contents

Conservation and Wise Use of Rich and Diverse Wetlands

RAMSAR SITES in JAPAN

The Japanese Archipelago and Nature

Situated across the Sea of Japan on the eastern rim of the Eurasian continent, the Japanese Archipelago is an island chain spanning 3000km from north to south. It consists of the four major islands of Honshu, Hokkaido, Kyushu, and Shikoku in addition to over 6000 surrounding islands.

Spanning subarctic to subtropical climate zones, the geography of Japan is diverse as seen in its high altitude mountain ranges; exceeding 3000m in height, coastline of over 30,000km, and hundreds of small rivers and streams flow down their generally steep, eroded slopes.

Climatic conditions are varied as well, influenced by seasonal monsoon winds, with distinct weather patterns for each season and average precipitation exceeding 1000mm per annum.

Forests cover over 25 million ha, or 67% of the total area of Japan, with most found in mountainous areas. These are dissected by many small rivers and streams, with eroded slopes that are generally steep. Most plains and basins found scattered here are of sand and gravel, and thus sedimentary in origin.

Japan supports a very rich biodiversity, which includes many endemic plant and animal species. Its fauna comprises 5000 vertebrates and 55,000 invertebrates while its flora is represented by 8800 vascular plants, 5500 algae, 1600 bryophytes, 1800 lichens and 16,500 fungi.

Land use is very complicated in Japan, due mainly to its topography. Forests cover most mountains, while hills and volcanic areas have been converted into pastures and orchards. Flatlands including plateaus, terraces and plains are generally used for agricultural and residential purposes. Rice paddies dominates the plains except sprawling urban areas.

The population of Japan is 127.5 million, of which most is concentrated in the very small flatland areas. The average population density is 377 persons per km^2. Human intervention and rapid urbanization, coupled with economic development have increasingly exerted pressures on the natural landscape, as well as biosphere in Japan. As a result, many flora and fauna are faced with extinction.

Status of Wetlands in Japan

With high levels of rainfall and surrounded by oceans, Japan is a country blessed with water. Consequently, within its small area are numerous marshlands, rivers, ponds and lakes, beaches, tidal flats, coral reefs, mangrove forests, seagrass/seaweed, rice paddies, reservoirs, springs, and underground water systems, which represent the myriad of wetland types supporting Japan's rich biodiversity.

Marshlands:

In the field of soil science, marshlands are known as peatlands. These can be classified as high-moors rich in plant species such as sphagnum, which are sustained only by nutrient-poor rainfalls; low-moors where reeds and sedge enriched with trophic salts from rivers thrive; and the intermediate moor characterized by colonies of plants such as Moliniopsis japonica.

As low-moors are tended to be directly impacted by human activity, those at lower altitudes in southern Honshu have long been converted into rice paddies and residential areas.

While they are found as south as Yakushima Island, intermediate moor are generally distributed in cool temperate zones throughout Japan.

High-moors are found extensively in the Chubu region of central Honshu and Hokkaido to the north, and provide important habitats for relict species of the Ice Age.

The largest marshland in Japan is the Ramsar site Kushiro-shitugen in Hokkaido, with an area of 18,000ha. There are many other marshlands designated as Ramsar sites such as Sarobetsu-genya, Kiritappu-shitugen, Bekambeushi-shitsugen, Utonai-ko, Uryunuma-shitsugen, Oze, Oku-Nikko-shitsugen. Kuju Bogatsuru and Tedewara-shitsugen.

Status of Wetlands in Japan

Rivers :

Japan has almost 109 river systems encompassing 14,000 rivers and streams. Because Japan abounds with mountains, most are short in length, and travel down steep inclines to the ocean. Sudden, heavy rainfalls in upstream areas result in numerous floods. Indeed, flood control is the greatest challenge facing river basin management schemes.

Of the 113 major rivers in Japan, very few remain in their natural state, unmarked by dams, dikes, and sluices. Natural riverbanks have largely undergone artificial modification, resulting in the disappearance of habitats for aquatic organisms every year. The Bekambeushi River in Hokkaido, a Ramsar site, is one of the exceptional rivers retaining all of its natural riverbanks.

Freshwater Lakes:

Lakes in Japan varying greatly in type are scattered throughout the country. Some are in mountainous areas, while others lie in flatlands, and still others exist as lagoons in recessed coastlines.

