

Part 2 : Current Environmental Issues and Environmental Conservation Measures by Government

This part reports the current conditions of environmental problems and the environmental conservation measures that were implemented in 2001 based on the Basic Environment Plan under the Chapters indicated below. The following Chapters clarify the current conditions of environmental problems and issues in the major fields.

Chapter 1 Creating a Socio Economic System Based on Sound Material Cycles with Minimal Environmental Burden

Chapter 2 Basis of Measures, and Measures to Promote Participation of All Segments of Society

Chapter 3 Measures to Promote International Action

Chapter 4 Effective Implementation of the Basic Environment Plan

1) Global Scale Conservation of Air Environment

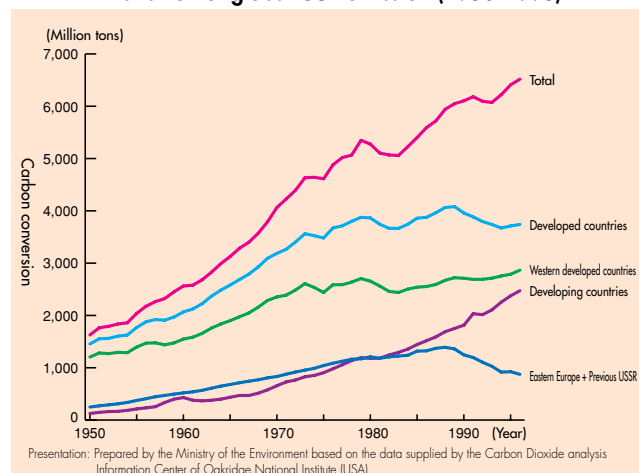
(1) Global warming

With the recent expansion of human activities, a large amount of greenhouse gases such as carbon dioxide and methane gas is emitted into the air, enhancing greenhouse effects and increasing the possibility of global warming.

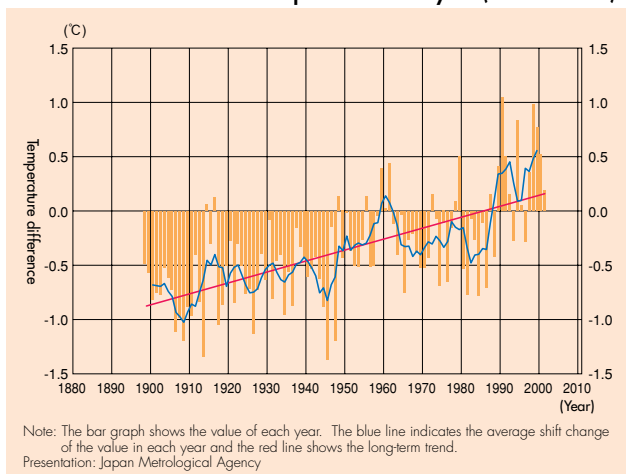
The 2001 report of the Intergovernmental Panel on Climate Change (IPCC) indicates a rise of the average global surface temperature by $0.6 \pm 0.2^\circ\text{C}$ since 1861 and forecasts a further rise by 1.4°C to 5.8°C until 2100 and a rise of the sea level of between 9cm and 88cm. The observation by Japan Meteorological Agency indicates a rise of the average annual temperature by about 1.0°C over the last 100 years and the influence of global warming on the natural environment is already detected such as reduction of the sea ice area of Sea of Okhotsk and a shift of natural habitat areas of animals and plants.

Among the greenhouse gases emitted in 1999 in Japan, the carbon dioxide emission accounts for 1,225 million tons and the emission per capita is 9.67 tons (both are based on carbon dioxide conversion). The emission per capita has increased by 6.3% since 1990 and the total emission shows an increase of 9.0%. The results by sector indicates an increase of 23.0% in the transportation sector, an increase of 20.1% in the public welfare (business) sector, and an increase of 15.0% in the public welfare (household) sector, while the result shows an increase of 0.8% in the industrial sector.

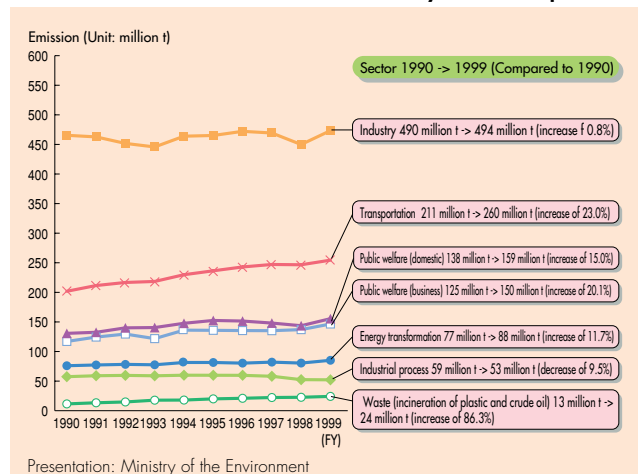
Transition of global CO₂ emission (1950-1996)



Chronological change of anomaly of average surface temperature in Japan in common year (1898 to 2001)



Condition of carbon dioxide emission by sector in Japan



To solve global warming problems, the Japanese Government is to make its utmost efforts for approval of the conclusion of Kyoto Protocol in the 154th ordinary session of the Diet, and establishment of the domestic collateral law that is required for the approval regarding the greenhouse gas emission of developed countries in order to conclude in 2002 the Kyoto Protocol that sets constraints on emission values. In addition, the Government needs to enhance the measures in every site of the socio economical system and organically combine measures of each aspect. At the same time, a fundamental measure is necessary in the future for reviewing and changing the mass production, mass consumption, and mass waste producing modern socio economic system.

(2) Ozone layer depletion

It became clear that the ozone layer is being depleted by ozone layer depletion substances such as chlorofluorocarbon (CFC). When an ozone layer is depleted, harmful ultra violet rays reach the Earth's surface, causing health hazards such as skin cancer or cataracts.

Ozone layers being depleted globally except over tropical areas and the rate of depletion is higher in the highest latitude regions. In Japan also, a statistically significant trend has been verified in Sapporo, and in the South Pole, the largest ozone hole in history was observed in 2000. The ozone layers are in a fragile condition due to the emission of man-made chemicals.

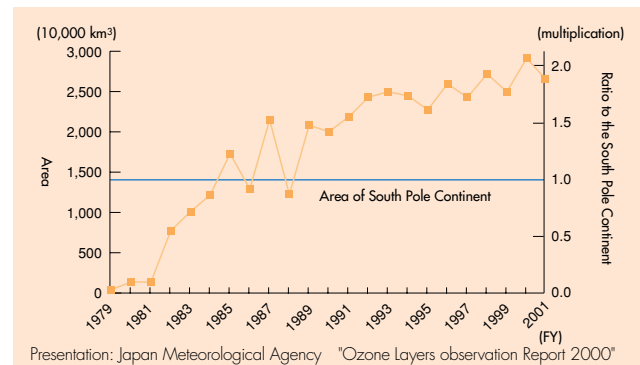
The Japanese Government controlled production of CFC by establishing the Ozone Layer Protection Law in 1988 established the "Law Regarding Recovery and Destruction of Freon Associated with Specific Products" in June 2001. This law made obligatory the recovery and destruction of Freon in commercial freezer air conditioners and car air conditioners.

2) Conservation of Air Environment (Excluding the global scale air environment) Air Environment

(1) Acid rain

Acid rain is a rain that shows strong acidity for dissolved sulfur oxides and nitrogen oxides that are generated from combustion of fossil fuels and so on. The impact of acid rain over a wide range of places for the acidification of inland water was such as lakes, swamps, and rivers, and forests by acidification of soils, and acceleration of deterioration or collapse of trees and cultural heritage buildings by acid deposition, is feared.

