhold consent and trigger a search for alternative locations for the development.

    ii) An increase in livestock grazing intensity on a wet grassland, while in theory having the potential to affect the botanical species composition of the site, may be judged more likely to have effects that are negligible within the natural range of variation of the site. Although there is a risk that this prediction may be wrong, it would be disproportionate to prevent the activity on that basis, and so instead the small risk is consciously accepted. However, given the uncertainty of an adverse effect occurring, a monitoring and contingency plan could be developed and implemented.

30. The risk-based approach therefore goes beyond a mere assessment of risk to include a step which makes explicit the "appetite" for tolerance of risk that has been carefully chosen, taking into account other factors such as cost and timeframe. The approach also offers the

scope for documenting a transparent audit trail of the judgments made about the management of risks.

3.3 Selecting responses for all wetlands

31. The framework for applying a risk-based approach to responding to a change or likely change in the ecological character or loss of a wetland comprises the same three-fold approach to decision making: avoidance, mitigation and compensation.

32. When an activity or project[2] is either planned or has been completed, it is necessary to understand the implications of the project and any related project activity on the ecological character of the wetland. Decisions made in the implementation of a project should be predicated on an understanding of the associated risk. The decision to move from one stage (for instance, from avoid to mitigate) requires a consideration of all appropriate response options to ensure that changes in ecological character are minimized or obviated entirely.

33. When considering the potential or actual impact of a project or an activity on a wetland it is also necessary to appraise all possible alternatives and outcomes. Traditionally the focus has been on the overall process and the techniques applied to deliver mitigation or compensation. However, an essential element in implementing the conceptual framework is the requirement to be able to evaluate all options before triggering a move from one step in the framework to another (e.g., from avoid to mitigate).

34. Some of the crucial issues and decision-making criteria that require consideration in applying the avoidance-mitigation-compensation framework are considered below.

35. The Framework must be applied in the context set by the Convention that wise use is to be achieved where possible. While compensation does not contribute to wise use of the affected wetland, it may contribute to the wise use of the broader wetland network (e.g., by providing resources necessary for restoration) and the replacement of benefits that are lost due to the unmitigated impacts.

Avoidance

36. To ensure that the ecological character of any wetland is maintained, avoidance of any impact should be the default position. The following decision criteria should be considered in order to evaluate whether avoidance is a realistic response to a likely change in the ecological of a wetland.

- *Is the site unique and/or does it provide valuable or irreplaceable ecosystem services/benefits?* The ecological character of a wetland may be significant and/or provide valuable and/or irreplaceable ecosystem services, in which case any change in ecological character should be considered unacceptable. In this situation, a cost/benefit analysis that includes a risk-based assessment would indicate that the activity should be abandoned or relocated to avoid any direct or indirect impact on the wetland.

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2 'Project' in this context relates to any activity, such as a change in land use, the construction of infrastructure, a variation in land use or a change in water quality or quantity, which may impact upon a wetland and result in a change of ecological character.

- *Have other localities been examined for the proposed activity or is the proposed activity wetland-dependent?*
  In certain circumstances, it may be possible to undertake the proposed activity in an alternative location or at a different site that does not impact a wetland. A comprehensive assessment of other potential sites should be conducted in order to determine if changing the location of the activity would result in avoiding change in the ecological character of the wetland.

- *Have design modifications been considered to avoid wetland losses?*
  In certain circumstances, a review of the activity design should consider modifications or alternative methods that would result in the avoidance of change in the ecological character of the wetland. All viable design modifications should be considered during this process.

- *Have the economic values of lost or altered ecosystem services been considered in the project cost-benefit analysis?*
  The wetland will be providing benefits to a variety of stakeholders through the delivery of ecosystem services, and these ecosystem services may have an economic value. Any change in ecological character will make a resultant change in ecosystem services and consequently may have an economic impact. The value of any change in the values derived from ecosystem services needs to be considered in the project development phase.

- *What are the costs and efficacy of mitigation/compensation measures if the proposed activity is implemented?*
  The financial costs of mitigating and compensating for the change in ecological character of the wetland should be considered seriously, including an assessment of the implications for ecosystem services. Likewise, the efficacy of any measures in achieving the desired outcomes needs to be evaluated rigorously through a risk-based approach. If the cost and effectiveness of these measures are unacceptable, avoidance should be adopted as the default strategy.

- *Have both direct and indirect impacts on the wetland been considered?*
  A project might result in both direct impacts, such as infilling of part of a wetland to facilitate a construction project, and indirect impacts, such as pollution of a wetland some distance downstream from where the project is being implemented. The implications of all impacts and their potential to change ecological character need to be assessed fully to ensure that a change in ecological character is avoided.

- *Have cumulative or in-combination impacts on the wetland been considered?*
  It is possible that in isolation the impact of a project may be insufficient to result in a change of ecological character within the specified limits of change. The project might not be an isolated event, however, and its potential impact needs to be considered in association with all other projects or activities which might have an impact on the wetland.

- *Has an assessment been made of all the risks and benefits associated with the project?*

There will be risks and benefits associated with all projects, and usually these will have an economic dimension, but there may also be moral, ethical or other considerations as well. Before proceeding with a project which could change the ecological character of a wetland, a risk-based approach should be pursued to understand fully the implication of any possible change in ecological character.

Box 2. Avoidance of change in ecological character. Case study: The Severn Estuary, UK

The Severn Estuary Ramsar Site in the west of England has one of the largest tidal ranges in the world and is one of Europe's most important wildlife habitats. The estuary, and the rivers that feed into it, contain and support a wealth of wildlife. Its tidal waters, saltmarshes and mudflats are used by 69,000 waterbirds each winter. The diverse habitats support over 100 fish species and vast numbers of invertebrates, and the Estuary is a vital migration route for migratory fish, including Atlantic salmon, sea trout and eels, and a significant contributor to the economy of the area.

Schemes to harness the tidal energy of the Severn have been promoted for more than a hundred years. A report by the UK Sustainable Development Commission published in October 2007 suggested that the Severn Estuary could produce 5% of the UK's electricity needs. The preferred option promoted by a consortium of developers was for a 10-mile tidal barrage which would have altered some 160km^2 of estuarine habitats. Many conservation groups raised concerns regarding the fundamental changes that a large-scale barrage would have on the ecological character of the estuary. Doubts were also raised regarding the cost-benefit calculations and the long-term economic returns from a barrage.

Following a period of feasibility studies, research and consultation, the UK government concluded in October 2010 that it did not see a strategic case for public investment in a tidal energy scheme in the Severn estuary. Whilst not wanting to rule out future proposals, the government acknowledged that the costs and risks for the taxpayer and energy consumer would be excessive compared to other low-carbon energy options. The government expressed the view that when a risk-based approach is applied, other options, such as the expansion of wind energy, carbon capture and storage, and nuclear power without public subsidy, represented a better deal for taxpayers and consumers. Hence the decision to avoid changes to the ecological character of an internationally important wetland site was made on socio-economic grounds rather than purely ecological criteria.

Source: www.decc.gov.uk/assets/ decc/What%20we%20do/UK%20energy %20supply/Energy%20mix/Renewable%20energy/severn-tp/621-severn-tidal-power-feasibility-study-conclusions-a.pdf

Box 3. Understanding economic benefits to avoid wetland loss. Case study: Yamuna River floodplain, India

Around 3,250 hectares of floodplain between the Yamuna River and the landmass in Delhi offer benefits such as provision of water, fodder and other materials, fisheries, and recreation. Faced with pressures to convert the floodplain into areas suitable for housing development and industry, the decision makers, whilst acknowledging the ecological role of the floodplain, were not able to establish sufficient justification for conserving it without economic valuation of the ecosystem services to enable a cost-benefit analysis of conversion.

Value estimates for a range of services totaled US$ 843/ha/year (2007 prices). The embankment of the Yamuna would virtually dry the floodplain, causing the disappearance of those services. These ecosystem benefits exceeded the opportunity costs of conservation (estimated from the land price, assumed to reflect the discounted value of 'development' benefits) for a range of discount rates from 2 percent to 12 percent, justifying the maintenance of the floodplain. The Delhi government halted the embankment plan of the Yamuna River floodplain until further order.

Source: Kumar, P.; Babu, C. R.; Sharma, S. R; Love, A. and Prasad, L.(2001) Valuation of Ecosystem Services: A Case Study of Yamuna Floodplain in the Corridors of Delhi. Under the World Bank Aided Environmental Management Capacity Building Programme.Mimeograph, IEG, Delhi.

Mitigation

37. Where a risk-based evaluation has indicated that a project can proceed, but that a change in the ecological character is likely, and the risk associated with this is considered acceptable, then appropriate proactive mitigation should be undertaken. In certain circumstances a change in ecological character may have already been detected and reactive mitigation needs to be undertaken.

38. If a change in the ecological character of a wetland has been detected or is likely to be detected, the following decision criteria should be considered:

    - *Are the costs and risks associated with effective mitigation measures considered to be too high?*
      A risk-based approach may consider the cost of mitigation to be prohibitive. In this scenario a decision needs to be made as to whether this is appropriate or the party should refrain from implementing the activity, with avoidance becoming the best response.

    - *Is it possible to mitigate the impacts of the activity in a practical and effective manner?*
      Where mitigation is possible, maximum consideration must be given to outcomes that are self-sustaining and maintain the ecological character of the wetland. The criteria and timelines for successful mitigation should be clear and practical.

    - *Are the mitigation activities going to fully minimize the impacts?*
      In some scenarios it may not be possible to fully mitigate impacts on a wetland and, consequently, residual impacts may remain. Attempts should be made to ensure that the temporal extent, magnitude and scale of any residual impacts are minimized. Where residual impacts exist appropriate compensation measures should be provided.

Box 4. Mitigation. Case study: Gasbol (Bolivia-Brazil Gas Pipeline)

Gasbol is a 3,150-km gas pipeline between Brazil and Bolivia. The project, which was partly financed by the World Bank (WB), starts in Rio Grande, Bolivia, extending west and then south to Porto Alegre, Brazil. WB policy requires that all WB-financed infrastructure projects conduct an Environmental Assessment (EA). Projects must also comply with the WB Natural Habitats

(critical and non-critical) policy, and they must avoid significant modification to critical habitats. For non-critical habitats, avoidance is still recommended unless there are no feasible alternatives. Where impacts are unavoidable, mitigation or compensation measures are required.

To avoid certain sensitive ecosystems, the pipeline's route was modified. To reduce the size of impacts, the width of the right of way (ROW) was narrowed in many transects. In Brazil, the ROW width was reduced from 30 to 20 meters.

As described in Quintero (2007), mitigation measures to minimize unavoidable impacts included:

- *Manual tree removal along the ROW:* Trees were manually removed with chain saws to ensure that they were felled within the ROW, avoiding damage to surrounding vegetation.

- *Pushing and pulling method for wetlands:* State-of-the-art techniques were used to install the pipeline across the wetlands. The pushing and pulling method is used during the rainy season. It uses a preassembled section of pipe which is floated into position over an inundated trench. The buoys are removed and the pipe, coated with concrete jackets, sinks into the ditch. This method requires less clearing than conventional methods, because the construction space is limited to that required to allow the backhoe to cross the wetland to stockpile excavated soil. In contrast, under conventional methods the entire area is usually cleared during the dry season in order to set the pipe.

- *Drilling under river beds:* Similar special works were commissioned for the crossing of 13 rivers to avoid negative impacts on vegetation and water quality. Horizontal drilling techniques were used to tunnel under river beds, minimizing disturbance to riparian vegetation and protecting the pipe from pipeline scouring.

- *On-site restoration:* A 13-meter-wide strip along the ROW of the pipeline was revegetated and the trenches were refilled after construction.

The Gasbol project has received the International Association of Impact Assessment's Environmental Award for its EA and the World Bank's 2001 Green Award.

Source: Quintero, J.D. 2007. Mainstreaming Conservation in Infrastructure Projects: Case Studies from Latin America.

Compensation

39. Where there are residual post-mitigation impacts, it is necessary to compensate for the resultant change in ecological character, as agreed by the Parties in Resolution VII.24, *Compensation for lost wetland habitats and other functions* (1999). Any such action should be *ex situ* and appropriate to offset the residual impacts.

40. The following decision criteria require consideration during the development and implementation of compensation measures:

    - *Is the compensation type-for-type?*
      The change of ecological character of one type of wetland (for instance, an area of saltmarsh) should be compensated ,as appropriate, by the protection, enhancement,

restoration or creation of a similar wetland type (Resolution VII.24), in this case another area of saltmarsh rather than, for example, an area of freshwater marsh.

- *Is the compensation function-for-function, component-for-component,or area-for-area?*
  The residual change in ecological character may result in a loss of area and/or a loss of function or loss of provision of ecosystem services. The compensation provided should address the areal extent,significant ecosystem components, and the functional performance of the wetland. Therefore, it is necessary to understand the range of ecosystem services provided by the wetland, its physical size, and the type of biodiversity a wetland supports prior to developing compensatory habitat.

- *Where should compensation be located?*
  The location of any compensatory wetland habitat is important. Ideally it should be in close proximity to the impacted wetland and within the same hydrological catchment or coastal zone. Where compensation measures require habitat restoration or creation, the existing ecological character of the proposed restoration or creation site needs to be assessed to ensure that a) other existing important wetland values and services are not damaged, and b) other non-wetland impacts are not generated.

- *How can compensation be achieved?*
  Compensation may be achieved through the restoration, enhancement, and/or creation of wetlands. The compensation measures must address cumulative impacts on both area and function and promote integrity and resilience through a detailed scientific understanding of risks and uncertainties. The timing of implementing compensatory measures is important. Compensation must be established in advance of, or at least in consideration of, the timing of the proposed impacts. The monitoring of any compensatory measures needs to be undertaken to evaluate whether the residual impact to the ecological character has been adequately compensated, or whether further compensation provision proves to be necessary. Securing the conservation of other existing wetlands, for example through increasing statutory protection for maintaining the ecological character of another wetland, whilst covered under the terms of Article 4.2, should generally be considered a less appropriate compensation option under the overall terms of the Convention, since all Parties have already committed themselves to the wise use, through the maintenance of ecological character, of all wetlands.

- *How can long-term compensation be implemented?*
  The security of any long-term success will depend on appropriate stewardship and resourcing. When considering compensation, the ability to ensure that the necessary technical, financial, management and legislative capabilities will exist into the future needs to be considered with sufficient care and consideration. As with any wetland restoration, enhancement or creation, full local community engagement, support and stewardship is a key prerequisite for long-term success (in line with Resolutions VII.8, *Guidelines for establishing and strengthening local communities' and indigenous people's participation in the management of wetlands* (1999), and VIII.16, *Principles and guidelines for wetland restoration* (2002)).

- *Are the costs and risks associated with effective compensation considered to be too high?*

A risk-based approach may consider the full cost of compensation, including both initial or capital costs and the long-term cost to secure the future ecological character of the area in perpetuity, to be prohibitive. Alternatively, because of ecosystem complexity, irreplaceability and/or scientific uncertainty the risk of failure to successfully compensate an adverse decision may be unacceptably high. In these scenarios a decision needs to be made as to whether compensation is appropriate or instead the party should refrain from implementing the activity, with avoidance becoming the appropriate strategy.

3.4 Additional responses for Ramsar Sites

41. Under Article 2 of the Convention, Contracting Parties have committed themselves to designating suitable wetlands within their territories for inclusion on the List of Wetlands of International Importance. The legal status of Ramsar Sites will be different to other wetlands in a territory (Article 3). For instance, if a Party does not follow prescribed guidance in the case of a designated Ramsar Site (e.g., Article 3.2 reporting in the event of a change in ecological character), then it is in breach of the Convention itself – if a Party does not follow guidance in the case of other wetlands (Article 3.1), however, it is only breaching the spirit of a non-binding good practice principle. Consequently, under the avoid-mitigate-compensate framework there are additional commitments, and hence responses required, for Ramsar Sites concerning wetland loss and degradation. Guidance on these responses (including reporting obligations; see also section 4.8) has been adopted in Resolution X.16, *A Framework for processes of detecting, reporting and responding to change in wetland ecological character* (2008), included in Handbook 19, 4th edition, 2010.

42. Article 2.5 of the Ramsar Convention states that "any Contracting Party shall have the right . . . because of its urgent national interests, to delete or restrict the boundaries of wetlands already included by it in the List". Following from that, Article 4.2 of the Convention states that "where a Contracting Party in its urgent national interest deletes or restricts the boundaries of a wetland included in the List, it should as far as possible compensate for any loss of wetland resources." General guidance for Contracting Parties for interpreting "urgent national interests" under Article 2.5 of the Convention and considering compensation under Article 4.2 was adopted by the Parties in Resolution VIII.20, *General guidance for interpreting "urgent national interests" under Article 2.5 of the Convention and considering compensation under Article 4.2* (2002).

43. Furthermore, Resolutions 5.1 and VII.24 respectively make the points that "Contracting Parties will aim to meet their commitments under the Convention through the following actions: . . . restore degraded wetlands and compensate for lost wetlands" (under a heading of Wetlands of International Importance), and that Contracting Parties are urged to "take all practicable measures for compensating any loss of wetland functions, attributes and values, both in quality and surface area, caused by human activities".

44. The overall decision-making framework for avoiding, mitigating and compensating for wetland loss applies both to already-designated Ramsar Sites and as far as possible to all other wetlands in the territory of the Contracting Party according to Article 3.1 of the Convention.

45. A range of potential scenarios are illustrated in Figure 3. Concerning site area, the deletion of a site or a restriction in the boundary of a Ramsar Site (square 1) is illustrated in (2) and

(3). The appropriate response to the development of compensation measures for deleting or restricting the boundaries of wetlands on the Ramsar List should follow the guidance provided in section 3.2 of this Framework and in Resolution VIII.20 (Handbook 19, 4th edition).

46. Further guidance for consideration of the deletion or restriction of the boundaries of a listed Ramsar Site for reasons of other than "urgent national interest" is provided in the Annex to Resolution IX.6, *Guidance for addressing Ramsar sites or parts of sites which no longer meet the Criteria for designation* (2005).

47. It should be noted that the trigger for compensation under Article 4.2 is not the ecological character change itself, but rather the administrative decision that the Ramsar Site designation should be changed because the ecological change is considered to be irreversible. This is logical, since until such a conclusion has been reached, the correct response to character change should be to endeavour to reverse it.

48. If, however, irreversible negative ecological character changes have occurred or will occur as the result of activities on- or off-site, and yet no decision is taken to amend or de-List the designated area (square 4 in Figure 3), the Convention text does not expressly require compensation, other than the general terms of Resolution VII.24. Nevertheless, in such cases, Resolution IX.6 calls upon Contracting Parties to make "at least equivalent provision of compensation" when there is unavoidable loss of ecological character at a Ramsar Site.[3]

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3 Another, albeit rare, scenario in which compensation is necessary for a Ramsar Site may occur when (in accordance with Resolution 5.3, 1993), "following consultation between the Convention [Secretariat] and the Contracting Party concerned, it is agreed that a site failed at the time of designation to qualify under any of the criteria, and that there is no possibility of extension, enhancement, or restoration of its functions or values, it shall instruct the Convention [Secretariat] to remove the site from the List and shall apply the provisions for compensation, as provided in Article 4.2 of the Convention."

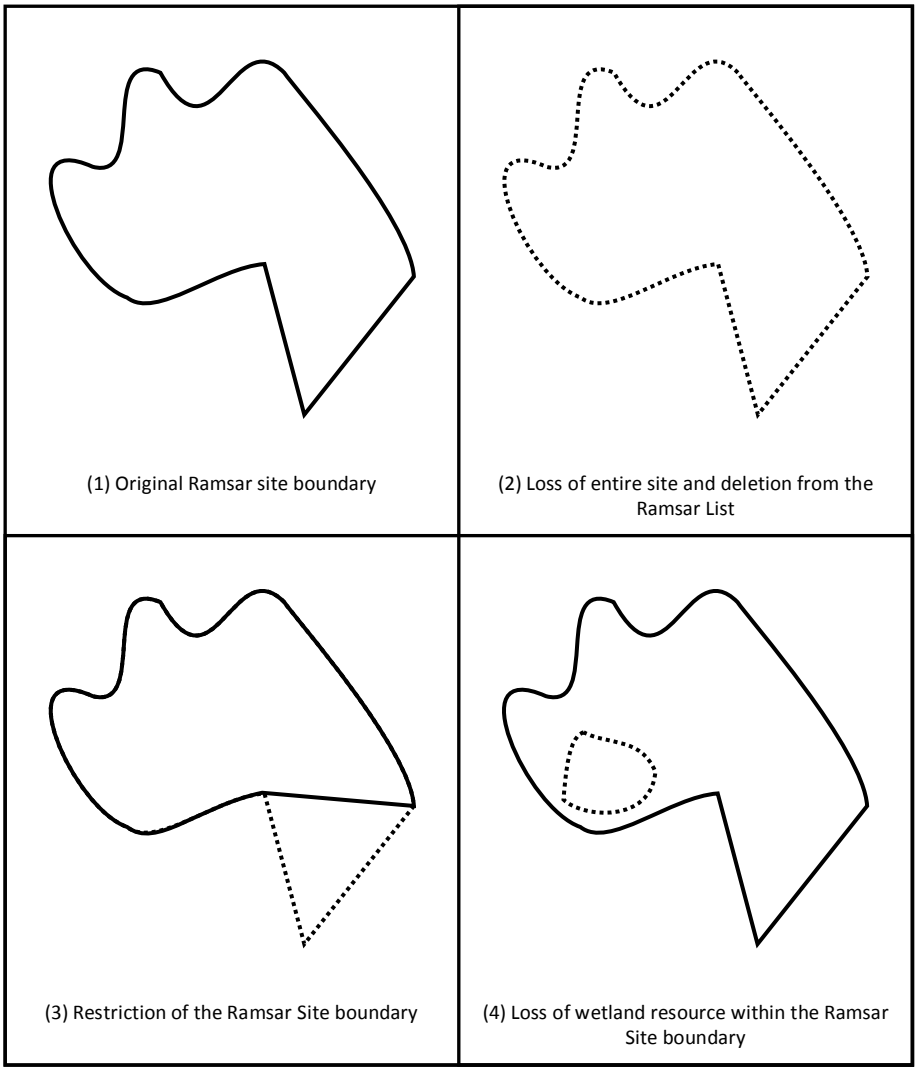

Figure 3. Scenarios for changes to a Ramsar site

3.5 Additional responses for sites that qualify for Ramsar site designation

49. Under the Ramsar Strategic Plan 2009-2015, Strategic Goal 2 seeks to "develop and maintain an international network of wetlands that are important for the conservation of global biological diversity, including waterbird flyways and fish populations and for sustaining human life, by ensuring that all Contracting Parties appropriately implement the Strategic Framework and guidelines for the future development of the List of Wetlands of International Importance and by appropriate management and wise use of those internationally important wetlands that are not yet formally designated as Ramsar sites but have been identified as qualifying through domestic application of the Strategic Framework or an equivalent process."

50. This Goal is advanced further through Strategy 2.7 on the management of other internationally important wetlands, which states: "Appropriate management and wise use achieved for those internationally important wetlands that have not yet been formally designated as Ramsar sites but have been identified through domestic application of the Strategic Framework or an equivalent process."

51. The implication in the Strategic Plan is that all sites which have been recognized through a domestic or equivalent process as being "internationally important" under the terms of the *Strategic Framework and guidelines for the future development of the List of Wetlands of International Importance* but which have not been formally designated as Ramsar Sites should be considered, in terms of the maintenance of their ecological character, in the same way as sites which have been placed on the List of Wetlands of International Importance.

52. Consequently the response options and the decision criteria applied to these sites should be identical to those applied to sites which are designated on the List of Wetlands of International Importance (section 3.4 above).

4. Principles and guidance for avoiding, mitigating and compensating for wetland losses

4.1 Introduction

53. Whilst the focus of this Framework is upon avoidance, mitigation and compensation, other aspects of the issue of maintenance of the ecological character of wetlands are considered within these overall principles and guidance.

54. In order to detect change, the ecological character of the wetland first needs to have been described, limits of acceptable change in ecological character defined, and then appropriate monitoring is required to ensure that any change is identified and characterized. Without these essential elements, it is difficult to make an informed decision regarding the risk of implementing various response options to change or likely change in ecological character.

55. Key principles and guidance for implementation of the overall Framework are elaborated below and follow the *Framework for processes of detecting, reporting and responding to change in wetland ecological character* adopted as Resolution X.16 (Handbook 19, 4th edition, 2010).

4.2 Describing wetland ecological character

56. As noted above, the current definition of "ecological character" (paragraph 15 of Resolution IX.1 Annex A) is: "Ecological character is the combination of the ecosystem components, processes and benefits[4]/services that characterise the wetland at a given point in time."

57. Whilst a definition of "ecological character" is helpful, it is also important to be able to describe the particular ecological character of a wetland as a key element of an effective management planning process, including monitoring, as is set out in the wetland management planning guidance in Ramsar Wise Use Handbook 18 (4th edition.). It also follows that if human-induced adverse change in the ecological character of a wetland occurs, a baseline description of ecological character is needed against which to assess change and consequently to consider avoidance, mitigation and compensation.

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4 In this context, ecosystem benefits are defined in accordance with the MA [Millennium Ecosystem Assessment] definition of ecosystem services as "the benefits that people receive from ecosystems".

58. The Contracting Parties have adopted guidance which has moved beyond the *definition* of the concept to a treatment of the *constituent parts of what goes to make up* ecological character, and which can be applied to any wetland. Guidelines on describing ecological character of a wetland, including its components, processes and services, are provided in the annex to Resolution X.15, *Describing the ecological character of wetlands, and data needs and formats for core inventory* (2008).

59. Consistent with Resolution X.15, this ecological character description structure and fields have now also been incorporated into the Ramsar Site Information Sheet (RIS) – 2012 revision adopted by Resolution XI.8.

4.3 Monitoring and early warning indicators

60. In order to detect actual or potential changes in ecological character, regular monitoring is required. Monitoring is defined in the Ramsar *Framework for Wetland Inventory* (Resolution VIII.6, 2002) as the "collection of specific information for management purposes in response to hypotheses derived from assessment activities, and the use of these monitoring results for implementing management. (Note that the collection of time-series information that is not hypothesis-driven from wetland assessment should be termed surveillance rather than monitoring, as outlined in Resolution VI.1.)"

61. The *Additional Guidance for the implementation of the wise use concept* (Resolution 5.6, 1993) also pointed out that monitoring does not automatically require sophisticated technology or high investment and can be carried out at different levels of intensity. It should be emphasised that there are many different monitoring techniques available and that each Contracting Party should select the technique(s) most appropriate to its priorities and available resources.

62. A monitoring programme should, ideally, be an integral part of a site-specific wetland management plan, as set out in Resolution VIII.14, *New Guidelines for management planning for Ramsar sites and other wetlands*, and described further in Ramsar Handbook 18 (4th edition, 2010). Where a management plan does not yet exist, it is still possible to implement a monitoring programme; without the framework of a management plan, however, it will be difficult to implement the results of monitoring effectively.

63. In any monitoring programme, it is useful to develop early warning indicators.The underlying concept of early warning indicators is that effects can be detected which are precursors to, or indicate the onset of, actual environmental impacts. Whilst such 'early warnings' may not necessarily provide firm evidence of larger-scale environmental degradation, they present an opportunity to determine whether intervention or further investigation is warranted. As such, early warning indicators can be defined as "the measurable biological, physical or chemical responses to a particular stress, preceding the occurrence of potentially significant adverse effects on the system of interest". Further information on early warning indicators is also provided in Ramsar Handbook 18 (4th edition).

64. The ecological relevance (ability of the measure to predict future ecological change of state through documented correlation and/or causation) of an early warning indicator should be considered, but at the same time, the concepts of early warning and ecological relevance

can conflict. The types of biological responses that can be measured, and their relationship to ecological relevance and early warning capability, is generalised in Figure 4.

65. As an example, biomarker responses can offer exceptional early warning of potential adverse effects, but there exists very little evidence that observed biomarker responses result, or culminate in, adverse effects at an individual level, let alone at the population, community or ecosystem level. Therefore, biomarker responses cannot be considered ecologically relevant because they have low predictive power for the future ecological changes or condition. If the primary assessment objective is that of early detection, then it is likely that it will be at the expense of ecological relevance, while the opposite would probably apply if ecological relevance of effects was prioritized.

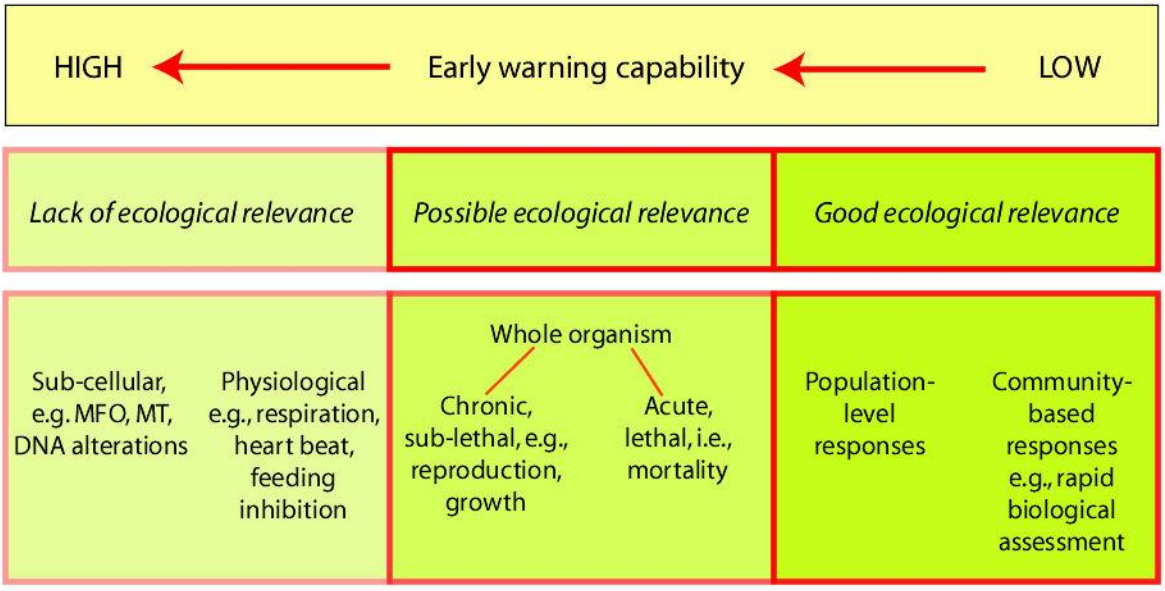

Figure 4. Relationship of ecological relevance and early warning capability to measurable biological responses (from Resolution VII.10, Handbook 18, 4th edition, 2010)

Ideal attributes of early warning indicators

66. The annex to Resolution VII.10 sets out a clear strategy for developing early warning indicators. To have potential as an early warning indicator, a particular response should be:

a) **anticipatory**: it should occur at levels of organization, either biological or physical, that provide an indication of degradation, or some form of adverse effect, before serious environmental harm has occurred;
b) **sensitive**: in detecting potential significant impacts prior to their occurring, an early warning indicator should be sensitive to low levels or early stages of the problem;
c) **diagnostic**: it should be sufficiently specific to a problem to increase confidence in identifying the cause of an effect;
d) **broadly applicable**: it should predict potential impacts from a broad range of problems;
e) **correlated to actual environmental effects/ecological relevance**: an understanding that continued exposure to the problem, and hence continued

manifestation of the response, would usually or often lead to significant environmental (ecosystem-level) adverse effects;

f) **timely and cost-effective**: it should provide information quickly enough to initiate effective management action prior to significant environmental impacts occurring, and it should be inexpensive to measure while providing the maximum amount of information per unit effort;

g) **regionally or nationally relevant**: it should be relevant to the ecosystem being assessed;

h) **socially relevant**: it should be of obvious value to, and observable by stakeholders, or predictive of a measure that is socially relevant;

i) **easy to measure**: it should be able to be measured using a standard procedure with known reliability and low measurement error;

j) **constant in space and time**: it should be capable of detecting small change and of clearly distinguishing that a response is caused by some anthropogenic source, not by natural factors as part of the natural background (that is, high signal to noise ratio); and

k) **nondestructive:** measurement of the indicator should not be damaging to the ecosystem being assessed.

4.4 Avoiding change in wetland ecological character

67. As explained above, Ramsar Contracting Parties through their decisions of the COP have consistently endorsed the notion that wetland impacts should be avoided as the principal step in any decision-making process in matters of environmental impact assessments, wetlands and river basin management, and sector-specific activities.

68. For example, the Annex to Resolution X.17 in providing advice on environmental impact assessments observes that "remedial action can take several forms, i.e., *avoidance* (or prevention), *mitigation* (by considering changes to the scale, design, location, siting, process, sequencing, phasing, management and/or monitoring of the proposed activity, as well as restoration or rehabilitation of sites), and *compensation* (often associated with residual impacts after prevention and mitigation). A 'positive planning approach' should be used, where avoidance has priority and compensation is used as a last resort measure. One should acknowledge that compensation will not always be possible: there are cases where it is appropriate to reject a development proposal on grounds of irreversible damage to, or irreplaceable loss of, biodiversity."

69. Resolution X.19 on wetlands and river basin management also identifies avoidance as the priority, calling on wetlands and river basin management policy to address "the need to avoid, minimize or compensate (for example, through conservation offsets) possible negative effects on wetlands of activities within river basins."

70. Sector-specific guidance on biofuels and extractive industries also recognize avoidance as the priority under the Convention. Resolution X.25 calls on Contracting Parties "to seek to avoid negative impacts, and where such avoidance is not feasible, to apply as far as possible appropriate mitigation and/or compensation/offset actions, for example through wetland restoration". Similarly, Resolution X.26 recognizes "the need, in implementing policies for the wise use of all wetlands, including those in the Ramsar List, and in a context of objectives for sustainable development, to avoid, minimize or mitigate the negative impacts of economic development on the ecological character of wetlands" and

accordingly urges Contracting Parties to "review and revise regulatory and permitting procedures related to extractive industrial activities, in order to ensure that impacts on wetland ecosystems and their ecosystem services are avoided, remedied or mitigated as far as possible, and that any unavoidable impacts are sufficiently compensated for in accordance with any applicable national legislation".

71. Contracting Parties have also long emphasized that "restoration schemes" – and thus mitigation and compensation efforts – "must not weaken efforts to conserve existing natural systems" (Recommendation 4.1, 1990).

4.5 Mitigating for loss of wetland ecological character

72. When all options for avoiding change in ecological character have demonstrably been exhausted, the next step in the sequence which may be considered is the taking of practical actions to minimize or reduce *in situ* wetland impacts. Such mitigation actions can take place anywhere (including, for example, upstream in the catchment), as long as their effect is realised in the site where change in ecological character is likely. Judgments about impacts should be based on appropriate methods of impact assessment.

73. Ramsar guidance on Environmental Impact Assessment (Resolution X.17) refers to the purpose of mitigation as being to look for ways to achieve the objectives of a project while reducing negative impacts to acceptable levels. Typically this will involve the incorporation of safeguards in the design of the project, and the guidance describes this as potentially including "changes to the scale, design, location, siting, process, sequencing, phasing, management and/or monitoring of the proposed activity, as well as restoration or rehabilitation of sites".

74. The guidance further observes that:

    i) "mitigation requires a joint effort of the proponent, planners, engineers, ecologists and other specialists, to arrive at the best practicable environmental option";

    ii) options should be examined at early scoping stages in the process so that their feasibility can be evaluated before choices become more constrained; and

    iii) "mitigation measures must be identified and described in detail, including an analysis of their likely success and realistic potential to offset adverse project impacts". National policy and legal systems may specify particular requirements in individual countries.

75. A common method of framing and applying mitigation measures is by means of conditions or covenants attached to project or plan consents. As well as specifying the measures to be undertaken, these can also enable mechanisms for accountability and oversight to be specified where appropriate. In some cases this can be formulated as an agreement between those responsible for implementing and assessing the mitigation.

76. Mitigation can also on occasion be achieved by use of spatial management approaches, spatially segmenting activities, so that location-specific risks are mitigated.

77. A mitigation plan may often best be implemented through an "adaptable management" approach, whereby adjustments and corrections can be applied as necessary in the light of feedback from monitoring and testing. Resolution VIII.14 (2005), in the *New Guidelines for management planning for Ramsar sites and other wetlands*, includes some guidance on adaptable management, outlining such a process as follows:

    i) a decision is made about what should be achieved (i.e., quantified management objectives are prepared for the important features);
    ii) appropriate management, based on the best available information, is implemented to achieve the objectives;
    iii) the features are monitored in order to determine the extent to which they are meeting the objectives;
    iv) if objectives are not being met, management is modified;
    v) monitoring is continued to determine if the modified management is meeting the objectives, and step iv) is repeated for any further adjustments, as necessary.

4.6 Compensating for loss of wetland ecological character

78. Where residual post-mitigation impacts remain or are expected to occur (or when Article 2.5 "urgent national interest" is invoked for a listed Ramsar Site), the next step in the sequence is to compensate for the resulting change in ecological character. Note, however, that the COP has stressed the point (in Resolutions VII.17, para. 10, and VIII.16, para. 10) that restoration or creation of wetlands cannot replace the loss or degradation of natural wetlands. This is true in relation to the ecological values of such wetlands, but in many cases it is equally true, or even more so, in relation to those cultural values that are site-specific in nature (see also Resolution IX.21, *Taking into account the cultural values of wetlands*).

79. Contracting Parties have also highlighted the fact that it is preferable to compensate for wetland loss with wetlands of a similar type and in the same local water catchment (Resolution VII.24 and the annex to Resolution VIII.20).

Wetland restoration as a response option

80. Restoration constitutes a potential response to change or likely change in ecological character in situations where residual impacts remain after avoidance or mitigation efforts.

81. In 2002, the Conference of the Parties adopted *Principles and guidelines for wetland restoration* (Resolution VIII.16). The concepts embedded in those principles apply equally to the application of restoration as a response option to a loss of wetland ecological character.