Biwa-ko, a freshwater lake in Shiga Prefecture, is Japan's largest lake with an area of 67,000ha. This and other freshwater lakes, such as Imuta-ike, Katano-kamoike, Sakata, Izu-numa and Uchi-numa, Kabukuri-numa, Kutcharo-ko, Utonai-ko, Miyajima-numa, and Akan-ko are designated as Ramsar sites. These provide important habitats for ducks, geese, swans, and other waterfowl, as well as freshwater fishes, plants, and aquatic insects such as dragonflies.

Many freshwater lakes in Japan have been historically utilized as irrigation pools and reservoirs for rice paddies, as seen in the Ramsar sites like Katano-kamoike, Sakata, Izu-numa and Uchi-numa, Kabukuri-numa, and Miyajima-numa.

Rice Paddies:

Rice paddies occupies 2.6 million of Japan's total land area of the 38 million ha. From ancient times, the Japanese drew their livelihoods from rice production. Rice paddies and their interconnected channels and stock ponds, as well as the managed broad-leafed deciduous tree forests in the surrounding mountains combine to form the unique, secondary nature environments found here.

Rice paddies serve as important stopovers and feeding grounds for migratory birds such as shorebirds and other waterfowl. In addition, they provide habitats for innumerable aquatic organisms such as fish and insects. Terraced paddy fields, and those situated in ravines too contribute to the unique rice paddy landscapes of Japan.

Katano-kamoike and Kabukuri-numa and the surrounding rice paddies, both Ramsar sites, contain rice paddies. Other Ramsar sites such as Shinji-ko, Nakaumi, Sakata, Izu-numa and Uchi-numa, and Miyajima-numa among others from close relationships with their surrounding rice paddies.

Groundwater Systems:

The Ramsar Convention now recognizes subterranean karst formed by limestone and underground hydrological systems as wetland types. In Japan, although limestone deposits are found in abundance from Hokkaido to Okinawa, few are large enough to be karst-forming. The Akiyoshidai Groundwater System, one of the Japan's largest karsts, and three of its subterranean caves have been designated a Ramsar site.

Coastlines:

The coastline of over 6000 islands in Japan totals 32,800km, of which 53.1% is natural and 33.0% artificial. Approximately 1300km of natural coastline has disappeared due to artificial modification in the 20 years following 1978. In the main islands of Hokkaido, Honshu, Shikoku and Kyushu, 42.3% of natural shoreline remains, whereas 41.0% is artificial.

Yakushima Nagata-hama, a natural sand beach providing the largest nesting ground for the Loggerhead Sea Turtle in the Northern Pacific region, is designated a Ramsar site.

Brackish Lakes:

All along the Japanese coastline are numerous brackish lakes, formed when left behind by receding waters, yet with most still retaining contact with the sea. Often the final depository of organic trophic materials from rivers, these lakes are shallow, with a complex ecosystem combining freshwater and saline environments. These characteristics combined create a highly productive ecosystem that abounds with marine resources that support fishing industries. In Hokkaido, Akkeshi-ko, Furen-ko and Shunkuni-tai, Tofutu-ko, Nakaumi, Shinji-ko, and Mikata-goko among others represent brackish water Ramsar Sites in Japan.

Seagrass/Seaweed Beds:

Seagrass/Seaweed beds refer to near-shore waters where vast communities of seagrass such as Eelgrass and seaweed such as Kelp thrive. These areas are provide oxygen for marine organisms, purify water, and stabilize sea-bottom environment. In addition, they are important for not only providing food sources to fish and sea turtles, but also places for nesting, growth, and hiding for countless organisms. Seagrass/Seaweed beds have long been revered by the Japanese as excellent fishing grounds as well.

According to results from the Survey on Marine Organisms Environment (Seagrass/Seaweed) in 1994, Japan has 200,000ha of Seagrass/Seaweed beds (those exceeding 1ha in area) within its waters at depths shallower than 20m. Compared to the 1978 survey, 6400 ha of Seagrass/Seaweed beds had been lost by land reclamation and other factors caused by degradation of surrounding environment. These trends continue in recent years, thus making their conservation a pressing issue. Particularly large Eelgrass beds remains in Notsuke-wan, a Ramsar site.