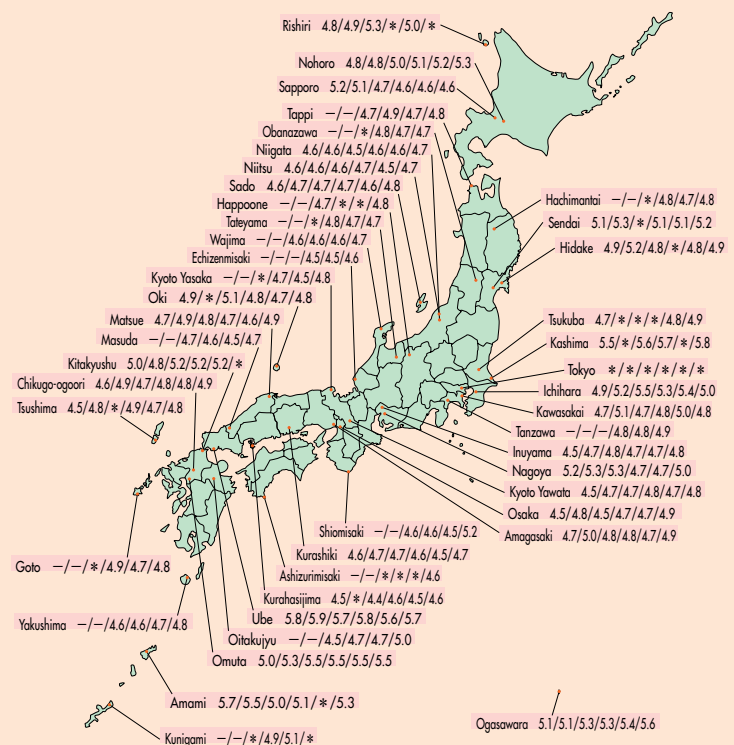
Transition of scale of ozone holes



pH distribution chart in rainfall

Result of 2nd survey and 3rd survey

Average of 2nd survey⁽¹⁾/1993/1994/1995/1996/1997



—: Not measured

*: Invalid data (discarded by the annual judgment criteria)

Notes: 1. Average value of the 2nd survey over 5 years (excluding missing measurement and the annual average values that were discarded)

2. In Tokyo, values are measured in different positions in the 2nd survey and the 3rd survey.

3. In Kurashijima, values are measured in different positions in 1993 and 1994.

4. For Sapporo, Niitsu, Hidake, and Tsukuba, the measurement frequencies are different in 1993 and from 1994 onwards.

5. Data of the winter closed points (Oze, Nikko, and Akagi) is excluded.

Source: "Summary of 3rd Acid Deposition Survey" by the Ministry of the Environment, Acid Deposition Countermeasure Review Meeting

In Japan, almost the same degree of acid rain impact is observed as in Europe and America from which damage has already been reported. However, the impact on the ecosystem has not been clarified yet. Since in general, the damage by acid rain surfaces after a long period of time, if acid rain continues at the present rate, the damage of acid rain may become actualized.

(2) Photochemical oxidants

Photochemical oxidants are generated as the secondary product of photochemical reactions when primary pollutants mainly consisting of nitrogen dioxides and hydrocarbons that are emitted from factories, offices, and automobiles receive irradiation from sunlight. Photochemical oxidants cause photochemical smog that irritates the eyes and throats or influences the respiratory organs, however, the level of photochemical oxidants still exceeds the environmental standard in almost all the areas nationwide.

(3) Nitrogen oxides

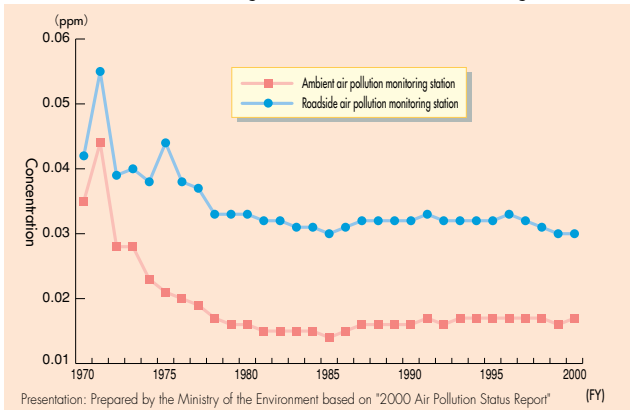
Nitrogen oxides that adversely affect the respiratory organs at high concentration are generated mainly by material combustion. They are mainly generated from stationery sources such as factories and mobile sources such as automobiles.

The annual average concentration of nitrogen dioxide in 2000 was slightly higher than that of the previous year, however, the long-term view shows that the concentration remains almost at the same level. For the environmental standard achievement statuses for nitrogen dioxide in 2000, the Ambient Air Pollution Monitoring Station indicated 99.2% and the Automobile Exhaust Gas Monitoring Station indicated 80%. However, the standard has not been satisfied over a wide area surrounding the urban areas that are specified by Automobile NOx Control Law (Law Concerning Special Measures for Total Emission Reduction of Nitrogen Oxides from Automobiles in Specified Areas) and the condition of air pollution is still unsatisfactory. Based on this reason, the implementation was enhanced by amending the Automobile NOx Law in 2001.

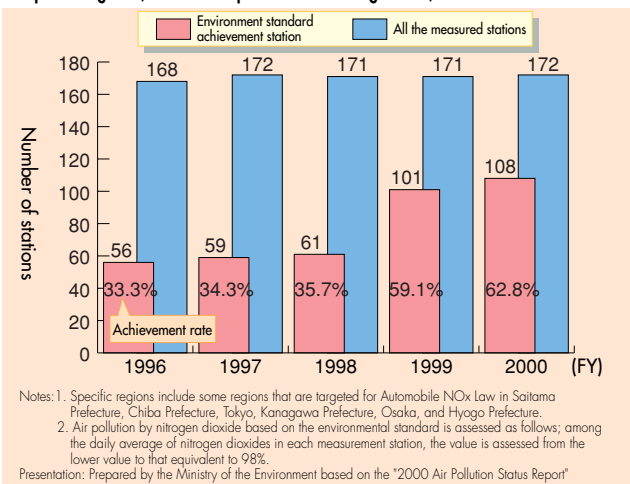
(4) Suspended particulate matter

Suspended particulate matter is particles with diameter of 10 micro meters or less and float in the air. Suspended particulate matter consists of two categories: primary particles such as diesel exhaust particles that are emitted from diesel automobiles and flinged-up soils; and secondary particles that are produced by changing gaseous substances such as nitrogen oxides into particles in the air. Being extremely small, such matters stay in the air for a long time, are deposited in lungs and the trachea, harming the respiratory organs at high

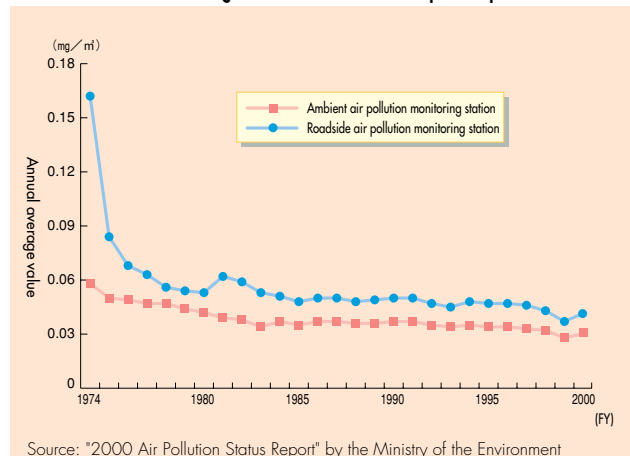
Transition of annual average concentration levels of nitrogen dioxide



Transition of environment standard achievement status associated with nitrogen dioxide in specific regions (Roadside air pollution monitoring station)



Transition of annual average concentration level of suspended particulate matter



concentration.

The average density of suspended particulate matter remains at almost the same level or is decreasing gradually. The conformity status of the environmental standard of suspended particulate matter based on the long-term assessment is decreasing slightly in comparison to that of the previous year. Therefore, as the measure for urban areas where the pollution conditions are quite serious, the Government amended Automobile NO_x Control Law to add particulate matter to the regulated substance list in 2001. The Government also examining micro particulate matter with diameter 2.5 micro m or less and diesel exhaust particles since the relationship between these substances and health is of great concern.