82. When choosing wetland restoration as a response option, it is essential that a clear understanding and statement of goals, objectives, and performance standards for restoration projects are defined. As indicated in Ramsar Resolution VII.17 on restoration as an element of national planning for wetland conservation and wise use, those goals and objectives should recognize that wetlands perform multiple functions. If it is hoped that a project will promote a return to pre-disturbance conditions, that should be stated as part of the project goals, and more detailed information on exactly what this means should be incorporated into project objectives. It should be noted, however, that not all restoration projects are intended to promote a return to pre-disturbance conditions and that a return

to pre-disturbance conditions is not necessarily implied by the word "restoration" as it is used in the *Principles and guidelines for wetland restoration*.

83. Moreover, it must be recognized that with a changing climate it is likely to become increasingly unlikely that restoration will achieve a historical reference condition. Rather, restoration goals and objectives should be designed to be as far as possible "climate-proof" and take into account projections of future climate change.

Wetland creation as a response option

84. In some situations it may be feasible to create wetlands on land that has never been wetland in order to provide compensation or even to assist in mitigating changes in ecological character.

85. Broadly, the concepts and approaches embedded in the *Principles and guidelines for wetland restoration* are also applicable to wetland creation, but consideration should also be given to the present and historic land use of an area in order to evaluate the appropriateness of creating wetlands in that location. It should also be noted that because of the lack of effectiveness of wetland creation efforts, some Contracting Parties, such as the USA, have adopted a policy preference for restoration over creation[5].

Applying a "no net loss" policy

86. A "no net loss" policy may express a preferred sequence of avoiding wetland impacts, mitigating unavoidable wetland impacts *in situ*, and/or compensating for or offsetting any remaining impacts *ex situ*. Thus, wetland impacts are permitted, but compensation (often through restoration) is a key element.

87. Some Contracting Parties have expressly adopted some form of a "no net loss" policy, including Australia (Western Australia position statement); the Bahamas (national wetlands policy); Canada (federal and provincial laws and policies); China (Hong Kong's Mai Po Inner Deep Bay Ramsar Site); Rwanda (Marshlands Law); Spain (national wetland policy); Trinidad and Tobago (national wetland conservation policy); and the United States (federal and state laws and policies).

88. In some countries, such as the Bahamas, Canada, and Trinidad and Tobago, the no net loss policy was adopted by government with a view toward implementing the Ramsar Convention. In other cases, such as the United States, the Ramsar Convention was not a factor in the policy's adoption.

89. Although a "no net loss" policy may be consistent with the objectives of the Ramsar Convention, it is important to note, on the other hand, that a "no loss" approach is built into the Convention text itself. Indeed, as mentioned above, the preamble states that "wetlands constitute a resource of great economic, cultural, scientific, and recreational value, the loss of which would be irreparable" and that the Contracting Parties desire "to stem the progressive encroachment on and loss of wetlands now and in the future," thus suggesting that avoiding further wetland losses *in situ* is of paramount importance.

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5 U.S. Army Corps of Engineers & U.S. Environmental Protection Agency. 2008. Compensatory Mitigation for Losses of Aquatic Resources, *Federal Register* 73(70): 19594-19705.

90. With respect to Ramsar Sites, the Convention again emphasizes a "no loss" approach. Contracting Parties must "promote the conservation" of Ramsar Sites and (as discussed in section 3.4) may delete or restrict the boundary of a Ramsar Site upon the formal invocation of "urgent national interest" (Article 2.5) or consistent with guidance included in Resolution IX.6, *Guidance for addressing Ramsar sites or parts of sites which no longer meet the Criteria for designation*. If a Contracting Party does invoke its urgent national interest to delete or restrict a Ramsar Site's boundary, then "it should as far as possible compensate for any loss of wetland resources." While such compensation may be viewed as a form of "no net loss," the overriding and primary duty is to avoid the need for such compensation in the first place.

91. A "no net loss" policy may have more relevance in the context of a Party's duty of wise use of the wetlands in its territory. A "no net loss" policy may be part of a National Wetland Policy, for example, and as the annex to Resolution VII.6 observes, a "National Wetland Policy is a key feature envisaged in the implementation of the wise use concept of the Ramsar Convention." In that regard, Handbook 2 (4th edition, 2010) suggests that a Contracting Party may "design no net loss or net gain projects focusing on wetland functions and values (including wetland area where administratively required) within national, regional or municipal wetland programmes."

92. Moreover, Handbook 3 (4th edition), in the context of assessing the effectiveness of existing wetland-related legal and institutional measures in promoting wetland conservation and wise use, advises Contracting Parties to consider "where development involves wetland loss or degradation . . . whether there is a legal requirement to make monetary or other compensation, consistent with the polluter pays principle." A properly structured "no net loss" policy may be one aspect of a Contracting Party's implementation of the wise use obligation.

93. Although a "no net loss" approach is incorporated into several Contracting Parties' wetland laws and policies, there are few studies evaluating the effectiveness of such policies. The US studies that have been undertaken suggest that the goal of no net loss is not being met, especially with respect to wetland functions (ecosystem services), due to failure of compensation projects.

94. For example, for the USA the US National Research Council (2001)[6] found that "the goal of no net loss of wetlands is not being met for wetland functions by the compensation program, despite progress in the last 20 years." The National Research Council therefore strongly recommended that impacts to wetlands that are difficult or impossible to restore, such as fens or bogs, be avoided. More recently, the US Fish and Wildlife Service's Wetlands Status and Trends[7] reported a net gain in national wetland area from 1998 to 2004, but emphasized that there is no data to support a conclusion that a net gain in functions exists. Stedman and Dahl (2008)[8] later pointed out that certain regions of the

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6 National Research Council 2001. *Compensating for Wetland Losses Under the Clean Water Act*. National Academy Press, Washington DC. 322 pages.

7 Dahl, T. E. 2006. *Status and Trends of Wetlands in the Conterminous United States 1998 to 2004*. US Fish & Wildlife Service, Washington DC.

8 Stedman, S. & Dahl, T.E. 2008. *Status and Trends of Wetlands in the Coastal Watersheds of the Eastern United States 1998 to 2004*. US Fish & Wildlife Service, Washington DC.

country and certain types of wetlands suffered losses from 1998 to 2004; for example, wetland losses in the southeastern US averaged more than 23,800 hectares annually during that period. There do not appear to be any comprehensive evaluations of the effectiveness of "no net loss policies" of other Contracting Parties.

95. In summary, first, the Ramsar Convention encourages a "no loss" approach. A "no net loss" policy may be one means of implementing a Contracting Party's wise use obligation. Although the goal of a "no net loss" policy is to offset wetland impacts, there are no studies to suggest whether Contracting Parties with such a policy have achieved "no net loss" with respect to wetland functions rather than wetland area. Accordingly, Contracting Parties with "no net loss" policies should continue or commence monitoring the effectiveness of such an approach. In light of the lack of these data, a "no net loss" policy should not be implemented in a manner that undermines the primary imperative to avoid impacts to natural wetlands.

Wetland banking and other biodiversity offset schemes

96. *Wetland banking* (often referred to as *wetland mitigation banking*) is a tool for providing wetland compensation to offset unavoidable impacts that remain after mitigation measures. It is most well developed in the USA, where it is viewed as an incentive-based approach to wetland protection. In its simplest form, a site owner generates compensation credits through the restoration, enhancement, creation, and/or preservation of wetlands. The amount of credits generated is based on the ecological improvements at the site. Credits are then sold to developers to offset adverse wetland impacts to the same type of habitat elsewhere.

97. It is expected that regulatory agencies will oversee each step of the process:

    i) approval of the establishment of a wetland bank, which determines baseline conditions at the site and potential credit generation if performance standards are met;
    ii) approval of the release of credits – thereby making them eligible to be sold or transferred – once the performance standards have been met; and
    iii) approval of the use of credits in specific permit actions to ensure that a project's impacts are adequately offset by the environmental gains that the credits represent.

98. A main feature of wetland banking in the USA is that the legal responsibility for compensation shifts from the permittee (the project developer or proponent) to the wetland banker. Accordingly, while the wetland permittee is ostensibly buying wetland credits, it is also purchasing a release of liability. Once the transaction occurs – with government approval – the wetland banker becomes responsible for ensuring that the compensation site is properly maintained and monitored for the long term.

99. *Biodiversity offset schemes*, also referred to as *offset programmes*, are conceptually similar to wetland banking but can be broader than wetland habitat or wetland-dependent species. Biodiversity credits are generated by restoring, enhancing, or preserving elsewhere the same type of impacted ecosystem. Before considering offsets, developers should undertake avoidance and mitigation measures. Examples of active biodiversity offset programmes can be found in Australia and the USA. Recently, the EU approved a strategy for reducing biodiversity loss by 2020 which would serve as the basis for developing a species-banking

program. The strategy, which is pending approval by the European Council, also endorses the concept of no net loss of biodiversity.

100. As with any form of compensation, these approaches should not be used in such a manner as to circumvent the avoidance of impacts to wetlands, and the preference to compensate for wetland loss with wetlands of a similar type and in the same local water catchment, addressing both the areal extent and functional performance.

101. For further information on wetland mitigation banking and biodiversity offset schemes see: IUCN 2004[9]; Ecosystem Market Place 2010[10]; Zwick 2011[11] and Gardner 2011[12].

Box 5. Mitigation banking. Case study: Kennecott Utah Copper: the Inland Sea Shore Bird Reserve

Kennecott Utah Copper, a subsidiary of Rio Tinto Plc., operates the largest copper mine in North America. In 1994, the company sought to expand its storage capacity for tailings. After considering a number of sites for the storage, the company selected an area adjacent to its main tailings impoundment along the south shore of the Great Salt Lake, which is part of the Western Hemispheric Shorebird Reserve Network and provides habitat to migratory birds and waterfowl. U.S. law required the company to follow an "avoid, minimise (mitigate), and compensate" sequence.

At least 12 alternative sites were examined, and wetland impacts could not be entirely avoided because of the scale of the project. The selected site resulted in direct impacts to 427 hectares of wetlands; the area had already been highly modified, however, and included degraded saltpans and industrial lands. To offset unavoidable impacts, the company purchased a 1,011-hectare site less than one kilometre away from the project. In selecting the site, the company considered its acreage and hydrology, as well as its ecologic and geographic similarity to the impacted habitats.

A Technical Advisory Committee, including representatives from federal and state agencies and NGOs, helped to develop a compensation plan. Because of the project's proximity to the Great Salt Lake, the focus was upon offsets for impacts to habitat for nesting and migratory shorebirds and waterfowl. Compensation included removal of trash and weeds, construction of fences to keep out cattle and trespassers, and construction of ponds and water conveyance canals for the restoration and creation of shorebird habitat. Monitoring results indicate that the ecologic values of the site, now known as the Inland Sea Shorebird Reserve, have significantly increased. For example, it is reported that over 100 bird species have been sighted at the reserve, and an estimated 120,000 shorebirds and waterfowl use the site annually.

In 1997, the site was expanded to include another ca. 350 hectares, including four additional ponds. The company plans to use this area primarily as compensation to offset impacts associated with its future activities. The entire area is protected by a conservation easement. A

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9 IUCN. 2004. *Biodiversity Offsets: Views, Experience, and the Business Case*. IUCN, Gland, Switzerland.

10 Ecosystem Market Place. 2010. *Estate of Biodiversity Markets: Offset and Compensation Programs Worldwide*.

11 Zwick, S. 2011. *Proposed EU Biodiversity Strategy Supports Species Banking*, Ecosystem Market Place (May 4, 2011), www.ecosystemmarketplace.com/pages/dynamic/article.page.php?page_id=8284&section=news_articles&eod=1.

12 Gardner, R. C. 2011. *Lawyers, Swamps, & Money: U.S. Wetland Law, Policy, and Politics*. Island Press.

suitable endowment will be negotiated between the company, the federal regulatory agency, and a third party if there is a change in ownership.

The Inland Sea Shorebird Reserve has participated in many research activities around Great Salt Lake concerning shorebird use and fecundity (Cavitt 2006) and impounded wetlands assessment (UDEQ 2009), and it has been used as a control site for other compensatory offsets. In 2004, the Inland Sea Shorebird Reserve, as part of the larger Gilbert Bay ecological unit, was recognized as an Important Bird Area.

Sources:

Kerry Ten Kate, Josh Bishop, & Ricardo Bayon, IUCN, Biodiversity Offsets: Views, Experience, and the Business Case (2004), *available at* http://water.epa.gov/lawsregs/guidance/wetlands/upload/2004_11_5_wetlands_Biodiversity_Offsets_Report.pdf.

Kerry Ten Kate, Josh Bishop, & Ricardo Bayon, TEEB, The Kennecott Inland Sea Shorebird Reserve (2010), *available at* www.eea.europa.eu/atlas/teeb/the-kennecott-inland-sea-shorebird.

USACE Permit Agreement (Permit No. 199450301) (1996), *available at* https://rsgis.crrel.usace.army.mil/ribits/f?p=107:25:4045198597746697::NO::P25_REPORT_ID,P3_LOCATION:235,BANK.

Wetland Mitigation Banking Agreement: www.eli.org/pdf/wmb/UT.WMB.Inland_Sea_Shorebird_Reserve_Bank.pdf.

Personal communication with Ann Neville.

Development of an assessment framework for impounded wetlands of Great Salt Lake: www.deq.utah.gov/Issues/gslwetlands/docs/FinalReport122209.pdf

Great Salt Lake Snowy Plover Survey: http://departments.weber.edu/avianecologylab/SNPL%20Survey.htm

Great Salt Lake Waterbird Survey 1997-2001: http://wildlife.utah.gov/gsl/waterbirdsurvey/report.htm

Cavitt, J.F. 2006. Productivity and foraging ecology of two co-existing shorebird species breeding at Great Salt Lake, UT: 2005 – 2006 Report. Avian Ecology Laboratory Technical Report. AEL 06-03. Weber State University, Ogden UT. 38pp. : http://departments.weber.edu/avianecologylab/PublicationFiles/ProductivityForagingReport06-03.pdf

4.7 Monitoring and verification of outcomes of mitigation, compensation and restoration activities

102. Section 4.3 above provides guidance on the assessment and monitoring of risks, impacts and change in ecological character in wetlands. A separate set of monitoring considerations arise in relation to verification of the outcomes of mitigation, compensation and restoration activities. It is crucial to build in some provision for this in relation to any such activities, wherever they may occur in the avoid-mitigate-compensate sequence.

103. Ramsar guidance on management planning for Ramsar Sites and other wetlands (Resolution VIII.16, Ramsar Handbook 18, 4th ed.) provides some information on monitoring the achievement of project standards, as follows:

> Monitoring should focus on performance standards that are linked to project objectives. Effective monitoring programs should consider that all ecosystems undergo constant change and development and should account for both temporal and spatial variability. If performance standards are not met, careful

reconsideration of the project is necessary. It may be that original goals, objectives, and performance standards are not feasible, in which case they should be reconsidered. If original goals, objectives, and performance standards are still considered feasible, remedial action should be taken. Remedial action could range from a few simple modifications to existing plans to a complete redesign of the project.

104. The essence of the principle here is that there should be an adaptive feedback loop, not just a series of linear steps. Ramsar guidance on Environmental Impact Assessment (Resolution X.17, Handbook 16, 4th ed.) addresses similar issues, as follows:

i) Monitoring and auditing are used to compare the actual outcomes after project implementation has started with those anticipated before implementation. [This] also serves to verify that the proponent is compliant with [any] environmental management plan (EMP).

ii) Management plans, programmes and systems, including clear management targets, responsibilities and appropriate monitoring should be established to ensure that mitigation is effectively implemented, unforeseen negative effects or trends are detected and addressed, and expected benefits (or positive developments) are achieved as the project proceeds. Sound baseline information and/or pre-implementation monitoring is essential to provide a reliable benchmark against which changes caused by the project can be measured.

iii) Provision should be made for emergency response measures and/or contingency plans where unforeseen events or accidents could threaten [wetland ecological character]. The EMP should define responsibilities, budgets and any necessary training for monitoring and impact management, and describe how results will be reported and to whom.

iv) Provision [should be] made for regular auditing in order to verify the proponent's compliance with the EMP, and to assess the need for adaptation of the EMP […]. An environmental audit is an independent examination and assessment of a project's (past) performance. It is part of the evaluation of the environmental management plan and contributes to the enforcement of EIA approval decisions. The results of monitoring provide information for periodic review and alteration of environmental management plans, and for optimising environmental protection through good, adaptive management at all stages of the project.

4.8 Reporting obligations

105. The reporting obligations required under each step of this Framework should follow the existing guidance already adopted by Contracting Parties. The flow charts provided in the annex of Resolution X.16 describe the appropriate reporting obligations applicable to this Framework for Ramsar Sites and other wetlands (see also Handbook 19, 4th ed.).

11th Meeting of the Conference of the Parties to the Convention on Wetlands (Ramsar, Iran, 1971)

"Wetlands: home and destination"

Bucharest, Romania, 6-13 July 2012

Resolution XI.10

Wetlands and energy issues

1. RECALLING that in the Convention's Strategic Plan 2009-2015 (Resolution X.1, 2008), Strategy 1.4 ('Cross-sectoral recognition of wetland services') is aimed at increasing recognition of and attention in decision-making to the significance of wetlands for reasons of biodiversity conservation, water supply, coastal protection, integrated coastal zone management, flood defense, climate change mitigation and/or adaptation, food security, poverty eradication, tourism, cultural heritage, and scientific research";

2. ALSO RECALLING that the Changwon Declaration (Resolution X.3) emphasized the need to harmonize policies in different sectors, so that initiatives aimed at achieving human and economic development did not inadvertently lead to the degradation of wetlands, thus "undermining the ability of wetlands to provide vital services", as well as the relevance to wetlands and energy issues of Resolutions VIII.2 on *The Report of the World Commission on Dams*, X.19 on *Wetlands and river basin management*, and X.1 *The Ramsar Strategic Plan 2009-2015,* particularly its Goal 1 concerning the Wise Use of Wetlands;

3. CONSCIOUS of the need, in pursuing policies for the wise use of wetlands and sustainable development, to avoid, mitigate, or compensate for negative impacts on the ecological character of wetlands (Resolution XI.9);

4. RECALLING the Outcome of the Rio +20 Conference (Brazil, 2012) which recognized that energy plays a critical role "in the development process, as access to sustainable modern energy services contributes to poverty eradication, saves lives, improves health and helps provide for basic human needs", and which emphasized the need to take further action to provide these services in a "reliable, affordable, economically viable and socially and environmentally acceptable manner in developing countries";

5. RECOGNIZING that demands for energy can be met from a variety of renewable and non-renewable sources as described in the annex to this Resolution, and CONCERNED that the increasing but differentiated demand for both renewable and non-renewable energy, when not addressed using sustainable measures and actions which take into account the need to protect wetland ecosystems, is likely to lead to a continued loss of wetland biodiversity and ecosystem services;

6. CONCERNED about the potential for certain activities related to the extraction of non-renewable energy resources, the production or harvesting of renewable energy resources including biofuels (outlined in Resolution X.25 on *Wetlands and "biofuels"*), and the processing, distribution and utilization of energy resources and generation of electricity, if they are not appropriately managed and regulated, to have direct and indirect adverse impacts on the ecological character of wetlands, including Ramsar Sites[1]; and CONCERNED about the particular vulnerability of wetlands to the impacts of extraction of non-renewable energy resources, as described in Resolution X.26 on *Wetlands and extractive industries*;

7. ALSO CONCERNED about the vulnerability of wetlands to the consequences of failures in the energy sector, given not only the role of wetlands as sources of key ecosystem services, including water provision and storage, but also the potential for impacts to be transferred both upstream and downstream within a river basin and in coastal and marine areas;

8. CONCERNED IN PARTICULAR about the globally increasing number of energy development plans that, by changing water fluxes and sediment transport, interrupting connectivity, and creating barriers for species migration, could have adverse effects on the ecological character of wetlands, including on wetland species and ecosystems, on the potential for wetlands to produce a wide range of ecosystem services, on their biodiversity, and on the status of water quantity and quality;

9. AWARE of the particularly close inter-relationships between energy, water and wetlands, where some energy options are wholly or partly dependent on water; ALSO AWARE that water availability can impose limitations on energy production; RECALLING that Resolution VIII.1 contained guidelines for the allocation and management of water for maintaining the ecological functions of wetlands; and STRESSING the need for integrated planning in order to maintain sustainable water and energy supplies while also protecting the ecological character of wetlands;

10. AWARE that Resolution XI.11 on *Principles for the planning and management of urban and peri-urban wetlands* highlights the continuing trends of rapid urbanization of human populations, CONCERNED that the increasing demands for infrastructure and services, including energy services, for growing urban populations will pose significant challenges for the wise use of wetlands in the future, and ALSO RECOGNIZING the important role of local governments in planning and managing energy service delivery to urban populations;

11. NOTING that Resolution XI.14 on *Climate change and wetlands* stresses that "integrative policies and planning measures for the wise use of wetlands need to be encouraged in order to address the influence of global climate change on the interdependencies between wetlands, water management, agriculture, energy production, poverty reduction and human health";

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1 Whilst Contracting Parties recognize the importance of continuing efforts to better assess such indirect impacts, at present there is no scientific consensus regarding their quantification and measurement. Further work is required to improve understanding of, and the ability to measure, such indirect impacts.

12. RECOGNIZING the importance in decision-making of valuing the full range of ecosystem services provided by wetlands, and RECALLING that the advice on valuation of wetland ecosystem services in Ramsar Technical Report no. 3 (2006) can be applied in a manner consistent with the Convention, internationally agreed development goals, and other relevant international obligations; and

13. NOTING the relevance of recent decisions of other multilateral environmental agreements (MEAs), notably Decisions X/28 on *Inland waters biodiversity*, X/37 on *Biofuels and biodiversity* and X/44 on *Incentive measures* adopted by the 10th meeting of the Conference of the Contracting Parties to the Convention on Biodiversity (CBD), Resolution 10.11 on *Power lines and migratory birds* adopted by the 10th meeting of the Conference of Contracting Parties to the Convention on Migratory Species (CMS) and CMS Resolution 7.5 on wind turbines and migratory species, Resolutions 5.11 on *Power lines and migratory waterbirds* and 5.16 on *Renewable energy and migratory waterbirds* of the Agreement on the Conservation of African-Eurasian Migratory Waterbirds (AEWA), and *Bats and other migratory animals: guidelines for consideration of bats in windfarm projects* (EUROBATS publication no.3 2008);

THE CONFERENCE OF THE CONTRACTING PARTIES

14. WELCOMES the *Guidance for addressing the implications for wetlands of policies, plans and activities in the energy sector* annexed to this Resolution, and INVITES Contracting Parties to make use of this guidance, adapting it as necessary to suit national conditions and circumstances, within the frameworks of existing regional initiatives and commitments;

15. ENCOURAGES Contracting Parties to identify the capacity, expertise and technical information which are needed, particularly in relevant public sector and local government institutions, to address the specific issues and potential impacts of the energy sector on wetlands as described in this document; FURTHER ENCOURAGES Contracting Parties to implement, through the Ramsar Regional Wetland Centres and where necessary through partnerships with public, private and NGO sector organizations, appropriate training and capacity building programmes in order to strengthen if necessary regulatory oversight of energy sector activities and to enhance application of guidance for Strategic Environmental Assessment (SEA) and Environmental Impact Assessment (EIA) contained in Resolution X.17, as well as application of the guidelines in Resolution VIII.1 on allocation and management of water for maintaining the ecological functions of wetlands; and REQUESTS the Secretariat, in collaboration with the Scientific and Technical Review Panel (STRP), the CEPA Oversight Panel, the Regional Initiatives and Contracting Parties to support, resources permitting, Contracting Parties' training and capacity building efforts;

16. INVITES Contracting Parties, the International Organization Partners (IOPs), NGOs, relevant scientific and technical organizations and industry associations to share information, guidance and case studies for managing specific impacts of energy sector activities on wetlands (e.g., the Hydropower Sustainability Assessment Protocol, as agreed at the International Congress on Hydropower in Iguassu, Brazil, 2011), and studies on regional and transboundary collaboration for energy planning and development that are consistent with the wise use of wetlands and that reflect the differences in energy and environmental policies of each of the Parties and the transboundary energy services which wetlands produce, and REQUESTS the Secretariat to compile this information and make it widely available;

17. INVITES Contracting Parties to undertake, at national level, development of specific ecological impact criteria to be applied in selection of energy generation sites in relation to wetlands, ensuring that these criteria take into account the wide range of natural river and wetland characteristics such as hydromorphology, water quality and quantity, sediment transport and distribution, presence of rare or endemic species and habitats, biodiversity and other ecosystem functions;

18. INVITES Contracting Parties, as necessary and appropriate, to adopt and apply such ecological impact criteria for energy generation consistently, as part of SEA processes or water resources planning processes, to guide energy development planning in order to minimize impacts on the ecological character, functions and biodiversity of wetlands;

19. ALSO INVITES the Scientific and Technical Review Panel (STRP), with inputs from Contracting Parties that have already established and adopted such ecological impact criteria, and with support from other interested organizations and Ramsar's IOPs, to compile information on approaches and best practices for applying these impact criteria in selection of energy generation sites, to report to the Standing Committee on the progress of this work, and to submit this for consideration at COP12;

20. REQUESTS the STRP, funding permitting, to monitor the information and trends emerging from relevant global assessments, such as the Global Energy Outlook and Global Biodiversity Outlook, and to keep Contracting Parties informed of the trends in the context of wetlands and energy;

21. INVITES the STRP, in carrying out task 6.2 (wetlands and biofuels) of its work programme, to take into account the findings and conclusions contained in the documents UNEP/CBD/SBSTTA/16/14 and UNEP/CBD/SBSTTA/16/INF/32 related to gaps in tools and approaches and uncertainty surrounding the sustainability of biofuels compiled for discussion at the 16th meeting of the Subsidiary Body on Scientific, Technical and Technological Advice (SBSTTA) of the CBD, as potential contributions for further refinement of the Guidance annexed to this Resolution as well as for addressing sustainable biofuels issues in relation to wetlands by Contracting Parties to the Ramsar Convention;

22. EXPRESSES APPRECIATION to the STRP for its preparation of the draft Ramsar Technical Report on *Wetlands and energy issues* and the executive summary of that report provided to Contracting Parties in COP11 DOC. 28, and to the government of the United Kingdom (Department of Environment, Food and Rural Affairs – defra) for its financial support for this work; and

23. INVITES the Secretary General of the Ramsar Convention to bring this Resolution to the attention of the Secretary General of the United Nations as well as the United Nations High Level Panel in charge of developing the "Sustainable Energy For All" Initiative.

Annex

Guidance for addressing the implications for wetlands of policies, plans and activities in the energy sector

A. Context and definitions

1. The "energy sector" is broad and diverse and, for the purposes of these guidelines, it includes:
   i) the generation of electricity in thermoelectric, tidal or other kinds of power plants;
   ii) the production of liquid and gaseous fuels for the transport sector from various raw resources;
   iii) the generation of heat and/or electricity through the use of various forms of biomass; and
   iv) the direct use of liquid and gaseous fuels, solar energy, and geothermal energy for heating water and/or built spaces.

2. Within the energy sector, demands for energy are currently met from a variety of sources, including:
   i) non-renewable sources (coal, crude oil, natural gas, peat, "unconventional" sources of oil and gas such as oil shale and tar sands, and metallic fuels for nuclear power such as uranium, plutonium and thorium); and
   ii) renewable sources (wind, solar, hydropower, ocean energy including tidal and wave energy, geothermal and bioenergy, including energy from purpose-grown energy crops and from use of traditional biomass sources such as mangroves and other kinds of wood, as well as from byproducts of agriculture, forestry, municipal waste, and algal culture).

3. The "energy supply chain", with regard to wetlands, has several distinct phases, each of which may have potential impacts on wetland ecosystems. For the purposes of these guidelines, the energy supply chain includes:
   i) planning of energy development projects, including mitigation and compensation;
   ii) exploration for, extraction and processing of, raw energy resources from non-renewable sources;
   iii) development and construction of energy generation projects and facilities;
   iv) monitoring and oversight of energy projects;
   v) production or harvesting of energy from renewable sources;
   vi) distribution of energy and the transport of fuels to points of use for electricity generation, transport, heating and other purposes; and
   vii) decommissioning of energy plants and associated infrastructure.

B. Potential impacts of energy sector activities on wetlands

4. Secure access to reliable and sustainable energy supplies is an essential factor in supporting human and economic development. Demand for energy and for associated energy

services[2] will continue to increase in the near future, particularly in developing countries. While significant expansion is expected in renewable sources of energy to meet this demand, many countries are likely to continue to rely upon non-renewable sources for the foreseeable future.

5. Energy sector activities in all phases of the energy supply chain can potentially have negative impacts on the ecological character of wetlands[3]. Impacts are primarily expressed through (but not limited to) the following aspects:
   i) changes in water quantity available for wetlands due to consumptive use of surface water or groundwater or to alterations of natural flow regimes or drainage;
   ii) changes in water, soil, and air quality due to chemical, thermal, radioactive and organic pollutants resulting from energy sector activities;
   iii) changes in natural coastal water level fluctuations due to the construction of {energy generation facilities such as} tidal power plants;
   iv) direct impacts on wetland habitats arising from the conversion of wetlands for construction and operation of energy generation facilities and infrastructure and disruption in sediment flow and ecosystem connectivity of energy-related activities or infrastructure;
   v) direct impacts on wetland fauna, especially birds and bats, due to collision and electrocution;
   vi) indirect impacts of habitat fragmentation and connectivity between hydrographic basins, their wetlands and primary forest zones with a high biodiversity component;
   vii) indirect impacts of atmospheric emissions, including water quality impacts from emissions (for example of particulate materials, sulphur or nitrogen compounds) and those due to climate change effects resulting from greenhouse gas emissions in the energy sector (GHG); and
   viii) effects on local climate which can reduce the potential for carbon sequestration and storage in peatlands.

C. Inter-relationships between policies in energy, water, wetlands, climate change and other sectors

6. Many large-scale energy generation and supply projects are implemented in ways that require large geographic distances between activities associated with different phases of the energy supply chain such as extraction, generation, storage, distribution and use. This can lead to cumulative impacts not only on individual wetlands but also on networks of wetlands in the broader landscape, which can compromise the integrity of an entire network where those wetlands may be connected through hydrological processes (for

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2 "Energy services" include lighting, cooking and water heating, space heating, cooling, energy to support access to information and communication technologies, and energy for earning a living.

3 The Ramsar Convention defines *ecological character* as "the combination of the ecosystem components, processes and services that characterize the wetland at a given point in time" (Resolution IX.1 Annex A). As defined by the Convention, *wetlands* include a wide variety of habitats such as lakes and rivers, floodplains, swamps and marshes, wet grasslands and peatlands, oases, estuaries, deltas and tidal flats, near-shore marine areas, mangroves and coral reefs, and human-made sites such as fish ponds, rice paddies, reservoirs, and salt pans.

example, within a river basin) or through ecological processes (for example, as important breeding or feeding sites along migration routes).

7. There is an especially close inter-relationship among energy, water, and wetlands. Some energy options are particularly water-intensive in one or more phases of the energy supply chain. Some water supply options are energy intensive, for example in their needs for pumping or treatment. Hence there is potential for significant impacts on wetlands if energy and water planning are not coordinated and if insufficient water is available to maintain the ecological character of wetlands. Moreover, water supplies for energy and other water uses (including human consumption) can be compromised if the ecological character of wetlands should become degraded.

8. Climate change policies also have significant influences on energy policies and demands. Resolution X.24 on *Climate change and wetlands* (2008) stresses the need to ensure that climate change policy responses do not lead to further degradation and loss of wetlands, as well as the need for integrated coordination in developing national policies related to water management, agriculture, energy production, poverty reduction, and human health in order to ensure that sectoral objectives are mutually supportive in addressing the likely negative impacts of climate change. In some cases the implementation of measures to mitigate climate change could potentially compromise the ability of wetlands to provide options for climate change adaptation measures.

9. Attempting to increase energy security and economic development as well as reduce greenhouse gas (GHG) emissions has been cited as an urgent global priority (Resolution X.25, *Wetlands and "biofuels",* 2008), and there is increasing global attention to the use of low-emission and renewable sources of energy, including biofuel production. Whilst the Contracting Parties have recognized the potential contribution of the sustainable production and use of biofuels for the promotion of sustainable development and the achievement of Millennium Development Goals, they have also noted the potential negative environmental and socio-economic impacts of unsustainable production and use of biofuels (Resolution X.25).

10. In Resolution X.25*,* the Conference of the Parties i) called upon Parties to apply EIA and SEA to assess the potential impacts, benefits and risks, including drainage, of proposed biofuel crop production schemes affecting Ramsar Sites and other wetlands, and ii) strongly urged Parties to "consider the full range and value of ecosystem services and livelihoods provided by wetlands and the biodiversity they support, and to consider the trade-offs between these services alongside cost benefit analysis and make use of, as appropriate, the application of the precautionary approach as defined in Principle 15 of the 1992 Rio Declaration on Environment and Development".

D. Guidelines for integrated sectoral policy and planning

11. At national, regional or global levels, the energy sector deploys a mix of options to provide supply and meet demand. That mix of options is influenced by various drivers, including national, regional and global policies for economic development, energy security, and climate change mitigation, but also by the introduction of new energy technologies. Undesirable impacts on wetlands and wetland ecosystem services can potentially be avoided, reduced or mitigated by adapting the mix of energy options where possible.

12. Regardless of the mix of energy options deployed in policy and implementation, and recognizing that the costs of retrofitting existing energy infrastructure to achieve increased efficiency can be very high, striving for energy efficiency as a primary objective in both supply-side and demand-side options can significantly reduce overall energy consumption and help to reduce the overall impacts of energy sector activities on wetlands.

13. In this regard, the following recommendations can be made:

    i) Promote integrated planning approaches in developing and implementing national policies related to wetlands, water management, agriculture, energy production, poverty reduction, urban planning, and human health and climate change.

    ii) Identify energy options for implementation which can contribute to achievement of mutually supportive objectives in these sectors.

    iii) Prioritize the use of more efficient options or technologies in new energy infrastructure development which avoid or minimize direct and indirect impacts on wetlands.

    iv) Pay particular attention to ensuring that water and energy planning are fully integrated in order to minimize impacts on wetland ecosystems through the water demands and water-related impacts of energy sector projects.

    v) Consider the potential cumulative effects of all energy projects, both planned and already implemented, on wetland ecosystems at river basin and flyway scale.

    vi) In national planning, recognize the vital role of wetlands and wetland biodiversity in providing natural water infrastructure.

    vii) When developing options to meet future energy demands, evaluate the economic, social and environmental benefits and impacts of efficiency and demand management options (particularly in the industrial, building, and transport sectors) against the associated benefits and impacts of supply-side options.

    viii) Undertake appropriate Communication, Education, Participation and Awareness (CEPA) activities to ensure that all relevant public and private sector bodies associated with energy sector activities are aware of commitments under the Ramsar Convention regarding the wise use of wetlands and the maintenance of their ecological character.

    ix) Develop integrated knowledge platforms which support identification of threats to wetland ecological character, potential policy tradeoffs and opportunities for maximizing synergies and minimizing impacts.

E. Guidelines for Strategic Environmental Assessment (SEA)

14. Several provisions in Resolution X.26, *Wetlands and extractive industries*, are also relevant to the extraction of non-renewable energy resources and should be applied in managing the

impacts of energy sector activities on wetlands, while respecting national sovereignty in relation to natural resources and taking into account varying national circumstances and priorities. In particular, Resolution X.26:

i) recognized the importance of adequate wetland inventory and baseline information in supporting decision-making and permitting procedures and in strengthening and supporting Strategic Environmental Assessment (SEA) and Environmental Impact Assessment (EIA) processes related to extractive industries;
ii) emphasized the importance of early notification of proposed exploration and extraction activities, in respect of national sovereignty over natural resource and also in the light of national priorities; and
iii) further emphasized the need to ensure that the boundaries of all Ramsar Sites within their territories are accurately delineated and mapped.

15. Those provisions of Resolution X.26 are also relevant to other energy sector activities, including those activities related to renewable energy and the processing, distribution and use of energy resources and generation of electricity.

16. Transparent processes and systematic approaches for planning and decision making involving all relevant sectors can help to ensure the integration of wetland conservation and wise use into energy policies and plans, and can facilitate the participation of wetland policy makers, wetland managers, and other stakeholders in these processes. Contracting Parties have recognized the value of SEA approaches in supporting decision making that reflects the wise use of wetlands (Resolution X.17, *Environmental Impact Assessment and Strategic Environmental Assessment: updated scientific and technical guidance*, 2008).

17. The following recommendations should be taken into consideration:

i) Apply the guidance adopted in Resolution X.17, adapting it as appropriate in order to address specific issues associated with the direct and indirect impacts of energy sector policies, plans and projects on wetlands and, in applying the guidance, take account of traditional collective knowledge.

ii) Ensure that, in SEA and EIA studies related to the energy sector, potential impacts in whole river basins are fully considered through ecosystem approaches (including *inter alia* those of the Convention on Biological Diversity), and in doing so, apply the guidance in Resolutions IX.1 *Additional scientific and technical guidance for implementing the Ramsar wise use concept*, Annex Cii (groundwater) and X.19 on *Wetlands and river basin management*.

iii) Make adequate information available on current and future energy policies and plans so as to facilitate SEA and integrated spatial planning at national, regional and global scales, while respecting national sovereignty with respect to natural resources.

iv) Ensure that the boundaries of all Ramsar Sites within their territories are accurately delineated and mapped, especially in areas where the extraction of raw material for biofuels is proposed.

v) Ensure that indigenous peoples and local communities, especially those within the project area, have appropriate opportunities to participate in decision making, applying as needed the guidance adopted by the Parties in Resolution VII.8, *Guidelines for establishing and strengthening local communities' and indigenous peoples' participation in the management of wetlands* (1999), and Resolution VIII.36, on *Participatory Environmental Management (PEM) as a tool for management and wise use of wetlands* (2002); and

vi) Undertake valuation studies at an early stage in SEA and EIA, using appropriate techniques, including those that Contracting Parties may have developed, and in a manner consistent with the Convention, internationally agreed development goals, and other relevant international obligations, in order to ensure that the full range of ecosystem services is considered, both quantitatively and qualitatively whenever possible, in cost-benefit analyses related to all relevant phases of energy sector activities.