Tidal flats:

In the Seashore Survey of 1998, 49,380ha of tidal flats (exceeding widths of 100m and areas of 1ha) were identified. Rich nutritious sediments from freshwater and marine sources are deposited in these exposed and submerged areas, which contain a wealth of microorganisms and benthos. It is worth-mentioning that these organisms contribute significantly to the purification of water in the area.

Land development in Japan tends to target tidal flats for land reclamation, due to scarcities in flatlands, and consequently 6000ha of tidal flats have disappeared in the twenty years following 1978. Ramsar sites of Yatsu-higata, Fujimae-higata, Manko and Nagura Amparu, are valuable examples of tidal flats preserved.

Mangrove Forests:

According to the Seashore Survey (1998), there are 2670ha of mangrove forest in Japan, over 95% of which are found in Okinawa Prefecture. Although most are small in scale, there are a few which exceed 100ha in area. Of the approximate 100 types of mangrove vegetation, 4 families and 7 species have been identified in Japan. Mangrove forests are found in Manko and Nagura Amparu, both Ramsar sites.

Coral Reefs:

The total area of reed-building corals in Japan is approximately 35,350ha, most of which are located south of the Tokara Archipelago in the Nansei Islands, Kagoshima Prefecture. The species diversity of reef-building corals found here are among the most outstanding in the world. There are notable coral reefs among the Keramashoto, in addition to the high-latitude coral communities in Kushimoto. Both have been designated Ramsar sites.

Ramsar Sites in Japan

When Japan became a contracting party to the Ramsar Convention in 1980, Kushiro-shitsugen became Japan's first Ramsar site. In 1993, neighboring Kushiro City hosted the Fifth Meeting of the Conference of the Contracting Parties (COP5) to the Ramsar Convention, greatly raising awareness of the objectives of the Ramsar Convention in Japan and the rest of Asia. The number of Ramsar sites in Japan gradually increased thereafter, to reach 13 at COP8.

These numbers would soon multiply: in November, 2005 at COP9, Japan added an additional 20 wetlands, bringing the current total to 33 sites. This was achieved in response to the global objective set at COP7 in 1999 to double the then number of 1000 Ramsar sites by 2005. Japan, who only had 11 sites in 1999, was able to surpass well beyond its goals of 22 sites by 2005.

In previous years, the majority of Japan's Ramsar sites were those primarily serving as habitats for waterfowl. However, these have expanded to include wetlands such as marshlands, lakes, salt marshes, tidal flats, seagrass/seaweed beds, beaches, mangrove forests, and groundwater systems, which reflect the abundance and diversity of Japan's wetlands. In addition, better representation of wetlands in western Japan, which were largely overlooked before, was achieved.

In designating wetlands as Ramsar sites, Japan is able to:

1. Meet the international standards set by the Ramsar Convention
2. Conduct long-term planning for nature conservation through national legislation of laws such as the Natural Parks Law and Wildlife Protection and Hunting Law.
3. Gain the approval and support of the local people.

The Conservation and Wise Use of Wetlands

In designating a wide variety of wetland types, the Ramsar Convention strives not only for their conservation, but their wise use as well. The 'wise use' of wetlands as defined by the Convention refers to the "sustainable utilization for the benefit of mankind in a way compatible with the maintenance of the natural properties of the ecosystem." Sustainable practices at Japan's Ramsar sites, such as those implemented in fishing, may be considered good examples of wise use.

In order to achieve both the conservation and wise use of Japan's wetlands, various legislative measures such as laws and plans strive for the conservation and management of wetlands. The successful realization of these require full cooperation between all stakeholders, including national agencies, local governments, research institutions, NGOs, corporations, and the citizens.

Policy for Wetland Conservation:

Japan's national policy on wetlands is described in the National Biodiversity Strategy of Japan (established in 2002). In order to conserve the unique ecological character of wetlands while achieving consensus in society, an integrated approach involving measures such as the enhancement of conservation as well as provision of economic incentives needs to be employed. This requires a widened perspective that acknowledges all wetland types, as well as an international one to protect borderless migratory birds and promote international cooperation.

Laws for the Conservation of the Natural Environment:

Legislation for nature conservation and the protection of wildlife in Japan include the Basic Environmental Law, Nature Conservation Law, Natural Parks Law, Law for the Protection of Cultural Properties, Wildlife Protection and Hunting Law, Law for Conservation of Endangered Species of Wild Fauna and Flora, Law for the Promotion of Nature Restoration, and the Invasive Alien Spe-

cies Act, among others. These are far-reaching, ranging from the protection of specific species to specific areas, and set restrictions on development and the exploitation of resources. Furthermore, these strive to restore lost natural environments. Many wetlands and the countless species inhabiting them are covered in these laws.