(5) Sulfur oxide

The average concentration of sulfur dioxide that is generated by burning oil and coal containing sulfur and causes pollution disease and acid rain remains at the same level or is decreasing. The recent environmental compliance status maintains a favorable condition although there were some influences from volcanic gas from Miyake Island.

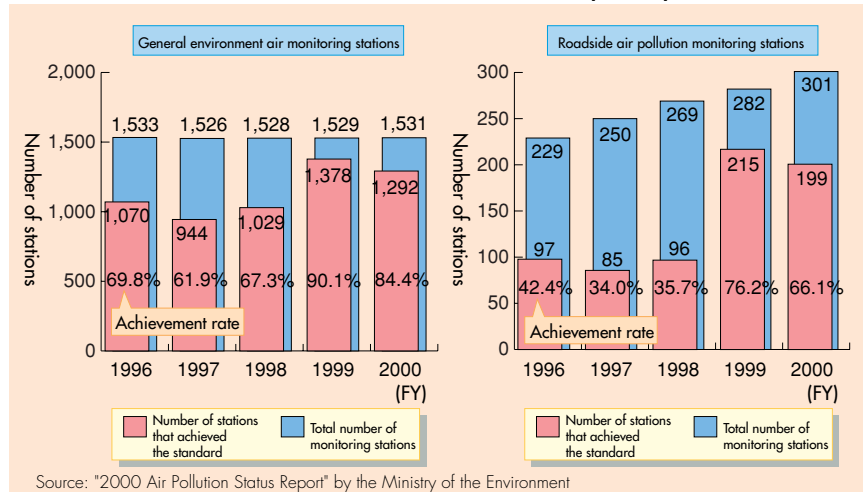
(6) Hazardous air pollutants

Full-scale monitoring was started for hazardous air pollutants in local Governments based on the revised Air Pollution Control law that was implemented in 1997. The levels of benzenes exceeded the environment standard value in 74 spots among 364 spots in 2000, and enhancement of emission reduction by voluntary measures is planned from 2001.

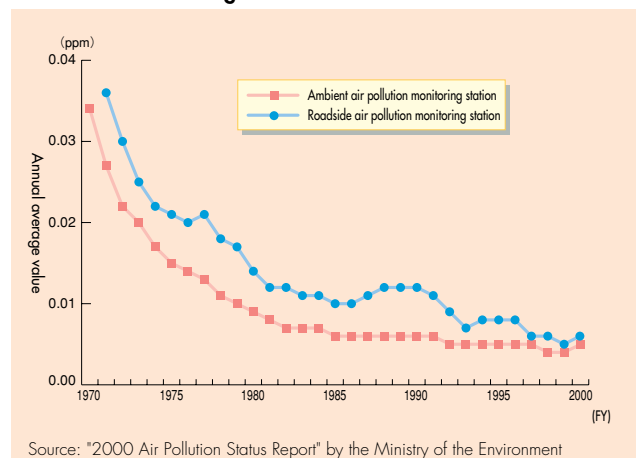
(7) Noise, vibration, and offensive odor

In addition to air pollution, there are also noise, vibration, and offensive odors, which are mainly related to human senses and are now regarded as important issues in conservation of the living environment. Noise is a problem closely related to daily living among various types of pollution and the sources vary greatly. Annually, the number of complaints against noise forms the majority of pollution complaints. Although the number of complaints regarding noise has decreased over these past 10 years, the number increased in 2000. The number of complaints regarding vibration remains at the same level over these past 10 years. The number of complaints regarding offensive odors was dropping after reaching its peak in 1972, however, it has started to increase in these past several years.

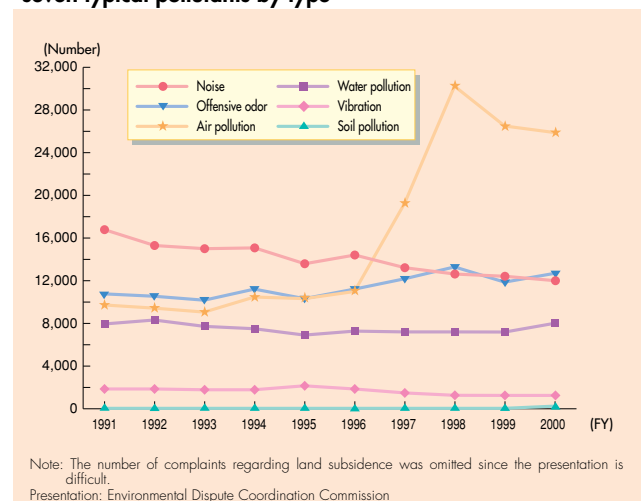
Transition of environment standard achievement status of suspended particulate matter



Transition of average concentration level of sulfur dioxide



Transition of the number of complaints regarding seven typical pollutants by type

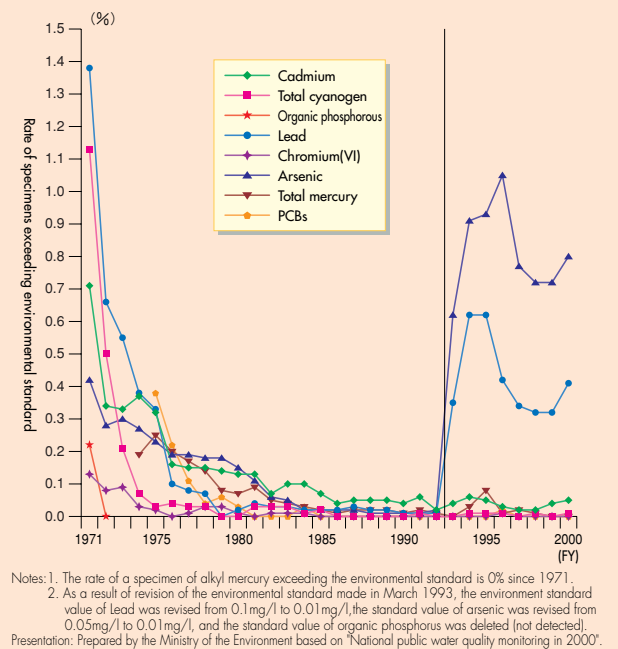


3) Conservation of water, soil, and ground environment

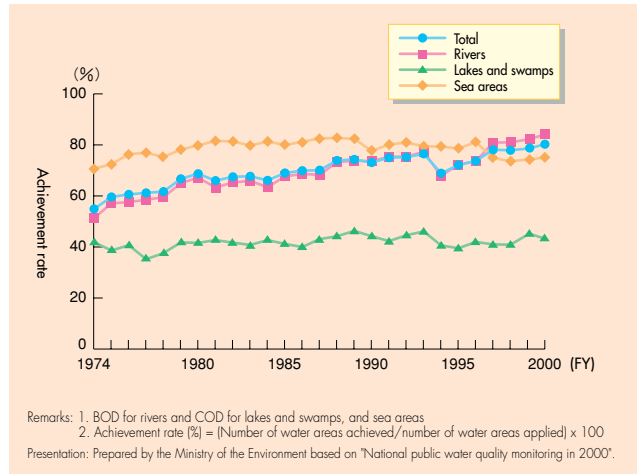
(1) Water environment

The result of national public water quality monitoring in 2000 indicates that the environment standard achievement rate regarding human health such as cadmium is 99.2%, however, the environmental standard achievement rate regarding conservation of living environment such as COD, which is a typical water quality index of organic pollution, is 79.4%. In particular, the achievement rates in the enclosed waters such as lakes, swamps, and bays are still low. The COD indexes, which are the typical indicators, indicate 63% for Tokyo Bay, 56% for Ise Bay, 76% for Seto Inland Sea, and 42.3% for lakes and swamps. To take the proper measures for such a condition, the Government decided to reduce COD indexes of Tokyo Bay, Ise Bay, and Seto Inland Sea further. The Government also decided to implement the 5th Areawide Total Pollutant Load Control targeting 2004 as the implementation year by adding nitrogen contents and phosphorus contents as the specification items as well as COD, in order to promote comprehensive reduction measures combining nitrogen and phosphorus, which are the causes of eutrophication.