F. Guidelines for Environmental Impact Assessment (EIA) and project level issues

18. Resolution VII.16, *The Ramsar Convention and Impact Assessment: strategic, environmental and social* (1999), calls upon Parties "to reinforce and strengthen their efforts to ensure that any project, plans, programmes and policies with the potential to alter the ecological character of wetlands in the Ramsar List, or impact negatively on other wetlands in their territories, are subjected to rigorous impact assessment procedures and to formalize such procedures under policy, legal, institutional and organizational arrangements".

19. The following recommendations should be considered:

i) Apply the guidance on Environmental Impact Assessment contained in Resolution X.17 on *Environmental Impact Assessment and Strategic Environmental Assessment*, adapting it where appropriate in order to ensure that it adequately addresses the direct and indirect impacts upon wetlands of the full spectrum of energy sector activities, including the impacts of distribution infrastructure such as transmission lines and pipelines and transport infrastructure such as roads and railways, as well as the dredging of navigation channels to transport energy resources.

ii) Where necessary, review and revise regulatory and permitting procedures related to energy sector activities, in order to ensure that impacts on wetland ecosystems and their ecosystem services are avoided or mitigated as far as possible, and that any unavoidable impacts are sufficently compensated for in accordance with any applicable national legislation, as suggested in Resolution XI.9, *An Integrated Framework for avoiding, mitigating and compensating for wetland losses*.

iii) Ensure that regulatory procedures allow sufficient time for the collection of wetland inventory and baseline information and for valuation studies to support effective EIA, permitting, and oversight of energy sector activities, especially with respect to enforcement of compliance with the conditions of authorizations and licenses.

iv) Adopt a precautionary approach when energy sector activities may seriously or irreversibly impact Ramsar Wetlands of International Importance or other

internationally important wetlands, or when the SEA or EIA predicts any substantial or irreversible loss of wetland ecosystem services. The decommissioning of energy generation plants and associated infrastructure as well as the management of wastes from energy generation should also be considered.

vi) Prioritize transport methods for resources used in energy generation which minimize direct impacts on wetlands and which do not require dredging in riverine or coastal wetlands.

vii) Ensure that existing or new energy sector development projects address, as far as possible, the need to avoid or mitigate the impacts of those projects, as well as the need to compensate for the loss of livelihoods that may result from their impacts on wetland biodiversity and ecosystem services. Such compensation should be in accordance with any applicable national legislation, in a manner consistent with the Convention, internationally agreed development goals, and other international obligations, taking into account Resolution VII.24, *Compensation for lost wetland habitats and other functions* (1999), Resolution VIII.20, *General guidance for interpreting "urgent national interest" under Article 2.5 of the Convention and considering compensation under Article 4.2"* (2002), and Resolution XI.9, *An Integrated Framework for avoiding, mitigating and compensating for wetland losses*.

G. Guidelines related to risk, transparency and social responsibility

20. Wetlands are especially vulnerable to the consequences of failures in the energy sector, including catastrophic failures. The potential costs of such failures in terms of lost or degraded wetland ecosystem services can be reduced if the risks of failure are identified, prevented and minimized at the planning stage and are then managed carefully during implementation.

21. The *Framework for assessing the vulnerability of wetlands to climate change* (Ramsar Technical Report no. 5, 2011) provides approaches for developing responses that will help to reduce a wetland's vulnerability to various pressures and potential threats. Resolution VII.10, *Wetland Risk Assessment Framework* (1999), outlines how to approach the prediction and assessment of change in ecological character with a particular emphasis on the application of early warning techniques.

22. In addition, while it is essential to seek and develop new technologies for extracting, processing, generating and using energy in order to meet growing demands, the speed at which new technologies emerge and begin to be implemented is not always matched by adequate knowledge of the impacts of those technologies on wetlands. Hence adequate study should be undertaken prior to the introduction, application and regulation of new energy technologies in order to ensure that there is sufficient understanding of the full implications and potential impacts on wetlands, both short- and long-term.

23. The following recommendations should be noted:

i) Undertake adequate study prior to the introduction, application and regulation of new energy technologies in order to ensure that there is sufficient understanding of the full implications and potential impacts on wetlands, both short- and long-term.

ii) In conducting EIA and cost-benefit analyses (CBA), ensure that risks of failure in the energy sector are incorporated into the cost side of CBA and weighed against the potential value of wetland ecosystem services lost or degraded in the case of failure.

iii) Ensure that risks of failure are minimized or avoided in those areas where wetlands, and the people who depend upon wetland ecosystem services, are especially vulnerable to the impacts of failure.

iv) Ensure that enforceable mechanisms are in place for the restoration of wetlands damaged as a result of failures or for appropriate compensation in the event of wetland losses due to failures.

v) Urge private and publicly-owned companies and utilities in the energy sector to report openly on investments and impacts associated with their activities according to agreed international mechanisms such as the Global Reporting Initiative and the Extractive Industries Transparency Initiative, in the spirit of Resolution XI.20 on *Promoting sustainable investment by the public and private sectors to ensure the maintenance of the benefits people and nature gain from wetlands*.

vi) Urge private and publicly-owned companies and utilities in the energy sector to include the full life cycle costs (including decommissioning) of new infrastructure in their economic assessments.

H. Guidelines for international collaboration

24. In many cases, the raw resources needed for energy generation are located far from where the energy will actually be used. Because of this, energy planning and energy policies are often developed and implemented at scales from regional to global, through bilateral or multilateral collaboration. The potential impacts of such projects can be manifested over correspondingly large geographic scales and across political or administrative boundaries, affecting both individual wetlands and networks of wetlands. International collaboration in strategic environmental assessment (SEA) and integrated resource planning can help to ensure that the potential impacts of energy plans and policies on wetlands and wetland ecosystem services are addressed in regional-scale and global-scale energy sector activities.

25. The following recommendations should be noted:

i) Collaborate with other Contracting Parties in the region to ensure that wetland ecosystems and the full value of wetland ecosystem services are adequately considered in regional energy policy development, planning and implementation.

ii) Collaborate in sharing information on wetland ecosystems and values to inform regional and global energy sector policies, plans and implementation.

iii) Collaborate in knowledge sharing on nature-friendly technological solutions to avoid, mitigate, or compensate for adverse impacts on wetland ecological character and values.

11th Meeting of the Conference of the Parties to the Convention on Wetlands (Ramsar, Iran, 1971)

"Wetlands: home and destination"

Bucharest, Romania, 6-13 July 2012

Resolution XI.11

Principles for the planning and management of urban and peri-urban wetlands

1. RECALLING the commitments made by Contracting Parties in Article 3.1 of the Convention on Wetlands to achieving the wise use, as far as possible, of all wetlands in their territory and to maintaining the ecological character of wetlands included in the Ramsar List of Wetlands of International Importance;

2. AWARE that since prehistoric times human settlements have been associated with and dependent upon wetlands for food production, water supply, trade and defence, amongst other things;

3. CONFIRMING that, for the purposes of this Resolution, "urban wetlands" are those wetlands lying within the boundaries of cities, towns and other conurbations and that "peri-urban wetlands" are those wetlands located adjacent to an urban area between its suburbs and rural areas, and NOTING that many other wetlands beyond the immediate confines of municipal boundaries are linked, for instance hydrologically, with urban settlements;

4. RECOGNIZING that the world has become increasingly urbanized and that since the mid-2000s more than 50% of the Earth's human population now resides in cities, towns and urban settlements, and CONCERNED that this trend is placing major and increasing pressure on natural resources within and beyond urban areas;

5. AWARE that this shift to a predominantly urban human population is predicted to continue at average rates up to almost 1.6% per annum worldwide, with low growth rates in the most developed countries and the highest urbanization rates in less developed and least developed countries;

6. RECOGNIZING that urban areas have the potential to generate a range of negative impacts on the environment, and on wetlands in particular, which can vary in scale and magnitude and with a geographic scope which always extends well beyond municipal boundaries, and which can have global implications in terms of ecological footprints;

7. AWARE that, with increasingly rapid urbanization in all regions of the world, wetlands are being threatened in two principle ways, through:

   i) manipulation and direct conversion of wetlands, whether planned or unplanned, to urban areas, leading to acute problems associated with polluted drainage, direct habitat loss, overexploitation of wetland plants and animals by urban and peri-urban residents, and the increased prevalence of non-native invasive species; and

   ii) the watershed-related impacts of urban development, including growing demands for water, increasing diffuse and point source pollution, the need for greater agricultural production, demands on the extractive industries to supply materials for the development of urban infrastructure, and the water requirements of energy production for the burgeoning urban population;

8. CONCERNED that inappropriate and unsustainable management of wetlands can reduce the resilience of cities to natural disasters, such as floods, tsunamis and earthquakes, and compromise the post-disaster recovery of cities;

9. STRESSING that, for the prosperity of future generations and the maintenance of wetlands, their biodiversity and their services to people, it is essential that society adopt a more sustainable approach to urbanization, recognizing the need to protect the natural resource base that sustains urban areas;

10. RECOGNIZING that urban and peri-urban wetlands provide a range of ecosystem services, including providing food, improving water quality and sustaining drinking water supplies, assisting in water security and mitigating natural hazards through the regulation of flooding and reduction of storm surges, and FURTHER RECOGNIZING that access to urban green space can make a positive contribution to people's physical and mental well-being;

11. CONFIDENT that with good planning, stewardship and management, cities can be a driving force for sustainable social and economic development for current and future generations, and RECOGNIZING that urban populations offer significant opportunities for community participation in wetland management and restoration in their local environment;

12. ACKNOWLEDGING, however, that inappropriate management of urban wetlands, as for all wetlands, can contribute to threats to human well-being through diseases such as malaria or through unsustainable development in floodplain areas, as outlined in Resolution XI.12 on *Wetlands and human health*;

13. RECALLING the request to the Convention's Scientific and Technical Review Panel (STRP) by the 10th meeting of the Conference of the Contracting Parties (COP10) in Resolution X.27 to explore collaborative links with the UN Human Settlements Programme (UN-Habitat) concerning the promotion of social and environmental sustainability of towns and cities in relation to wetlands and water and the preparation of guidelines for managing urban and peri-urban wetlands;

14. RECOGNIZING the role that wetlands, including urban wetlands, and the implementation of the Ramsar Convention can play in contributing to the achievement of the Millennium Development Goals (MDGs), as noted in Annex 1 to Resolution XI.12;

15. NOTING Decisions IX/28 of the Convention on Biological Diversity (CBD) COP9 (2008) on "Promoting engagement of cities and local authorities", Decision X/22 of CBD COP10 (2010) on "Plan of Action on Subnational Governments, Cities and Other Local Authorities for Biodiversity", and the Aichi/Nagoya Declaration on Local Authorities and Biodiversity adopted by the City Biodiversity Summit in Nagoya from 24 to 26 October 2010, and ALSO NOTING that CBD Decision IX/28 recognized the rapidly urbanizing global population and importance of water supplies to cities and urged Parties and other governments to protect biodiversity and ecosystem services provided by urban and peri-urban wetlands under their jurisdiction;

16. FURTHER NOTING that Resolution 23/4 of UN-Habitat's Governing Council (2011) on "Sustainable Urban Development Through Expanding Equitable Access to Land, Housing, Basic Service and Infrastructure" specifically mandates UN-Habitat to promote cities and biodiversity, including wetlands and ecosystem services, as part of its urban development strategy;

17. RECALLING the outcomes of the United Nations Conference on Sustainable Development (Rio+20) meeting in June 2012 in relation to sustainable cities and human settlements, and RECOGNIZING that, if well planned and developed, including through integrated planning and management approaches, cities can promote economically, socially and environmentally sustainable societies;

18. WELCOMING the opportunities to extend collaborative endeavours with *inter alia* the Convention on Biological Diversity (CBD), UN-Habitat, UN-Water, the International Council for Local Environmental Initiatives (ICLEI), Ramsar's International Organization Partners (IOPs), and individual cities;

19. EXPRESSING GRATITUDE to the STRP for the development of the principles annexed to this Resolution and to UN-Habitat and the Danone Group for their support for that work;

20. EXPRESSING GRATITUDE to the Ramsar Culture Working Group which promotes the idea of a constructive and positive relationship between human activities and settlements with wetlands; and

21. WELCOMING the initiative from France of an Award to municipalities that promote wetlands in urbanized areas, implemented with the support and participation of the coordinator of the Ramsar Culture Working Group;

THE CONFERENCE OF THE CONTRACTING PARTIES

22. WELCOMES the *Principles for the sustainable planning and management of urban and peri-urban wetlands* annexed to this Resolution, RECOGNIZES that the "Principles" can also be applied to spatial planning and management in rural areas, as appropriate, and URGES Contracting Parties and other governments to act upon these principles, further disseminate them to other interested parties (including through translation into local

languages), and seek to ensure that they are taken up by the sectors and levels of government responsible for the planning and management of urban and peri-urban environments;

23. URGES Contracting Parties to continue to promote the conservation and wise use of wetlands in urban and peri-urban environments, as well as those beyond the urban boundary that are affected by urban activities and developments, and to integrate this approach with the key principles of achieving sustainable urban development and adequate shelter for all, as a contribution to achieving the Millennium Development Goals;

24. RECOGNIZES that urban development should be planned and managed in a sustainable way, especially with reference to the Resolution XI.9 on an *Integrated Framework for avoiding, mitigating, and compensating for wetland losses*, and INVITES Contracting Parties and other relevant organizations to raise awareness of, and provide guidance on, the importance of wetlands as providers of benefits to urban populations;

25. URGES Contracting Parties to promote integration of the *Principles for the planning and management of urban and peri-urban wetlands* proactively into a range of national and, where appropriate, local planning policies and documents, and RECOMMENDS that they be disseminated widely in order to increase awareness of the potential for wetlands to be valued and managed as urban water management infrastructure;

26. INVITES Contracting Parties, through their National Focal Points and STRP National Focal Points, as appropriate, to continue to advise the Ramsar Secretariat on evolving issues concerning the maintenance, enhancement and management of urban and peri-urban wetlands;

27. REQUESTS the Ramsar Secretariat and the Scientific and Technical Review Panel (STRP) to strengthen collaborative initiatives with UN-Habitat and continue to develop collaboration with Ramsar Regional Initiatives, the CBD, Ramsar's IOPs, ICLEI and other appropriate urban stakeholders, including individual cities, in order to foster projects that develop demonstration sites which both benefit urban local communities and promote the wise use of wetlands;

28. ALSO REQUESTS that the Convention explores establishing a wetland city accreditation, which may in turn provide positive branding opportunities for cities that demonstrate strong and positive relationships with wetlands;

29. FURTHER REQUESTS the STRP, in the context of its work plan for 2013-2015, resources permitting, to develop further practical guidance for mainstreaming wetland issues into urban planning, and REQUESTS Contracting Parties to assist the STRP in this task by providing information and case studies;

30. FURTHER REQUESTS the Ramsar Secretariat and STRP, with UN-Habitat, to assist other relevant international and national agencies in developing further guidance for different stakeholders, including as set out in section 4 of the annexed Principles, that will contribute to the sustainable management of urban and peri-urban wetlands, and to report their progress to the Standing Committee and Conference of the Parties; and

31. Recognizing the potentially substantial role local and regional governments can play in wetland management within their jurisdiction, as land use and development planning functions are frequently exercised at these levels, RECOMMENDS to Parties hosting a meeting of the Conference of the Parties to include in parallel an event for the local and territorial governments concerning their planning and management of wetlands.

Annex

Principles for the planning and management of urban and peri-urban wetlands

Contents

1. Background

1. The Ramsar Convention's 10th meeting of the Conference of the Contracting Parties (COP10) in 2008 adopted Resolution X.27 on *Wetlands and urbanization*, which recognized that wetlands in urban and peri-urban areas can provide a range of important ecosystem services – benefits to people – but also that in many countries wetlands are increasingly becoming degraded as a result of spreading urbanization.

2. The following principles for the planning and management of urban and peri-urban wetlands have been prepared jointly by the Scientific & Technical Review Panel (STRP), UN-Habitat (the United Nations Human Settlements Programme), and other stakeholders, including Ramsar's International Organization Partners and the Secretariat of the Convention on Biological Diversity in relation to the Global Partnership on Cities and Biodiversity. This effort has been the first step in responding to the request in Resolution X.27 for guidelines for managing urban and peri-urban wetlands in accordance with an ecosystem approach, taking into account such issues as climate change, ecosystem services, food production, human health, and livelihoods. These principles are intended to provide a framework for general guidance, as is outlined in Figure 1 and Section 4 below, and are not legally binding.

3. The work of preparing these principles formed part of the first phase of a developing and ongoing collaboration between the Ramsar Convention and UN-Habitat, in joint recognition of the importance of encouraging society to adopt a more sustainable

approach to urbanization, one which recognizes the need to protect the natural resource base that sustains urban areas.

4. Further background to the issues addressed in the principles for wetland wise use in an increasingly urbanized world, and the importance of maintaining urban and peri-urban wetlands for the services they provide and the contribution they make to human well-being, is provided in COP11 DOC. 23.

5. At the 43rd meeting of the Ramsar Standing Committee, it was observed that the Principles as set out in Section 3 below can also be applied more broadly to land use (spatial) planning and management for wetlands in rural environments.

2. Objectives and audiences of the principles

6. Traditionally, biodiversity conservation and ecosystem management have been viewed as the domain and responsibility of national governments, with little attention or focus on the level of local government. More recently, however, it has been recognized that the role of local governance is increasingly relevant and important, especially in light of rapid urbanization.

7. Guidance on managing wetlands and their biodiversity in urban and peri-urban areas should demonstrate how existing 'tools' (or policies) can be applied most effectively before developing new or original tools/policies.

8. To facilitate this process it is important that there should be a convergence in understanding among urban planners and managers and wetland conservation and management experts. A key step is the development of general principles which speak to both audiences and can be used to guide the development of policy and the implementation of practical tools.

9. Because these principles have been developed jointly with UN-Habitat and other stakeholders, they reflect the collective philosophies of several organizations and are addressed to a range of audiences.

10. Whilst many issues related to urbanization and wetlands are universal, there is also a need to recognize distinctions between the developed and developing world and between different national and local stakeholders.

11. Thus, the initial focus audience must be all levels of government, but particularly local, which are responsible for urban development in the developing world, in order to enhance their recognition of the ways in which maintaining wetlands can contribute to achieving the Millennium Development Goals (see, e.g., Resolution XI.12 Annex 1, on wetlands and health). Then, through national policies, the principles need both to be cascaded down to regional and local planning and development levels and to be transmitted laterally to other ministries with environment management and planning responsibilities for urban areas.

12. In addition, there is also a need to ensure that international organizations are kept informed, including *inter alia* UN-Habitat, the CBD, and ICLEI – Local Governments for Sustainability. Similarly, information must be disseminated to those such as wetland

managers who are directly involved in the management and wise use of wetlands in urban and peri-urban areas.

13. These principles provide just a first step in laying the foundation for the subsequent development of practical implementation guidance on urban development and wetland management, for both the wetland management and the urban planning and development communities (see Figure 1).

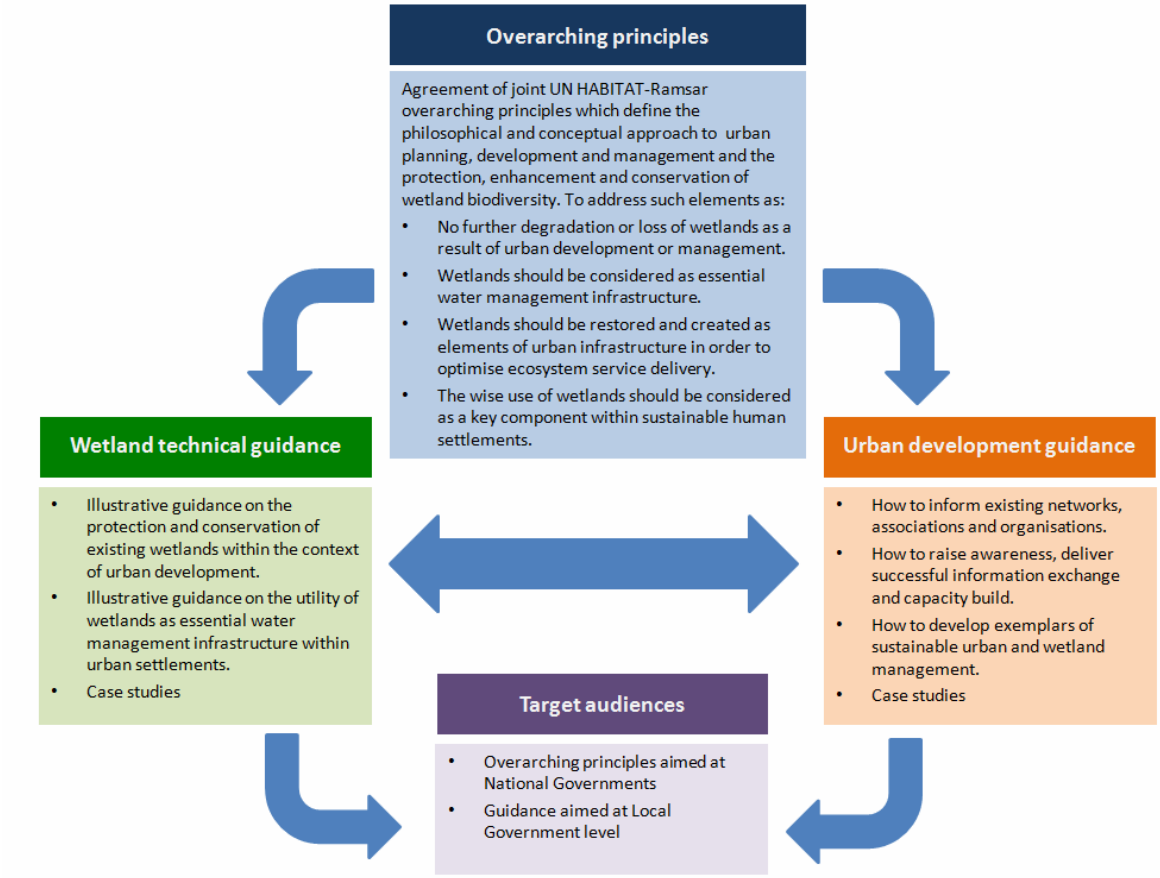

Figure 1. The relationship between the overarching principles and the development of practical guidance for different target audiences

3. Principles for the planning and management of urban and peri-urban wetlands

14. The principles set out below cover both policy and implementation practice levels of consideration. The key issues that have been identified concerning wetlands and urbanization, which have formed the basis for the preparation of the principles, are listed in the appendix.

3.1 Policy principles

15. The following four policy recommendations represent headline messages which governments, from national to local need to consider and implement when developing policies that jointly address urban planning and management and the wise use of wetlands:

Policy principle 1: **Wetlands and the range of services they provide are essential elements of the supporting infrastructure of urban and peri-urban settlements.**

Policy principle 2: **The wise use of wetlands contributes to socially and environmentally sustainable urban and peri-urban areas.**

Policy principle 3: **Any further degradation or loss of wetlands as a result of urban development or management should be avoided, and where not possible, any impacts should be mitigated, and any residual effects appropriately compensated for by offsets such as wetland restoration.**

Policy principle 4: **The full participation of indigeneous and local communities, municipalities and government sectors involved in urban and peri-urban spatial planning and wetland management decision making is vital to creating sustainable urban and peri-urban settlements.**

Policy principle 5**: The threat of natural calamities and human-made disasters and their impacts on urban populations and wetlands requires government priority and convergent actions to enhance resilience to disasters**.

3.2 Practical principles

16. The implementation of the policy principles should catalyze a range of practical measures which together will deliver more sustainable urban development in combination with better maintenance and enhancement of wetlands. The following practical, or best-practice, principles are recommended:

Practical principle 1: Wetland conservation

i) Urban development should avoid, whenever possible, destroying wetlands.

Practical principle 2: **Wetland restoration and creation**

i) Wetlands should be restored and/or created as elements of urban and especially water management infrastructure in order to maintain or enhance ecological character and optimize ecosystem service delivery.
ii) Opportunities to restore wetlands should be prioritized ahead of the creation of new wetlands. The creation of wetlands should be encouraged according to the regulations of each Contracting Party and established only in cases where other alternatives do not exist and related to economic and social projects, taking ecosystem services into consideration.

Practical principle 3: **Understanding the value of wetlands**

i) Opportunities to reduce urban poverty through the optimization of sustainably utilised wetland ecosystem services, in accordance with the wise use principles, should be pursued urgently.
ii) Trade-offs in terms of livelihood options and economic benefit-sharing, involving both the market and the state, need to be considered.
iii) Incentive systems such as payment for environmental services should be applied within and beyond urban environments to protect wetlands.

iv) The values of wetlands need to be articulated clearly for urban planners to inform their decision making. The costs of wetland loss and degradation should be made explicit within urban development.

Practical principle 4: **Stakeholder engagement**

i) Urban development and wetland management should adopt the principles of inclusivity, empowerment, and participation of indigenous and local communities.
ii) Governance of urban development and wetland management should be participatory, with all relevant stakeholders, and decentralized to the lowest appropriate level.

Practical principle 5: **Integrated planning**

i) Thematic planning should be used as an essential tool to safeguard wetlands and their ecosystem services both within and beyond urban settlements.
ii) The consideration of wetlands within urban planning needs to be integrated fully with wider elements of spatial planning (such as Integrated River Basin Management as adopted under Resolution X.19, water resource management, the development of transport infrastructure, agriculture production, fuel supply, etc.).
iii) Alternative locations need to be identified for planned urban developments (both formal and informal built development) which do not lead to wetlands, or other natural ecosystems, being degraded or lost.

4. Opportunities and priorities for the future development and integration of guidance for the planning and management of urban and peri-urban wetlands

4.1 Immediate priorities

17. In the short term there is the need to ensure that the principles set out in Section 3 above are disseminated and embedded widely. To achieve this, there must be ongoing and proactive collaboration with a range of stakeholders and organizations. Given limited resources, it is essential that priorities be established – the following represent the key primary targets for immediate integration and collaboration:

i) ***The Global Partnership on Cities and Biodiversity***. The Global Partnership on Cities and Biodiversity is facilitated by the CBD Secretariat in partnership with UNEP, UN-Habitat, ICLEI, IUCN Countdown 2010, UNITAR, UNESCO and a Steering Group of Mayors from Curitiba, Montreal, Bonn, Nagoya and Johannesburg, in order to bring together existing initiatives on cities and biodiversity. The aim of the Partnership is to engage cities in the fight to reverse the loss of biodiversity by 2010, and it assists national and local governments by providing awareness-raising material, organizing workshops and trainings, developing tools, and involving cities in international meetings on biodiversity.

ii) ***The UN-Habitat Urban Planning and Design Branch.*** The UN-Habitat Urban Planning and Design Branch supports spatial planning at the scales of the metropolitan region, city and neighbourhood, as well as through the entry point of climate change. It works at the international scale to mainstream the urban agenda into Multilateral Environmental Agreements and at the local scale to mainstream

environmental considerations into urban planning.

iii) ***Local Action for Biodiversity (LAB) - ICLEI***. LAB is a global urban biodiversity programme coordinated by ICLEI – Local Governments for Sustainability. The LAB Pioneer WorkNet began in 2006 with a select group of local and regional authorities from around the world, representing over 54 million citizens. Referred to as the 'LAB Pioneers', these local authorities are currently international leaders in managing and conserving biodiversity at the local level.

18. Through these networks and organizations there is the potential to embed the principles across a range of parallel initiatives and ensure that the wise use of wetlands is considered appropriately within urban planning and development. In particular, there is an immediate opportunity to integrate wetland guidance within the existing and successful framework of the UN-Habitat Urban Development and Planning Branch.

4.2 Longer-term priorities

19. Integration within the three programmes identified above will mark the beginning of a process and not the end. Future proactive engagement by the bodies of the Ramsar Convention is required to ensure that these principles are being applied and implemented. Similarly, as advances are made on wider wetland guidance on, for example, human health (see Resolution XI.12) and poverty eradication (Resolution XI.13), it will be necessary to integrate these developing work areas within broader urbanization agendas.

20. To ensure that wetlands are given the consideration they deserve, and that these principles and any subsequent guidance material are truly integrated into urban planning and management, there needs to be an ongoing commitment. The social and environmental science surrounding urban settlements is evolving rapidly and opportunities for information gathering and dissemination are legion.

4.3 Potential future products

21. The process of developing the principles has drawn attention to the desirability of a range of further products, and the principles themselves provide the basis for policy development. The following two products have been identified:

i) information for local authorities, planning departments, and municipal authorities on wetlands and urban planning and management; and
ii) information for local wetland managers on urbanization and wetland planning and management.

22. Cities are dynamic entities. Decisions can often be implemented at a city level which in turn can act as catalysts for broader adoption at a national level. In recognition of this, the city-level audience must be targeted in a concerted manner. Information and practical guidance for local and municipal officials and planning department authorities is required across a range of wetland-related issues including:

- awareness raising and Communication, Education, Participation, and Awareness (CEPA);

- mapping (wetland types and classification);
- understanding and evaluating wetland values and ecosystem services;
- identifying and mitigating threats and impacts, including in relation to a changing climate;
- recognizing wetland restoration and creation as solution providers;
- building capacity across wetland-related disciplines; and
- undertaking strategic environmental assessment.

23. Additionally, targeted guidance is needed for a range of stakeholders, including indigenous peoples and local communities, elected members of local government, the private sector (to facilitate trade in ecosystem services, industry, and housing), and non-governmental organizations.

24. Wetland managers also form a distinct audience. Whilst a profile of wetland managers in relation to urbanization is not yet clear, they will undoubtedly form a distinct and important audience for specific guidance.

Appendix

Key issues and potential solutions for future sustainable urban and wetland management and planning

The principles articulated above are intended to cover the **key issues facing wetlands from the pressures associated with urbanization**. The key issues and drivers of wetland loss and degradation within and beyond urban areas which underpin the principles can be identified here:

i) Sectoral conflicts across government departments (both horizontally and vertically) and the scarcity or absence of joined-up planning and coordination often fail to integrate wetlands appropriately in decision-making processes.

ii) Leaving urban land use and land allocation decisions to market forces or to the customary and informal delivery systems is not a sustainable policy option and will result in continued wetland loss and degradation.

iii) There is widespread lack of awareness about the economic and social value of wetlands and the ecosystem services they provide, both directly and in maintaining water resources upon which urban populations depend.

iv) Lack of leadership and poor and inequitable governance is a persistent problem.

v) There is a general lack of policies and laws to protect wetlands as well as a lack of regulatory mechanisms to enforce them.

vi) Lack of infrastructure and financial and human resources inhibit the sustainable planning and management of urban and peri-urban wetlands.

vii) Often there is a weak definition or understanding even of what a "wetland" is. This can be compounded by the lack of a wetland inventory to inform the urban planning process.

viii) Populations and population density are increasing, often driven by rural poverty forcing migration to urban centres.

ix) Climate change is a direct driver of change but also causes increasing numbers of environmental refugees to migrate to urban centres, compounding population pressures there.

x) Poor equity of access to the benefits derived from wetland ecosystem services and endemic urban poverty can result in the over-exploitation of wetlands out of economic necessity.

xi) Unsustainable development with poorly considered and located formal and informal settlements, illegal buildings and, especially in proximity to the coast, activities such as dumping of waste, contribute to wetland loss and degradation.

xii) Lack of urban waste water and sewage treatment results in pollution of wetlands directly and impacts to the aquatic environment. In addition, polluted run-off from agro-chemicals and industrial waste can also impact upon wetlands.

xiii) Pressures on water resources for human and industrial consumption can result in water scarcity and security issues both within and beyond urban areas.

xiv) Wetlands are still often associated with diseases such as malaria, sometimes leading to their drainage and infilling, and there must be a greater recognition that healthy wetlands often enhance people's health and livelihoods.

xv) Inappropriate wetland management has contributed to reducing the resilience of cities to disasters and further reducing their ability to recover from disasters.

xvi) Extraction of geological materials beyond municipal boundaries for both building and development and to support urban populations, such as sand, salt and minerals, must be managed carefully.

xvii) Over-exploitation of wetland resources and the accelerated introduction of alien species, both accidental and deliberate, often cause loss of habitat, decline of indigenous biota, and degradation of ecosystems and the services that they provide.

To overcome these key considerations, a range of **potential solutions** can be identified, which inform the principles provided above. These are:

i) raising the level of understanding of the broad utility of wetlands, as this is not fully appreciated by a considerable proportion of the planning and other sectors;

ii) improving awareness of the benefits wetlands deliver at different levels, including teaching programmes at universities, wider public awareness campaigns, and provision of targeted information across government departments;

iii) achieving more sensitive urban planning policy development, including development frameworks and spatial zonation to protect ecosystem services (especially those of wetlands), and addressing water management issues at the appropriate scale;

iv) increasing the focus by governments on conserving wetland areas and, if necessary, paying people to move to other, less sensitive areas, e.g., through systems that provide payments for ecosystem services;

v) explicitly including wetlands as natural infrastructure in urban planning, including in landscape planning and all aspects of water management, such as storm water management, water resources and water treatment;

vi) treating wetlands not merely as areas that are important for nature conservation *per se* but as key elements within urban water management infrastructure and essential components in providing water resources;

vii) enhancing policy and legal frameworks protecting wetlands, and ensuring that they are enforced and regulated;

viii) using selected wetlands as natural waste-water treatment systems to mitigate urban pollution and sedimentation, particularly in improving sanitation within the limits imposed by their capacity to provide these services and without significantly compromising their ability to continue providing other ecosystem services and as long as this does not have significant adverse effects on the environment;

ix) considering the wise use of wetlands both within and beyond urban boundaries and understanding the interconnectivity of catchment/ watershed-scale issues including to guarantee environmental flows to wetlands;

x) ensuring appropriate stakeholder participation and empowerment, in both problem setting and problem solving, which can be an essential element in delivering sustainable cities – despite being essential to future successes, such engagement is currently deficient; and

xi) developing specific programmes aimed at benefiting and involving indigenous communities in sustainable wetland management.