Stakeholder Participation:

In Japan, local governments are the administration bodies working the most closely with wetlands and their surrounding catchments. They are responsible for implementing wetland management policies through various public services. In many cases wetlands are protected under municipal acts. These activities are supplemented by prefectural wildlife protection area, nature conservation area, natural parks, as well as their own legislation and environmental projects.

There is also the network "Meeting of Japanese Municipalities Involved with Wetlands Designated under the Ramsar Convention" that encourages information exchange and project cooperation. Regular meetings are organized to promote grassroots wetland conservation activities striving for appropriate management of these sites.

In order to promote the participation of all stakeholders for wetland conservation, and raise public awareness, the Ministry of the Environment has established waterfowl and wetland centers at the Ramsar sites of Kutcharo-ko, Akkeshi-ko and Bekambeushi-shitsugen, Biwa-ko, Sakata, Manko, Fujimae-higata, among others. In addition to raising public awareness, these centers serve as bases for information dissemination. Management and operation of these centers is conducted by the responsible municipalities, who also often establish their own observation centers.

In 2003, 'Japanese Lawmakers' League for Increasing Ramsar Sites' was established with objectives to increase the number of Ramsar sites by supporting the activities of the Ministry of the Environment and local governments. For example, the committee organizes inspections of potential sites.

In the areas surrounding wetlands are the countless individuals and groups such as locals, NGOs, and specialists working towards the conservation and management of wetlands. This is not only restricted to Ramsar sites: throughout Japan, people everywhere turn to wetlands for livelihood and enjoyment, and are committed to their conservation.

International Cooperation:

International cooperation is vital to meet the goals of wetland conservation and wise use. Acknowledging this, the international community has high expectations for Japan, a developed country in Asia, to work towards its realization. To meet these expectations, Japan is currently actively engaged in a variety of activities that support various causes.

Financial Assistance and Technology Transfer for the Conservation of Wetlands:

Through the Japan International Cooperation Agency (JICA), trainees from developing countries are invited to Japan for study courses for the conservation and wise use of wetlands, conservation of coral reefs and conservation of mangroves. In addition, technology- transfer projects for wetland conservation are underway in Iran and Mongolia.

Wetland Surveys and Information Exchange:

The Ministry of the Environment organized surveys and workshops in Myanmar in order to compile a national wetland inventory, which subsequently lead to Myanmar's entry into the Ramsar Convention.

In addition, the ministry supported the development of teaching materials to promote the Asian Wetlands Inventories.

Support was also lent in the organization of the routinely held "Asian Wetland Symposium", which gathers wetland management scholars and specialists, administrative bodies, and NGOs from all over Asia.

Sistership Programs between Wetlands Sites:

In order to promote information exchange and awareness-raising activities for the conservation and wise use of wetlands between Japan and abroad, a sistership program has been created. Sisterships have now been established linking Kushiro-shitsugen, Kiritappu-shitsugen, Akkeshi-ko and Bekambeushi-shitsugen to the Hunter Estuary Wetlands of New South Wales, Australia, and the Yatsu-higata to the Boondall Wetland in Queensland, Australia.

Bilateral Agreements for Migratory Birds:

Japan supports migratory bird protection, and has bilateral treaties/agreements with the United States, Russia, Australia and China. Actions have been taken to ban migratory bird hunting, register migratory bird species, promote information exchange, establish sanctuaries, secure measures for the conservation of habitats, as well as to conduct joint surveys of specific species. Japan-Korea Environment Protection and Cooperation Agreement has been signed, whereupon joint surveys and meetings are organized for the protection of migratory birds.

Asia Pacific Migratory Waterbird Conservation Strategy:

As to multilateral frameworks, together with Australian government, Japan has been leading the Asia Pacific Migratory Waterbird Conservation Strategy, which supports activities for conserving migratory waterbirds and their habitats in the region including the activities of the East Asian-Australasian Shorebird Reserve Network, the North East Asian Crane Site Network, and the East Asian Flyway for Anatidae (ducks, geese and swans).