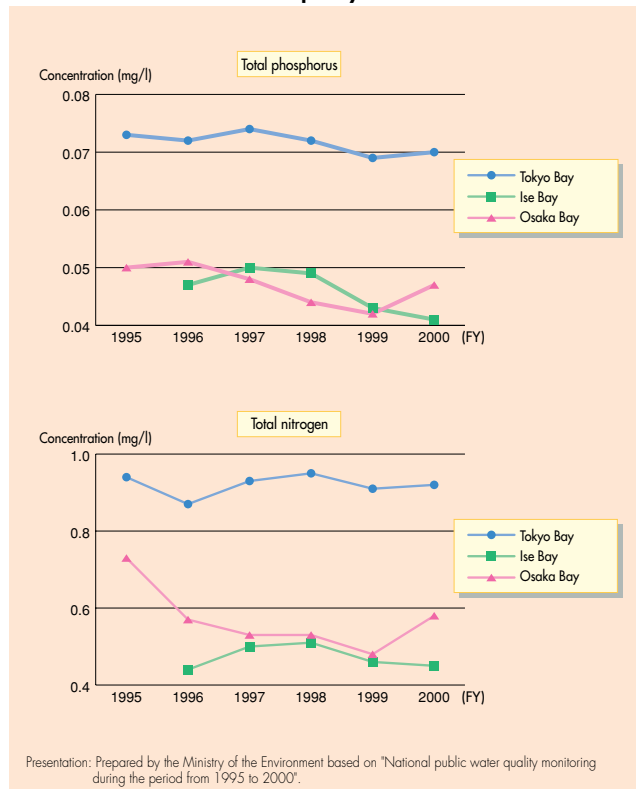
Transition of rate of specimens exceeding environmental standard associated with health items (8th item)



Transition of environmental standard (BOD or COD) achievement rate



Transition of water quality in three sea areas



Groundwater quality monitoring result of 2000

Substance	Number of wells tested (wells)	Number of wells exceeded the standard (wells)	Excess rate %	Environmental standard
Cadmium	2,997	0	0.0	0.01 mg/l or less
Total cyanogen	2,616	0	0.0	not detectable
Lead	3,360	10	0.3	0.01 mg/l or less
chromium(VI)	3,187	1	0.03	0.05 mg/l or less
Arsenic	3,386	65	1.9	0.01 mg/l or less
Total mercury	2,833	2	0.1	0.0005mg/l or less
Alkyl mercury	1,048	0	0.0	not detectable
PCBs	1,818	0	0.0	not detectable
Dichloromethane	3,534	0	0.0	0.02 mg/l or less
Carbon tetrachloride	3,675	2	0.1	0.002 mg/l or less
1,2-dichloroethane	3,301	0	0.0	0.004 mg/l or less
1,1-dichloroethylene	3,650	2	0.1	0.02 mg/l or less
cis-1,2-dichloroethylene	3,657	12	0.3	0.04mg/l or less
1,1,1-trichloroethane	4,219	0	0.0	1 mg/l or less
1,1,2-trichloroethane	3,286	0	0.0	0.006 mg/l or less
Trichloroethylene	4,225	22	0.5	0.03 mg/l or less
Tetrachloroethylene	4,225	17	0.4	0.01 mg/l or less
1,3-dichloropropene	3,039	0	0.0	0.002 mg/l or less
Thiuram	2,528	0	0.0	0.006 mg/l or less
Simazin	2,508	0	0.0	0.003 mg/l or less
Thiobencarb	2,453	0	0.0	0.02 mg/l or less
Benzene	3,436	0	0.0	0.01 mg/l or less
Selenium	2,634	0	0.0	0.01 mg/l or less
Nitrate nitrogen and nitrite nitrogen	4,167	253	6.1	10 mg/l or less
Fluoride	3,276	25	0.8	0.8 mg/l or less
Boron	3,210	16	0.5	1.0 mg/l or less
Total (Number of wells)	4,911	398	8.1	

Presentation: Ministry of the Environment "Groundwater Quality Monitoring Result in 2000"

For groundwater, the result of a survey conducted in 2000 shows that 8.1% of the wells that were examined exceeded the environmental standards. Regarding nitrate nitrogen and nitrite nitrogen, 6.1% of the wells exceeded the environmental standard. Under these circumstances, the countermeasures are regarded as urgent issues.

(2) Marine pollution

The number of confirmed marine pollutants in the Japanese sea areas in 2001 was 486, which is a reduction of 124 in comparison to that of 2000.

(3) Soil contamination

Soil contamination occurs due to direct infection such as leakage of raw materials due to inappropriate treatment or due to the secondary load generated through water pollution or air pollution caused by business activities. Once soil is contaminated, hazardous substances are deposited, causing a long-term contamination. Recently, soil contamination are being detected increasingly as a result of redevelopment of factory sites and research organization sites. In 2000, 134 soil contamination instances were detected. Therefore, to promote soil environment conservation measures in urban areas and so on, the Government submitted a bill for soil contamination countermeasures in February 2002.

(4) Ground Subsidence

Ground subsidence occurs due to contraction of a clay layer that is caused by a drop of the groundwater level that is caused by excessive extraction of groundwater. Once the ground has subsided, it will not be recovered to the original condition, causing damage to buildings and increase of submersion probability at flooding. By 2000, ground subsidence was noticed in 37 Prefectures and 61 regions.

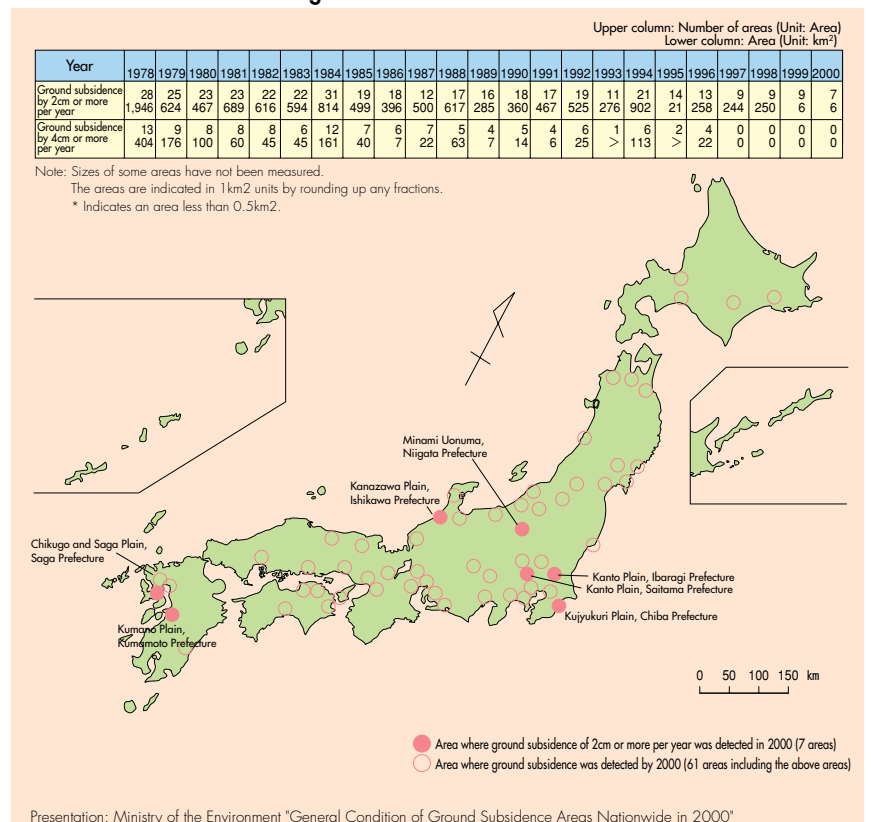
Transition of number of confirmed marine pollutions by sea area

(Unit: Pollution)