11th Meeting of the Conference of the Parties to the Convention on Wetlands (Ramsar, Iran, 1971)

"Wetlands: home and destination"

Bucharest, Romania, 6-13 July 2012

Resolution XI.12

Wetlands and health: taking an ecosystem approach

1. RECALLING Resolution X.3, *The Changwon Declaration on Human Well-being and Wetlands*, Resolution X.23, *Wetlands and human health and well-being*, and Resolution X.21, *Guidance on responding to the continued spread of highly pathogenic avian influenza*, each of which called for an integrated approach to addressing health issues in wetlands, and ALSO RECALLING that Resolution IX.1 Annex A defined the "wise use" of wetlands as "the maintenance of their ecological character, achieved through the implementation of ecosystem approaches, within the context of sustainable development";

2. AWARE of relevant recent initiatives and developments, including the United Nations General Assembly's 2010 recognition of the right to safe and clean water and sanitation as a human right; the Libreville Declaration on Health and Environment in Africa in 2008; the Convention for Biological Diversity (CBD) Decision X/20 calling for collaboration with the World Health Organization (WHO) on biodiversity and health; the work agenda of the Protocol on Water and Health to the 1992 Convention on the Protection and Use of Transboundary Watercourses and International Lakes; the tripartite strategic alignment between the Food and Agriculture Organisation of the United Nations, World Organisation for Animal Health (OIE), and WHO to address health risks at the human-animal-ecosystems interface; and the continuing relevance to wetland management of the Health Synthesis report of the Millennium Ecosystem Assessment (MA);

3. ALSO AWARE that Resolution 9.8 of the Convention on Migratory Species (CMS) called for fully integrated approaches, at both national and international levels, to addressing diseases of domestic livestock and wildlife, recognizing the direct and indirect benefits to human, wildlife and domesticated livestock health from such activities;

4. ACKNOWLEDGING that a "One Health" movement recognizes the inextricable connections between humans, pet animals, livestock and wildlife (both plants and animals) and their social and ecological environment; NOTING that the "Ecohealth" movement involves researchers, human and animal health practitioners, and communities motivated by the inherent interdependence of human health, biodiversity, and ecosystems; AWARE that both of these movements place disease dynamics in the broader contexts of sustainable agriculture, socio-economic development, environment protection and sustainability, and the complex patterns of global change (*inter alia* the increasing interface

between humans, domestic and wild animals with resultant disease transference); and ALSO AWARE that both of these health movements have been promoted and supported by many international, government, and non-government organizations;

5. RECOGNIZING the relevance of wetland management and wise use in supporting governments' efforts to achieve the 2000 Millennium Development Goals (MDGs) and their targets for 2015, and the significant contributions that Contracting Parties can make to their achievement through wetland conservation and management; and AWARE that world leaders reaffirmed their commitment to the MDGs and called for intensified collective action and the expansion of successful approaches at the 2010 High-level Plenary Meeting of the General Assembly on the Millennium Development Goals,

6. AWARE that the continuing loss and degradation of coastal wetlands, such as tidal flats and marshes, coral reefs, mangroves and seagrass beds, through human activities including *inter alia* land-claim, changes in sedimentation, and pollution, can result in negative health outcomes for people and species dependent on these habitats;

7. ALSO RECOGNIZING that health for humans is a complete state of physical, mental and social well-being and not merely the absence of disease and infirmity; RECALLING the World Health Declaration's principle of the highest attainable standard of health as one of the fundamental rights of every human being; and ALSO RECALLING the recognition by the Rio +20 Conference (Brazil, 2012) that "the goals of sustainable development can only be achieved in the absence of a high prevalence of debilitating communicable and non-communicable diseases and where populations can reach a state of physical, mental and social well-being", and NOTING that such needs equally apply to the goal of wetland wise use;

8. AWARE that human health and well-being are dependent upon ecosystems, the effective management of which needs holistic and collaborative approaches and an understanding of complex relationships among humans and other biodiversity;

9. RECOGNIZING that ecosystem approaches to the health of humans, livestock and wildlife are essentially preventive and participatory, with long-term savings for medical and veterinary costs, and with benefits through the involvement in preventive care of those most likely to be affected by specific health issues; and ALSO RECOGNIZING that pursuing an ecosystem approach to human and animal health involves the genuine cooperation and mutual understanding of quite different organizational sectors and disciplines;

10. CONFIRMING that ecosystem approaches are consistent with the 'healthy settings' approach as outlined in the Ottawa Charter for Health Promotion, whereby health is created and experienced by people within the settings of their everyday life, and where people actively use and shape the environment, thus creating or solving problems relating to health; and AWARE that wetlands are one of the key settings for human health and provide a context for health policies;

11. STRESSING the key role of wetlands in determining human health and well-being, since they are the source of hydration, safe water, and/or nutrition; the sites of exposure to pollution, toxicants, infectious diseases, and/or physical hazards; the settings for mental

health and psychosocial well-being, including as places where people derive their livelihoods and have their lives enriched, so enabling them to cope and help others; and sites from which medicinal products can be derived; RECOGNIZING the close specific linkages between wetland ecosystems and human livelihoods and improved lifestyles (including potential for physical exercise, stress relief, improved mental health and resistance to illness), in particular for indigenous peoples and local communities; and ALSO RECOGNIZING that changes in wetland functions from anthropogenic activities can result in poor health outcomes;

12. AWARE that for wildlife, natural cycles of disease are an integral part of ecosystems, with infectious organisms and other causes of disease serving an important role in the population dynamics of animals and plants; CONCERNED that threats affecting wetlands, including *inter alia* climate change, substantial habitat modification, pollution, invasive alien species, pathogen pollution, wildlife and domestic animal and plant trade, agricultural intensification and expansion, and increasing industrial and human population pressures, can act as drivers for disease emergence and re-emergence occurring beyond natural cycles; and ALSO CONCERNED that these epidemic disease emergences or re-emergences are negatively impacting wildlife populations and in some circumstances (such as the role of the fungal disease chytridiomycosis in global amphibian declines) are acting as important contributing factors in multiple extinctions of wetland species;

13. NOTING the similarities and parallels between the negative impacts of invasive alien species and novel pathogens and REAFFIRMING Resolution VIII.18 (*Invasive species and wetlands*) which recognized that prevention of the introduction of such species is preferable to attempting their subsequent control, and that wetland management practices aimed at prevention of either of these types of species can provide a level of protection from both;

14. UNDERSTANDING that biological diversity itself helps to provide resilience to ecosystems, including buffering against disease emergence, and AWARE that the loss of wetland diversity can have direct adverse health consequences affecting humans, agriculture and wildlife;

15. AWARE that altered hydrological conditions in wetlands can result in the exposure of humans and animals to biological, physical and chemical characteristics of wetland sediments with negative health outcomes, for example in arid and semi-arid climates where dried sediments can become mobilised in dust storms; and AWARE that in some instances the resolution to these problems will require regional and global cooperation;

16. RECALLING the Ramsar Convention's attention to the role of wetlands in the prevention and mitigation of disaster impacts (Resolution IX.9, 2005), NOTING that the world has witnessed recent floods, earthquakes, and tsunamis where large numbers of human lives have been lost, and where there have been acute and long-lasting health consequences for affected populations, and AWARE that, in some circumstances, these consequences can be reduced with appropriate policies that recognize and implement ecosystem approaches to wetland management;

17. RECOGNIZING the work of the World Health Organization's Commission on Social Determinants of Health (2008) in highlighting the mediating role played by socio-economic status in determining human health and the persisting unacceptable inequities in

this regard, and ACKNOWLEDGING that similar disparities may also exist in wetlands and contribute to poor domestic animal health;

18. ALSO RECOGNIZING the importance of the cross-sectoral mechanisms (including the Scientific Task Force on Avian Influenza and Wild Birds) developed in response to the threat of highly pathogenic avian influenza H5N1; WELCOMING the global momentum to build the capacity and understanding of wetland managers, biologists and human and animal health practitioners during the international response to this disease; ALSO WELCOMING the establishment of the multi-stakeholder CMS/FAO Scientific Task Force on Wildlife and Ecosystem Health (as retitled in CMS Resolution 10.22), of which the Ramsar Convention is a member; and DESIRING to further strengthen capacity and broaden communication and cooperation among those organizations involved in wetland health monitoring and management;

19. RECOGNIZING that prevention of disease emergence rather than its subsequent control brings multiple benefits, including cost effectiveness, and that this preventive ecosystem approach needs to be addressed at a landscape scale to ensure the maintenance of ecosystem services and reduce negative impacts to wetland sites, and APPRECIATING that land and wetland users represent key stakeholder groups with an important role in prevention of disease emergence;

20. ACKNOWLEDGING that enhanced capacity to take an ecosystem approach to health, including managing, mitigating, detecting and responding to, and learning from, health issues within wetlands, is needed across a broad range of stakeholders, particularly wetland managers and decision makers, but RECOGNIZING that there remains a need for greater awareness to support the provision of animal and human health services in wetlands;

21. APPRECIATING that communication, education, participation and awareness in a broad range of wetland users helps to promote health through wise use and through the engagement of local people whose health is affected, and RECOGNIZING that wetland users' understanding of the principles of disease risk reduction and actions to prevent disease emergence is key to an ecosystem approach to health;

22. WELCOMING the preparation by the Scientific and Technical Review Panel (STRP) of Ramsar Technical Report no. 6 on *Healthy wetlands, healthy people: A review of wetlands and human health interactions*, which provides a conceptual treatment of the relationship between wetland management and human health and shows that the wise use of wetlands enhances the provision of ecosystem services and also results in specific and demonstrable health outcomes and benefits, and NOTING WITH APPRECIATION that it has been prepared and published jointly with the World Health Organization, so that its information and advice may reach health sector practitioners as well as wetland wise use and management practitioners; and

23. ALSO WELCOMING the guidance that has been developed by international entities with relevant expertise to help policy-makers and wetland managers respond to animal diseases in wetlands, notably that prepared by the STRP and provided in the *Ramsar wetland disease manual: Guidelines for assessment, monitoring and management of animal disease in wetlands (*Ramsar Technical Report no. 7, 2012), and THANKING the STRP, the UK Wildfowl & Wetlands

Trust, and those Contracting Parties and others who contributed experiences and input to that publication;

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24. WELCOMES the assessment of the relevance of wetland management and wise use in supporting governments' efforts to achieve the 2000 Millennium Development Goals (MDGs) and their targets for 2015 (Annex 1 to this Resolution) and URGES Contracting Parties to draw to the attention of those bodies responsible nationally for working toward the MDGs the significant contributions that can be made by implementing wetland wise use and management under the Ramsar Convention;

25. ALSO WELCOMES the 'Key Messages' for policy-makers and wetland managers concerning wetlands, human health and wildlife diseases provided in Annexes 2 and 3 to this Resolution, derived from the Ramsar Technical Reports on *Healthy wetlands, healthy people* and the *Ramsar wetland disease manual*, for use by Parties and others in promoting and delivering an ecosystem approach to health in wetlands;

26. CALLS UPON the Secretariat and URGES Contracting Parties to communicate the *Ramsar wetland disease manual* to wetland managers and to help translate, publish, and disseminate it further;

27. STRONGLY URGES Contracting Parties to adopt an ecosystem approach to health in wetlands and their catchments with integrated methodologies and actions across relevant sectors (e.g., human health, wildlife management, and agriculture) in order to bring health benefits to all; to seek to ensure that all disease prevention and control actions are undertaken within wise use principles; and to facilitate dialogue between different health sectors, using National Ramsar Committees or other relevant mechanisms where other structures do not already exist;

28. ENCOURAGES relevant national and international organizations to continue to gather data and information on the specific health benefits for wetland users, livestock, agriculture and wildlife that may be gained by managing wetland ecosystem services effectively and on the consequent impacts on poverty reduction, sustainable livelihoods, and food security which bring specific health benefits;

29. RECOMMENDS that Contracting Parties adopt an appropriate use of 'healthy wetland' terminology (see Annex 2 to this Resolution), thereby acknowledging the need to understand the complex interactions within wetlands as the basis of good decision making regarding wetland and landscape management and the maintenance of ecological character;

30. REQUESTS the STRP, resources permitting, to advise on appropriate strategic mechanisms to ensure that health costs and benefits are satisfactorily included in economic models that seek to value the contributions that wetland management makes to human health and well-being, and to identify and compile techniques to evaluate the outcomes of wetland management decision making in health terms, noting that such appropriate strategic mechanisms will necessarily involve government sectors for whom such valuations are more commonly undertaken;

31. REQUESTS the STRP, resources permitting, and working with the WHO, the UN Food and Agriculture Organization (FAO), the CBD, the World Organization for Animal Health (OIE), the Biodiversity Indicators Partnership, IUCN, Contracting Parties and others, to identify and compile from expert sources:

    i) indicators of the relationship between wetland ecosystem services and health, with a particular emphasis on identifying early warning indicators for the emergence or re-emergence of diseases and persistent and endemic diseases of people, livestock or wildlife associated with wetlands;
    ii) guidance on the health implications of disruptions to ecosystem services so that the health sector can more effectively participate in planning and decision making related to wetlands and their catchments;
    iii) guidance for wetland managers on the conduct of human and animal health impact assessments in wetlands (identifying the impact assessment protocols that examine health in particular, for elements that are currently insufficiently dealt with in wetland management procedures, including the importance of invasive species and pathogens; prevention of disease emergence or re-emergence; attending to livelihoods, reducing poverty and improving health outcomes; and the possible trade-offs between ecosystem services and health); and
    iv) human health guidance for wetland managers so they can provide wetland-related inputs to a) burden-of-disease assessments (i.e., comparative measurements of the gap between a given health status for a population and an ideal health situation where the entire population lives to an advanced age, free of disease and disability); b) community health assessments (where communities themselves conduct assessments of the health matters that they perceive to warrant greater attention); and c) community and stakeholder engagement concerning health matters;

32. REQUESTS the STRP, resources permitting, to seek the views of wetland managers and other relevant stakeholders on the utility of the content of the *Ramsar wetland disease manual: Guidelines for assessment, monitoring and management of animal disease in wetlands* and whether expanding its coverage, such as to include plant diseases and human diseases associated with wetlands, would be desirable;

33. ENCOURAGES relevant national and international organizations to help to build the capacity of wetland managers, as a key stakeholder group, to take an ecosystem approach to health, including by using the *Ramsar wetland disease manual* to assist promotion of health in domestic and wild animals, and ALSO ENCOURAGES wetland managers to enhance disease prevention by building disease consideration and management into wetland management planning and plans;

34. URGES Contracting Parties, working with relevant national and international organizations, to address current gaps in understanding of wetland wildlife health and impacts of disease on biodiversity, including by creating national or regional integrated wildlife health strategies which recognize disease as a threat to the conservation status of species as well as its impact on human and domestic animal health; and

35. REQUESTS the Ramsar Secretariat and the STRP, within available resources, to work with the other relevant institutional stakeholders concerned with health (such as WHO, FAO, OIE, UNEP, IUCN and the Convention on Migratory Species) to encourage an

ecosystem approach to relevant health issues in wetlands and their surrounding catchments.

Annex 1

The contributions of wise use and wetland management to achieving the Millennium Development Goals (MDGs)

1. Through the adoption by the United Nations in 2000 of the *Millennium Declaration,* the world's governments established the Millennium Development Goals to improve the lives of people around the world, particularly those most vulnerable and disadvantaged, with specific targets to be reached by 2015.

2. The MDGs are designed to lift people out of poverty, save lives, ensure adequate childhood education, reduce maternal deaths, and expand opportunities for women and girls through empowerment. Of direct relevance to wetlands and water resource management, they seek to ensure access to clean water and alleviate the burden of deadly and debilitating diseases that many people face. They seek to promote sustainable development and protect the most vulnerable from the devastating effects of multiple crises, whether they be conflicts, natural disasters, or volatility in prices for food and energy (United Nations 2011).

3. Global attempts to achieve these goals and targets are increasing: "At the 2010 High-level Plenary Meeting of the General Assembly on the Millennium Development Goals, world leaders reaffirmed their commitment to the MDGs and called for intensified collective action and the expansion of successful approaches" (United Nations 2011, p.5).

4. Wetland policy-makers and managers can make a contribution towards the MDGs wherever the close relationships between wetland management and food production, hunger and poverty, climate change, water extraction and use, and waterborne and aquatic vector-borne diseases are present.

5. Contributions through implementation of the Ramsar Convention can be foreseen along two axes. The first is intervening in the ongoing disruption to wetland ecosystem services so as to help to improve human, domestic- and wildlife health and thereby address the MDGs; this axis is shown in column two of the following table.

6. The second axis is shown in column three of Table 1. Methods for seeking to achieve the MDGs, improve human health, and enhance wetland ecosystem services may not necessarily be mutually beneficial – indeed, systemic effects like cross-scale interactions and feedback consequences may prove to undermine the originally intended objectives. The activities to address MDGs by the international community, national actions, and actions by sectors other than wetland management need to be more cognisant of the systemic nature of the relationship between these objectives and wetland ecosystem health. Where potential negative consequences are foreseeable, this is no reason to avoid actions that seek to achieve these MDGs; rather, those consequences need to be understood and considered in decision making.

7. An understanding of the trade-offs among different wetland ecosystem services and the need for cooperation across sectors is critical in designing further actions in support of the MDGs. For example, it is not uncommon for strategies intended to increase food

production and reduce poverty to propose the conversion of marshes to agriculture, conversion of mangroves to aquaculture, and significant increases in the use of fertilizers to increase crop production. This approach, however, will reduce habitat area (and hence the magnitude of services provided by the original habitat), increase the input of water pollutants, remove the natural water filtering service provided by wetlands, and remove ecosystem services provided by mangroves, such as storm surge protection, timber and charcoal supply, and fish habitat, on which local residents in particular rely. This will make the development goal of improved water and sanitation more difficult to achieve and may in fact increase poverty for some groups. In contrast, a development strategy that safeguards the full range of benefits provided by wetlands might better achieve the set of development goals while minimizing future harm to the wetlands.

Table: Ways in which wise use and wetland management can contribute towards the achievement of the Millennium Development Goals (modified from Horwitz *et al.* (Ramsar Technical Report No. 6, 2012), which was compiled using material presented in Molden (2007), UNEP (2007), UN WWDR (2006) and as otherwise indicated.)

Millennium Development Goals (MDGs)	How will intervening in disruption to wetland ecosystem services improve human health & help address the MDGs?	Systemic consequences: where will addressing MDGs need to be aware of the relationship between human health & wetland health?
1. Eradicate extreme poverty & hunger	Food security of the poor often depends on healthy ecosystems & the diversity of goods & ecological services they provide. Diverse wetland ecosystems are self-sustaining & provide the essential genetic material for aquaculture & horticulture. Sustainable livelihoods by definition seek to ensure that the core requirements of food & water are provided to those dependent on the provisioning of wetland ecosystems.	The challenge for irrigated agriculture is to improve equity, reduce environmental damage, increase ecosystem services, & enhance water & land productivity in existing & new irrigated systems (Molden, 2007). Improving productivity should not be at the expense of other ecosystem services. If it is, the human, animal & plant health consequences of ecosystem disruption will occur in full or in part due to a range of both direct & indirect impacts, the latter as a result of altered health status of livestock & wildlife.
2. Achieve universal primary education	Wetland management needs to address the disruptions to ecosystem services that result in water-related diseases. Water-related diseases such as diarrheal infections cost about 443 million school days each year, diminish learning potential & reduce the coping capacity of local populations for current predicaments & future ecosystem changes.	Primary education should include knowledge of health, water & energy issues at least (a fundamental necessity for urban dwellers who have become more alienated from their surroundings than at any stage in history). Education services can have tendencies to resist increases in attention to such environmental issues at the expense of other subjects.
3. Promote gender equality & empower women	Addressing degradation in wetlands, such as water contamination & deforestation, will contribute to the health of women & girls. Women & girls bear the brunt of collecting water & fuelwood & are more vulnerable members of populations to water-borne diseases.	Improved wetland management should involve women & girls in a meaningful way, perhaps by recognizing that women can play greater roles in wetland management than they currently do. "Wetland managers", as professions, tend to be dominated by men. Decision-

		making structures for water resource management, wetland management, & agriculture are also gendered in many parts of the world. These may operate as barriers to achieve this Goal.
4. Reduce child mortality	Wetland management will become an essential operational requirement to reduce exposures to waterborne diseases, such as diarrhoea & cholera. Prevalence of these diseases is a result of disruption of regulatory services (as a result of over-extraction & inappropriate practices).	Interventions such as water treatment facilities (often through aid provision) will usually be technological & infrastructural in the short term to address immediate needs. However the medium- to long-term goal should be the management of wetland ecosystems to ensure that they can provide suitable water purification & pathogen removal services.
5. Improve maternal health	Addressing disruptions to wetland ecosystem services will always include an examination of water quality. Provision of clean water reduces the incidence of diseases that undermine maternal health & contribute to maternal morbidity & mortality.	Improving the quality of source water from catchments, reservoirs & wetlands in general, & distribution infrastructure, may reduce disinfection loads & the likelihood of maternal exposures to these loads.
6. Combat major diseases	Up to 20% of the burden of disease in developing countries may be associated with environmental risk factors. Preventive environmental health measures are as important & at times more cost-effective than health treatment. Managing wetlands to enhance ecosystem services with the aim of reducing the likelihood of human exposures to pollutants & infectious diseases is preventive, attending to upstream environmental determinants of health. New biodiversity-derived medicines hold promises for fighting major diseases.	Increasing human population sizes as a consequence of successful disease prevention measures may also increase pressure on local water & wetland resources. Wetland management needs to act in concert with water resource management to deal with these foreseeable consequences, for instance by increasing awareness & thus changing behaviour, & by incorporating the concept of ecosystem services in prevention strategies. This management needs to be integrated with regional population policies, domestic livestock & wildlife policies (to reduce risk of emerging zoonoses), education & awareness.
7. Ensure environmental sustainability	Current trends in environmental degradation need to be reversed in order to sustain the health & productivity of the world's ecosystems. Wetlands, & the biodiversity they support, encompass many of the key ecosystems of the world & many of the most productive ones. Wetland management applies directly to this Goal.	Development strategies that aim to safeguard the full range of benefits provided by wetlands might better achieve the Goal while minimizing harm to wetlands. This requires recognizing the trade-offs that exist when managing for some ecosystem services like those concerned with production, while trading-off supporting & regulating services.
8. Develop a global partnership for development	Poor countries are forced to exploit their natural resources, like wetland ecosystems, to generate revenue & make huge debt repayments. Unfair	Trade, tourism & migrations of species are often transcontinental. Meaningful wetland management acknowledges that pests & pathogens capable of decreasing

	globalization practices export their harmful side effects to countries that often do not have effective governance regimes.	ecosystem services & having consequences for the health of local human, domestic & wildlife communities can be distributed by inappropriately planned & controlled human activities. This needs appropriate recognition in global partnerships for development.

References

Horwitz, P., Finlayson, M. and Weinstein, P. (2012). *Healthy wetlands, healthy people. A review of wetlands and human health interactions.* Ramsar Technical Report no. 6. Secretariat of the Ramsar Convention on Wetlands and the World Health Organization. Gland Switzerland.

Kavaisi, A. (2001). The potential for constructed wetlands for wastewater treatment and reuse in developing countries: a review. *Ecological Engineering* 16: 545-560.

Molden, D., ed. (2007). *Water for food, water for life: a comprehensive assessment of water management in agriculture*. London, UK: Earthscan.

United Nations (2011). The Millennium Development Goals Report 2011. United Nations.

United Nations Environment Program UNEP (2007). Global Environment Outlook 4 – Environment for Development, UNEP, Nairobi.

UN WWDR (2006). *Water, a shared responsibility*. The United Nations World Water Development Report 2. World Water Assessment Programme, United Nations Educational, Scientific and Cultural Organization, Paris and Berghahn Books, New York, NY.

Annex 2

Healthy wetlands, healthy people: A review of wetlands and human health interactions

(Ramsar Technical Report no. 6/World Health Organization Report, 2012)

Key messages for policy-makers and wetland managers

1. **Wetland ecosystems**, including rivers, lakes, marshes, rice fields, and coastal areas, **provide a well-defined set of ecosystem services that contribute to human well-being and poverty alleviation**, and this relationship has changed over time. It is impossible to imagine human life without water and wetlands.

2. **Ecosystems are implicitly recognized within considerations of public health** in nearly all of its endeavours, **yet managing ecosystems is mostly given low priority** against the medical imperatives of attending to curing disease.

3. While the Ramsar Convention uses text and language that centres around wise use and ecological character, **the phraseology of 'healthy wetlands'** (and healthy rivers, healthy ecosystems, healthy parks, healthy landscapes, etc.) **persists in common and professional use, including by the Convention itself.** A claim to 'healthy ecosystems' comes from judgments on the desirability of an ecological character. It is also explicit about the health of components of the ecosystem (including humans) and about whether organizations responsible for managing ecosystems are adaptive and responsive to changes in those ecosystems.

4. **The benefits of wetland ecosystems for human health can be approached in at least three inter-related ways**: by recognizing the human needs that are met by water in its setting; by recognizing the health products that come from wetland ecosystems; and by valuing wetlands in a full sense, in a way that allows individuals within wetland ecosystems to sustainably improve their socio-economic conditions.

5. **Wetland ecosystems provide a sophisticated water treatment service** involving depositional environments, aerobic water columns, anaerobic sediments, microbial suites, and wetland vegetation, all contributing to the assimilation and extraction of pollutants, parasites and pathogens.

6. **Wetlands**, through the services they provide, **contribute to human health through the provision of food security**: ensuring food availability, buying power, or social capital to access food with cash or through barter, sufficient nutrients from the available food, and a resource of genetic material contained within wetland organisms.

7. **Addressing wetland management as if people's lives, and their livelihoods, depended upon it will undoubtedly contribute to human health**.

8. **Humans can be exposed to health risks in wetland ecosystems**: toxic materials, water-borne or vector borne diseases. While steps can be taken to ameliorate these risks,

the risks can increase (sometimes dramatically) if disruption occurs to ecosystems and the services they provide.

9. **Wetlands, in their myriad forms, become embedded in the human psyche in formulations of "sense of place"**. Changes to wetlands, to their products, to their ability to deliver a livelihood, or becoming a source of toxic exposure or disease can influence people's mental health by causing psychological stress. These potentialities are increasingly recognized as being part of the wetland manager's and public health practitioner's spheres of prevention and intervention.

10. **Attitudinal shifts and reorientation of perspectives within and outside the field of wetland management will ensure that human health and wetland ecosystems are managed to benefit one another**.

11. **To embrace the breadth and richness of the relationship between wetland ecosystems and human health and well-being will need policy interventions promoted by, but extending well-beyond, the wetland sector**.

12. **Instruments and approaches likely to be used by the health sector** to respond to health effects and health outcomes of disruption to ecosystem services **should be understood and used by wetland managers**.

Annex 3

Ramsar wetland disease manual: Guidelines for assessment, monitoring and management of animal disease in wetlands.

(Ramsar Technical Report no. 7, 2012)

Key messages for policy-makers and wetland managers

General

1. The term 'disease' is used to define any impairment to health resulting in dysfunction.

2. Disease is often viewed as a matter of survival or death, but the effects are often far more subtle.

3. Stress is often an integral aspect of disease capable of exacerbating existing disease conditions and increasing susceptibility to infection.

4. Disease is an integral part of ecosystems with infectious organisms and other causes of disease serving an important role in population dynamics.

5. The emergence and re-emergence of diseases has become a wildlife conservation issue both in terms of the impact of the diseases themselves and of the actions taken to control them.

6. The wetland manager may be responsible for biodiversity and its conservation, including parasites and parasite-hosts relationships and the ways in which they contribute to ecological functions.

An ecosystem approach to health

7. The concept of 'One World One Health' has arisen due to the appreciation of the fundamental connectivity in health of humans, domestic livestock, and wildlife.

8. Embracing an ecosystem approach to health in wetlands involves recognizing the dependence of health and well-being on 'healthy wetlands' which can only be achieved through wise use, most often at a landscape and/or catchment scale.

9. The concept of 'prevention is better than cure' and an ecosystem approach to health, particularly when focused at a landscape or catchment scale to ensure maintenance of ecosystem services and reduce negative impacts to wetland sites, maximize benefits and minimize costs for wetland stakeholders.

Basic principles of disease management

10. Diseases are integral components of ecosystems and often do not need management intervention.

11. The greatest power to prevent disease emergence in animals is not only in the hands of animal health experts but in those of the land users and managers. Although they cannot be expected to be disease experts, these groups need to be empowered to play a central role in disease prevention.

12. If wetland stakeholders understand both the impacts of diseases and how to prevent and control them, they will feel motivated and empowered to take action.

13. An understanding of disease in its broadest terms and its overt and subtle effects on individuals and populations precedes a better appreciation of how to manage those effects successfully.

14. The drivers of disease emergence are often under-recognized in wetland management plans and actions.

15. Effective management of any disease is dependent on a good understanding of its epidemiology and the ecology of host populations.

16. Invasive alien species and novel pathogens and parasites have many parallels in their biology, in the risks they pose, and in the measures needed to prevent their establishment and control.

17. A broad range of proactive and reactive strategies and practices are available to the wetland manager and other wetland stakeholders to achieve or maintain the health of the ecosystem.

General management practices

A. Assessing risk and planning for the future

18. To ensure that consideration for disease prevention and control is at the heart of wetland management, activities need to be integrated into wetland management plans.

19. Risk assessments are valuable tools for animal health planning and serve to identify problems/hazards and their likely impact, thus guiding wetland management practices.

20. Multidisciplinary advisory groups provide a broad range of benefits for disease prevention and control.

21. Contingency planning helps to model possible emergency disease management scenarios and to integrate rapid cost effective response actions that allow the disease to be prevented and/or controlled.

B. Reducing risk of disease emergence

22. An understanding by the wetland manager of the uses of a wetland and its catchment by people, industry, agriculture including livestock, and wildlife, coupled with an appreciation of the risk factors for disease emergence, can provide a sound foundation for disease risk reduction.

23. It is important that wetland managers identify stressor risks within their site and the broader catchment/landscape, and understand that these may change over time.

24. Disease zoning can help control some infectious diseases through the delineation of infected and uninfected zones defined by sub-populations with different disease status.

25. The movement of infected animals to new areas and populations represents one of the most obvious potential routes for the introduction of new/novel infections.

26. Where possible, biosecurity measures should be implemented routinely as standard practice whether or not an outbreak has been detected.

27. If wetland stakeholders understand the principles and value of biosecurity and what measures to take, it will encourage the development of an everyday 'culture' of biosecurity which can help disease prevention and control.

28. Implementing biosecurity measures in the natural environment can be extremely challenging, particularly in aquatic systems, and although eliminating risk will be impossible, a substantial reduction in risk can be achievable.

C. Detecting, assessing and responding to new disease

29. Timely and accurate diagnoses and early warning systems for disease emergence, and rapid reporting of suspected disease outbreaks to competent authorities are all critical for swift responses, achieving effective disease control, and minimising losses and costs.

30. The detection of new, emerging disease, robust risk assessments, and effective disease control in and around wetlands all rely on effective disease surveillance and monitoring.

31. Identifying when a disease presents a 'problem' is complex and needs thorough disease investigation and existing good long-term surveillance information.

32. In the event of a suspected outbreak of disease, wetland managers are not expected to be the final disease diagnostician. However, they should play a key role in an outbreak investigation team.

D. Managing existing disease

33. The appropriate approach to disease management will depend on the characteristics of the problem and, when dealing with an infectious disease, on the correct identification of reservoirs, hosts and vectors of infection.

34. Disinfection and sanitation procedures target pathogens and can be very effective at controlling spread of infection, but they should be used with caution in wetland situations to avoid negative impacts on biodiversity.

35. Animal carcasses represent a significant potential source of infection and should be rapidly and appropriately collected and disposed of.

36. Targeting vectors in integrated disease control strategies can be effective and usually takes the form of environmental management, biological and/or chemical controls, or actions to reduce the contact between susceptible hosts and vectors.

37. Vaccination programmes, often supplemented by other disease control measures, can help to control and even eliminate diseases affecting livestock and/or wildlife.

38. Habitat modification in wetlands can eliminate or reduce the risk of disease.

39. Movement restrictions of animals and people, usually imposed by government authorities, can be an effective tool in preventing and controlling disease transmission.

40. Complete eradication of a disease needs a thorough understanding of its epidemiology, sufficient political and stakeholder support, and thorough resourcing. Elimination of disease from a limited area is a more likely outcome.

E. Training and education

41. Well planned, targeted and resourced education and training programmes for wetland stakeholders are essential for raising awareness and appreciation of wetland diseases and the measures that can be taken to successfully prevent, detect, control and mitigate disease outbreaks.

42. Programmes should aim to inform wetland stakeholders of the basic principles of healthy habitat management, thus reducing the risk of a disease outbreak.

43. A 'culture' of proactive disease management can be developed only if a broad range of wetland stakeholders are involved in these programmes.

44. Simulation exercises and testing of contingency plans are a valuable method for training.

F. Communication

45. Communication strategies should aim to make stakeholders aware of the nature and potential consequence of animal disease and of the benefits gained from prevention and control measures.

46. Selection of the appropriate message, the messenger, and the method of delivery is critical for successful communication.

47. A strategy, written in 'peacetime', for dealing with the media can increase likelihood of successful outcomes.

11th Meeting of the Conference of the Parties to the Convention on Wetlands (Ramsar, Iran, 1971)

"Wetlands: home and destination"

Bucharest, Romania, 6-13 July 2012

Resolution XI.13

An Integrated Framework for linking wetland conservation and wise use with poverty eradication

1. RECALLING that the *Changwon Declaration on human well-being and wetlands* (Resolution X.3, 2008) affirmed that wise use, management, and restoration of wetlands should help to build opportunities for improving people's livelihoods, particularly for wetland-dependent, marginalised and vulnerable people;

2. ALSO RECALLING that Resolution X.28 (2008) on *Wetlands and poverty eradication* encouraged Contracting Parties to identify ways and means of further implementing the initial framework for action on wetlands and poverty reduction adopted in Resolution IX.14 (2005), and in paragraph 11 it requested the Scientific and Technical Review Panel (STRP) to develop specific guidance for Contracting Parties to support the implementation of those Resolutions;

3. RECOGNIZING that poverty has been defined as the pronounced deprivation of well-being, is complex and multidimensional, and a reality that still affects a large percentage of the world's people and nations, and is indeed one of the greatest challenges for wetland management in developing countries;

4. RECALLING the recognition by the Rio +20 Conference (Brazil, 2012) that "Eradicating poverty is the greatest global challenge facing the world today and indispensable requirement for sustainable development" and that this equally may apply to the goal of wetland wise use;

5. ALSO RECALLING that, at the Ramsar 5th Pan-American preparatory regional meeting, the Kingston Declaration underscored commitment to an integrated framework for wetland conservation and poverty eradication;

6. ALSO RECOGNIZING that many of the world's poor are predominantly rural and that their survival depends disproportionately upon local ecosystems, and AWARE that wetland ecosystems and the services they provide form an integral part of the livelihood strategies of wetland-dependent human communities, and that the livelihood strategies of such communities also influence the ecological character of the wetlands as well;

7. FURTHER RECOGNIZING that the implementation of the wise use provisions of the Ramsar Convention can contribute to poverty eradication and hence the achievement of the Millennium Development Goals (MDGs) 1 and 7on eradicating extreme poverty and hunger and ensuring environmental sustainability, AND WELCOMING the process regarding development of the Sustainable Development Goals as set by Rio +20 Conference;

8. EMPHASIZING that livelihood strategies based on wetlands need to be sustainable in order to contribute meaningfully to poverty eradication;

9. NOTING that Decision X.6 (2010) of the Convention on Biological Diversity, on "Integration of biodiversity into poverty eradication and development", called for active involvement and commitment of development cooperation bodies and implementing agencies in supporting the mainstreaming of biodiversity and ecosystem services into poverty eradication and development processes; and

10. EXPRESSING APPRECIATION to the STRP for its work in preparing the advice and guidance annexed to this Resolution, and ALSO THANKING the government of the United Kingdom, Wetlands International, and the International Water Management Institute (IWMI)for their support to the development of this guidance;

THE CONFERENCE OF THE CONTRACTING PARTIES

11. WELCOMES the 'Integrated Framework for linking wetland conservation and wise use with poverty eradication', annexed to this Resolution, as a tool for governments, wetland management authorities and stakeholders to assess wetland ecosystem services and livelihoods interlinkages at multiple scales;

12. URGES Contracting Parties to make use of the Framework, in their assessments of the interlinkages between poverty and the wise use of wetlands, and to include such assessments in the development of site-based management planning to promote wise use and maintenance of the ecological character of wetlands;

13. ALSO URGES Contracting Parties to draw the Framework to the attention of all relevant stakeholders, including *inter alia* government ministries, departments and agencies, non-governmental organizations, and civil society, and FURTHER URGES Parties to use this Framework, together with the *Ramsar Handbooks for the Wise Use of Wetlands* (4th edition, 2010), as a means of furthering cooperation and collaboration with development agencies to address poverty issues within wetlands in their decision-making and their activities that relate to the delivery of the wise use of wetlands;

14. FURTHER URGES Contracting Parties, when drawing the Framework to the attention of all relevant stakeholders, to make use of the advice provided in Resolution XI.12 Annex 1, on 'Wetlands and health', concerning the relevance of implementing the Ramsar Convention for addressing the Millennium Development Goals (MDGs), and especially MDG1 (Eradicate extreme poverty and hunger);

15. INVITES development banks and other donors to support the implementation of this Resolution by Contracting Parties by supporting capacity-building for governments and

indigenous peoples and local communities, public action support, and project funding and to include wetland conservation as a key component of official development assistance;

16. REQUESTS the Ramsar Secretariat, resources permitting, to identify means and ways of assisting Contracting Parties in assessing contributions made towards achieving the MDGs through implementation of the Ramsar Convention while conducting national evaluations for the global assessment of the MDGs in 2015, including by making use of the annexed Framework in accordance with paragraph 9 of this Resolution, and to report this matter to the 12th meeting of Conference of the Parties;

17. FURTHER REQUESTS the Secretariat to engage in the process and development of the Sustainable Development Goals being coordinated by the UN Secretary General;

18. REQUESTS the Scientific and Technical Review Panel, working with Contracting Parties, the International Organization Partners, and other interested organizations and networks, in particular the CBD's Biodiversity for Development Initiative and subject to available resourcing and agreed priorities in Resolution XI.17 to build upon this Framework by including in its future work plan the development of:

    i) advice on mainstreaming the "Integrated Framework for linking wetland conservation and wise use with poverty eradication" into national policies and programmes that may have a bearing on poverty eradication;

    ii) advice to include Communication, Education, Participation and Awareness (CEPA) as a mechanism that contributes significantly to reduce the risks that can create or deepen poverty; and

    iii) case studies and best practices on the application of the Framework for assessing poverty in wetlands; and

19. FURTHER REQUESTS the Scientific and Technical Review Panel working with the IOPs, other interested organizations and networks, resources permitting, to supplement the Framework by undertaking tasks identified under Resolution X.28, including further development of indicators relating wetland wise use to livelihoods and poverty eradication, development of structured guide to available guidelines and tools for addressing poverty eradication in relation to wetlands, and collation and review of examples of how wetland degradation affects people's livelihoods and how maintenance or restoration of the ecological character of wetlands can contribute to poverty alleviation.

Annex

An Integrated Framework for linking wetland conservation and wise use with poverty eradication

I. Introduction

1. In 2005, Ramsar Contracting Parties adopted Resolution IX.14 on *Wetlands and poverty reduction*, which recognized the relevance of wetland conservation and wise use (and thereby of the Ramsar Convention as an instrument) as an important element for achieving internationally agreed development strategies, including the Millennium Development Goals (MDGs). In the subsequent Resolution X.28 (2008) on *Wetlands and poverty eradication,* the Parties requested the Scientific and Technical Review Panel (STRP) to develop an integrated framework for linking wetland conservation and wise use with poverty eradication and to identify the most appropriate scale at which each type of poverty eradication action should take place.

2. Within this framework, poverty is recognized as a multi-dimensional, value-laden, context-specific, and dynamic phenomenon. This is consistent with current thinking on the concept and measurement of poverty, which over the past four decades has evolved from an emphasis on access to physical commodities to an approach which includes capabilities, or the ability to achieve human well-being.

3. Some of the dimensions used to describe poverty include "inability to satisfy basic needs, lack of control over resources, lack of education and skills, poor health, malnutrition, lack of shelter, poor access to water and sanitation, vulnerability to shocks, violence and crime, lack of political freedom and voice"[1]. Poverty has also been expressed as "pronounced deprivation of well-being"[2]. The Millennium Ecosystem Assessment[3] identified poverty and well-being as two extremes of a multi-dimensional continuum. Poverty is also considered to be a dynamic phenomenon, with some people remaining in a state of chronic poverty over time whilst others experience a more transient state and may move in and out of poverty.

4. Whilst absolute poverty in terms of the more conventional, financial dimensions of poverty measurements of income/consumption levels can be compared in relation to a poverty line, other dimensions of poverty are context-specific, and what is perceived as poverty can vary between different individuals, sites, regions and countries, and may also vary over time.

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1 World Bank (2001) *Poverty Trends and Voices of the Poor*. 4th Edition. The World Bank, Washington DC, USA.

2 World Development Report (2001) *Attacking Poverty: Opportunity, Empowerment and Security,* World Bank, Washington DC, USA.

3 Millennium Ecosystem Assessment (2005). *Millennium Ecosystem Assessment Synthesis Report*. Island Press, Washington, DC.

5. Ramsar Resolution IX.14 (2005) refers to poverty reduction, which implies lifting people beyond a defined poverty line and transforming them from poor to non-poor, while the subsequent Resolution X.28 (2008) talks about poverty eradication, which usually refers to moving people who are in extreme poverty (below a US$1.25 per day poverty line) to above this line.

II. Wetland-poverty interlinkages

6. Wetland management seeks to ensure "wise use" of wetlands, which in Ramsar's definition of wise use means "the maintenance of ecological character, achieved through the implementation of ecosystem approaches, within the context of sustainable development"(Resolution IX.1 Annex A, 2005).

7. An explicit recognition of ecological character as a relatively value-based, cultural and normative social construct forms the basis of wetland-poverty interlinkages. Human societies are fundamentally linked to wetlands, from the core human requirements for water, food and livelihoods, through the choices and tradeoffs they make and the governance systems that influence their behaviour in and around wetlands. The existence of poverty in its various forms may therefore influence, and be influenced by, wetland ecological character and associated cultural values.