Year	Type	Sea Area											Total
		Hokkaido coastal area	Honshu East coast	Tokyo Bay	Ise Bay	Otsuka Bay	Sea of Japan excluding Otsuka Bay	Sea of Japan South Coast	Kyushu coastal area	Japan Sea coastal area	South-West sea area		
1997	Oil	28	34	61	6	16	86	38	57	53	26	405	
	Other than oil												
	Hazardous substance	0	9	1	0	1	3	75	1	0	0	90	
	Waste	5	44	0	7	5	23	29	14	8	9	144	
	Others	5	1	10	0	2	1	0	0	1	0	20	
1998	Oil	32	24	73	12	16	67	52	47	33	32	388	
	Other than oil												
	Hazardous substance	0	7	1	0	1	2	33	0	0	2	46	
	Waste	8	6	2	13	37	60	33	39	13	0	211	
	Others	2	0	9	1	1	11	1	1	0	0	26	
1999	Oil	18	33	64	11	14	47	31	37	35	49	339	
	Other than oil												
	Hazardous substance	0	2	2	0	0	1	13	2	0	0	20	
	Waste	13	3	4	20	9	49	40	18	21	4	181	
	Others	1	3	6	0	5	5	1	0	2	0	23	
2000	Oil	13	23	78	17	16	44	45	31	13	27	307	
	Other than oil												
	Hazardous substance	0	1	0	1	1	1	25	0	1	0	30	
	Waste	10	9	2	45	3	43	10	39	64	1	226	
	Others	1	1	4	0	1	3	5	1	0	0	16	
2001	Oil	15	19	73	28	11	49	31	45	38	18	327	
	Other than oil												
	Hazardous substance	0	2	1	1	2	1	0	1	0	0	8	
	Waste	1	3	3	6	5	32	13	8	31	1	103	
	Others	1	1	8	0	0	0	1	0	0	0	11	

Notes: 1. "Hazardous substances" in the column "other than oil" refer to hazardous substances that are specified in the "Law Relating to Prevention of Marine Pollution and Maritime Disaster" and unexamined liquid substances.
2. "Others" in the column "other than oil" refer to factory waste water and Blue Tide.
Presentation: Japan Coast Guard

Outline of ground subsidence areas nationwide

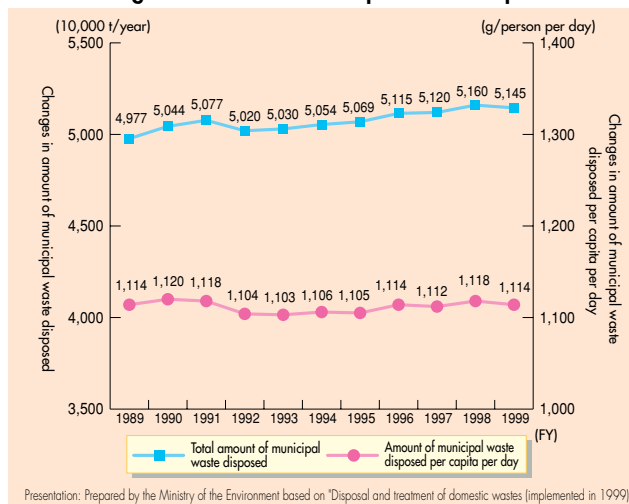


4) Measures for waste and recycling

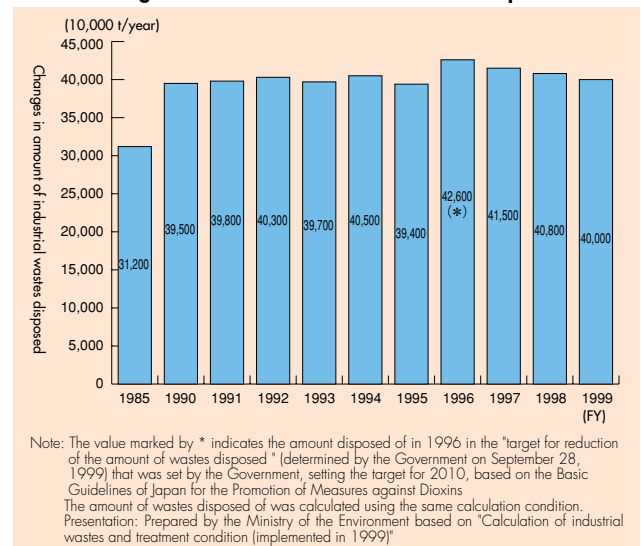
In Japan, about 50 million tons of municipal wastes are disposed of annually since 1989 and the amount has remained at the same level for these past several years. Of the wastes, 78.1% is directly incinerated and 10.87 million tons are treated as final disposal. The average national capacity of municipal landfill sites is 12.3 years in 1999.

The total amount of industrial wastes disposed of remains at the same level in these past several years. In 1999, the amount decreased slightly from that of the previous year, resulting in about 400 million tons and the amount of final disposal was about 50 million tons, a decrease from the previous year's in terms of the proportion to the total disposal amount. The average national capacity of landfill sites was 3.7 years in 1999, presenting a more difficult situation than municipal wastes. In particular, the capacity in metropolitan areas is 1.2 years, which is a particularly difficult situation.

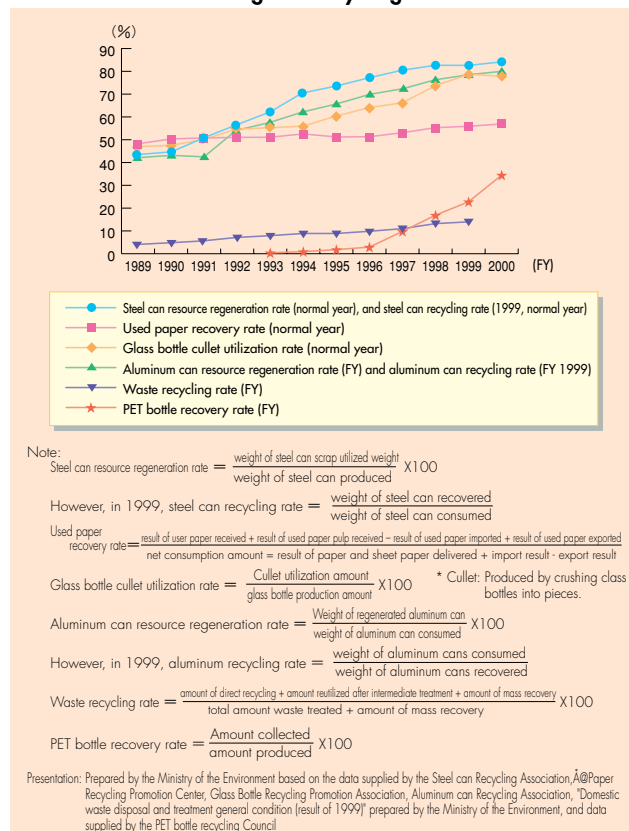
Changes in amount of municipal wastes disposed



Changes in amount of industrial wastes disposed



Changes in recycling rate



To solve these problems, waste and recycling measures must be implemented keeping in mind the following priority rule stipulated in the Basic Law for Establishing a Recycling-Based Society firstly reduction of waste generation, secondly reuse of used products and components, thirdly recycling as materials, fourthly energy recovery, and finally, proper disposal.

Regarding recovery and recycling status, the recycling rate combining resource regeneration implemented by municipalities and mass recovery by resident groups is only 13.1% in 1999. Although the rate is increasing each year, it is still at a low level. The individual recycling status in 2000 shows 84.2% for steel cans, 80.6% for aluminum cans, and 77.8% for glass bottle cullet (crushed used bottles) utilization rate. The rate of recycling used papers is slightly increasing, which is 57.0%. The recovery rate of PET bottles is also increasing each year and has reached 34.5% in 2000.

1,027 cases of illegal disposal of industrial waste were detected in FY 2000, and the tonnage dumped remained fairly stable at around 400,00 tonnes per year recently.