8. Wetland ecosystem services (the benefits people derive from wetlands) form an integral part of the livelihood strategy of wetland-dependent communities. Their livelihood systems often involve adapting to the overall ecological character of the wetland so as to optimize livelihood outcomes. The ways in which ecosystem services integrate with other livelihood capitals, particularly the social, economic and political contexts under which ecosystem services accrue to the livelihoods of dependent communities, become important variables in influencing the sustainability of livelihood strategies as well as poverty within wetland communities.

9. Conversely, livelihood strategies of communities living in and around wetlands may also influence a wetland's ecological character. Failure to follow wise use principles can exacerbate the problem by pushing people into poverty (transforming the non-poor into the poor), by maintaining the status quo for those who are already in poverty, and by pushing already poor people further into poverty.

10. The relationship between wise use and poverty eradication can be direct (e.g., wise use of resources that support livelihoods) and indirect (e.g., wise use of wetlands contributes to climate change mitigation and thus can improve human well-being). Similarly, degradation of ecological character can have direct relationships with poverty (e.g., resource depletion that negatively impacts on livelihoods of local wetland-dependent communities) or be indirect (e.g., pollution that impacts on the livelihoods of downstream communities through the deterioration of water quality and/or increasing costs of water treatment).

11. Given the multi-dimensional nature of poverty, however, achieving a change in poverty status is dependent on several factors which are beyond the domain of just ensuring wise use of wetlands or maintaining and enhancing ecological character. So whilst ensuring the wise use of wetlands can serve as an important constituent of poverty-related policy making, it can seldom be the single instrument.

12. As well as wetland loss and degradation impacting upon human well-being, poverty can often result in interventions that impact upon wetlands. These impacts can be both direct (over-exploitation of a natural resource that reduces livelihood options; absence of sanitation, which forces people to use wetlands for waste disposal) and indirect (destructive agricultural practices in the catchment leading to changes in wetland sedimentation). Such interventions can also take place at a range of geographical scales, from local (e.g., poverty of local wetland dependent communities resulting in unsustainable exploitation) and national (e.g., national government efforts to reduce poverty may result in unwise use of wetlands) to global (e.g., focusing on MDG goals on hunger, poverty, and water may result in the failure to achieve targets for wetland ecosystem services).

13. Where poverty exists, it is possible for a vicious circle to develop, whereby poverty impacts upon ecological character to the extent that the potential for wetlands to deliver their ecosystem services is degraded or even lost.

14. The impact of conservation/development interventions on wise use (maintaining ecological character) and poverty eradication have a number of potential outcomes. The range of potential scenarios is dependent on the starting point on the poverty/well-being and ecological character axes, as shown in Figure 1. The nature of any intervention will depend on the relevant institutional, social, economic, and ecological factors at play.

15. It is clear that policy changes that bring the communities into the domain of well-being (lifting people out of poverty) and maintain good ecological character provide a win-win situation. Conversely, a policy change that triggers deterioration in ecological character beyond the limit of acceptable change and pushes communities into poverty lies in the "no-go" zone.

16. Between these two options there is a range of scenarios which deliver one of the two objectives at the cost of the other, thereby indicating that tradeoffs have to be made. It is in these zones that a systematic assessment of wetland-poverty interlinkages becomes highly relevant, as too does developing policy options that ensure optimal achievement of both objectives, poverty eradication and maintenance of ecological character.

17. For further description of the interactions between wetland ecological character and the human health aspects of poverty eradication and human well-being, see Ramsar Technical Report No. 6 (2012)[4].

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4 Horwitz, P., Finlayson, C.M. & Weinstein, P. (coordinating authors) 2012. *Healthy wetlands, healthy people: a review of wetlands and human health interactions*. Ramsar Technical Report No. 6/World Health Organization Report. Ramsar Convention Secretariat, Gland, Switzerland.

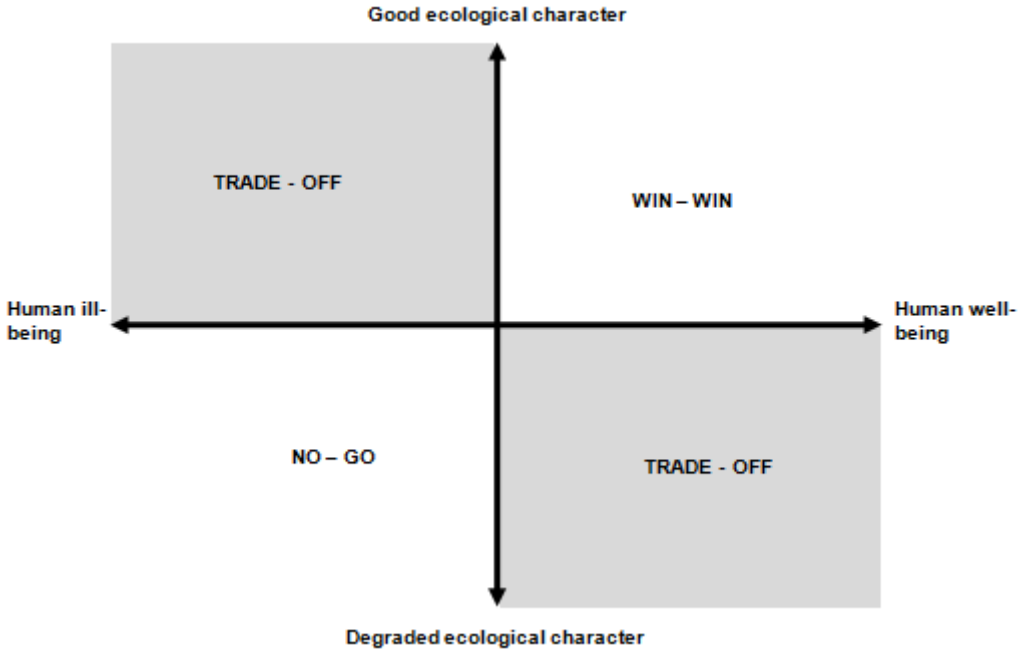

Figure 1. The range of potential scenarios of changes in wetland ecological character and poverty due to policy interventions

III. A general framework for integrated assessment of wetland-poverty interlinkages

18. This general framework for assessing wetland-poverty interlinkages builds upon recognizing the tradeoffs involved in the transition from a state of ill-being to a state of well-being, with an underlying change in ecological character. The framework builds on the concepts of justice, equity, sustainability, livelihoods, capability, and ecosystem stewardship, along with the Ramsar definitions of ecological character and wise use of wetlands.

19. The framework is based on a set of design principles derived from a review of existing frameworks on poverty-environment linkages. The review reinforces the idea that a two-way interaction between livelihoods and environment is essential.

20. The framework progresses from understanding poverty as an expression of vulnerabilities to exposure to environmental change, to more meaningful expressions of well-being and ecosystem services and how a systems approach can reveal interventions which can alleviate poverty.

21. The five general principles underlying the framework are:

    i) **Poverty as a multi-dimensional concept.** Poverty and well-being are two ends of a multi-dimensional, value-laden and context-specific spectrum. Conceptualizing poverty requires a clear emphasis on capabilities (ability to achieve livelihood conditions) as differentiated from functioning (livelihood conditions). The relationships between ecosystem services and poverty are complex, and not all drivers and constituents of poverty are addressed by sustainable provision of

wetland ecosystem services. Sustainable management of wetlands should be seen as a part of a number of broad-scale strategies for addressing poverty.

ii) **Wetland management as a process to promote and encourage participation of the poor.** Existing evidence on the relationship between biodiversity and poverty indicates that in general the poor carry an unequal burden from the impact of wetland degradation. Exclusion or inclusion, at multiple levels and forms, in natural resources management constitutes one of the key determinants of poverty. At the same time, owing to their relative location and relationship with resources, the poor also provide opportunities for promoting stewardship and contributing traditional knowledge to support conventional understanding of ecosystem functioning. One of the key purposes of wetland management planning is to provide a voice and a mechanism for the poor to participate in decision making. Ramsar guidance promotes full local community participation in wetland management planning (see Ramsar Wise Use Handbook 7, 4th edition, 2010).

iii) **Sustainability of livelihoods as an important precondition to achieving wise use of wetlands.** Several components of ecological character are manifestations of livelihood systems with direct or indirect linkages to wetlands. Poverty is influenced by, and also influences, wetland ecological character. Livelihoods need to be sustainable, in social as well as ecological terms, to achieve the wise use of wetland ecosystems.

iv) **The interconnectedness of ecosystems services and livelihood capitals – the dynamic nature of wetland ecosystem services as a livelihood capital base for the poor.** People obtain livelihoods using various capitals. Capabilities help define access to various forms of capitals. Wetlands form a dynamic capital base that contributes to all forms of capitals. Institutions and levels of freedoms available to a community play an important role in defining access, allocation and overall resource management.

v) **The inherent relationships amongst livelihood systems across various socio-political, spatial and ecological scales.** It is apparent that livelihood-related issues where the environment is implicated cannot be solved exclusively by approaches in a 'traditional' development domain which focus on people and their assets. Rather, broader approaches are needed, drawing on ecological and social sciences, accepting that humans are not separable from their natural environment and that socio-economic factors mediate human health and well-being. The drivers and pressures on livelihood systems act at multiple scales and through several direct as well as indirect pathways. An important consequence for wetland management is therefore to be able to recognize these pathways and develop appropriate response strategies as a part of management processes.

22. The framework for integrated assessment of wetland-poverty interlinkages comprises five elements:

a) wetlands as settings for livelihood-ecological character interactions;
b) linkages with external environment-vulnerability contexts;
c) livelihood strategies;

d) institutions and freedoms; and
e) human well-being outcomes.

23. The framework is presented in Figure 2. Description of each of the framework elements follows.

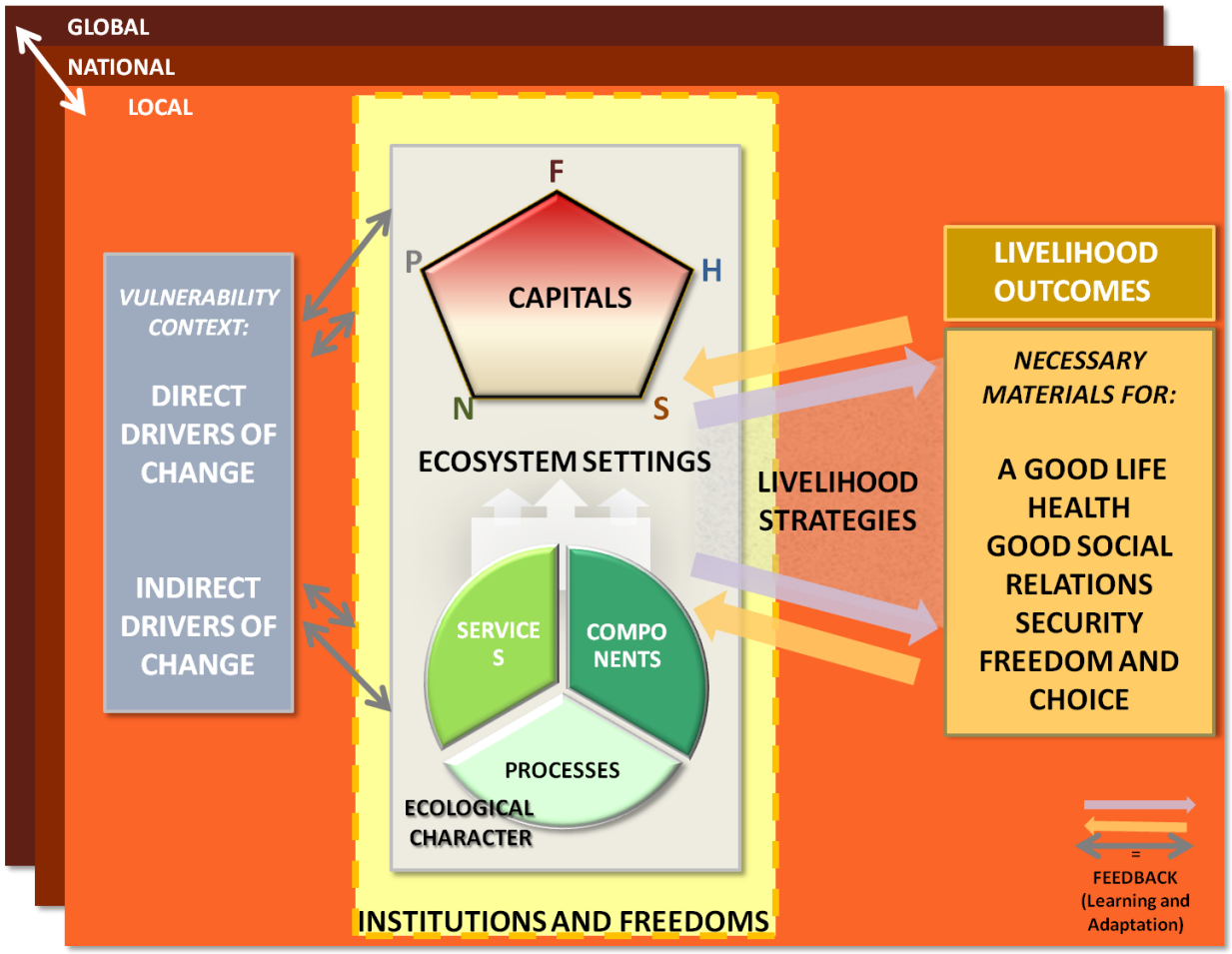

Figure 2. The framework for integrated assessment of wetlands-livelihoods interlinkages (derived from the Millennium Ecosystem Assessment's conceptual framework for ecosystems and human well-being)

A. Wetlands as settings for livelihood-ecological character interactions

24. The framework emphasizes wetland ecosystems and their services as *settings* determining human health and well-being because they provide (safe) water, nutrition, fibre, shelter and medicinal products. They are the places from which people derive their livelihood and the places that enrich people's lives, enable them to cope and to help others. The ecological character of wetland ecosystems is the foundational construct of these settings. Livelihood systems interact with wetlands at multiple spatial and temporal scales, mutually shaping and reinforcing ecosystem services embedded within ecological character, as well as livelihood capitals which form the basis of livelihood strategies.

25. The livelihood systems can be seen as based on a set of capitals[5], broadly categorized into:

    i) **Natural Capital**, representing capital stocks derived from nature from which resource flows and services useful for livelihoods are derived;

    ii) **Human Capital**, representing the skills, knowledge, ability to labour, and good health that together enable people to pursue different livelihood strategies and achieve livelihood objectives;

    iii) **Social Capital**, comprising the social resources upon which people may draw in pursuit of livelihood objectives (such as opportunities for participation);

    iv) **Physical Capital**, comprising the basic infrastructure and producer goods needed to support livelihoods; and

    v) **Financial Capital**, comprising the financial resources that people use to achieve livelihood objectives.

26. Ecosystem services from wetlands are flows parallel to those from other livelihood capitals. While forming a part of the natural capital, these services, through transforming structures and processes, contribute to all other forms of capital. An understanding of these interactions helps to conceptualize the extent to which wetlands can contribute to poverty reduction for a given livelihood system. Maintenance of ecological character forms the basis of the continued provision of these ecosystem services to people. A mapping of wetland ecosystem services and livelihood capitals is provided in Table 1.

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5 These are further described in DFID (UK Department for International Development) (2001) *Sustainable Livelihoods guidance sheets*. Downloadable from www.eldis.org/index.cfm?objectid=07D70938-0664-EE3F-F57D2FF787FF2F9A

Table 1. Linking wetland ecosystem services to livelihood capitals

Ecosystem services from wetlands		Livelihood Capitals				
		Natural: Land, soil, water, fisheries, etc.	**Physical**: Basic infrastructure & producers' goods	**Human**: Skills, knowledge, health & ability to work	**Social**: Informal networks, formalized groups membership, relationships	**Financial**: Savings, credit, incomes, trade & remittances
	Provisioning	**Food & water security (subsistence)** Drinking water for humans & livestock; water for agriculture; food for humans & livestock		**Wetlands & human health**: Medical products		**Products for trading**: Food for humans; food for livestock; water, reed fiber & peat; medicinal plants
	Regulating	Water purification; flood control; flood storage; soil; sediment & nutrient retention; coastal shoreline stabilization; storm protection; carbon storage; climate buffering	**Wetlands as water infrastructure:** Flood control; flood storage; coastal shoreline stabilization; storm protection	Biological control agent for pest diseases		**Insurance values of wetlands:** Coastal shoreline protection; carbon storage
	Cultural	Recreational hunting & fishing; cultural heritage; contemporary cultural significance; spiritual & religious values; water sports; nature study; educational values; aesthetic & sense of place values; knowledge systems; other recreation & tourism		**Wetlands & human health:** Water sports; nature study; educational values; aesthetic & sense of place values; knowledge systems	Recreational hunting & fishing; cultural heritage; contemporary cultural significance; spiritual & religious values	**Revenue generation opportunities** Other recreation and tourism
	Supporting	Primary production; nutrient cycling				

B. Linkages with external environment-vulnerability contexts

27. The capitals are linked to an external environment domain, which consists of direct and indirect drivers of change. Operating at multiple scales and across stakeholders, the indirect drivers may include demographic, economic, socio-political, scientific and technological, and cultural and religious drivers. Direct drivers include changes in local land use and cover, species introduction or removal, technology adaptation and use, external inputs, harvest and resource consumption, climate change, and other natural, physical, and biological drivers.

C. Livelihood strategies

28. The capability of the communities to employ livelihood capitals, as well as the wetland ecosystem services embedded within the capital set, define their livelihood strategies. Livelihood analysis starts from the premise that access to services and benefits, and therefore well-being outcomes, is likely to be distributed in an unequal way along prevailing socio-economic circumstances. Management interventions for wetlands must also seek to address these inequities through a range of possible options, for example, use of payments and incentive systems linked to ecosystem services.

D. Institutions and freedoms

29. The capability to access livelihood capitals is influenced by institutional arrangements, formal and informal (referred to in DFID 2001as transforming structures and processes). Inequality in access to resources, often attributed to scarcity, as well as opportunities of value addition, create incentives for powerful groups to gain privileged access by influencing political, economic and social institutions that govern their access, management, and use. The ability to create, revise, and/or modify institutions is linked to the degrees of freedoms in the community. These freedoms play an important role in providing space for the poor to define their rights and create institutions that will ensure and fulfil fair distribution of rights, finally leading to an ability to make their own choices for self-determination.

30. Six broad categories of freedoms[6] have been articulated as:

    i) **participative freedom** which allows people to be involved in an active manner without intimidation or fear in deciding issues related to their well-being;

    ii) **economic facilities,** enabling people to convert ecosystem services for production and exchange;

    iii) **social opportunities** such as arrangements societies make for education, health and other related sectors in order to allow people to live better lives and be productive members of society, with specific reference being made to gender equality;

    iv) **transparency guarantees**, encouraging openness and trust;

    v) **protective security,** creating safety nets against adverse events that make individuals helpless; and

    vi. **ecological security**, the minimum levels of ecosystem services required to sustain livelihoods.

E. Human well-being outcomes

31. The livelihood strategies finally lead to a livelihood outcome, or change in well-being status. A strategy can therefore be leading to a certain change in poverty status depending upon the changes induced in the five broad elements of human well-being, i.e., the necessary material for good life, health, good social relations, security, and freedoms and choice.

32. The sustainability of the wetland-livelihoods interlinkages can be assessed for a livelihood system in terms of achieving at least three preconditions:

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6 For a detailed discussion, refer to UNEP-IISD (2004). *Exploring the Links: Human Well-Being, Poverty and Ecosystem Services.* IISD, Winnipeg, Canada.

i) **Internal sustainability**, when there is the ability to cope and recover from stresses and shocks and maintain or enhance capabilities and assets both now and in future;

ii) **Social sustainability**, when the livelihood of others are enhanced, or not diminished; and

iii) **Ecological sustainability**, when there is no depletion or disruption of ecosystem services to the prejudice of livelihoods and the well-being of others, now or in future. Inherent in this definition is that livelihood systems are enabling maintenance or enhancement of wetland ecological character.

IV. Response strategies

33. The framework for integrated assessment of wetland-livelihoods interlinkages can be used to develop response strategies for addressing unsustainable wetland-livelihood interlinkages by identifying causative factors at the levels of framework elements.

34. A suitable problem analysis tool – for example, the Driver-Pressure-State-Impact-Response (DPSIR) framework – can be employed to identify the causal links between the human well-being outcomes and various framework elements.

35. Although any specific intervention will vary depending on the characteristics of the site-level interaction, it is understood that a multiscalar response strategy will be required that involves multiple stakeholders. The wetland management planning processes and the enabling institutional arrangements would need to ensure that sufficient linkages are maintained to be able to initiate and implement these response strategies to achieve desired wetland management and poverty eradication outcomes.

36. A generic response framework for addressing wetland-poverty interlinkages based on the framework elements is provided in Table 2. The response options can form the basis of development of a set of indicators for assessing the sustainability of wetland-livelihoods interlinkages for poverty eradication.

Table 2. A generic response framework for addressing wetland-poverty interlinkages based on the framework elements

Framework elements	**Proximate factors affecting sustainability of wetlands-poverty interlinkages**	**Response Options**		
		Local	**National**	**Global**
Linkages with external environment – vulnerability contexts	Land use change adversely affecting wetland ecological character & ecosystem services		Including wetlands fully in spatial planning, distinctly considering impacts of basin-level land use changes on wetland ecological character & the livelihood capitals of dependent communities	Enhancing international cooperation to address the drivers of land use change

Livelihoods-wetland ecological character interactions	Degradation of wetlands leading to negative impacts on livelihood capital base Resource use practices negatively impact wetland ecological character	Improving measures to access & develop capacity of communities to sustainably use wetland resources based on wise use principles Rationalizing incentive systems to promote wetland ecosystem stewardship Ensuring that wetland management planning processes provide opportunities for sustainable livelihoods for wetland communities	Integrating the conservation & wise use of water & wetlands into national poverty reduction strategy papers Creating partnerships between wetland managers, indigenous peoples, local communities & national level policy planners to ensure that local perspectives & existing sustainability strategies are respected Establishing financial mechanisms that improve wetland management as well as contribute to tangible poverty reduction Ensuring that gender equality & sensitivity are taken into account in sustainable wetland management strategies	Developing new financial mechanisms for wetland management as a means of addressing poverty alleviation / reduction / eradication
Livelihood strategies	Lack of capacity of wetland communities to access livelihood capitals, including wetland ecosystem service flows	Ensuring that wetland-dependent communities have adequate freedoms to be able to create, revise or modify institutional arrangements		

11th Meeting of the Conference of the Parties to the Convention on Wetlands (Ramsar, Iran, 1971)

"Wetlands: home and destination"

Bucharest, Romania, 6-13 July 2012

Resolution XI.14

Climate change and wetlands: implications for the Ramsar Convention on Wetlands

1. RECALLING that ResolutionX.24 on *Climate change and wetlands* (2008), which updated and superseded Resolution VIII.3 on *Climate change and wetlands: impacts, adaptation and mitigation* (2002), recognized the potential implications of climate change for the conservation and wise use of wetlands and, among other things, called upon Contracting Parties to manage their wetlands in such a way as to increase their resilience to climate change and extreme weather events and to ensure that climate change responses would not lead to serious damage to the ecological character of wetlands, and RECOGNIZING the Ramsar Convention's role and mandate to address all issues affecting the maintenance of the ecological character of wetlands;

2. ALSO RECALLING that in its Third and Fourth Assessment Reports, the Intergovernmental Panel on Climate Change (IPCC) concluded that wetlands are amongst those natural systems especially vulnerable to climate change because of their limited adaptive capacity and that they may therefore undergo significant and irreversible damage, AWARE that the IPCC is presently conducting a Fifth Assessment Report to provide in 2013/2014 an update of knowledge on the scientific, technical and socio-economic aspects of climate change, and RECOGNIZING the role and mandate of the UNFCC and the IPCC in this process;

3. AWARE that the IPCC is currently undertaking further work at the request of the Subsidiary Body for Scientific and Technical Advice (SBSTA) of the United Nations Framework Convention on Climate Change (UNFCCC), notably the preparation of the "2013 Supplement to the IPCC 2006 Guidelines on National Greenhouse Gas Inventories: Wetlands" (www.ipcc.ch);

4. WELCOMING the significant progress made since Ramsar COP10 (2008) with respect to knowledge and awareness of the importance of the carbon sequestration and storage function of wetlands (including *inter alia* inland peatlands and coastal wetlands), including in the scientific understanding of greenhouse gas fluxes from wetlands and the drivers of greenhouse gas fluxes from land use, land use change, and forestry sources, through 'wet carbon' and 'blue carbon' assessments made by UNEP, the World Bank, IUCN, the Ramsar Convention (with the Danone Fund for Nature), Wetlands International, and

others, and RECOGNIZING that the continuing degradation and loss of these wetlands releases large amounts of stored carbon;

5. RECALLING that the preambular text of the Convention affirms the determination of Parties to "stem the progressive encroachment on and loss of wetlands now and in the future"; NOTING that avoiding such loss and degradation has been reaffirmed in subsequent COP Resolutions as the primary option for delivering wetland conservation and wise use (as outlined in Resolution XI.9 on *An Integrated Framework for avoiding, mitigating and compensating for wetland losses*); and CONCERNED that, despite extensive research undertaken, the importance of wetlands in managing greenhouse gas emissions could be more widely recognized by international and national climate change response strategies and mechanisms, and could benefit from improved communication about the current and potential climate change mitigation provided by wetlands;

6. AWARE of the adoption of a new voluntary accounting activity 'Wetland Drainage and Rewetting' for a second commitment period of the Kyoto Protocol by which Annex I Parties to the Kyoto Protocol can account for anthropogenic greenhouse gas emissions by sources and removals by sinks resulting from wetland drainage and rewetting (UNFCCC Decision 2/CMP.7);

7. AWARE of the Verified Carbon Standard (VCS) approved Peatland Rewetting and Conservation (PRC) under the VCS Agriculture, Forestry and Other Land Use (AFOLU) programme for crediting climate benefits from all wetland areas, including mangroves, freshwater tidal coastal wetlands, salt marshes, sea grasses, floodplains, peatlands and potentially other land areas;

8. ALSO RECALLING that the *Strategic Framework and guidelines for the future development of the List of Wetlands of International Importance* (Resolution XI.8, Annex 2, Objective 4.1) encourages the use of Ramsar Sites and other natural wetlands as baseline and reference areas for monitoring to detect trends in climate change, among other things; RECOGNIZING the role that the designation and effective management of Ramsar Sites can play in adaptation and resilience to climate change; and AWARE that both forested and non-forested wetlands included in the Ramsar Classification System for Wetland Type play a role in carbon sequestration and storage;

9. WELCOMING the continuing progress made by the Ramsar Convention, as outlined in Resolution XI.6 on *Partnerships and synergies with Multilateral Environmental Agreements and other institutions,* in expanding cooperation with other MEAs and other institutions, so that the expertise and advice available from the Ramsar Convention may be available to support all such other bodies in addressing issues affecting the conservation and wise use of wetlands;

10. RECALLING the establishment by the Danone Group, IUCN, and the Ramsar Convention, at the 10th meeting of the Conference of the Contracting Parties (COP10), of the "Danone Fund for Nature" (DFN) initiative to develop a programme for restoring wetlands, especially mangroves, for carbon storage, and NOTING the progress made by this initiative since COP10, including the development of a methodology for the Clean Development Mechanism (CDM) under the UNFCCC for the "Afforestation and reforestation of degraded tidal forest habitats" (ARNM0038);

11. RECOGNIZING that wetlands, through their functions, deliver a wide range of ecosystem services that contribute to human well-being, and that some wetland types deliver services that are important for climate change adaptation and by acting as natural infrastructure to reduce risks from severe water-related events such as storms, flooding, drought, coastline erosion, and the intrusion of saltwater into freshwater systems;

12. AWARE that the continuing degradation and loss of some types of wetlands cause the release of large amounts of stored carbon and thus exacerbates climate change;

13. RECOGNIZING that scientific reports indicate that degradation and loss of many types of wetlands is occurring more rapidly than in other ecosystems and that climate change is likely to exacerbate this trend which will further reduce the mitigation and adaptation capacity of wetlands, and, since the conservation and wise use of wetlands have the potential to halt this degradation, the designation of Ramsar Sites, together with their effective management, as well as that of other wetlands, can in some regions play a vital role in carbon sequestration and storage and therefore in the mitigation of climate change;

14. NOTING the ongoing discussions on issues relating to reducing emissions from deforestation and forest degradation in developing countries and the role of conservation, sustainable management of forests, and enhancement of forest carbon stocks in developing countries under the UNFCCC, and FURTHER NOTING the importance of those discussions in helping achieve the objectives of the Ramsar Convention, and ENCOURAGING Parties to promote the importance of wetlands in ongoing discussions on this issue;

15. AWARE that the Scientific and Technical Review Panel (STRP) has, at the request of the Contracting Parties in Resolution X.24, continued to address wetlands and climate change issues during the 2009-2012 triennium, including on:

    i) methods for assessing the vulnerability of different wetland types to climate change;
    ii) opportunities for adaptation to climate change;
    iii) wetland restoration as a tool for climate responses;
    iv) the role and importance of different wetland types in the global carbon cycle; and
    v) recent key messages and recommendations concerning wetlands, water and climate change from relevant intergovernmental and international processes and initiatives;

16. THANKING the STRP for making much of this work available to the Parties and others through Ramsar Technical Reports and other documents, and AWARE that aspects of this work are ongoing;

17. RECALLING that the Key Messages of the Millennium Ecosystem Assessment *Wetlands and Water Synthesis Report,* and subsequent scientific reports, indicate that the degradation and loss of wetlands is occurring more rapidly than for other ecosystems, and that global climate change is likely to exacerbate the loss and degradation of many wetlands, thereby reducing the delivery of wetlands ecosystem services critical to adapting to and mitigating climate change;

18. RECOGNIZING that the conservation and wise use of wetlands helps biodiversity to adapt to climate change by providing connectivity, corridors and flyways, and other migratory pathways, along which biota can move, and AWARE of efforts by the

Convention on Migratory Species (CMS) to address these issues, including the adoption at its 10th Conference of the Parties (November 2011) of Resolution 10.19 on "Migratory species conservation in the light of climate change", and the adoption by the 5th Meeting of Parties (MOP5) of the African-Eurasian Migratory Waterbird Agreement (AEWA) in May 2012 of Resolution 5.13 "Climate Change Adaptation Measures for Waterbirds";

19. NOTING the preparation in 2009 by the Ad-Hoc Technical Expert Group on Climate Change and Biodiversity of the Convention on Biological Diversity (CBD) of a report containing advice on the incorporation of the conservation and sustainable use of biodiversity into climate change mitigation and adaptation activities, summarized in CBD Technical Series No. 41 on *Connecting biodiversity and climate change mitigation and adaptation*, and of the CBD Technical Series No. 59 report on *REDD-plus and Biodiversity* (2011);

20. WELCOMING decision X/33 of the 10th meeting of the Conference of the Parties to the CBD, on biodiversity and climate change, and in particular paras. 8(n), (s) and (t) that relate to wetlands and the Ramsar Convention;

21. FURTHER NOTING Target 15[1] of the Aichi Biodiversity Targets of the Strategic Plan for Biodiversity 2011-2020, adopted by the CBD in the annex to decision X/2, and RECOGNIZING that implementation of Strategies 1.4, 1.5 and 1.8 of the Ramsar Strategic Plan 2009-2015 will contribute towards the achievement of that target, as is indicated in Ramsar Resolution XI.3 on adjustments to the Ramsar Strategic Plan;

22. RECOGNIZING that wetlands provide several other services important for responding to climate change effects, such as the role of wetlands in regulating water cycles, thereby providing, for example, benefits in terms of coping with sea level rise, including coastal storm protection and the protection of surface and ground water from saltwater intrusion, and ALSO RECOGNIZING that methane and nitrous oxide, emitted as part of the nitrogen cycle during de-nitrification in wetlands, has been recognized by the UNFCCC as an important consideration for greenhouse gas fluxes regarding climate change mitigation;

23. REAFFIRMING that integrative policies and planning measures for the wise use of wetlands need to be encouraged in order to address the influence of global climate change on the interdependencies between wetlands, water management, agriculture, energy production, poverty reduction, and human health, and WELCOMING Ramsar Technical Report No. 6 on wetlands and human health interactions, as well as Resolution XI.12 on *Wetlands and health*, which further elaborate upon the many benefits that people obtain from healthy wetlands and the need to incorporate climate change adaptation approaches into efforts to alleviate poverty; and

24. CONCERNED that mechanisms may not be in place for determining specified limits of change in ecological character of wetlands, or adequate baselines or reference conditions available against which change can be assessed or for reporting under Article 3.2 of the Convention (see also COP11 DOC.24 concerning limits of acceptable change in the Ramsar context);

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1 "By 2020, ecosystem resilience and the contribution of biodiversity to carbon stocks has been enhanced, through conservation and restoration, including restoration of at least 15 per cent of degraded ecosystems, thereby contributing to climate change mitigation and adaptation and to combating desertification."

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25. ACKNOWLEDGES the distinct mandates and independent legal status of conventions and AFFIRMS that the UNFCCC and IPCC are the key references for the terms *mitigation*, *adaptation*, *carbon sequestration*, *greenhouse gas emissions* and *carbon storage* used in this Resolution, as they pertain to climate change;

26. URGES Contracting Parties to maintain or improve the ecological character of wetlands, including their ecosystem services, to enhance the resilience of wetlands as far as possible in the face of climate-driven ecological changes including, where necessary, to promote the restoration of degraded wetlands, and further to promote the ability of wetlands to contribute to nature-based climate change adaptation, particularly the roles of wetlands in regulating water, including reducing risks from water-related disasters, and to sequester and store carbon as important responses for climate change mitigation through the maintenance and enhancement of their ecological functions, and to reduce or halt the release of stored carbon that can result from the degradation and loss of wetlands;

27. URGES those Contracting Parties that are also Annex I Parties to the Kyoto Protocol to consider the wise use of wetlands in activities identified in paragraph 6 above for accounting of greenhouse gas emissions from wetlands under a second commitment period under the Kyoto Protocol;

28. URGES Contracting Parties to establish or strengthen CEPA programmes to increase awareness of the importance of the role of wetlands in climate change;

29. ENCOURAGES Contracting Parties and their representatives to reach out to their counterparts in the UNFCCC, and its relevant subsidiary bodies, in order to initiate and foster greater information exchange on the actual and potential roles of wetland conservation, management, and restoration activities in implementing relevant strategies, as appropriate, in mitigating greenhouse gas emissions through enhancing carbon sequestration and storage in wetlands;

30. ENCOURAGES Contracting Parties, the private sector, and other stakeholders, consistent with national legislation and circumstances, to explore opportunities for incentives to support the wise use and restoration of wetlands;

31. URGES Contracting Parties to develop and implement policies that promote opportunities to take advantage of the regulatory services already provided by wetlands to the global climate system, while at the same time contributing to improving human livelihoods, eradicating poverty, and meeting biodiversity goals, including the Aichi Biodiversity Targets, and to communicate progress, successes and best practices to the Secretariat, including, *inter alia*, through their national reports;

32. ENCOURAGES Contracting Parties and relevant organizations to undertake studies of the role of the conservation and/or restoration of both forested and non-forested wetlands in relation to: i) climate change mitigation, including the role of wetlands in carbon storage and sequestration, greenhouse gas emissions from degrading wetlands, avoidance of greenhouse gas emissions through removals of wetland carbon sinks, and ii) adaptation to climate change, including water regulation at local and regional scales, such

as flood risk reduction, water supply and storage, and reducing the impacts of sea level rise and extreme weather events, including extreme rainfall situations; and to cooperate, within Regional Initiatives or other regional cooperation fora, in developing and disseminating knowledge about the results, and INVITES Contracting Parties and other organizations to make their findings available to the Ramsar Secretariat, the Secretariat of the UNFCCC, and other relevant bodies through existing reporting processes;

33. URGES Contracting Parties and others to make use of the existing Ramsar guidance on the wise use of wetlands (available in the Handbooks for the Wise Use of Wetlands), much of which is applicable to many of the threats to, and impacts on, wetlands arising from climate change, in developing their policies, including strategies related to adaptations to climate change impacts on wetlands;

34. URGES Contracting Parties and INVITES other governments, and the secretariats and scientific and technical subsidiary bodies of the environment related agreements, to improve collaboration and information exchange on wetlands and climate change at the international level through capacity building, resource mobilisation, and collaborative work programmes, including under such established mechanisms as the Joint Liaison Group of the Rio conventions and the Biodiversity Liaison Group;

35. REQUESTS the Scientific and Technical Review Panel (STRP):

    i) to continue to prepare advice on the implications of climate change for maintaining the ecological character of wetlands, including *inter alia* strategies for dealing with the emergence of novel[2] or hybrid ecosystems as a consequence of climate change, the determination of appropriate reference conditions for assessing change in ecological character, determining specified limits of change, and the reporting of change in ecological character at Ramsar Sites, and how this can be reflected in Ramsar Information Sheets, and to collate information from such assessments for future meetings of the Conference of the Parties;

    ii) to collate and assess case studies and other information generated in response to paragraph 32 above and make this available to Contracting Parties;

    iii) working with interested Contracting Parties and international organizations, to prepare advice on sustainable management of carbon stocks which enhances wetland biodiversity and the delivery of ecosystem services, thereby contributing to human well-being, with special attention to indigenous peoples and local communities;

    iv) in conjunction with the Secretariat and Ramsar Regional Initiative Networks and Centres, to collaborate with relevant international organizations and conventions, within their respective mandates, to further investigate the potential contribution of wetland ecosystems to climate change mitigation and adaptation through:

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[2] New assemblages of species that have not co-occurred historically, that largely result from direct and indirect human activity, and that occupy new ecological spaces in the world's landscapes and seascapes.

a) preparing advice on assessing social resilience and vulnerability of wetlands to climate change, to complement the existing advice on assessing the biophysical vulnerability of a wetlands to climate change (Ramsar Technical Report No. 5/CBD Technical Series No. 57);

b) preparing advice on ecosystem-based adaptation to climate change for coastal and inland wetlands; and

c) reviewing any relevant advice provide by other MEAs, in particular the outcomes of CBD COP-11;

without pre-empting any future decisions of the UNFCCC;

36. URGES the STRP National Focal Points to engage in and contribute to this work of the STRP (outlined above) in order to provide national and regional perspectives and contribute expertise from their in-country networks of wetland scientists and other experts;

37. Recognizing the role of the Ramsar Convention as the lead implementation partner for wetlands for the CBD, INVITES the 11th meeting of the Conference of the Parties to the CBD to consider this Resolution in its relevant deliberations, REQUESTS the Secretary General to bring this Resolution, in particular, to the attention of the Biodiversity Liaison Group (BLG), and INVITES the Executive Secretary of the CBD to bring this Resolution it to the attention of the Joint Liaison Group (JLG); and

38. INVITES Ramsar Administrative Authorities to bring this Resolution to the attention of the national focal points of other MEAs, and ENCOURAGES Contracting Parties to promote collaborative work among the national focal points of these MEAs in support of its implementation.

11th Meeting of the Conference of the Parties to the Convention on Wetlands (Ramsar, Iran, 1971)

"Wetlands: home and destination"

Bucharest, Romania, 6-13 July 2012

Resolution XI.15

Agriculture-wetland interactions: rice paddy and pest control

1. CONCERNED that, as indicated by the Millennium Ecosystem Assessment (MA), certain agricultural practices continue to be a major driver of the loss of, and change to, the ecological character of wetlands through *inter alia* direct wetland conversion for food production, abstraction of water for crop irrigation, and the impacts of the use of agro-chemicals, including fertilizers and pesticides, on water quality and wetland biodiversity;

2. RECALLING the recognition by the Rio +20 Conference (Brazil, 2012) of "the necessity to promote, enhance and support more sustainable agriculture, including crops, livestock, forestry, fisheries and aquaculture, that improves food security, eradicates hunger, and is economically viable, while conserving land, water, plant and animal genetic resources, biodiversity and ecosystems, and enhancing resilience to climate change and natural disasters" and to "also recognize the need to maintain natural ecological processes that support food production systems";

3. NOTING the Decisions X/34 on agricultural biodiversity, X/28 (notably paragraphs 10e and 18) on inland waters biodiversity, and X/32 on sustainable use of the Convention on Biological Diversity, and the *Satoyama* Initiative;

4. NOTING that rice paddies are fundamental for many developing countries in terms of their contribution towards the achievement of economic and social development, poverty eradication, and food security;

5. RECALLING that Ramsar Resolution VIII.34 (2002) addressed the overall issue of agriculture and wetland linkages and interdependencies, and ALSO RECALLING that Ramsar Resolution X.23 (2008) called upon wetland managers to reduce and more precisely target the use of pesticides;

6. RECOGNIZING the relevance of the work of the "Guidelines in Agriculture, Wetlands and Water Resource Management Interactions" project (GAWI), designed to support implementation of Resolution VIII.34, summarized in COP10 DOC. 26 and available in the 2008 report *Scoping agriculture-wetland interactions. Towards a sustainable multiple response strategy* (available as FAO Water Report no. 33, www.fao.org/nr/water/docs/Water Reports33.pdf), and NOTING that the work of members of the GAWI consortium is

ongoing and covers different types of agriculture-wetland interactions, including those concerning rice cultivation;

7. RECOGNIZING that irrigated rice fields are a major wetland type under the Ramsar Convention which directly delivers food production from wetlands, and that consequently there is a particularly close relationship between the benefits of sustainable management of rice paddy for wetland biodiversity and the potential negative impacts on this biodiversity from aspects of unsustainable rice production practices, and AWARE that rice paddy is included as "rice fields" in the Ramsar Classification System for Wetland Type as a human-made wetland ("Type 3 Irrigated land; includes irrigation channels and rice fields");

8. AWARE that in Resolution X.23 (2008) the Ramsar Convention has recognized the linkages between food security and human health, poverty reduction, and sustainable wetland management; AWARE, too, of the global importance of rice production in supporting over half of the world's population and the dependence of many communities on reliable, safe and cost-effective food supplies, particularly in less developed regions; and ALSO AWARE of the importance to local livelihoods in some regions of fisheries in rice paddy;

9. NOTING that the Conference of the Parties to the Convention on Migratory Species (CMS) adopted Resolution 10.26 on *Minimizing the Risk of Poisoning to Migratory Birds* and that a working group has been set up under the Scientific Council to undertake a detailed assessment of the impacts of poisoning on migratory birds and recommend suitable responses to address this problem;

10. ALSO NOTING the concerns of the United Nations Food and Agriculture Organization (FAO) in relation to food security, the need to increase available supplies of food commodities, and the pivotal role of rice production in food security; AWARE of the challenges in selecting options for rice production that are also ecologically, socially, and economically feasible and sustainable; and ALSO AWARE that agriculture is dependent on biodiversity, and that cultivated systems provide food, feed, fibre and fuel, but that some unsustainable agricultural practices can affect other ecosystem benefits/services;

11. RECALLING that the 10th meeting of the Conference of the Parties (2008), in Resolution X.31, recognized the importance of the maintenance and enhancement of the ecological and cultural role and value of rice paddies as wetland systems, and the cultural, social and economic benefits of the sustainable use of rice paddies to communities, and that indigenous agricultural practices and cultural and biodiversity values relating to rice cultivation could provide examples of wetland wise use, while also recognizing the impact of inappropriate agricultural practices relating to water management and introduction of new taxa, use of high levels of harmful agricultural chemicals, and inappropriate conversion of rice paddies to other land uses; and RECOGNIZING the contribution of the report released at Ramsar COP11 on *Good Practices for Enhancing Biodiversity in Rice Paddy Ecosystem in Japan, Korea and Other Asian Countries*;

12. RECALLING Resolution X.19 on wetlands and river basin management, and RECOGNIZING that integrated river basin management needs to ensure not only that rice paddies are not degraded by upstream land uses and practices but also that rice farming practices should not negatively affect the ecological character of downstream areas, especially wetlands;

13. AWARE of evidence from the FAO, the International Rice Research Institute (IRRI), the International Water Management Institute (IWMI) and others of continuing increases in the use, overuse, and inappropriate use of pesticides in some rice production regions as part of attempts to maintain and increase rice production;

14. RECOGNIZING that some countries have put in place mechanisms which are reducing levels of such pesticide usage, but CONCERNED that continuing patterns of pesticide use are threatening not only rice paddy ecosystem services and biodiversity, but also food security and human health and livelihoods, and may be creating potential adverse downstream impacts on wetland ecosystems through changes in water quality from pesticide run-off;

15. ALSO CONCERNED that in some rice-growing countries the regulation of rice pesticide use remains underdeveloped, the impacts of unsustainable pesticide usage are not adequately addressed, and the response strategies required are complex and wide ranging, and also that the risks of the overuse or inappropriate use of such pesticides to human health, rice pest control by natural predators, and overall wetland biodiversity, including that depended upon by local communities for their livelihoods, such as from fisheries, are not always well recognized or dealt with by stakeholders;

16. RECOGNIZING that there are alternative management systems to pesticide-only usage which may help to maintain biodiversity, such as integrated management of rice paddy biodiversity, and to enhance the natural conditions for the control of rice pests, including the use of conventionally-bred rice varieties that provide pest resistance within the context of considering potential negative impacts on biodiversity and ecosystem services and also the use of lower-risk pesticides, and ALSO RECOGNIZING that in natural wetlands, wild native plants can be a source of genetic resistance to mitigate the effects of viral agents, bacteria and insects arising from the crops and/or the transformation of the ecosystem; and

17. RECALLING the relevance to this Resolution of the objectives of the *Changwon Declaration on human well-being and wetlands* (Resolution X.3) which emphasized the need for engagement with audiences beyond the Ramsar Convention itself, as well as the key role of Ramsar Administrative Authorities (National Focal Points) in developing partnerships for the conservation and sustainable use of wetlands to support learning, collecting and sharing of knowledge;

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18. CALLS ON Contracting Parties to seek to ensure that groundwater recharge and flood control services provided by rice paddies are fully considered in Integrated River Basin Management (IRBM) processes, including through the appropriate use of the Convention's guidance on wetlands and river basin management (Resolution X.19);

19. NOTES the need for Contracting Parties to consider the review, revision, and/or formulation, as appropriate, of national policies for the regulation and use of pesticides in rice production, taking into account the specific priorities, conditions and circumstances of developing countries in particular, and recognizing the need for policies that avoid the

negative impacts of their use on wetland biodiversity and ecosystem services, including through the development or application, where possible, of:

i) national/local data collection and dissemination of good practice on managing rice paddy biodiversity for the control of rice crop pests, on rice production including pest and disease control;

ii) careful assessment of impacts of such policies, including monitoring, in order to ensure that their implementation does not also create negative impacts on wetland biodiversity and ecosystem services; and

iii) national/local training and capacity building programmes in pest control;

20. ENCOURAGES Contracting Parties to integrate relevant issues for addressing wetland biodiversity conservation and wise use related to pesticide usage in rice paddy into their national policies and strategies (or equivalent) for wetlands, their national biodiversity strategy and action plan (NBSAP), national agricultural policies and regulations, and national strategies for the implementation of other relevant multilateral environmental agreements (MEAs);

21. ENCOURAGES Contracting Parties to work with research institutions and biodiversity and human health sectors, and REQUESTS rice and pesticide industries to address inadequate and inappropriate practices; eliminate perverse incentives; secure the provision of financial resources and technical assistance from developed to developing countries; and ensure exchange of knowledge in relation to rice pest management, taking into account the specific economic and social conditions; and to consider incorporating the use of integrated management of biodiversity in rice paddies, and the optimal time of planting, traditional breeding and varieties, and other farming practices which capitalize on the capacity of the environment of rice paddies as pest control strategies;

22. ENCOURAGES Contracting Parties to maintain and protect wetland systems containing traditional and native rice species;

23. URGES Contracting Parties to strengthen the role of communications, education, participation, and awareness (CEPA) in working with local communities to improve available information and enhance community understanding of the risks to wetland ecological character and ecosystem services from the unsustainable and other inappropriate use of pesticides; to raise awareness about the adverse effects of the use of pesticides in rice farming and of nature and biodiversity-based alternatives for pest control; and to recognize the value of the traditional agricultural practices and organic farming in pest control and raise awareness of avoiding the use of illegal/counterfeit pesticides;

24. REQUESTS the STRP (including its IOP members), in collaboration with Contracting Parties, relevant UN organizations, and other MEAs and their initiatives including the working group on bird poisoning under the CMS, to compile and review information on the positive and negative impacts of agricultural practices on rice paddies as wetland systems in terms of enhancing their biodiversity and ecosystem services, and to prepare advice to the Convention on these matters.

11th Meeting of the Conference of the Parties to the Convention on Wetlands (Ramsar, Iran, 1971)

"Wetlands: home and destination"

Bucharest, Romania, 6-13 July 2012

Resolution XI.16

Ensuring efficient delivery of scientific and technical advice and support to the Convention

1. RECOGNIZING that the Ramsar Convention has been founded on a practical scientific evidence-based approach to understanding, promoting and implementing the wise use of wetlands;

2. ALSO RECOGNIZING that since its adoption in 1971, the Ramsar Convention has been able to attract the involvement and support of many organizations and individual experts who have been committed to the Convention's objectives and who continue to provide their time and expertise generously to support its implementation, thus providing a valuable resource in terms of knowledge, expertise, and capacity to support the Convention, not only at the global level but also at national and local levels;

3. NOTING that a particular strength of the Ramsar Convention is that its Scientific and Technical Review Panel (STRP) has, since its establishment at the 5th meeting of the Conference of the Parties (COP5) in 1993, been able to follow flexible and adaptive approaches in response to the changing needs and priorities of the Convention;

4. FURTHER NOTING that this process has encompassed the ongoing development of the STRP's roles and composition and the evolution and refinement of the STRP's *modus operandi*, as well as the development of the range of scientific priorities addressed by the STRP and other bodies of the Convention over the years, {as reflected in the work themes and priorities set out in the annexes to Resolution XI.17 on *Future implementation of scientific and technical aspects of the Convention for 2013-2015*;

5. WELCOMING the continuing increase in the numbers of Contracting Parties and Ramsar Sites over the years, but RECOGNIZING that this growth is leading to an increased demand for scientific and technical support for implementation and interventions, including increased demand for Ramsar Advisory Missions, and that there are clear capacity limitations to the current mechanisms for responding to this demand, making it necessary to reassess the priorities and focus of current Convention mechanisms, including but not limited to the STRP;

6. ALSO RECOGNIZING that the Convention should continue to work to improve its understanding of, and response to, the scientific and technical needs related to wetlands of Contracting Parties, in the most efficient and effective way possible;

7. NOTING that a number of different mechanisms for delivering scientific and technical knowledge, advice and support are currently utilized to further Convention implementation, including *inter alia* through the Secretariat, the International Organization Partners (IOPs), Ramsar Regional Initiatives, Ramsar Advisory Missions, and the STRP;

8. RECALLING that in the review of the utility of Ramsar guidance ("An Evaluation of the Use & Utility of Ramsar Guidance" and COP10 DOC.21), it was reported that, whilst the Ramsar guidance and the Wise Use Handbooks are generally appreciated and found useful by many people and Contracting Parties, there are opportunities for significant improvements in the delivery, uptake and implementation of scientific and technical guidance;

9. RECOGNIZING that there are several distinct target audiences for scientific and technical advice, support and information, due to the range of implementing agents who play roles in achieving the wise use of wetlands, including *inter alia* managers of individual wetland sites as well as managers of networks of wetlands such as on migratory waterbird flyways; wetland policy makers and those responsible for regulating use of and impacts on wetlands; policy makers in other sectors such as water, agriculture, health, urban development, and energy; stakeholders and local communities who may depend upon wetlands and wetland ecosystem services; educators and researchers; and private sector organizations;

10. AWARE that these diverse target audiences require scientific and technical advice, support and information at differing scales relevant to their responsibilities or interests, including at local or wetland site scale, river basin scale, and national, regional and global scales;

11. RECOGNIZING that there are many wetland site managers and local communities among others who require practical information and advice, case studies of best practices, and training for the wise use of wetlands, but who may lack the resources or the networks through which to access such information and training, and may not be able to access fully the advice and guidance prepared by the STRP;

12. ALSO RECOGNIZING that the capacity of the STRP is limited and cannot address the needs of so many target audiences on so many subjects and, therefore, that priorities should be established in terms both of targets and of subjects;

13. AWARE that Ramsar's profile and recognition are growing in international processes related to water, energy, climate change, and other related sectors, and that this implies an increasing need for wetland managers and policy-makers to be able to provide relevant, credible scientific information and advice on wetlands to these processes;

14. ALSO AWARE that, through the STRP and the Secretariat, the Ramsar Convention has contributed much scientific knowledge and information on wetlands to other international biodiversity processes, notably the Millennium Ecosystem Assessment (MA) and its 2005 synthesis report on water and wetlands (*Ecosystems and Human Well-being: Wetlands and Water*

Synthesis), and has been active in support and collaboration with the scientific advisory bodies of other Multilateral Environmental Agreements;

15. REITERATING that all bodies of the Convention, including the Contracting Parties, the Secretariat, the STRP, the Conference of Parties, and the Standing Committee, and others such as National Ramsar Committees, national focal points, and the International Organization Partners (IOPs), have roles to play in ensuring that scientific and technical support is delivered in ways that support effective implementation of the objectives of the Convention, and EMPHASIZING the importance of clarifying these roles and ensuring effective coordination and communication in working to deliver scientific and technical support to enhance the implementation of the Convention;

16. AWARE that the effective delivery and uptake of scientific advice, support and information, at the appropriate scales and to the appropriate target audience, is enhanced by collaboration and appropriate partnerships with other scientific organizations, observer organizations, private sector groups, academic organizations and their scientific networks in the Ramsar regions;

17. AWARE of the potential for the Intergovernmental Platform on Biodiversity and Ecosystem Services (IPBES) to strengthen the scientific basis for effective action related to the Ramsar Convention (Resolution XI.6);

18. RECOGNIZING the need to establish clear processes for identifying and communicating scientific and technical priorities of the Parties for supporting Convention implementation at targeted and appropriate level, and to consider current priorities as well as future or emerging priorities which should be addressed by the STRP and other bodies of the Convention, as appropriate; and

19. RECALLING Decisions SC42-23 and SC43-12 of the Standing Committee regarding the establishment of an informal working group to take these matters forward to COP11, and WELCOMING this opportunity to reflect upon and improve the Convention's scientific functions;

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20. EXPRESSES APPRECIATION to the informal working group established by the Standing Committee for its provision of the supporting information paper to this Resolution (COP11 DOC.26);

21. AGREES that a review of the delivery, uptake and implementation of scientific and technical advice and guidance to the Convention will be undertaken for consideration by the 12th meeting of the Conference of the Parties (COP12);

22. ALSO AGREES that the review committee will, *inter alia*:

    i) review the application and utility of Ramsar guidance, building on the findings and conclusions of the "Evaluation of the Use & Utility of Ramsar Guidance" and any other relevant assessments, and provide recommendations for improving the operationality of guidance for the target audiences;

ii) review the full range of processes by which scientific and technical Convention implementation needs are identified, articulated, prioritised and converted into tools for the range of on-the-ground stakeholders, including those processes which involve adoption of scientific and technical Resolutions by the COP (including the terms of Resolution VIII.45) as well as other relevant processes within or outside formal Convention mechanisms, and also including the development of clear and transparent criteria to formally prioritize STRP work in order to ensure that the tasks undertaken by the STRP reflect the highest priority needs of the Contracting Parties;

iii) review the roles of relevant entities within the Convention for scientific support and delivery to stakeholders, including the roles of the STRP, the CEPA Oversight Panel, the Secretariat, the national focal points, and the Regional Initiatives, giving special attention to finding ways to ensure that scientific and technical products effectively support the Contracting Parties' abilities to advance the implementation of the Convention;

iv) explore possible refinements or changes to all relevant Convention processes to facilitate effective communications between all those entities involved in scientific support and delivery;

v) consider ways and means to strengthen collaboration with the scientific advisory bodies of other Multilateral Environmental Agreements on scientific and technical issues of common concern, *inter alia* through further development of joint scientific and technical products, where appropriate, in order to leverage funding, increase efficiencies, and avoid duplication of efforts;

vi) identify monitoring and evaluation mechanisms, including the use of existing mechanisms, needed to evaluate the effectiveness of the scientific support and delivery processes within the Convention, across the various responsible entities; and

vii) generate suggestions for a future vision, direction and objectives for maintaining the strong practical science evidence base upon which the Ramsar Convention was founded;

23. FURTHER AGREES that the review will be undertaken by members of the Management Working Group and any other interested Contracting Parties and International Organization Partners since they have been key actors of the Convention since its beginning, with no conflict of interest and appointed by the Standing Committee, and that:

i) the review committee should, through appropriate appointments, include expertise familiar of the development of the Ramsar Convention, the STRP, the responsibilities of Contracting Parties, and implementation on the ground, and also with knowledge of other international science platforms including not only IPBES but also other subsidiary scientific platforms and bodies. It should also include expertise and knowledge of the operational needs of Contracting Parties and in particular the needs of local wetland managers and policy makers;

ii) the review committee should consult with all relevant entities and their representatives, including *inter alia* the STRP Chair and members, CEPA Oversight Panel, Secretariat staff, Contracting Party national focal points, Ramsar Site managers, other wetland managers, International Organization Partners, and representatives of other bodies associated with Ramsar, such as the biodiversity-related MEAs, who can offer advice and guidance;

iii) the review committee should engage widely with Parties and should present a clear assessment of the present situation and recommendations that will be submitted to the Standing Committee for consideration during the 2013-2015 triennium. Recommendations will include suggestions for mechanisms within the Convention to implement any proposed changes, with assessment of their financial implications, and a Draft Resolution for COP12 consideration; and

iv) the cost and duration of the review should be taken into consideration, and the work of the review committee should be focused and should use cost-effective means of working so as to keep its activity within reasonable limits and minimize costs. The Chairs of the Standing Committee, its Subgroup on Finance, the Management Working Group and the STRP plus the Vice-Chair of the Standing Committee should review the STRP line items in the budget to direct their use as necessary towards implementing this Resolution; and

24. REQUESTS the Secretariat to support the establishment of the review committee and its work, as needed and according to clear specifications to be provided by the Standing Committee.

11th Meeting of the Conference of the Parties to the Convention on Wetlands (Ramsar, Iran, 1971)

"Wetlands: home and destination"

Bucharest, Romania, 6-13 July 2012

Resolution XI.17

Future implementation of scientific and technical aspects of the Convention for 2013-2015

1. RECALLING Resolutions IX.2, X.9, X.10, X.11, XI.18 concerning a complete, unified and prioritized programme of scientific and technical implementation activities and the work of the Scientific & Technical Review Panel (STRP);

2. THANKING the STRP for its significant work during the 2009-2012 triennium, as summarized in the Report of the Chair of the STRP (COP11 DOC. 6), but AWARE that it has not been possible to progress some elements of the STRP's priority work in the 2009-2012 triennium and that full delivery of the Panel's work programme remains subject to the availability of resources, in particular to additional voluntary contributions from Parties and others;

3. ALSO THANKING those Parties and organizations that have made additional voluntary contributions and in kind support to the work of the STRP in the 2009-2012 triennium, and NOTING the significant benefits to the implementation of the Convention and the scope of the Panel's work that are facilitated by voluntary contributions from Contracting Parties; and

4. NOTING that the terms of Resolution XI.16 may have implications for the implementation of this Resolution;

THE CONFERENCE OF THE CONTRACTING PARTIES

5. APPROVES the full list of tasks in Annex 2 as the basis for the programme of scientific and technical work for Convention bodies (including the STRP) for the 2013-2015 period, and ALSO APPROVES the 20 tasks listed in Annex 1 to this Resolution as the top priority tasks for implementation, resources permitting, in the 2013-2015 period;

6. INSTRUCTS the STRP, in line with its approved *modus operandi* (Resolution X.9, as amended by Resolution XI.18), to develop its work plan for the 2013-2015 triennium for the Standing Committee's consideration from the tasks identified in the annexes to this Resolution, including an early assessment of those tasks which could be undertaken on a collaborative basis with other Multilateral Environmental Agreement subsidiary bodies;

REQUESTS the STRP to define specific "implementation targets" for each work task itemized in Annex 2; ALSO REQUESTS the STRP to develop a format to aid in the implementation of the STRP's work plan at the national level; and INVITES those other organizations and bodies identified in the annexes to this Resolution to consider taking the lead and/or contributing to those tasks concerning issues for which they have expertise;

7. URGES Contracting Parties, and INVITES donors, intergovernmental agencies, International Organization Partners (IOPs), national NGOs, and others to use this list, including the programme for Top Priority actions in Annex 1, when deciding priorities for their financial and other material support towards the scientific and technical implementation of the Ramsar Convention, and FURTHER URGES Parties to consider making additional voluntary contributions to support the Convention's programme of scientific and technical work, particularly for those tasks indicated as being top priorities;

8. INSTRUCTS the Secretariat to consolidate into Annexes 1 and 2 of this Resolution any additional or amended scientific and technical implementation actions arising from other Resolutions adopted by the present meeting of the Conference of the Parties; and

9. INSTRUCTS the Secretariat and STRP to develop indicators based on the Ramsar Information Sheet - 2012 revision adopted in Resolution XI.8 for measuring the outcomes of Ramsar Site management efforts in terms of enhancing the implementation of the Convention at national and site levels.

Annexes 1 and 2: Introduction

1. This section provides explanatory notes concerning the two attached annexes.

2. Annex 1 provides a summary list of top priority scientific and technical tasks for the 2013-2015 triennium. This is drawn from Annex 2, which provides a summary of the full list of scientific and technical implementation support tasks for the work of Convention bodies in 2013-2015.

3. Certain top priority themes (and in some cases more specific task topics associated with these themes) for future implementation have been identified by Contracting Parties through one or more Ramsar regional pre-COP meetings and consultation processes. These are:

- CEPA – training & capacity-building
- ecosystem services/valuation
- climate change
- wetland inventory and assessment (including change in ecological character)
- wetlands and water resources (including wetlands' role in the global water cycle)
- invasive species
- poverty eradication
- wetlands and aquaculture issues
- advice on best practices including case studies

4. The 20top priority tasks listed in Annex 1 below have been identified from the full range of scientific and technical tasks listed in Annex 2 and are recommended as top priority activities for the Convention's various bodies according to advice received from Contracting Parties (through their regional pre-COP11 meetings and COP11), the Scientific and Technical Review Panel (STRP), and the Ramsar Secretariat.

5. The provisional figure for the total estimated funds needed for full implementation of the recommended 2013-2015 top priority tasks is CHF 1,915,000 over the triennium (see Annex 2 for cost estimates for the tasks). [Note that this total does not yet include cost estimates for some tasks amended or added in COP11 Resolutions.] Of this, some support (CHF 150,000) has already been pledged by a number of donor countries for the task "The role of biodiversity and wetlands in the global water cycle".

6. Annex 2 provides further details of all scientific and technical implementation support tasks for the work of Convention bodies 2013-2015. This annex provides a summary description of each task, with its anticipated outcomes and outputs, and provisional estimated costs. Fuller descriptions of top priority tasks are provided in COP11 Information Paper 21"Scientific & technical implementation of the Convention 2013-2015: task pro-formas". [Secretariat Note. The task descriptions in this Information Paper are based on those proposed to Parties at COP11 in COP11 Draft Resolution 17, and in the light of amendments to some tasks in the adopted Annex 2 below these fuller task descriptions will need to be updated.]

7. As indicated in Annex 2, a number of the tasks listed are either ongoing or have been carried forward from the task lists in the equivalent COP Resolution adopted by previous COPs, but for which capacity has been insufficient in the previous triennia to undertake or complete them.

8. Provisional estimated costs in Annex 2 are based on each task requiring the engagement of an expert (or experts) to undertake the work required. These provisional estimated costs have been prepared by the STRP and Secretariat to provide Contracting Parties with an initial assessment of delivery needs – more precise costing and the scope and ways and means for the delivery of each of the tasks will be developed at the beginning of the 2013-2015 cycle and reported to the Standing Committee at that time. It is recognized that, as for previous triennia, much of the funds estimated to be needed for further developing scientific and technical implementation support will need to be found from sources other than the Convention's core budget.

9. Annex 2 also provides an indication of which body or process would be most appropriate to lead the implementation of the work, and which bodies, processes and/or organizations could be anticipated to bring in relevant expertise to contribute to the work.

10. In most cases, lead responsibility for a task listed in Annex 2 is assigned to one of the Convention's bodies or processes (e.g., Secretariat, Ramsar Regional Centres, STRP, etc.). However, for certain tasks, the nature of the task and the expertise required for it lies outside the direct expertise of the Convention's processes, particularly when the task concerns aspects of providing advice on cross-sectoral issues, and where there is a relevant expert body or organization that has established collaborative arrangements with the Convention (for example, though a Memorandum of Cooperation and/or as an invited

observer organization to the STRP). Where such an organization is indicated in Annex 2, it will be invited to consider taking the lead in work on that task.

Annex 1

Recommended top priority scientific and technical tasks for the 2013-2015 triennium

Recommended top priority tasks 2013-2015 (short task title only)	**Lead body/process**
CEPA	
• Assessing and supporting the capacity-building needs of Contracting Parties and wetland managers in applying Ramsar guidance	STRP/Secretariat/Ramsar Regional Centres, etc.
• Capacity-building support for STRP National Focal Points	Secretariat (with STRP & Ramsar Regional Centres)
• STRP communication & dissemination support: a) web platform; and b) newsletters	Secretariat/STRP
Strategic, emerging & ongoing issues	
• Strategic scientific & technical advice	STRP
• Ongoing ad hoc advisory functions	STRP
• Review of COP Draft Resolutions from Parties	STRP
• Sectoral and/or emerging issues for possible future priority work	STRP
• Invasive species and wetlands	STRP, with IUCN-SSC, CMS & others
• Engagement with IPBES	STRP (with Secretariat)
Wetland inventory, assessment, monitoring & reporting	
• Reporting on the state of the world's wetlands and their services to people, and the Convention's effectiveness	STRP, with GWOS partnership
• Development and coordination of a Global Wetland Observing System (GWOS) partnership	GWOS partnership (IOPs/STRP partner organizations), with STRP
• Detecting, reporting & responding to change in ecological character – further guidance	STRP
Wetlands of International Importance	
• Implementation of the Ramsar Information Sheet (RIS) – 2012 revision	Secretariat
Ramsar, wetlands and other sectors	
A. Wetlands & human health	
• Guidance on "Wetlands and Human Health" for the health sector	WHO, with STRP
B. Wetlands & climate change	
• Advice on implications of climate change for Convention processes	STRP, with STRP NFPs, Parties & others
C. Wetlands & water resource management	
• The role of biodiversity and wetlands in the global water cycle	STRP, with CBD Secretariat
• Ramsar, water and wetlands: review and development of a strategy for engaging in the global water debate	STRP
• Environmental water allocation for wetlands - guidance	STRP, gvmt of Mexico, WWF

Wetlands & agriculture	
• Wise use of wetlands in relation to coastal and inland aquaculture guidance	STRP, with FAO, World Fish Centre, WWF
Wetlands & poverty eradication	
• Wetlands & poverty eradication – tools and case studies	STRP (with Parties, IOPs, IHDP, UNDP, FAO, UK-DFID and others)
Wetlands & ecosystem services	
• Economics of wetland ecosystem services/benefits	STRP, with IEEP, IOPs, UNECE water convention, UNEP & others

Annex 2

Summary of scientific and technical implementation support tasks for the work of Convention bodies 2013-2015

1. The scientific and technical tasks are organized under six broad themes, as follows:

- Communication, education, participation & awareness (CEPA)
- Strategic, emerging & ongoing issues
- Wetland inventory, assessment, monitoring & reporting
- Wetlands of International Importance (Ramsar Sites)
- Ramsar, wetlands & other sectors
    - Wetlands & human health
    - Wetlands & climate change
    - Wetlands & water resource management
    - Wetlands & agriculture
    - Wetlands & poverty eradication
    - Wetlands & urbanization
    - Wetlands & tourism
    - Wetlands & energy
- Wetlands & ecosystem services/benefits

2. The categorization of types of tasks is coded in the tables below as follows:

1. New or revised Ramsar guidance for Contracting Parties
2. Technical support and advice – ongoing and ad hoc
3. Global information products and engagement in other global or sectoral processes
4. Advice on new and emerging issues
5. Scientific or technical products/initiatives undertaken by other relevant organizations

Theme: Communication, Education, Participation & Awareness (CEPA)

Task	Priority for delivery	Category of task	Who leads task?	Task summary and expected outputs/outcomes	Supports Strategic Plan Strategy/KRA:	Provisional estimated cost (CHF)
Assessing and supporting capacity-building needs of Contracting Parties and wetland managers in applying Ramsar guidance (2013-15/1)	Top	2	STRP & CEPA Oversight Panel (assessment & training package development) Secretariat, Ramsar Regional Centres, IOPs and others (training delivery)	Develop effective ways of providing training and capacity-building, including through a 'training for trainers' programme, for relevant stakeholders in Contracting Parties (including Administrative Authorities & wetland managers) to assist with the interpretation and implementation of scientific and technical guidance and other materials adopted by the Convention, with the assessment and definition of future needs. Carried forward from 2009-2012 (task 10.3) Outcomes/outputs: i) scoping study regarding the optimum capacity-building approaches for Contracting Parties to support their use of guidance; ii) training package/modules on Ramsar guidance; iii) a 'training for trainers' programme developed	Strategies 4.1 & 4.3 (incl. KRAs 4.1.viii & 4.3.vi)	15,000 (scoping study) 80,000 (development of training package)

Capacity-building support for STRP National Focal Points (2013-15/2)	Top	2	Secretariat (with input from STRP and Regional Centres)	Hold regional workshops for STRP National Focal Points (at least 1 per triennium). Ongoing from 2009-2012. Outcomes: Enhanced understanding of Convention processes by STRP NFPs; improved input by STRP NFPs to STRP of national and regional implementation needs.	Strategies 3.4 (KRA 3.4.ii) & 4.3 (KRA 4.3.vi)	100,000 per workshop
STRP communication & dissemination support (2013-15/3): **a) web platform**	Top	2	Secretariat (with input from STRP regional members & STRP NFPs)	Develop and maintain, and as necessary further develop, a new STRP web platform for input to and dissemination of STRP work by STRP NFPs and others. Ongoing from 2009-2012. Outcome: fully functional and up-to-date web tool for sharing information, reviewing drafts, and archiving the STRP's work	Strategy 3.4 (KRA 3.4.iii)	50,000
STRP communication & dissemination support (2013-15/3)**:** **b) newsletters**	Top	2	Secretariat (with input from STRP members, observers & STRP NFPs)	Produce regular STRP newsletters and seek to provide newsletters and key STRP documents in all Convention languages. Ongoing from 2009-2012. Outcome: information on STRP's work and activities widely available to STRP and other Convention NFPs	Strategy 3.4 (KRA 3.4.iii)	15,000

STRP communication & dissemination support (2013-15/3)**:** **c) STRP NFPs bulletin**	Lower	2	Secretariat (with input from STRP members & STRP NFPs)	Issue annual STRP NFPs' bulletin of activities. New. Outcome: STRP NFPs' experiences and activities shared	Strategy 3.4 (KRAs 3.4.ii & 3.4.iii)	1,000
CEPA advice on guidance preparation (2013-15/4)	Lower	1	STRP	Ensure that the preparation of STRP guidance and advice materials draws upon CEPA expertise available to the Convention in order to optimize the effective drafting, design, targeting and uptake of such materials. Ongoing from 2009-2012 (task 1.4)	Strategy 4.1	15,000
Waterbird flyway initiatives - knowledge sharing (2013-15/5)	Lower	1	Secretariat, CMS, AEWA, and other international flyway initiatives, with STRP	Contribute to establishing a mechanism for sharing knowledge and experience on best practices in the development and implementation of flyway-scale waterbird conservation policies and practices. Continued from 2009-2012. Outcomes/outputs: Briefing Note; input on Ramsar issues to the establishment of coordination mechanisms recommended by 2011 workshop.	Strategies 3.3 & 3.5 (KRA 3.5.iii)	-

Theme: Strategic, emerging and ongoing issues

Task	Priority for delivery	Category of task	Who leads task?	Task summary, and expected outputs/outcomes	Supports Strategic Plan Strategy/KRA:	Provisional estimated cost (CHF)

Strategic scientific & technical advice (2013-15/6)	Top	3/4/5	STRP	Provide proactive and reactive advice to the Convention on relevant strategic scientific and technical matters, including overall progress with scientific and technical aspects of the implementation of COP Resolutions, trends, emerging issues, and other priority matters requiring expert review. Ongoing from 2009-2012 Outcomes/outputs: Reports, STRP Briefing Notes, STRP Support Service communications, presentations to meetings or conferences.	Strategy 4.3	15,000 [time and travel costs]
Ongoing ad hoc advisory functions (2013-15/7)	Top	2/3	STRP	Provide advice to Secretariat and Parties, including on Ramsar Site designation, article 3.2 issues, Montreux Record, Ramsar Advisory Missions, RSIS, wetland projects, participation in CSAB, and other issues. Ongoing Outcomes/outputs: varies	Various	[Dependent on specific requests to STRP]
Review of COP Draft Resolutions from Parties (2013-15/8)	Top	1	STRP	Advise Standing Committee on proposals from Contracting Parties for COP Resolutions with scientific or technical content. Ongoing Outcomes/outputs: advice taken up in Draft Resolutions	Various	-

Sectoral and/or emerging issues for possible future priority work (2013-15/9)	Top	4	STRP	Maintain rolling list of global and regional sectoral and/or emerging issues that have potential implications for the wise use of wetlands. Provide recommendations to Standing Committee and COP when any of these issues might need to be addressed by the STRP or other Convention bodies. Ongoing Outcomes/outputs: advice to SC/COP; STRP Briefing Notes	Strategy 1.4	-
Invasive species and wetlands (2013-15/10)	Top	1	STRP, with IUCN-SSC and others	Develop a guide to guidance and available information related to alien invasive species in wetlands, for wetland managers and policy-makers. Carried over from 2009-2012 Outcomes/outputs: STRP Briefing Note & COP12 Information Paper	Strategy 1.9 (KRA 1.9.iv)	25,000
Reviewing topicality of adopted guidances (2013-15/11)	Lower	1	STRP, with CPs, IOPs, STRP NFPs etc.	Prepare a programme for the periodic review of each of the suite of guidances adopted previously by Parties. New task Outcomes/outputs: recommendations to Standing Committee and COP concerning the need for updating previously-adopted guidances.	Various	-

Highly Pathogenic Avian Influenza (HPAI) (2013-15/12)	Lower	1	STRP with Scientific Task Force on Avian Influenza & Wild Birds	Maintain an active overview of and input to issues relating to highly pathogenic avian influenza (HPAI), especially in relation to surveillance, information-exchange, and response strategies. Ongoing Outcomes/outputs: updated advice/technical guidance, if necessary	Strategies 1.6 & 3.4	-
Engagement with IPBES (2013-15/13)	Top	3	STRP (with Secretariat and Parties)	On behalf of the Ramsar Convention, maintain active participation in the development and execution of the scientific work programmes of the IPBES, in order to: - support an effective science/policy interface for wetland biodiversity, and - ensure that high-quality scientific information and understanding of wetlands is incorporated into policy-making. (continued)	Strategies 1.1, 3.1 & 3.4	15,000 (meetings participation) 10,000 (guidelines preparation)

				The approach will be through: i) assessing the STRP work plan and, if appropriate, identifying the needs and opportunities for improving the interface between science and policy in relation to the wise use of wetlands and identifying gaps in scientific, technical and technological information that could assist Parties in identifying priority requests to be submitted to IPBES while it establishes its work plan; ii) preparing (assisted by the Secretariat) interim guidelines to be adopted by the Standing Committee on timely and efficient processes for formulation, approval and transmission of requests from Ramsar to IPBES, taking into account that IPBES is an independent body and will establish the procedures for receiving and prioritizing requests. The interim guidelines could be revised in consideration of the future development of IPBES and Ramsar, and the most current guidelines will be submitted to the next Conference of the Contracting Parties for adoption; iii) continuing to work together with the other MEAs' scientific subsidiary bodies on IPBES-related issues, through the Chairs of the Scientific Advisory Bodies (CSAB), including in the preparation of any joint MEA requests proposed to be submitted to IPBES;		

				iv) reporting to each Standing Committee and Conference of the Parties on the engagement with IPBES and making recommendations on decisions and resolutions to be taken by the Parties, as appropriate; and v) providing available relevant wetland information to IPBES in response to notifications, advising the Secretariat when doing so, and reporting to the Standing Committee on any actions taken to respond to IPBES notifications. When the response to IPBES notifications has any substantial implications for STRP resources, the STRP Chair will consult with the Standing Committee Executive Team before taking action. Ongoing & Resolution XI.6 Annex, paragraphs 9-13 Outcomes/outputs: IPBES is responding to Ramsar Convention needs for advice/reports		
On-line Convention reporting mechanisms (2013-15/14)	Lower	2	Secretariat, with UNEP & UNEP-WCMC	Participate in the work of UNEP and UNEP-WCMC on developing tools for the on-line use of the biodiversity-related conventions, including exploring the opportunity for on-line and harmonized reporting applications relevant to Ramsar including *inter alia* National Reporting, Ramsar Site designations, and MEA information portals [COP11 DR6] Ongoing Outcomes/outputs: streamlined and more efficient tools for Convention reporting obligations and access to Convention information.	Strategy 3.1 (KRA 3.1.v)	-

Input of Regional Initiatives experience to STRP work (2013-15/15)	Lower	Varies, depending on specific tasks	STRP, Regional Initiatives	Explore ways of making good use of experiences from Regional Initiatives in STRP work New task (Resolution XI.5, paragraph 21) Outcomes/outputs: Regional Initiatives providing input to STRP tasks, as relevant	Various (depending on specific tasks)	-
Exchange of information with other MEAs' subsidiary bodies, including through CSAB (2013-15/16)	Lower	3	STRP	Exchange information and expertise with the equivalent subsidiary bodies of other MEAs and relevant regional fora; and continue to participate in meetings of the chairs of scientific and technical subsidiary bodies (CSAB). Ongoing & Resolution XI.6, paragraph 41 Outcomes/outputs: exchange of information with other MEAs, including through CSAB, reported to SC & COP.	Various (depending on specific tasks)	10,000 (for CSAB meeting participation)
Review of available guidance on sustainable investment in relation to wetlands (2013-15/17)	Lower	1	STRP, with other relevant organizations	Review: i) available technical guidance on assessing, avoiding, mitigating (minimizing) and compensating for harmful investment decisions, ii) available guidance on ensuring transparency and responsibility in investment decisions, including best practice case studies, and iii) available guidance on investments in wetland conservation, wise use and restoration, including those derived from public-private partnerships, and provide advice on such guidance. New task: Resolution XI.20 paragraph16	Strategies 1.3, 1.10 & 1.11	t.b.d.