5) Measures for environmental risks of chemical substances

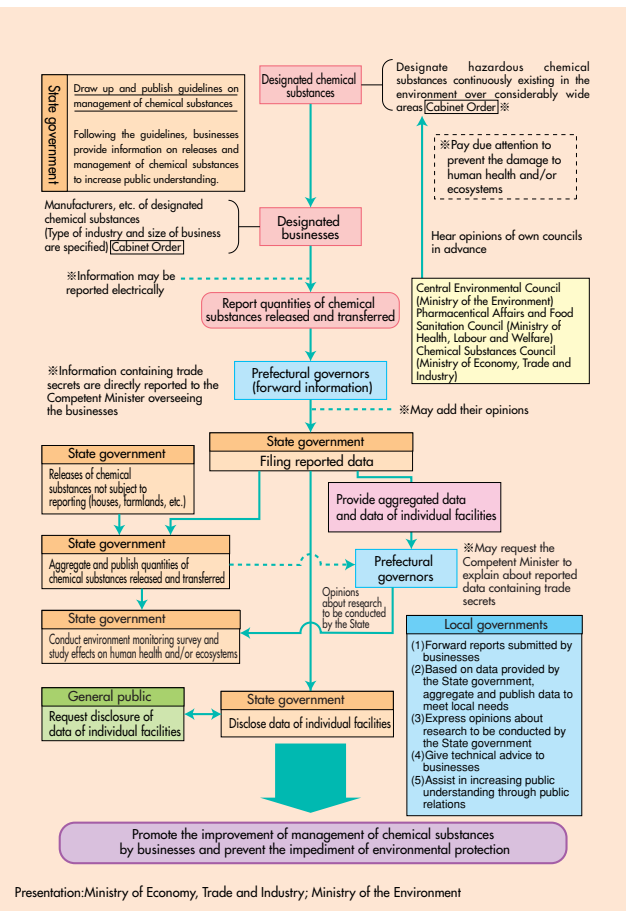
About 50,000 types or more of chemical substances that are currently distributed within Japan contain various toxicities including carcinogenicity and impacts on reproductive systems. These substances may give adverse effects on human health and the ecosystem via media such as air and water. The examination of chemical substances deposited in the environment has detected various chemical substances including those of high residual property, such as PCB and DDT. Some of these chemical substances are causing pollution on the global scale and, to tackle these problems internationally the Stockholm Convention on Persistent Organic Pollutants was adopted in 2001.

To prevent such impacts, it is necessary to take proper measures by assessing the concerns (environmental risks) caused by chemical substances.

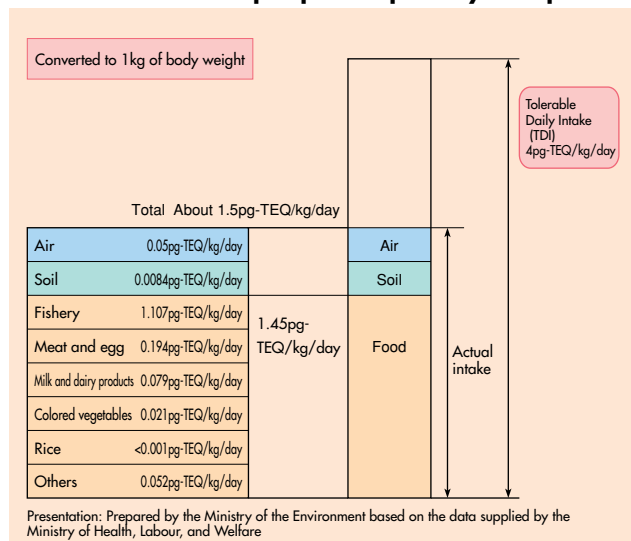
Regarding dioxin, which is attracting public concerns its amount taken per person per day has been reducing steadily, and is less than the tolerable daily intake(TDI), whose amount is not harmful to human health even if it is taken continuously throughout the whole lifetime.

Concerning endocrine disrupters (so called environmental hormone) that might have an adverse influence on an endocrine system, since there are many unsolved issues, examination and research are being implemented to accumulate more scientific information.

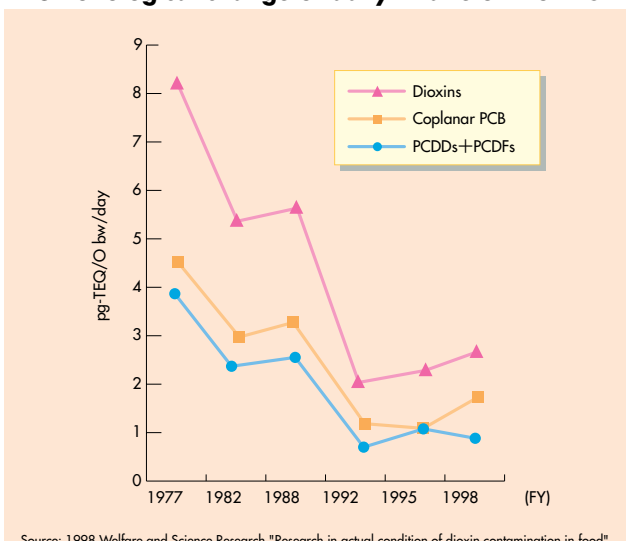
Implementation Procedure of Reporting, etc. of Releases of Specific Chemical Substances(PRTR/Pollutant Release and Transfer Register)



Intake of Dioxin per person per day in Japan



Chronological change of daily intake of Dioxins



In addition, the PRTR system was introduced in Japan and the results will be announced after the end of 2002. The PRTR system is a mechanism for checking, aggregating, and announcing the amount of chemical substances harmful to human health or the ecosystem that is emitted to the environment or may be carried together with wastes. In the future, improvement of risk communication becomes more important to promote sharing of information and mutual understanding among citizens, industries, and governments regarding environmental risks caused by chemical substances.

6) Securing harmonious coexistence between human-kind and nature

The condition of the natural environment in Japan shows a decrease of natural forests and secondary forests and increase of plantations, urban areas, and reclaimed land areas, Tidal flat and algal areas and natural lakeshore areas and coastal areas are decreasing. Among the species found in Japan, a total of 57 species are specified as lean wild plant and animal species, including 2 types of Mammalia and 39 types of birds. The species whose existences are threatened in Japan include about 20% or more of Mammalia, Amphibia, and salt-water/fresh-water Pisces, about 20% or less of Reptilia and vascular bundle plants, and 10% or more of Aves.

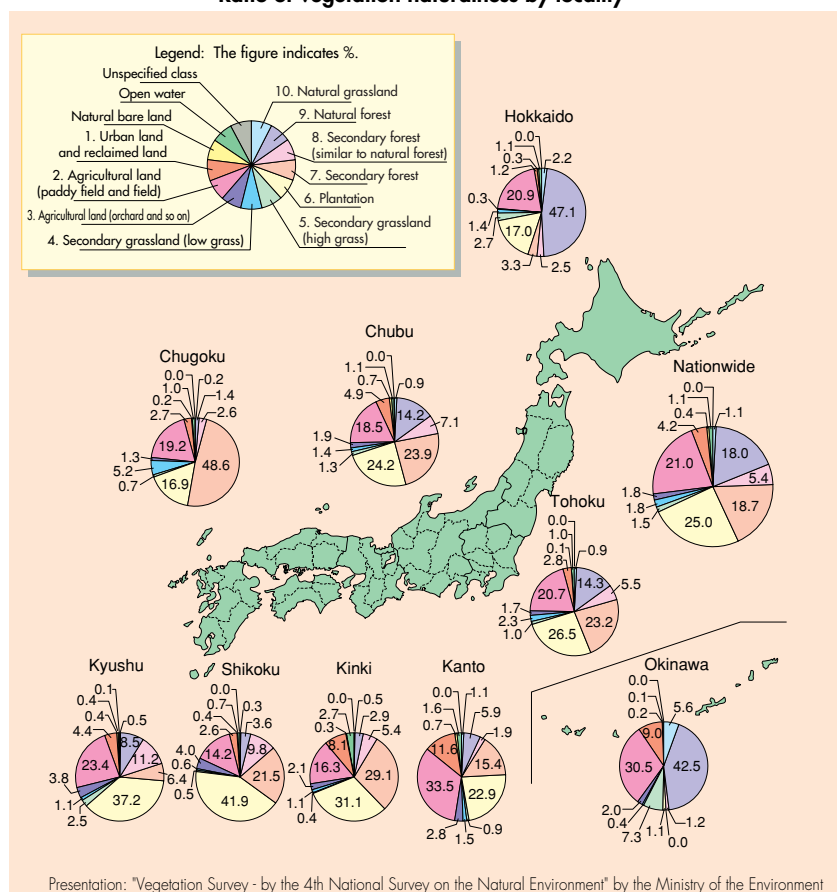
Based on these circumstances, the Government revised the National Strategy on Biological Diversity in March 2002.

Cycle in the socio economic system and cycle in the natural environment

Vegetation naturalness	Classification	3rd survey		4th survey		Increase/decrease	
		Number of meshes	Ratio	Number of meshes	Ratio	Number of meshes	Ratio
10	Natural grassland	4,038	1.1	4,011	1.1	-27	0.0
9	Natural forest	66,979	18.2	66,394	18.0	-585	-0.2
8	Secondary forest (similar to natural forest)	20,046	5.4	19,733	5.4	-313	-0.1
7	Secondary forest	70,484	19.1	69,030	18.7	-1,454	-0.4
6	Plantation	91,029	24.7	92,072	25.0	1,043	0.3
5	Secondary grassland (high grass)	5,737	1.6	5,626	1.5	-111	0.0
4	Secondary grassland (low grass)	5,939	1.6	6,498	1.8	559	0.2
3	Agricultural land (orchard)	6,798	1.8	6,817	1.8	19	0.0
2	Arable land (paddy fields and fields)	76,945	20.9	77,311	21.0	366	0.1
1	Urban land and reclaimed land	14,841	4.0	15,420	4.2	579	0.2
	Natural bare land	1,392	0.4	1,416	0.4	24	0.0
	Open water	4,170	1.1	4,211	1.1	41	0.0
	Unspecified class	72	0.0	71	0.0	-1	0.0
	Total	368,470	100.0	368,610	100.0	140	0.0

Presentation: "Vegetation Survey - by the 4th National Survey on the Natural Environment" by the Ministry of the Environment

Ratio of vegetation naturalness by locality



In the new national strategy, the Government indicated the basic policies regarding the future biological diversity conservation measures with the following three major pillars based on the current condition of the crisis on biological diversity and maturity of awareness of the nation on these issues:

- <1> "Enhancement of conservation" as the countermeasures for extinction of species, decrease of wetland, and problems of introduced species
- <2> Suggestion of "Restoration of Nature" for actively regenerating and restoring the parts of Nature that were lost or damaged, in addition to the conversion of Nature
- <3> "Sustainable use" in areas such as satoyama, community based traditional agriculture and forests, that is, promotion of regional conservation of biological diversity.

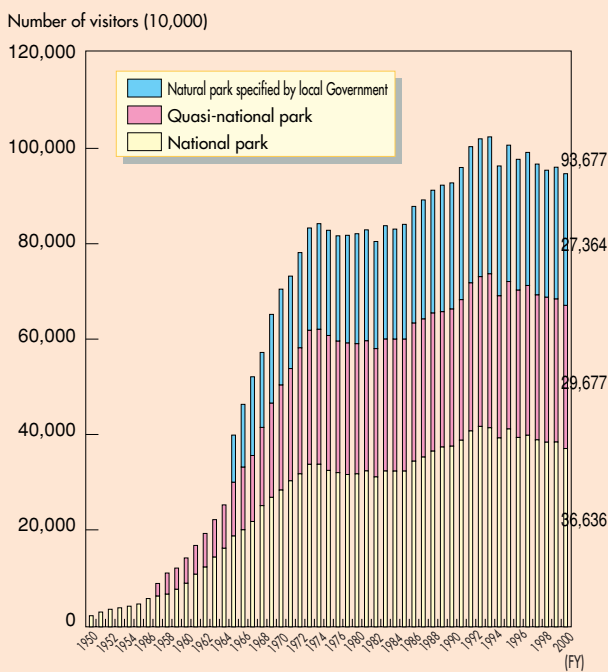
The conservation of areas with outstanding nature in Japan is also important issue. The Government is conserving the areas

Endangered wildlife species in Japan
(Species table listed in the Red Data Book Red List) (As of January 2002)

Taxonomic Group	Number of Species for Assessment	Extinct	Extinct in the Wild	Threatened			Near Threatened	Data Deficient	Endangered regional population	Number of endangered species	
				A Critically Endangered	B Endangered	C Vulnerable					
Fauna	Mammals	About 200	4	0	12	32	16	16	9	12	48
	Birds	About 700	13	1	17	42	48	16	15	2	90
	Reptiles	97	0	0	2	7	11	9	1	2	18
	Amphibians	64	0	0	1	5	9	5	0	4	14
	Brackish and Freshwater fish	About 300	3	0	29	58	18	12	5	14	76
	Insects	About 30,000	2	0		63	76	161	88	3	139
	Inland and Freshwater Shellfish	About 1,000	25	0		86	165	206	69	5	251
	Spiders and crustaceans	About 4,200	0	1		10	23	31	36	0	33
	Sub-total for Fauna		47	2		303	366	456	223	42	669
Flora	Vascular Plants	About 7,000	20	5	564	1,044	621	145	52	0	1,665
	Bryophytes	About 1,800	0	0		110	70	4	54	0	180
	Algae	About 5,500	5	1		35	6	24	0	0	41
	Lichens	About 1,000	3	0		22	23	17	17	0	45
	Fungi	About 6,500	27	1		53	10	0	0	0	63
	Sub-total for Flora		55	7		1,264	730	190	123	0	1,994
total		102	9		1,567	1,096	646	346	42	2,663	

(1) The number of animal species assessed (including endemic, and so on) is according to the 'Japanese Wildlife Enumeration (Ministry of the Environment Section, 1993, 1995, and 1998).
 (2) The number of vascular bundle plant species (including endemic, and so on) that are assessed is according to the summary of the Plant Taxonomy Association.
 (3) The number of species that are assessed for mosses, algae, lichen, and fungus (including endemic, and so on) is based on the survey conducted by the Ministry of the Environment.
 (4) The current condition of endangered species (including endemic, and so on) are based on 'Revised version of endangered wildlife - Red Data Book - Amphibia, Reptilia, Plant I, Plant II (Ministry of the Environment Section 2000)' and 'Red list Mammalia, Aves, Pisces, and Invertebrates (Prepared by the Ministry of the Environment, 1998, 1999, 2000)'.
 The categories are as follows:
 Extinct: Species that are considered to be extinct in Japan
 Extinct in the Wild: Species that exist under breeding or cultivation
 Critically Endangered + Endangered: Species that are endangered for extinction
 Vulnerable: Species that are increasingly endangered for extinction
 Near Threatened: Species whose existence is precarious
 Threatened Local Population: Regionally isolated population that are threatened for extinction
 Presentation: Prepared by the Ministry of the Environment based on the 'Red List'

Transition of the number of visitors to natural parks

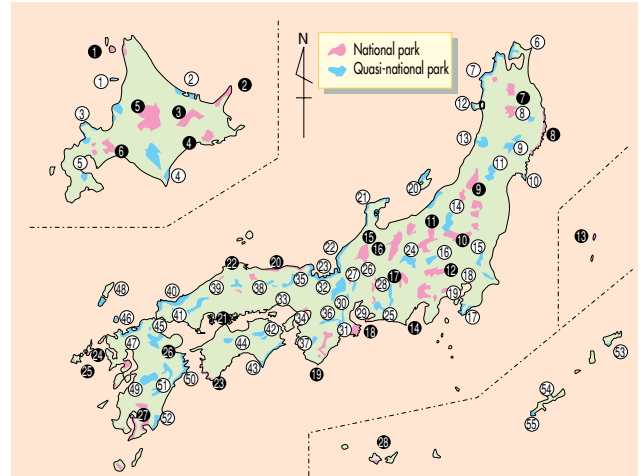


Note: Visitor statistical survey of quasi-national parks and national parks specified by local Government was started from 1957 and 1965, respectively.
 Source: 'Survey of Number of Visitors of Natural Parks' by the Ministry of the Environment

that maintain the native condition of the natural environment without being influenced by human activities by specifying them such as the Nature conservation Areas. Yakushima and Shirakami Sanchi are registered as World Natural Heritages. The Government is promoting conservation by specifying natural sights that can represent the country as natural parks such as national parks. Natural parks play important roles as the places for contact with nature such as experience in wild life, nature observation, and outdoor recreation, as well as conservation of natural environment. Corresponding to the increase of the nation's desire for enjoying nature, the number of visitors to natural parks exceeded 900 million.