Theme: Wetland inventory, assessment, monitoring & reporting

Task	Priority for delivery	Category of task	Who leads task?	Task summary, and expected outputs/outcomes	Supports Strategic Plan Strategy/KRA:	Provisional estimated cost (CHF)
Reporting on the state of the world's wetlands and their services to people, and the Convention's effectiveness (2013-15/18)	Top	3	STRP, with input from GWOS partnership, etc.	a) Preparation and publication of 1st edition of a periodic State of the World's Wetlands and their services (SoWWS)/Global Wetland Outlook (GWO) reporting. Carried over from 2009-2012 Outcomes/outputs: 1st edition State of the World's Wetlands and their services (SoWWS)/Global Wetland Outlook (GWO). (Note. The potential for IPBES to contribute to this output will be further assessed in 2012.)	Strategies 1.1, 1.2, 1.4 & 1.6	100,000 (provisional estimate)

			STRP & Secretariat, with other MEAs	b) further implementation of Resolution VIII.26 (2002) on developing indicators on the results of the Convention's activities, in collaboration with other biodiversity MEAs so as to achieve a coherent approach to indicator development, such that the evaluation of the effectiveness of the Convention may occur at least once in each reporting cycle; and advice on how reporting on these indicators may be incorporated into the National Reports of the Parties. (Resolution XI.6, paragraph 46) Ongoing Outcomes/outputs: updated reporting on Convention effectiveness (including through the SoWWS); advice on indicator reporting in the National Report Format for COP12.		25,000
Development and coordination of a Global Wetland Observing System (GWOS) partnership (2013-15/19)	Top	3	Wetlands International, Conservation International, GEO-BON, EO agencies, and others, with STRP & Secretariat	Establishment of a Global Wetland Observing System (GWOS) partnership mechanism (and portal), designed to access data and information for and facilitate SoWWS/GWO reporting (see above). Ongoing - continued from 2009-2012 Outcomes/outputs: a functioning GWOS mechanism delivering enhanced wetland data & information to the Convention stakeholders and others. Timelines of deliverables will be developed and advised once the scoping and development work can be resourced.	Strategy 1.2 (KRAs 1.2.i & 1.2.ii)	20,000 for inception and design; 500,000 (provisional estimate) for implementation & maintenance

Detecting, reporting and responding to change in ecological character - further guidance (2013-15/20)	Top	1	A) STRP B) & C) Secretariat & STRP	A) Update and rationalize guidance on issues relating to Article 3.2 of the Convention, including the role and operation of the Montreux Record; approaches to establishing the range of natural variability of wetland sites and defining Limits of Acceptable Change; the need for and scope of guidance on determining confidence limits and degree of likelihood in cases of "likely" change in the context of Article 3.2; and the need for and scope of guidance on the application of a precautionary approach in the Ramsar Convention; B) Set up criteria for, and streamline the procedure for, reporting cases of human-induced negative changes in the ecological character of a Ramsar Site under Article 3.2; and C) Streamline the lists of Article 3.2 cases and Sites on the Montreux Record, resulting in one single list of Ramsar Sites with human-induced negative changes in ecological character. A) carried over from 2009-2012. B) & C) from Resolution XI.4, paragraphs 21 & 22 Outcomes/outputs: further guidance for Parties on these issues; streamlined Article 3.2 and Montreux Record reporting to Standing Committee & COP.	Strategy 2.6	A) 20,000 B) 10,000

Describing ecological character –guidance and support (2013-15/21)	Lower	1	STRP (with external experts and Parties)	Prepare guidance on development and use of conceptual models for describing ecological character, and further guidance for completing ecological character description (ECD) sheet adopted by COP10 and ECD components of the RIS – 2012 revision. Carried over from 2009-2012 Outcomes/outputs: guidance for Parties; training and support modules	Strategy 2.4 (KRAs 2.4.ii & 2.4.v)	20,000 (provisional estimate)
Maintaining an overview of the status of wetland inventory (2013-15/22)	Lower	3	STRP (with WI, IWMI, UNEP-WCMC and others)	Establish and maintain a web-based wetland inventory metadatabase Carried over from 2009-2012 Outcomes/outputs: on-line metadatabase (potentially linked to RSIS) available; gap analysis of available wetland inventories	Strategy 1.1 (KRA 1.1.ii)	t.b.d.
Implementing harmonized MEA information systems at national level (2013-15/23)	Lower	1	UNEP, UNEP-WCMC and others, with STRP input	Prepare guidance for Parties on utilizing tools and processes for harmonizing information management, including national reporting Carried over from 2009-2012 Outcomes/outputs: guidance for Parties; "route-map" to harmonization and interoperability facilities, support for progress towards streamlined national approaches to MEA reporting	Strategy 3.1 (KRA 2.1.v)	20,000

Enhanced support for the implementation of the Ramsar Strategic Plan (2013-15/24)	Lower	1	STRP (with Secretariat, UNEP-WCMC and others)	Develop a data and information needs framework (COP10) as a searchable web portal, including options for on-line national reporting. Carried over from 2009-2012 Outcomes/outputs: - depending on outcomes of initial user needs assessment, the design and roll-out of web-based portal version of data & information framework (successor to the annex to Resolution X.14). - guidance for Parties and others on making optimal use of relevant data and information in support of the Ramsar Strategic Plan. - report on options for an on-line reporting (and potentially a site data submission) system for Ramsar	All Strategies	t.b.d.

Theme: Wetlands of International Importance (Ramsar Sites)

Task	Priority for delivery	Category of task	Who leads task?	Task summary, and expected outputs/outcomes	Supports Strategic Plan Strategy/KRA:	Provisional estimated cost (CHF)

Implementation of the of the Ramsar Information Sheet (RIS) – 2012 revision (2013-15/25)	Top	1, 2	Secretariat, with advice from STRP	Develop streamlined tools and mechanisms for enhanced and streamlined Ramsar Site designation and data and information management, including redevelopment of the Ramsar Sites Database and on-line submission tools for RIS. New task – Resolution XI.8 Outcomes/outputs: on-line accessible database capable of receiving and handling all data and information in the RIS – 2012 revision; on-line RIS submission tool; further guidance and training for Parties, as needed.	Strategies 2.1 & 2.2	400,000

RIS and guidance – further development (2013-15/25)	Lower	1	i. STRP, with input from CPs ii. & iii. STRP	i) Develop further practical guidance on the issue of defining Ramsar Site boundaries, reflecting that approaches used may depend *inter alia* of scale of site, the presence of ecological, national and other boundary situations, landscape type, land tenure, and national spatial planning laws and policies (CPs to be invited to provide information and case studies); ii) urgently consider scope for minor modifications to the RIS – 2012 revision to support monitoring at Ramsar Sites through possible inclusion of sub-fields related to: change at the site, for example in fields 12a, 12c, and 16 relating to species composition and wetland type; identification of thresholds of change in ecological character; and monitoring indicators. Any minor modifications proposed to be provided to the Secretariat to provide to the Standing Committee for final endorsement of remaining minor details enabling them to be incorporated within the finalized RIS – 2012 revision format by January 2015; and	Strategy 2.1	t.b.d.

				iii) prepare additional guidance concerning a) identification, boundary-setting and management issues related to very small wetlands which may nonetheless be of international importance, and b) zoning of sites in the context of management planning and especially in relation to uses of Ramsar Sites by people, including implications for RIS reporting; New task (Resolution XI.8, paragraph 21) Outcomes/outputs: i. & iii. supplementary guidance for Parties, for inclusion in the *Strategic Framework* for Ramsar Site designation; ii. adjustments to RIS – 2012 revision, as needed.		
Ramsar Sites and ecosystem benefits/services (2013-15/26)	Lower	1	i. STRP ii. STRP with Contracting Parties input	i) Further consider the issue of recognizing the importance of ecosystem benefits/services in the future designation of Ramsar Sites, in relation to the terms of Objective 1 of the *Strategic Framework* and to assess the implications for the RIS, and ii) Develop a more thorough understanding of the nature and extent of ecosystem benefits/services provided by Ramsar Sites individually and at national and global network scales. New task (Resolution XI.8, paragraph 20) Outcomes/outputs: i. advice to SC and Parties; ii. report to SC & COP.	Strategies 1.1, 1.4 & 2.1	i. 5,000 ii. 10,000

Understanding national site designation processes and impediments to national Ramsar Site networks (2013-15/27)	Lower	1	STRP, with Secretariat support, and input from Parties	The *Strategic Framework and guidelines for the development of the List of Wetlands of International Importance* (and associated Resolutions) calls for the designation of national networks of Ramsar Sites, yet few Parties have undertaken strategic reviews of potentially qualifying sites or have designated a comprehensive network of internationally important wetlands. This task is designed to help the STRP and Secretariat better understand the various constraints and impediments to this activity, as a basis for the STRP and Secretariat better supporting Parties in their future Ramsar Site designations. It will include seeking and promulgating specific examples of the efforts by Contracting Parties to develop and implement a strategic approach to Ramsar Site designation (Resolution XI.4, para. 23). New task. Outcomes/outputs: initially, an STRP Briefing Note, with case study CP examples.	Strategy 2.1	10,000
Target development to support the objectives for the Ramsar List (2013-15/28)	Lower	1	STRP	Develop an integrated suite of targets to respond to and support the five Objectives for the Ramsar List included in the *Strategic Framework – 2012 revision*, including linking to the "Aichi Biodiversity Targets". New task. Outcomes/outputs: Strategic Framework targets for consideration by COP12.	Strategy 2.1	10,000

Consideration of relationships between criteria for internationally important sites for biodiversity (2013-15/29)	Lower	5	IUCN-WCPA/SSC, with input from STRP	Contribute to current initiative led by IUCN's World Commission on Protected Areas and Species Survival Commission to review and possibly consolidate criteria for the identification of important sites for biodiversity conservation, in order to ensure that Ramsar Site criteria are fully taken into account. New task. Outcomes/outputs: report to SC/COP on implications for Ramsar.	Strategy 2.1	5,000
Ramsar Site Criteria and identification of globally significant areas for biodiversity (2013-15/30)	Lower	1	STRP, Secretariat, with IUCN WCPA, IUCN-SSC and others	Consider the implications of CBD's Decision X/31 in the context of supporting the application of the Convention's long-established Criteria for the selection of Wetlands of International Importance, including any implications this might have for the identification of important sites for delivery of ecosystem services (whilst noting the undesirability of radical changes for the Convention's established site-selection processes, as well as the delivery of Aichi Target 11 of the Strategic Plan for Biodiversity 2011-2020) New task (Resolution XI.8, paragraph 19) Outcomes/outputs: report to Sc & COP	Strategy 2.1	15,000

Theme: Ramsar, wetlands and other sectors

Sub-theme A: Wetlands and human health

Task	Priority for delivery	Category of task	Who leads task?	Task summary, and expected outputs/outcomes	Supports Strategic Plan Strategy/KRA:	Provisional estimated cost (CHF)
Guidance on "Wetlands and human health" for the health sector (2013-15/31)	Top	3	WHO, with STRP	Prepare guidance on "Wetlands and human health" for the health sector Carried over from 2009-2012 Outcomes/outputs: developed from the 2011 Ramsar Technical Report on wetlands and human health interactions (which was designed for wetland practitioners), a publication for use by human health practitioners	Strategy 1.4	50,000
Wetlands and human health case studies (2013-15/32)	Lower	3	STRP	Prepare case studies of wetlands and human health interactions Carried over from 2009-2012 Outcomes/outputs: case study publication	Strategy 1.4	25,000

Guidance on specific wetland-related diseases (2013-15/33)	Lower	1	STRP/WHO and others	Prepare guidance (fact-sheets) for wetland managers on different wetland-related human diseases Further development of 2009-2012 *Wildlife Diseases Manual* Outcomes/outputs: Factsheets for adding to *Wildlife Diseases Manual.*	Strategy 1.4	15,000
Development of wetland & health indicators (2013-15/34)	Lower	1	STRP, with WHO, FAO, OIE, BIP, IUCN, Parties & others	Identify, and compile from expert sources, indicators of the relationship between wetland ecosystem services and health, with a particular emphasis on identifying early warning indicators for the emergence or re-emergence of diseases, and neglected, persistent and endemic diseases of people, livestock or wildlife associated with wetlands. New task (Resolution XI.12 paragraph 31.i) Outcomes/outputs: indicator descriptions and implementation design	Strategy 1.4	10,000
Guidance on health implications of ecosystem services disruptions (2013-15/35)	Lower	1	STRP, with WHO, FAO, OIE, BIP, IUCN, Parties & others	Compile guidance on the health implications of disruptions to ecosystem services so that the health sector can more effectively participate in planning and decision making related to wetlands and their catchments. New task (Resolution XI.12 paragraph 31.ii) Outcomes/outputs: guidance for the health sector	Strategy 1.4	t.b.d.

Review of Ramsar guidance in relation to human health (2013-15/36)	Lower	1	STRP	Review existing Ramsar text and guidance for its relevance to wetlands and human health issues. Partly carried over from 2009-2012 Outcomes/outputs: Briefing Note: guide to existing Ramsar guidance relevant to health issues	Strategy 1.4	10,000
Including health cost and benefit assessment in economic models and wetland valuation (2013-15/37)	Lower	1, 3	STRP	i) Advise on appropriate strategic mechanisms to ensure that health costs and benefits are satisfactorily included in economic models that seek to value the contributions that wetland management makes to human health and well-being, and ii) Identify and compile techniques to evaluate the outcomes of wetland management decision making in health terms, noting that such appropriate strategic mechanisms will necessarily involve government sectors for whom such valuations are more commonly undertaken. New task (Resolution XI.12 paragraph 30) Outcomes/outputs: Briefing Note	Strategy 1.4	10,000

Guidance for wetland managers on human and animal health impact, burden of disease and community health assessments, in wetlands (2013-15/38)	Lower	1	STRP, with WHO, FAO, OIE, BIP, IUCN, Parties & others	Prepare human health guidance for wetland managers on: i) the conduct of human and animal health impact assessments in wetlands (identifying the impact assessment protocols that examine health in particular, for elements that are currently insufficiently dealt with in wetland management procedures, including the importance of invasive species and pathogens; prevention of disease emergence or re-emergence; attending to livelihoods, reducing poverty and improving health outcomes; and the possible trade-offs between ecosystem services and health); and iii) providing wetland-related inputs to a) burden-of-disease assessments (i.e., comparative measurements of the gap between a given health status for a population and an ideal health situation where the entire population lives to an advanced age, free of disease and disability); b) community health assessments (where communities themselves conduct assessments of the health matters that they perceive to warrant greater attention); and c) community and stakeholder engagement concerning health matters; New task (Resolution XI.12 paragraph 31 iii & iv) Outcomes/outputs: guidance for wetland managers and training package	Strategy 1.4	t.b.d.

Assessment of utility for wetland managers of *Ramsar wetland disease manual* (2013-15/39)	Lower	1	STRP, with wetland managers	STRP to seek the views of wetland managers and other relevant stakeholders on the utility of the content of the *Ramsar wetland disease manual: Guidelines for assessment, monitoring and management of animal disease in wetlands* and whether expanding its coverage, e.g., to include plant diseases and human diseases associated with wetlands, would be desirable New task (Resolution XI.12 paragraph 32) Outcomes/outputs: utility assessment (Briefing Note)	Strategy 1.4	t.b.d.
Encouraging ecosystem approaches to health issues (2013-15/40)	Lower	5	Secretariat & STRP, working with WHO, FAO, OIE, UNEP, IUCN, Convention on Migratory Species & CBD	Work with the other relevant institutional stakeholders concerned with health to encourage an ecosystem approach to relevant health issues in wetlands and their surrounding catchments. New task (Resolution XI.12 paragraph 35 Outcomes/outputs: positive responses and uptake of Ramsar advice and guidance by relevant stakeholders	Strategy 1.4	t.b.d.

Sub-theme B: Wetlands and climate change

Task	Priority for delivery	Category of task	Who leads task?	Task summary, and expected outputs/outcomes	Supports Strategic Plan Strategy/KRA:	Provisional estimated cost (CHF)

Implications of, and advice on, climate change for Convention implementation (2013-15/41)	Top	1	STRP, with input from STRP NFPs and Parties	i) Continue to prepare advice on the implications of climate change for maintaining the ecological character of wetlands, including *inter alia* strategies for dealing with the emergence of novel[1] or hybrid ecosystems as a consequence of climate change, the determination of appropriate reference conditions for assessing change in ecological character, determining specified limits of change, and the reporting of change in ecological character at Ramsar Sites, and how this can be reflected in Ramsar Information Sheets, and to collate information from such assessments for future meetings of the Conference of the Parties; ii) Collate and assess case studies and other information generated in response to Resolution XI.14 paragraph 32; iii) Working with interested Contracting Parties and international organizations, to prepare advice on sustainable management of carbon stocks which enhances wetland biodiversity and the delivery of ecosystem services, thereby contributing to human well-being, with special attention to indigenous peoples and local communities;	Strategy 1.4	i. 20,000 ii. t.b.d. iii. 15,000 iv. 40,000

[1] New assemblages of species that have not co-occurred historically, that largely result from direct and indirect human activity, and that occupy new ecological spaces in the world's landscapes and seascapes.

				iv) In conjunction with the Secretariat and Ramsar Regional Initiative Networks and Centres, collaborate with relevant international organizations and conventions, within their respective mandates, to further investigate the potential contribution of wetland ecosystems to climate change mitigation and adaptation through: a) preparing advice on assessing social resilience and vulnerability of wetlands to climate change, to complement the existing advice on assessing the biophysical vulnerability of a wetlands to climate change (Ramsar Technical Report No. 5/CBD Technical Series No. 57); b) preparing advice on ecosystem-based adaptation to climate change for coastal and inland wetlands; and c) reviewing any relevant advice provide by other MEAs, in particular the outcomes of CBD COP-11; without pre-empting any future decisions of the UNFCCC; Revised; partly carried over from 2009-2012 & Resolution XI.14 paragraph 35 Outcomes/outputs: guidance/advice for Contracting Parties		

Ramsar Sites boundary migration in response to sea level rise and other climate change effects (2013-15/42)	Lower	1	STRP, with CIESIN and others	Advise Parties on the implications of sea level rise for coastal Ramsar Sites, particularly those for which adaptation could be constrained due to, *inter alia*, the proximity of existing and expanding urban areas. Continued from 2009-1012. Outcomes/outputs: possible guidance for Parties; Ramsar Technical Report	Strategy 2.1	t.b.d.

Sub-theme C: Wetlands and water resource management

Task	Priority for delivery	Category of task	Who leads task?	Task summary, and expected outputs/outcomes	Supports Strategic Plan Strategy/KRA:	Provisional estimated cost (CHF)
The role of biodiversity and wetlands in the global water cycle (2013-15/43)	Top	1, 3, 5	STRP, with CBD Secretariat	Establish an expert group on maintaining the ability of biodiversity to continue to support the water cycle (as requested by CBD COP10 Decision X/28 and approved by SC42), and communicate with Parties so that they can provide scientific inputs through their own experts. Ongoing, initiated in 2009-2012 Outcomes/outputs: i) technical review of the contribution of biodiversity to sustaining the water cycle, and current and potential changes occurring in this relationship (RTR/CBD Technical Series report); ii) key policy-relevant messages for decision-makers.	Strategies 1.4 & 1.7	[150,000, funding already provided by donors]

Ramsar, water and wetlands: review and development of strategy for engaging in the global water debate (2013-15/44)	Top	1, 3	STRP & Secretariat	Develop a strategy for Ramsar to engage fully in the global water debate, focusing on the role of wetlands as natural water infrastructure. This includes specifying aims, mechanisms for engagement, and products needed to support the engagement. [Note. The Secretariat's 2011 development of a "Vision 40+" for the Convention contributes to this strategy.] Carried over from 2009-2012 (task 7.7.a) Outcomes/outputs: Ramsar engagement strategy and possible refinements to 2013-2015 work programme(for Parties, Secretariat, and STRP) in the global water debate.	Strategies 1.4 & 1.7	20,000
Environmental water allocation for wetlands – guidance (2013-15/45)	Top	1	STRP, Mexico and WWF	Work with Mexico and WWF to share approaches and experiences and to develop further guidance or tools for management and allocation of water for maintaining the ecological functions of wetlands,. Outcomes/outputs: Initially a Briefing Note prepared with Mexico to share their approaches and experiences. Consider whether to develop additional guidance on this topic for COP12.	Strategy 1.7	t.b.d.

Sub-theme D: Wetlands and agriculture

Task	Priority for delivery	Category of task	Who leads task?	Task summary, and expected outputs/outcomes	Supports Strategic Plan Strategy/KRA:	Provisional estimated cost (CHF)

Wise use of wetlands in relation to coastal and inland aquaculture (2013-15/46)	Top	1	STRP, with FAO, World Fish Centre, WWF	Develop guidance for the wise use of wetlands in relation to coastal and inland aquaculture. (Building on lessons learnt from best practices on sustainable aquaculture, and recognizing that global dependence on aquaculture is growing, that wild stocks continue to be depleted, and that meeting the need for seafood is resulting in significant direct (habitat loss, wild harvest of species) and indirect impacts (pollution, contamination) on wetlands.) New task: building on aspects of COP9 Resolution IX.4 Outcomes/outputs: Briefing Notes	Strategies 1.4 & 1.6	120,000
Impacts of agricultural practices on rice paddies as wetland systems (2013-15/47)	Lower	1	STRP, with Parties, relevant UN organizations, other MEAs (incl. CMS WG on bird poisoning)	Compile and review information on the positive and negative impacts of agricultural practices on rice paddies as wetland systems in terms of enhancing their biodiversity and ecosystem services, and prepare advice to the Convention on these matters. New task: Resolution XI.15 paragraph 24 Outcomes/outputs: advice to Parties (Briefing Note)	Strategies 1.4 & 1.6	80,000

Re-engineering agricultural landscapes (2013-15/48)	Lower	1	STRP, with Czech government, EU, OECD, FAO	Prepare guidance on re-engineering agricultural landscapes. Revitalization of wetland biodiversity within agricultural landscapes is an emerging issue with the transformation of past collective farming systems (e.g., in Central Europe) to individual landholdings. Community aspirations to develop eco-agricultural farming systems as part of such transformations need to be supported by technical/scientific guidance on best practices. New task. Outcomes/outputs: Briefing Notes; guidance for Parties	Strategies 1.4 & 1.6	145,000

Wetlands and biofuels (2013-15/49)	Lower	1	STRP, with IOPs and others	Working with international organizations addressing biofuel issues: i) review the global distribution of biofuel production in relation to impacts on wetlands; ii) review and collate existing best management practice guidance and social and environmental sustainability criteria for growing biofuel feedstocks in relation to wetlands, and where appropriate develop such guidance and criteria; iii) consider further discussion among the Contracting Parties on addressing sustainable biofuel issues in relation to wetlands; and iv) take into account the findings and conclusions contained in the documents UNEP/CBD/SBSTTA/16/14 and UNEP/CBD/SBSTTA/16/INF/32 related to gaps in tools and approaches and uncertainty surrounding the sustainability of biofuels as potential contributions for further refinement of the Guidance annexed to Resolution XI.10 as well as for addressing sustainable biofuels issues in relation to wetlands. Carried over from 2009-2012 (task 6.3) & Resolution XI.10 paragraph 21 Outcomes/outputs: Ramsar Technical Report & guidance/briefing notes for Parties	Strategies 1.4 & 1.6	45,000

Sub-theme E: Wetlands and poverty eradication

Task	Priority for delivery	Category of task	Who leads task?	Task summary, and expected outputs/outcomes	Supports Strategic Plan Strategy/KRA:	Provisional estimated cost (CHF)
Wetlands & poverty eradication – guidance and case studies (2013-15/50)	Top	1	STRP (with CPs, IOPs, IHDP, UNDP, FAO, UK-DFID and others)	Further tools and guidance to support the implementation of Resolutions IX.14, X.28 & XI.13, on: i) advice on mainstreaming the "Integrated Framework for linking wetland conservation and wise use with poverty eradication" into national policies and programmes for poverty eradication; ii) advice to include Communication, Education, Participation and Awareness (CEPA) as a mechanism that contributes significantly to reduce the risks that can create or deepen poverty; and iii) case studies and best practices on the application of the Framework for assessing poverty in wetlands. Continuation from 2009-2012 & Resolution XI.13 paragraph 18 Outcomes/outputs: Information Paper with structured guide to available guidance; a publication on case studies on wetlands and poverty interlinkages.	Strategy 1.4	20,000

Supplementary guidance to support the Resolution XI.13 poverty eradication framework (2013-15/51)	Lower	1	STRP, with IOPs, and other organizations and networks	Supplement the Resolution XI.13 Framework by undertaking tasks identified under Resolution X.28, including: i) further development of indicators relating wetland wise use to livelihoods and poverty eradication, ii) development of structured guide to available guidelines and tools for addressing poverty eradication in relation to wetlands, and collation, and iii) review of examples of how wetland degradation affects people's livelihoods and how maintenance or restoration of the ecological character of wetlands can contribute to poverty alleviation. Continuation from 2009-2012 & Resolution XI.13 paragraph 19 Outcomes/outputs: Guidance on indicators relating wetland wise use to livelihoods and poverty eradication; tools for addressing poverty eradication related to wetlands; Briefing Note on links between wetland maintenance and restoration and poverty alleviation.	Strategy 1.4	t.b.d.

Sub-theme F: Wetlands and urbanization

Task	Priority for delivery	Category of task	Who leads task?	Task summary, and expected outputs/outcomes	Supports Strategic Plan Strategy/KRA:	Provisional estimated cost (CHF)

Planning and management of urban and peri-urban wetlands (2013-15/52)	Lower	1	UN-Habitat, Secretariat, STRP, with Partnership on Cities and Biodiversity, CBD, ICLEI, IOPs, Parties	Embedding principles on wetlands and urbanization in existing processes, and development of guidance for different stakeholders to assist in sustainably managing urban and peri-urban wetlands, with information and case studies provided by Parties. Continued from 2009-2012; Resolution XI.11 paragraphs 29 & 30. Outcomes/outputs: i) Guidance briefing note for UN-Habitat and others in the sector including local authorities, planning departments and municipal authorities on issues and response options for urbanization and the wise use of wetlands. ii) Guidance briefing note for local wetland managers on issues and response options for urbanization and the wise use of wetlands.	Strategy 1.4	40,000
Urban wetland management demonstration sites (2013-15/53)	Lower	5	Secretariat& STRP, with UN-Habitat, Regional Initiatives, SCBD, IOPs, ICLEI and other urban stakeholders (including individual cities	Strengthen collaborative initiatives with UN-Habitat and continue to develop collaboration with Ramsar Regional Initiatives, the CBD, Ramsar's IOPs, ICLEI and other appropriate urban stakeholders, including individual cities, in order to foster projects that develop demonstration sites which both benefit urban local communities and promote the wise use of wetlands. Resolution XI.11 paragraphs 27. Outcomes/outputs: enhanced collaboration leading to demonstration projects.	Strategy 1.4	t.b.d.

Sub-theme G: Wetlands and tourism

Task	Priority for delivery	Category of task	Who leads task?	Task summary, and expected outputs/outcomes	Supports Strategic Plan Strategy/KRA:	Provisional Estimated cost (CHF)
Wetlands and tourism – development of guiding principles for tourism in and around wetlands (2013-15/54)	Lower	1	STRP (with Secretariat, UNWTO & other relevant organizations)	Develop further advice, including key messages and/or guiding principles for tourism in and around wetlands (drawing upon *inter alia* the analysis of case studies provided in the joint Ramsar–UNWTO publication on "Wetlands and Tourism") Continued from 2009-2012. Outcomes/outputs: Briefing Note/ guiding principles for Parties	Strategies 1.4 & 1.6	10,000

Sub-theme H: Wetlands and energy

Task	Priority for delivery	Category of task	Who leads task?	Task summary, and expected outputs/outcomes	Supports Strategic Plan Strategy/KRA:	Provisional Estimated cost (CHF)

Managing energy sector activities in relation to wetlands: guide to guidance and case studies (2013-15/55)	Lower	1	Secretariat, with CPs, IOPs, NGOs, relevant scientific & technical organizations, & industry associations	Share and compile information, guidance and case studies for managing specific impacts of energy sector activities on wetlands, and studies on regional and transboundary collaboration for energy planning and development that are consistent with wise use of wetlands. New task Outcomes/outputs: guide to guidance and case studies	Strategy 1.4	20,000
Monitoring energy trends reported in global assessments (2013-15/56)	Lower	1	STRP	Monitor the information and trends emerging from relevant global assessments, such as the Global Energy Outlook and Global Biodiversity Outlook, and keep Contracting Parties informed of the trends in the context of wetlands and energy. New task (Resolution XI.10 paragraph 20) Outcomes/outputs: information to Parties	Strategy 1.4	t.b.d
Applying ecological impact criteria in the selection of energy generation sites (2013-15/57)	Lower	1	STRP, with Parties, other organizations & IOPs	Compile information on approaches and best practices for applying ecological impact criteria in the selection of energy generation sites. New task (Resolution XI.10 paragraph 19) Outcomes/outputs: information and advice to COP	Strategy 1.4	t.b.d

Capacity building for energy sector regulatory oversight (2013-15/58)	Lower	2	Secretariat, with STRP, CEPA Oversight Panel, Regional Initiatives & Parties	Support Contracting Parties' training and capacity building efforts and programmes to strengthen if necessary regulatory oversight of energy sector activities and to enhance application of guidance for Strategic Environmental Assessment (SEA) and Environmental Impact Assessment (EIA) (Resolution X.17) and application of the guidelines in Resolution VIII.1 on allocation and management of water. New task (Resolution XI.10 paragraphs 18/19) (relates also to implementation of task 2013-15/1) Outcomes/outputs: capacity-building programmes supported	Strategy 1.4	t.b.d

Theme: Wetlands and ecosystem services/benefits

Task	Priority for delivery	Category of task	Who leads task?	Task summary, and expected outputs/outcomes	Supports Strategic Plan Strategy/KRA:	Provisional Estimated cost (CHF)
Economics of wetland ecosystem services/benefits (2013-15/59)	Top	1	STRP, with the Institute for European Environmental Policy (IEEP), IOPs, UNECE water convention, UNEP and	Building on the work of TEEB and others (& the TEEB water and wetland synthesis report): a) Conduct a user needs analysis for Ramsar Parties & wetland (site) managers) on tools, knowledge, methodology and data required to support integration of ecosystem service values in planning and decision making; b) Conduct a scoping review of the advancements in ecosystem services (description / recognition, valuation, capture) to support wise use of	Strategies 1.4 (KRA 1.4.ii) & 1.6	80,000

			others	wetlands, in particular cross sectoral integration; c) Develop a guide to guidance on best practices for integrating ecosystem services values within the response options for wetland management; d) Conduct a scoping review of technical aspects of relevance to the Ramsar Convention in the finance, banking, investment, insurance and other economic sectors; e) Develop an assessment mechanism for the contribution of wetland services/benefits to national GDPs. Carried forward and further developed from 2009-2012. Outcomes/outputs: i) Information Paper + communication product on synthesis of ecosystem service values related to water and wetlands (building from TEEB and linked to SOWW) ii) Needs assessment of tools, knowledge, methodology and data required to support integration of ecosystem service values in planning and decision making; iii) Guide to guidance/guidance/ Information Paper(s) on: a) Recognizing wetland ecosystem services: linking ecosystem services to inventory, assessment and monitoring framework; management planning; risk and vulnerability assessments, etc.; b) Valuing wetland ecosystem services: best practices on economic valuation;		

				participatory valuation techniques; c) Case studies on application of ecosystem services values for promoting wise use of wetlands.		
Wetlands and disaster risk reduction (2013-15/60)	Lower	1, 3	STRP, with IOPs, UNISDR, UNEP, UNDP, Stockholm Resilience Centre and others	Develop guidance for Parties and the disaster risk management sector on the role of healthy wetlands in disaster risk reduction (floods, droughts, landslides, storm surges, etc.). Carried forward from 2009-2012 (task 5.1). Outcomes/outputs: sectoral guidance on managing wetlands and disaster risk – Briefing Note and/or Ramsar Technical Report	Strategies 1.4 & 1.6	20,000

11th Meeting of the Conference of the Parties to the Convention on Wetlands (Ramsar, Iran, 1971)

"Wetlands: home and destination"

Bucharest, Romania, 6-13 July 2012

Resolution XI.18

Adjustments to the *modus operandi* of the Scientific and Technical Review Panel (STRP) for the 2013-2015 triennium

1. RECALLING Resolutions 5.5, VI.7, VII.2, VIII.28, IX.11, and X.9 on the Scientific and Technical Review Panel (STRP) and its *modus operandi*;

2. THANKING members of the STRP and its observer organizations and invited experts for their contributions since the 10th meeting of the Conference of the Parties (COP10) and for their expert advice on numerous scientific and technical issues important for implementation of the Convention, including those submitted for adoption at this meeting of the COP;

3. ALSO THANKING the governments of Finland, Norway, Tanzania, and the United Kingdom, and the Secretariat of the Convention on Biological Diversity, the Secretariat of the African-Eurasian Migratory Waterbird Agreement (AEWA),UN HABITAT, and the Danone Group for their financial contributions in support of the work of the STRP during 2009-2012, and BirdLife International, the International Water Management Institute (IWMI), the Society of Ecological Restoration (SER), the Wildfowl and Wetlands Trust (WWT, UK), and the Joint Nature Conservation Committee (JNCC–UK) for their in-kind support to the work of the Panel;

4. THANKING as well the government of the Republic of South Africa and the Water Research Commission of South Africa for hosting a workshop for African STRP National Focal Points and other wetland experts, and WELCOMING the offers made at the 42nd meeting of the Standing Committee from the Asian regional Ramsar centres (RRC-EA and RRC-WCA) to host a meeting of Asian STRP National Focal Points (NFPs);

5. WELCOMING the STRP's confirmation that its revised *modus operandi* for the 2009-2012 triennium, with the budget provided for its work by Resolution X.2 (2008) and through additional voluntary contributions, has continued to enable the Panel to develop and deliver its work plan and required priority tasks;

6. CONSCIOUS of the need to strengthen the STRP's understanding of local and regional wetland management needs and concerns and of the importance of establishing closer links between the STRP and networks of scientists and experts in each Contracting Party, so that the Convention may benefit from the array of existing knowledge and experience,

and CONCERNED that the STRP continues to report difficulties in establishing effective contact and working relationships with many STRP National Focal Points, and therefore URGING STRP National Focal Points to strive to engage actively in support of the work of the STRP;

7. RECOGNIZING the need for continuing cooperation between the STRP and a number of expert networks, specialist groups and societies that exist, some in association with the official International Organization Partners of the Convention;

8. ALSO RECOGNIZING the importance of the STRP working in partnership with the scientific and technical bodies of the conventions and programmes with which memoranda of cooperation and/or joint work plans are in place, and NOTING the need for the STRP to avoid duplication of the work of the scientific advisory bodies of other conventions and programmes;

9. RECALLING that Resolution IX.11 (2005) provides clear guidelines for identification and appointment of STRP members, and also establishes that STRP working groups will work largely through electronic means;

10. NOTING that the terms of Resolution XI.16 on *Ensuring efficient delivery of scientific and technical advice and support to the Convention* may have implications for the implementation of this Resolution; and

11. AWARE that the tasks, and the priorities for these tasks which *inter alia* form the basis for the work of the STRP for 2013-2015, are identified in the annexes to Resolution XI.17;

THE CONFERENCE OF THE CONTRACTING PARTIES

12. REAFFIRMS the critical importance to the Convention of the work and advice of the Scientific and Technical Review Panel (STRP) in providing reliable scientific and technical guidance to the Conference of the Contracting Parties with a view to enhancing the Contracting Parties' implementation of the Convention;

13. CONFIRMS that the *modus operandi* for the STRP adopted by Resolution IX.11 (2005) and subsequently refined in Resolution X.9 (2008) will apply for the 2013-2015 period and for subsequent periods unless further amended by COP decisions;

14. AGREES that:

    i) 13 expert members will be appointed to the Panel by the STRP Oversight Committee for the 2013-2015 triennium, taking into account the priority themes and tasks for this triennium as set out in the annexes to Resolution XI.17;
    ii) one appointed member shall have CEPA expertise;
    iii) one appointed member shall have socio-economic science expertise; and
    iii) at least one member, and preferably two, shall be appointed from each of the six Ramsar regions;

15. AFFIRMS that the primary roles and responsibilities of the Panel and its members are to:

a) establish the scope, deliverables and approach to delivery for each task assigned to it by the Conference of the Parties, including through thematic scoping workshops as appropriate, and in so doing ensure input from the network of STRP National Focal Points, Ramsar Regional Initiatives, and other relevant organizations,
b) commission, through the Secretariat and resources permitting, an expert or experts to lead preparation of the work identified,
c) ensure appropriate peer review of draft materials, including consideration of how best to present the material in order to ensure its effective communication and uptake,
d) review (including with STRP NFPs) and approve all scientific and technical materials prior to any transmittal of them to Parties, including to the Conference of the Parties, in line with the terms of Resolution VIII.45, and
e) leverage their own networks of wetland experts nationally and internationally to contribute to the work of the Panel;

16. AGREES that for work areas and tasks indicated in the annexes to Resolution XI.17, the Panel will, after first evaluating and assessing any relevant work already in existence in order to avoid duplication, seek additional expertise as and when required through various means, including through collaboration with the scientific advisory bodies of other international conventions and agencies, the International Organization Partners, STRP invited observer organizations, and STRP invited experts;

17. INSTRUCTS that the Panel should, especially when considering a new or emerging issue within its mandate, first prepare and issue to Contracting Parties and others a Scientific & Technical Briefing Note outlining the issue and its relevance to the implementation of the Convention, and invite feedback from Contracting Parties before giving consideration to bringing such issues formally through Draft Resolutions for the Parties' consideration;

18. CONFIRMS that the Standing Committee will continue to have overall responsibility for the work of the STRP, that the Chair of the STRP will report to each Standing Committee meeting on the Panel's progress with its programme of work and priorities as established by the COP (Resolution XI.17) and Standing Committee, and that the STRP will report to Standing Committee on any adjustments to its programme it considers necessary and on any new tasks proposed during the intersessional period in relation to emerging issues;

19. RECOGNIZES the continuing need to ensure both that the Panel is provided with the necessary resources to undertake its work effectively and that the Ramsar Secretariat has sufficient capacity to support this work, URGES Contracting Parties and others to contribute additional voluntary resources to support the Panel's work within their capacity and in alignment with their national priorities, and THANKS those Contracting Parties and others which have already indicated the provision of such support for the 2013-2015 triennium;

20. REVISES the list of bodies and organizations invited to participate as observers in the meetings and processes of the STRP, and INVITES the bodies and organizations listed in Annex 1 of this Resolution to consider establishing close working arrangements with the STRP on matters of common interest, particularly in relation to priority themes and tasks for the 2013-2015 triennium as indicated in Resolution XI.17;

21. URGES Contracting Parties to ensure that the persons they appoint as their STRP National Focal Point are appropriately qualified for this role as defined in the Terms of Reference provided as the appendix to Resolution X.9; that their STRP National Focal Points have contact with national experts relevant to the work areas of the Panel; that their STRP National Focal Points are involved in all Ramsar processes within the Contracting Party (including participation in any National Ramsar or Wetland Committee); and that the contact information for their STRP National Focal Points are kept up to date and functional;

22. ALSO URGES the 18 Contracting Parties[1] that do not currently have an appointed STRP National Focal Point to make such an appointment without delay, taking into account the Terms of Reference for STRP National Focal Points in the appendix to Resolution X.9;

23. REQUESTS the STRP, working with the STRP National Focal Points, to consider mechanisms for identifying task-based national expert contacts to undertake a) participation in specialist work on specific STRP tasks and b) review of draft documents;

24. REQUESTS the STRP and Secretariat to identify opportunities and mechanisms for holding intersessional regional or subregional meetings of STRP National Focal Points and other wetland experts in order to strengthen regional and subregional scientific networks, to help STRP NFPs to understand their roles, and to enhance the participation of STRP NFPs in the work of the STRP and in implementation of the Ramsar Convention in their regions;

25. INSTRUCTS the Partnership Coordinator and the STRP to assess and consider strategic funding opportunities and to target some of its work towards utilizing such opportunities for the wise use of wetlands;

26. REQUESTS the STRP and the Secretariat to consider arranging capacity building workshops for STRP National Focal Points to be held in association with the proposed intersessional regional or subregional meetings of STRP National Focal Points and other wetland experts;

27. ENCOURAGES Contracting Parties, the STRP, and STRP National Focal Points to make use of the STRP Newsletter and the Scientific and Technical Briefing Notes series to share good practices in wise use of wetlands; and

28. INSTRUCTS the Secretariat to review the texts of Resolutions XI.16 and XI.17, once adopted, and introduce any further adjustments to the STRP's *modus operandi* for this period that might be needed to ensure consistency.

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1 As of 12 July 2012: Azerbaijan, Bosnia & Herzegovina, Cape Verde, Croatia, Cyprus, Dijbouti, Guinea-Bissau, Iceland, Italy, Malta, Montenegro, the Netherlands, Nigeria, Panama, Papua New Guinea, Philippines, Poland and Uruguay.

Annex 1

Bodies and organizations invited to participate as observers in the meetings and processes of the STRP for the 2013-2015 triennium

- the Subsidiary Body on Scientific, Technical and Technological Advice of the Convention on Biological Diversity (CBD)
- the Scientific Council of the Convention on Migratory Species (CMS)
- the Technical Committee of the African-Eurasian Migratory Waterbird Agreement (AEWA)
- the Committee on Science and Technology of the Convention to Combat Desertification (UNCCD)
- the Subsidiary Body on Scientific and Technical Advice of the United Nations Framework Convention on Climate Change (UNFCCC)
- the Scientific and Technical Advisory Panel (STAP) of the Global Environment Facility
- the Secretariats of the CBD, CMS, CITES, UNCCD, UNFCCC, the World Heritage Convention (WHC); UNESCO – Man and the Biosphere Programme (MAB), the UNECE "Water Convention", and the Conservation of Arctic Flora and Fauna (CAFF) working group of the Arctic Council
- the Secretariat of the Intergovernmental Panel on Climate Change (IPCC)
- the UN Food and Agriculture Organization (FAO)
- the UNEP – World Conservation Monitoring Centre (UNEP-WCMC)
- the World Health Organization (WHO)
- UN-HABITAT
- UNESCO-IHE Institute for Water Education
- UNESCO-IHP International Hydrological Programme
- United Nations Forum on Forests (UNFF)
- the Society of Wetland Scientists (SWS)
- the Coordinating Committee for the Guidelines for Global Action on Peatlands (GGAP-CoCo)
- the International Association for Impact Assessment (IAIA)
- the International Network of Basin Organizations (INBO)
- The Nature Conservancy (TNC)
- Conservation International (CI)
- Ducks Unlimited (DU)
- the Global Water Partnership (GWP)
- the Wildfowl and Wetlands Trust (WWT)
- the Society for Ecological Restoration (SER)
- the International Society for Ecological Economics (ISEE)
- the European Space Agency – ESRIN (ESA-ESRIN)
- the Japanese Aerospace Exploration Agency (JAXA)
- Group on Earth Observation – Biodiversity Observation Network (GEO-BON)
- the International Crane Foundation (ICF)
- the Business and Biodiversity Offsets Program (BBOP)

- the Institute for European Environmental Policy (IEEP)
- ICLEI – Local Governments for Sustainability
- the interim Secretariat of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES)

11th Meeting of the Conference of the Parties to the Convention on Wetlands (Ramsar, Iran, 1971)

"Wetlands: home and destination"

Bucharest, Romania, 6-13 July 2012

Resolution XI.19

Adjustments to the terms of Resolution VII.1 on the composition, roles, and responsibilities of the Standing Committee and regional categorization of countries under the Convention[1]

1. RECOGNIZING the value of keeping under periodic review the terms of Resolution VII.1 (1999) so as to ensure that the work of the Standing Committee continues to be delivered in as effective and cost-efficient a manner as possible;

2. AWARE of Decisions SC41-5 and SC42-31, -32, and -33 of the 41st and 42nd meetings of the Standing Committee concerning issues of the composition and organization of the Standing Committee and its meetings; and

3. RECALLING that Resolution IX.24 (2005) established a Management Working Group reporting to the Standing Committee and the Conference of the Parties and that Resolution X.4 (2008) also established a Transition Ccommittee of the Management Working Group; RECOGNIZING that aspects of the work of these groups is also embodied in the roles and responsibilities of the Standing Committee itself; and AWARE of the intersessional Standing Committee oversight of the Secretariat now conducted on its behalf between meetings of the Standing Committee by its Executive Team (Chair, Vice Chair, and Chair of Subgroup on Finance) with the Secretary General; and EXPRESSING APPRECIATION to the members of the Management Working Group for their work;

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4. ADOPTS the text in Annexes 1-4, based upon amendments that update Resolution VII.1 (1999) on the composition, roles, and responsibilities of the Ramsar Standing Committee and its appended list of Contracting Parties and non-Contracting Parties belonging to the six Ramsar regional groups;

5. REAFFIRMS that all other terms and paragraphs of Resolution VII.1 and its annexes, apart from those amendments, continue to be appropriate for guiding the roles and responsibilities of the Standing Committee;

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[1] The Islamic Republic of Iran entered a reservation concerning the regional categorization in Annex 2 (Conference Report, paragraph 254).

6. RECOGNIZES the desirability of the members of the Executive Team (Standing Committee Chair, Vice Chair, and Chair of the Subgroup on Finance) being able to conduct work in a common language, for the effectiveness of conducting their own business within the Team and between the Team and the Secretariat, both during Standing Committee meetings and intersessionally, and in relation to their responsibilities of chairing other Convention bodies such as the CEPA Oversight Panel and STRP Oversight Committee;

7. INSTRUCTS the Secretariat to incorporate the adopted amendments into a final text of the annexed document and to make that finalized text available to the Parties; and

8. CONFIRMS that this updated text and its annexes supersede those adopted as Resolution VII.1, which is retired.

Annex 1

The composition, roles, and responsibilities of the Standing Committee and regional categorization of countries under the Convention

1. Considering that it is useful for the effective functioning of the Ramsar Convention that Contracting Parties should have a clear process for the operation of its Standing Committee, in Resolution VII.1 (1999) the Conference of the Contracting Parties adopted guidelines on the composition, roles, and responsibilities of the Standing Committee and the regional categorization of countries under the Convention. In [Resolution XI.19 (2012)], the Parties amended that text and the list of countries and Contracting Parties assigned to each of the six Ramsar regions in order to bring them up to date.

2. The Ramsar Convention will have the following regional groups:

    1. Africa
    2. Asia
    3. Neotropics
    4. Europe
    5. North America
    6. Oceania

3. Contracting Parties and those countries that are eligible to join the Convention are assigned to the above regional groups, but those Contracting Parties which are geographically near to the boundaries of the allocated region, as given in Annex 2, can at their own request, based on the existence of similar natural conditions, participate[2] within a

[2] "Participate" is defined in this context as different from membership within the alternative region. Participation confers to the state the right to be present in meetings, to speak, to exchange information, to submit reports, to cooperate on a scientific and practical level, and to contribute to joint projects. It does not include the right to be a representative of this alternative region nor to participate in the nomination of its representative(s). It does not confer the right to vote within the alternative region.

neighbouring alternative region, while remaining a member of their geographical region, upon formal notification of this intent to the COP.

4. The composition of the Standing Committee will be determined by means of a proportional system, by which each regional group in paragraph 2 above will be represented by voting members in the Standing Committee according to the following criteria:

   a) one representative for regional groups with 1 to 12 Contracting Parties,
   b) two representatives for regional groups with 13 to 24 Contracting Parties,
   c) three representatives for regional groups with 25 to 36 Contracting Parties,
   d) four representatives for regional groups with 37 to 48 Contracting Parties,
   e) five representatives for regional groups with 49 to 60 Contracting Parties.

5. Each region can decide to appoint an Alternate Member or Members pro rata with their appointed Members with full power to represent the region, if the representative member is unable to participate in a meeting of the Standing Committee;

6. The host countries of the most recent and the next meeting of the COP are also voting members of the Standing Committee.

7. The regional representatives and their alternate Party representatives will be elected by the Conference of the Contracting Parties on the basis of nominations received from the regional groups established in paragraph 2 above. Initial consideration of nominations by regional groups will be undertaken at any intersessional regional COP preparatory meetings which may take place, and finalization of nominations will be made by regional groups in their regional meetings at the COP venue immediately prior to the opening of the COP, so that appointments of the new members of the Standing Committee can be made as early as possible in the COP proceedings, thus permitting the members of the new Committee to participate in Conference Committee meetings during COP.

8. The terms of office of the regional representatives will commence at the close of the meeting of the COP at which they have been elected and will expire at the close of the next ordinary meeting of the COP, and each Contracting Party may serve on the Committee for a maximum of two consecutive terms;

9. Contracting Parties that are voting members of the Standing Committee will convey to the Ramsar Secretariat, through their diplomatic channels, the name of the officer(s) in the designated national Ramsar Administrative Authority who act as their delegates on the Standing Committee, as well as the name of their substitutes, should they be needed;

10. The Contracting Party acting as host country of the institutional host of the Ramsar Secretariat will continue to have the status of permanent observer in the Standing Committee. If the host country of the institutional host of the Secretariat stands for, and is elected as, a member of the Standing Committee representing its regional group, it will have voting status for that triennium in lieu of its permanent observer status.

11. The Ramsar Secretariat will continue to notify all Contracting Parties of the date and agenda of meetings of the Standing Committee at least three months in advance of each

meeting, so that they may, as appropriate, make arrangements to be represented at the meeting as observers.

12. Countries that are not Contracting Parties but have expressed an interest in joining the Convention may be also admitted as observers at meetings of the Standing Committee.

13. The Chairperson of the Scientific and Technical Review Panel will be invited as an observer to Standing Committee meetings, as well as other experts and/or institutions that the Standing Committee may deem appropriate for assisting in its consideration of particular agenda items.

14. International organizations which are official International Organization Partners in the work of the Convention will be invited to participate as observers in meetings of the Standing Committee.

15. If an extraordinary meeting of the COP is held between two ordinary meetings, the host country will participate as an observer in the work of the Committee on matters related to the organization of the meeting, provided that the country in question is not already present in the Committee as a member or permanent observer.

16. The Contracting Parties in regional groups with one representative in the Standing Committee will use a rotation system for the nomination of the regional representative, and in regional groups with two or more representatives the selection will be made in such a manner as to achieve a balance in relation to biogeographical, geopolitical, and cultural considerations.

17. At its first meeting immediately after the close of the COP the Standing Committee will elect its Chair and Vice-Chair, as well as the members and chair of the Subgroup on Finance established by Resolution VI.17 of COP6.

18. The Standing Committee will meet once each year, normally at the seat of the Convention Secretariat, according to the indicative schedule provided as the Annex 4 to this Resolution. A further meeting of the Subgroups on COP and Finance may be envisaged during the year before COP, if required and if sufficient funds are available, in order to ensure the timely and efficient preparation of the COP. The costs of participation of Committee members eligible for sponsorship will be borne by the Convention.

19. Within the policies agreed by the Conference of the Contracting Parties, the functions of the Standing Committee will be to:

    a) carry out, between one ordinary meeting of the Conference of the Contracting Parties and the next, such interim activity on behalf of the Conference as may be necessary, giving priority to matters on which the Conference has previously recorded its approval;

    b) make preparations on issues, including *inter alia* draft Resolutions and Recommendations, for consideration at the next meeting of the Conference of the Contracting Parties;

c) supervise, as a representative of the Conference of the Contracting Parties, the implementation of activities by the Ramsar Secretariat, the execution of the Secretariat's budget, and conduct of the Secretariat's programmes;

d) provide guidance and advice to the Ramsar Secretariat on the implementation of the Convention, on the preparation of meetings, and on any other matters relating to the exercise of its functions brought to it by the Secretariat;

e) act as Conference Committee at meetings of the Conference of the Contracting Parties in accordance with the Rules of Procedure;

f) establish subgroups as necessary to facilitate the carrying out of its functions;

g) promote regional and international cooperation for the conservation and wise use of wetlands;

h) approve the work plan of the Scientific & Technical Review Panel (STRP) on the basis of the decisions of the COP, receive the reports of the STRP on the progress made with its implementation, and provide guidance for its future development;

i) adopt for each triennium the Operational Guidelines for the Small Grants Fund for Wetlands Conservation and Wise Use and decide on the allocation of funds;

j) review each triennium the criteria for and select the laureates of the Ramsar Wetland Conservation Award established by Resolution VI.18; and

k) report to the Conference of the Contracting Parties on the activities it has carried out between ordinary meetings of the Conference.

20. The tasks of the regional representatives elected to serve in the Standing Committee will be those contained in Annex 3 of this document.

21. The Standing Committee, as a subsidiary body of the Conference of the Parties, shall take into consideration, within available resources, the need of having interpretation for its Subgroup meetings when it is requested by its members.

22. The Contracting Parties and the Secretariat will endeavor to secure additional voluntary funding to enable simultaneous interpretation at meetings of the Subgroup on Finance and Subgroup on COP.

23. The Standing Committee, as a subsidiary body of the Conference of the Parties, will be governed, *mutatis mutandis*, by the Rules of Procedure for meetings of the Conference.

Annex 2

Allocation of Contracting Parties and non-Contracting Parties to the six Ramsar regional groups

NOTE: Names of countries in capital and bold letters denote Contracting Parties to the Convention at the time of approval of this Resolution.

1. AFRICA

ALGERIA
Angola
BENIN
BOTSWANA
BURKINA FASO
BURUNDI
CAMEROON
CAPE VERDE
CENTRAL AFRICAN REPUBLIC
CHAD
COMOROS
CONGO
CÔTE D'IVOIRE
DEMOCRATIC REPUBLIC OF THE CONGO
DJIBOUTI
EGYPT
EQUATORIAL GUINEA
Eritrea
Ethiopia
GABON
GAMBIA
GHANA
GUINEA
GUINEA-BISSAU
KENYA
LESOTHO
LIBERIA
LIBYA
MADAGASCAR
MALAWI
MALI
MAURITANIA
MAURITIUS
MOROCCO
MOZAMBIQUE
NAMIBIA
NIGER
NIGERIA
RWANDA
SAO TOME AND PRINCIPE
SENEGAL
SEYCHELLES
SIERRA LEONE
Somalia
SOUTH AFRICA
SUDAN
South Sudan
Swaziland
TOGO
TUNISIA
UGANDA
UNITED REPUBLIC OF TANZANIA
ZAMBIA
Zimbabwe

2. ASIA

Afghanistan
BAHRAIN
BANGLADESH
Bhutan
Brunei Darussalam
CAMBODIA
CHINA
Democratic People's Republic of Korea
INDIA
INDONESIA
IRAN, ISLAMIC REPUBLIC OF
IRAQ
ISRAEL
JAPAN
JORDAN
KAZAKHSTAN
Kuwait
KYRGYZSTAN
LAO PEOPLE'S DEMOCRATIC REPUBLIC
LEBANON
MALAYSIA
Maldives
MONGOLIA
MYANMAR
NEPAL
Oman

PAKISTAN
PHILIPPINES
Qatar
REPUBLIC OF KOREA
Saudi Arabia
Singapore
SRI LANKA
SYRIAN ARAB REPUBLIC
TAJIKISTAN
THAILAND
TURKMENISTAN
UNITED ARAB EMIRATES
UZBEKISTAN
VIETNAM
YEMEN

3. NEOTROPICS

ANTIGUA AND BARBUDA
ARGENTINA
BAHAMAS
BARBADOS
BELIZE
BOLIVIA
BRAZIL
CHILE
COLOMBIA
COSTA RICA
CUBA
Dominica
DOMINICAN REPUBLIC
ECUADOR
EL SALVADOR
Grenada
GUATEMALA
Guyana
Haiti
HONDURAS
JAMAICA
NICARAGUA
PANAMA
PARAGUAY
PERU
Saint Kitts and Nevis
SAINT LUCIA
Saint Vincent and the Grenadines
SURINAME
TRINIDAD AND TOBAGO
URUGUAY
VENEZUELA

4. EUROPE

ALBANIA
Andorra
ARMENIA
AUSTRIA
AZERBAIJAN
BELARUS
BELGIUM
BOSNIA & HERZEGOVINA
BULGARIA
CROATIA
CYPRUS
CZECH REPUBLIC
DENMARK
ESTONIA
FINLAND
FRANCE
GEORGIA
GERMANY
GREECE
Holy See
HUNGARY
ICELAND
IRELAND
ITALY
LATVIA
LIECHTENSTEIN
LITHUANIA
LUXEMBOURG
MALTA
MOLDOVA
MONACO
MONTENEGRO
NETHERLANDS
NORWAY
POLAND
PORTUGAL
ROMANIA
RUSSIAN FEDERATION
San Marino
SERBIA
SLOVAK REPUBLIC
SLOVENIA
SPAIN
SWEDEN
SWITZERLAND
THE FORMER YUGOSLAV REPUBLIC OF MACEDONIA
TURKEY
UKRAINE
UNITED KINGDOM

5. NORTH AMERICA

CANADA
MEXICO
UNITED STATES OF AMERICA

6. OCEANIA

AUSTRALIA
Cook Islands
FIJI
Kiribati
MARSHALL ISLANDS
Micronesia (Federated States of)
Nauru
NEW ZEALAND
Niue
PALAU
PAPUA NEW GUINEA

SAMOA	Timor-Leste	Tuvalu
Solomon Islands	Tonga	Vanuatu

Annex 3

Tasks of Contracting Parties elected as Regional Representatives in the Standing Committee

The Contracting Parties that have accepted to be elected as Regional Representatives on the Standing Committee will have the following tasks:

1. To designate their delegates to the Standing Committee taking into account their significant responsibilities as Regional Representatives, according to paragraph 9 of this Resolution, and to make every effort that their delegates or their substitutes attend all meetings of the Committee.

2. When there is more than one Regional Representative in a regional group, to maintain regular contacts and consultations with the other regional representative(s).

3. To maintain regular contacts and consultations with the Contracting Parties in their regional group, and to use the opportunities of travel within their regions and of attending regional or international meetings to consult about issues related to the Convention and to promote its objectives. To this effect, when there is more than one regional representative, they will agree among themselves which Contracting Parties will be the responsibility of each regional representative.

4. To canvass the opinions of the Contracting Parties in their regional group before meetings of the Standing Committee.

5. To advise the Secretariat in setting the agenda of regional meetings.

6. To assume additional responsibilities by serving as members of the subgroups established by the Standing Committee.

7. To provide advice as requested by the Chairperson and/or the chairs of subgroups and/or the Secretariat of the Convention.

8. In the regions concerned, to make deliberate efforts to encourage other countries to join the Convention.

Annex 4

Indicative schedule for Standing Committee intersessional meetings post-2012, and for the 2013-2015 triennium

Note. This schedule is predicated on future cycles being three calendar years, with the meetings of the Conference of the Parties in May/June of the final year of each cycle.

	General timelines, post-2012	**2013-2015 triennium**
1st full meeting	9 months after COP	**SC46** – Feb/March 2013
2nd full meeting	21 months after COP	**SC47** – Feb/March 2014
Subgroup on COP (if required)	1 year before COP	**Subgroup on COP12** (if required) **–** May/June 2014
3rd full meeting	6 months before COP	**SC48 –** December 2014/January 2015
Pre-COP meeting	immediately prior to COP, at COP venue	**SC49 –** May/June 2015

11th Meeting of the Conference of the Parties to the Convention on Wetlands (Ramsar, Iran, 1971)

"Wetlands: home and destination"

Bucharest, Romania, 6-13 July 2012

Resolution XI.20

Promoting sustainable investment by the public and private sectors to ensure the maintenance of the benefits people and nature gain from wetlands

1. CONSCIOUS of the need to promote investment for sustainable development by government and private sectors so as to ensure the maintenance of the ecological character and of the benefits people and nature gain from wetlands in general, and from Ramsar Sites in particular;

2. RECOGNIZING that as Contracting Parties to the Ramsar Convention, governments should aim to ensure that international financing with any level of resources originating from Contracting Parties' governmental budgets should be in line with the objectives of the Convention, and hence RECOGNIZING that government financial participation should not generate, or contribute to generating, significant adverse impact on wetlands;

3. AWARE that such national and international investments may be channelled as direct investment in bonds and shares or loans and grants, through Ministries (including those not directly responsible for wetland conservation and wise use), government agencies such as Development Aid Agencies, Economic Cooperation Agencies, Economic or Industrial Promotion Agencies, sovereign wealth funds, multilateral financial institutions (such as the World Bank, Regional Development Banks, and the International Finance Corporation), government owned or semi-owned companies, and financial intermediaries in the national territory of a Contracting Party or in any other country's territory;

4. ALSO AWARE that making investments for sustainable development to maintain the ecosystem services of wetlands depends on proper methodologies for risk assessment, strategic environmental assessment, environmental impact assessment, and cost-benefit analysis as well as best practices, in line with guidance adopted by Contracting Parties to the Ramsar Convention (Resolutions VII.10 and X.17);

5. RECALLING that COP10 Resolution X.12 on *Principles for partnerships between the Ramsar Convention and the business sector* "encourages Parties' Administrative Authorities to draw these principles to the attention of relevant stakeholders, including *inter alia* private companies, government ministries, departments and agencies, water and basin management authorities, non-governmental organizations, and civil society at large"

(paragraph 12), and AWARE that Resolution XI.9, *An integrated framework for avoiding, mitigating and compensating for wetland losses*, provides guidance about when applying each of these response options is appropriate; and

6. ALSO RECALLING that Resolution X.3 on *The Changwon Declaration on human wellbeing and wetlands* (2008) recognized that "Development sectors, including mining, other extractive industries, infrastructure development, water and sanitation, energy, agriculture, transport and others can have direct or indirect effects on wetlands. These lead to negative impacts on wetland ecosystem services, including those that support human health and well-being. Managers and decision-makers in such development sectors need to be more aware of this and take all possible measures to avoid these negative impacts";

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7. ENCOURAGES Contracting Parties to seek to ensure that government funding through different investment channels (including those listed in paragraph 3 above) includes measures to prevent adverse environmental or social impacts on the wise use of wetlands, and the conservation of Ramsar Sites in particular;

8. ALSO CALLS UPON Contracting Parties to encourage private companies with headquarters in their national territories to draft, endorse and apply standards of sustainable business conduct that ensure the integrity and the ecosystem services of wetlands in general, and of Ramsar Sites in particular;

9. URGES Contracting Parties to ensure that environmental and social considerations are taken into account and precaution is applied to Contracting Party investment activities that may have an adverse environmental impact on the integrity and ecological functions of wetlands;

10. ENCOURAGES Contracting Parties to develop public-private partnerships to invest in wetland conservation, wise use, restoration and rehabilitation, in line with Resolution X.12, paragraph 18;

11. RECALLS Resolution X.26, paragraph 18, which "encourages Contracting Parties to undertake appropriate CEPA activities in order to ensure that all relevant public and private sector bodies associated with extractive industries are aware of obligations under the Ramsar Convention regarding the wise use of wetlands and the maintenance of their ecological character";

12. INVITES Contracting Parties to exchange appropriate information, in accordance with their laws and regulations, with other Contracting Parties related to their investments and implementation of other activities on transboundary sites such as shared wetlands and river basins, where the exchange of such information is relevant to the effective implementation of the Convention;[1]

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1 Turkey entered a reservation to the adoption by consensus of this paragraph of the Resolution. The text of the reservation appears in paragraph 436 of the COP11 Conference Report.

13. ENCOURAGES Contracting Parties and International Organization Partners (IOPs) to inform the Ramsar Secretariat regarding decisions, policies or guidelines of multinational companies which relate to Ramsar Sites in particular, and wetlands in general;

14. INVITES Contracting Parties to seek Secretariat advice or support if required, including through Ramsar Advisory Missions, when international investments appear to be having adverse effects on the integrity and the ecosystem services of wetlands, or are likely to have such adverse effects;

15. INVITES Contracting Parties to report on progress in the implementation of the objectives of this Resolution in the National Report Form for COP12; and

16. REQUESTS the Scientific and Technical Review Panel (STRP), working with other relevant institutions or organizations, to review:

    i) available technical guidance on assessing, avoiding, mitigating (minimizing) and compensating for harmful investment decisions,

    ii) available guidance on ensuring transparency and responsibility in investment decisions, including best practice case studies, and

    iii) available guidance on investments in wetland conservation, wise use and restoration, including those derived from public-private partnerships,

    and to provide advice on such guidance to the Conference of the Contracting Parties.

11th Meeting of the Conference of the Parties to the Convention on Wetlands (Ramsar, Iran, 1971)

"Wetlands: home and destination"

Bucharest, Romania, 6-13 July 2012

Resolution XI.21

Wetlands and sustainable development

1. AWARE that the "Global Forum on Wetlands for the Future" was held in the Islamic Republic of Iran on 5-6 March 2011 to commemorate the 40th anniversary of the signing of the Ramsar Convention on Wetlands, and that it was attended by more than 300 ministers, senior officials, and high-level representatives from Contracting Parties, international and regional organizations, academic institutions and other partners to the Convention;

2. HAVING BEEN INFORMED that the forum looked back over the history and work of the Convention and discussed the key areas where the Convention needs to focus its work in the coming years;

3. ACKNOWLEDGING with gratitude the efforts of the Islamic Republic of Iran in hosting that important meeting and of the participants for their careful consideration of matters of great consequence for the conservation and wise use of wetlands and the future work of the Convention; and

4. AWARE that the results of those considerations have been distilled in a document entitled the "Tehran Declaration", which was agreed by the ministers and heads of delegations participating in the forum;

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5. INVITES Contracting Parties to act upon the points made in the annexed document agreed by the ministers and heads of delegations participating in the Global Forum on Wetlands for the Future, and to disseminate the document widely to other relevant organizations and stakeholders, in order to help to promote actions that will enhance the implementation of the Convention over the next 40 years and beyond.

Annex

"Tehran Declaration on Wetlands and Sustainable Development

on the occasion of the 40th Anniversary of the Ramsar Convention on Wetlands

The Global Forum on Wetlands for the Future to commemorate the 40th anniversary of signing of the Ramsar Convention on Wetlands was held in Tehran and Ramsar, Islamic Republic of Iran, on 5th and 6th March 2011 respectively, attended by ministers, senior officials and high-level representatives from Contracting Parties, international and regional organizations, academic institutions and other partners to the Convention. The forum looked back over the history and work of the Convention and discussed the key areas where the Convention needs to focus its work in the coming years.

From an initial 18 signatory countries, the Convention has now grown to have 160 Contracting Parties who have committed themselves to implement the "three pillars" of the Convention, i.e., to work towards the wise use of all their wetlands; to designate suitable wetlands for the List of Wetlands of International Importance ("Ramsar List"); and to cooperate internationally.

The ministers and heads of delegations participating in the Global Forum on Wetlands for the Future,

Expressing appreciation to the people and Government of the Islamic Republic of Iran for hosting the Global Forum on Wetlands for the Future on the occasion of the 40th Anniversary of the Ramsar Convention on Wetlands,

Bearing in mind that water is the irreplaceable source of life, and that wetlands are the Earth's primary natural infrastructure for storing and – directly or indirectly – providing water for nearly seven billion inhabitants of the planet,

Aware that over the course of history and to this day, many human communities have developed adjacent to wetlands because of the benefits that they provide, including a reliable supply of freshwater, food from farming and fisheries, fuel and fiber, and protection from storms and floods, and that wetlands play a major role in maintaining the health and livelihood of human communities, thus reducing the risk of hunger and poverty,

Reaffirming that wetlands are also important for their contribution to biodiversity, as well as for addressing the effects of climate change, noting that the wise use of wetlands plays a major role in climate change mitigation and adaptation including through the storage and sequestration of carbon and the regulation of the water cycle, and that planning at floodplain- and catchment-scale is crucial for effective water supply and flood risk management,

Noting with concern that despite their importance, approximately half of the world's wetlands have already been lost over the last century and that this rate of loss and degradation is continuing at a faster pace than for any other ecosystem, due in part to the ever-increasing need to supply freshwater for a growing human population and for irrigated agricultural systems,

Cognizant of the fact that wetlands are being adversely affected by the demand for land for development, especially in parts of the globe experiencing rapid economic growth, through industry, infrastructure, energy and agriculture projects,

1. *Recognize* the importance of wetlands as a natural infrastructure that stores and delivers water, noting that water is essential for the maintenance of wetlands, and also the multiple functions and benefits that wetlands provide for people and nature;

2. *Acknowledge* the vital role of wetlands in sustainable development and in achieving the Millennium Development Goals by 2015;

3. *Stress* the need to promote greater awareness of wetlands through the development by Contracting Parties of programmes of education and awareness building, directed especially towards stakeholder groups and local communities;

4. *Urge* the Contracting Parties with the support of the Secretariat and the Scientific and Technical Review Panel (STRP) to seek the inclusion of wetlands in the "REDD+" mechanism for reducing carbon emissions from ecosystem destruction and degradation;

5. *Urge* the further streamlining of the implementation of the Ramsar Convention in conjunction with other international conventions and processes, so as to meet targets of mutual relevance, such as the 2020 Aichi Biodiversity Targets established by the international community at the Convention on Biological Diversity's tenth Conference of Parties in Nagoya, 2010;

6. *Reiterate* the significance of incorporating economic values of wetlands in development projects so as to ensure that decision-makers better understand the full range of benefits and values provided by wetlands;

7. *Underline* the necessity of formulating action plans and guidelines to ensure the conservation and wise use of wetlands when developing alternative means of livelihood for local communities;

8. *Insist on* promoting wise use of wetlands and the ecosystem services that wetlands provide, as well as investments and incentives for the conservation of wetlands;

9. *Reaffirm* the crucial role of participatory management of wetlands involving all stakeholders;

10. *Reiterate* the importance of capacity building through financial support and training, as well as sharing data and experiences among the Contracting Parties, and facilitating the transfer of technology and best practices to ensure the conservation and wise use of wetlands;

11. *Recognise* the potential benefit for implementation of the Ramsar Convention that could be gained from the formation of a Trust Fund, and *call upon* the international donor community and the private sector to explore the possibilities for contributing to such a Fund;

12. *Call upon* the United Nations Commission on Sustainable Development to convey the contents of the present Declaration to the forthcoming World Summit on Sustainable Development in 2012;

13. *Invite* interested Parties to participate in an eminent persons group to develop further a vision on the role of wetlands in providing ecosystem services for sustainable development in conjunction with the STRP, to be completed in time for presentation to the World Summit on Sustainable Development in 2012, and *welcome* the invitation by the I.R. Iran to host a meeting of this group in Tehran;

14. *Invite* the Ramsar Convention's Secretariat to further develop the main themes of this Declaration for consideration and endorsement by the forthcoming Conference of the Parties in 2012, and to make all efforts for their practical implementation."

11th Meeting of the Conference of the Parties to the Convention on Wetlands (Ramsar, Iran, 1971)

"Wetlands: home and destination"

Bucharest, Romania, 6-13 July 2012

Resolution XI.22

Thanks to the host country, Romania

1. HAVING MET for the first time in ten years in the European region, in Romania (Bucharest);

2. FULLY AWARE of the significant effort required for the organization of a meeting of the Conference of the Contracting Parties (COP), with, on this occasion, more than 800 participants, including delegations from 137 Contracting Parties and 5 observer States;

3. RECOGNIZING Romania's long-term commitment to the conservation and wise use of wetlands through their strong participation in the Ramsar Convention; and

4. NOTING the recent addition of six Romanian Ramsar Sites, including four new Ramsar Sites added to the List on the closing day of this meeting, and the announcement of the designation of eight additional Ramsar Sites to the List in the near future;

THE CONFERENCE OF THE CONTRACTING PARTIES

5. RECORDS its thanks to the President, the Alternate President and the Vice-Presidents of COP11 for their commitment to ensuring efficient and effective conduct of the plenary sessions;

6. ALSO RECORDS its thanks and appreciation to Romania, and in particular to the Ministry of Environment and Forests, for their efficient, comprehensive and thorough preparations which ensured the smooth running of the COP and all its associated events, as well as for the secondment of an officer to assist the Secretariat in the preparations for COP11;

7. FEELS INDEBTED to the people of Bucharest for their warm and gracious welcome;

8. EXPRESSES its admiration for and utmost appreciation of the crucial role played by the COP11 volunteers that have contributed to so many aspects of the COP's success;

9. GREATLY APPRECIATES the numerous side events and cultural events that provided a wonderful opportunity for technical and cultural exchanges between delegates and Romanian citizens;

10. COMMENDS Romania's support for the Ramsar Convention and wetland conservation and wise use through:

    a) its pioneering work for the restoration of the extensive urban wetland complex at the edge of its capital city Bucharest;

    b) the care taken for the maintenance and restoration of functional sturgeon migration routes in the Danube river basin, and the provision of continued support to these efforts that is needed in the future;

    c) the planned designation of the four newly listed Ramsar Sites referred to in paragraph 4 above as Transboundary Ramsar Sites with Bulgaria, thereby applying an ecosystem approach and furthering cross-border cooperation between Contracting Parties to the Convention; and

11. LOOKS FORWARD to working ever more closely with the government and people of Romania to harness the interest and energy generated by COP11 for the benefit of wetland conservation locally, nationally, and internationally.