In addition, the Government is implementing Rehabilitation of Natural Habitats and Maintenance of Viable Populations for endangered wild animals and plants such as Japanese crested ibis and Iriomote wild cat as a part of the wildlife protection management policies. The Government is also implementing businesses to improve various forests for installation of damage prevention facilities and coexistence of wild birds and animals, in response to aggravation of damage to agriculture, forestry, and Pisces and natural ecosystem by specific birds and animals such as deer and boars.

Map of national parks and quasi-national parks



National parks				Quasi-National parks			
① Rishiri-Rebun-Sarobetsu	② San'in Kaigan	③ Shokanbetsu-Teuri-Yagishiri	④ Sado-yahiko-Yoneyama	⑤ Nishi-Chugoku-Sanchi	⑥ Kito-Nagato Kaigan	⑦ Abashiri	⑧ Noto Hanto
⑨ Akan	⑩ Setonaikai	⑪ Niseko-Shakotan-Otari Kaigan	⑫ Echizen-Kaga Kaigan	⑬ Akiyoshida	⑭ Tsurugisan	⑮ Hidaka Sanmyaku-Erimo	⑯ Wakasa Wan
⑰ Kushiro Shitsugen	⑱ Daisen-Oki	⑲ Daisetsuzan	⑳ Ashizuri-Uwakai	㉑ Onuma	㉒ Yatsugatake-Chushin Kogen	㉓ Shimokita Hanto	㉔ Tenryu-Okumikawa
㉕ Towada-Hachimantai	㉖ Saikai	㉗ Shikotsu-Toya	㉘ Unzen-Amakusa	㉙ Tsugaru	㉚ Ibi-Sekigahara-Yoro	㉛ Iriomote	㉜ Aso-Kuju
㉝ Rikuchu Kaigan	㉞ Kirishima-Yaku	㉟ Banda-Asahi	㊱ Minamisanriku Kinkazan	㊲ Zao	㊳ Hida-Kiso Gawa	㊴ Kurikoma	㊵ Aichi Kogen
㊶ Nikko	㊷ Joshin'etsu Kogen	㊸ Chichibu-Tama-Kai	㊹ Ogasawara	㊺ Fuji-Hakone-Izu	㊻ Chubu Sangaku	㊼ Hakusan	㊽ Minami Alps
㊾ Ise-Shima	㊿ Yashino-kumano	1 ① Shokanbetsu-Teuri-Yagishiri	20 ② Sado-yahiko-Yoneyama	39 ③ Nishi-Chugoku-Sanchi	40 ④ Kito-Nagato Kaigan	41 ⑤ Akiyoshida	42 ⑥ Tsurugisan
		43 ⑦ Hidaka Sanmyaku-Erimo	44 ⑧ Wakasa Wan	45 ⑨ Onuma	46 ⑩ Yatsugatake-Chushin Kogen	47 ⑪ Shimokita Hanto	48 ⑫ Tenryu-Okumikawa
		49 ⑬ Tsugaru	50 ⑭ Ibi-Sekigahara-Yoro	51 ⑮ Aso-Kuju	52 ⑯ Hida-Kiso Gawa	53 ⑰ Kurikoma	54 ⑱ Aichi Kogen
		55 ⑲ Iriomote	56 ⑳ Joshin'etsu Kogen	57 ㉑ Zao	58 ㉒ Sado-yahiko-Yoneyama	59 ㉓ Nishi-Chugoku-Sanchi	60 ㉔ Kito-Nagato Kaigan
			61 ㉕ San'in Kaigan	62 ㉖ Noto Hanto	63 ㉗ Akiyoshida	64 ㉘ Tsurugisan	65 ㉙ Hidaka Sanmyaku-Erimo
			66 ㉚ Wakasa Wan	67 ㉛ Onuma	68 ㉜ Yatsugatake-Chushin Kogen	69 ㉝ Shimokita Hanto	70 ㉞ Tenryu-Okumikawa
			71 ㉟ Aso-Kuju	72 ㊱ Hida-Kiso Gawa	73 ㊲ Kurikoma	74 ㊳ Aichi Kogen	75 ㊴ Iriomote
			76 ㊵ Joshin'etsu Kogen	77 ㊶ Sado-yahiko-Yoneyama	78 ㊷ Nishi-Chugoku-Sanchi	79 ㊸ Kito-Nagato Kaigan	80 ㊹ Akiyoshida
			81 ㊺ Tsurugisan	82 ㊻ Hidaka Sanmyaku-Erimo	83 ㊼ Wakasa Wan	84 ㊽ Onuma	85 ㊾ Yatsugatake-Chushin Kogen
			86 ㊿ Shimokita Hanto	87 ㊱ Tenryu-Okumikawa	88 ㊲ Aso-Kuju	89 ㊳ Hida-Kiso Gawa	90 ㊴ Kurikoma
			91 ㊵ Aichi Kogen	92 ㊶ Iriomote	93 ㊷ Joshin'etsu Kogen	94 ㊸ Sado-yahiko-Yoneyama	95 ㊹ Nishi-Chugoku-Sanchi
			96 ㊺ Kito-Nagato Kaigan	97 ㊻ Akiyoshida	98 ㊼ Tsurugisan	99 ㊽ Hidaka Sanmyaku-Erimo	100 ㊾ Wakasa Wan
			101 ㊿ Onuma	102 ㊱ Yatsugatake-Chushin Kogen	103 ㊲ Shimokita Hanto	104 ㊳ Tenryu-Okumikawa	105 ㊴ Aso-Kuju
			106 ㊵ Hida-Kiso Gawa	107 ㊶ Kurikoma	108 ㊷ Aichi Kogen	109 ㊸ Iriomote	110 ㊹ Joshin'etsu Kogen
			111 ㊺ Sado-yahiko-Yoneyama	112 ㊻ Nishi-Chugoku-Sanchi	113 ㊼ Kito-Nagato Kaigan	114 ㊽ Akiyoshida	115 ㊾ Tsurugisan
			116 ㊿ Hidaka Sanmyaku-Erimo	117 ㊱ Wakasa Wan	118 ㊲ Onuma	119 ㊳ Yatsugatake-Chushin Kogen	120 ㊴ Shimokita Hanto
			121 ㊵ Tenryu-Okumikawa	122 ㊶ Aso-Kuju	123 ㊷ Hida-Kiso Gawa	124 ㊸ Kurikoma	125 ㊹ Aichi Kogen
			126 ㊺ Iriomote	127 ㊻ Joshin'etsu Kogen	128 ㊼ Sado-yahiko-Yoneyama	129 ㊽ Nishi-Chugoku-Sanchi	130 ㊾ Kito-Nagato Kaigan
			131 ㊿ Akiyoshida	132 ㊱ Tsurugisan	133 ㊲ Hidaka Sanmyaku-Erimo	134 ㊳ Wakasa Wan	135 ㊴ Onuma
			136 ㊵ Yatsugatake-Chushin Kogen	137 ㊶ Shimokita Hanto	138 ㊷ Tenryu-Okumikawa	139 ㊸ Aso-Kuju	140 ㊹ Hida-Kiso Gawa
			141 ㊺ Kurikoma	142 ㊻ Aichi Kogen	143 ㊼ Iriomote	144 ㊽ Joshin'etsu Kogen	145 ㊾ Sado-yahiko-Yoneyama
			146 ㊿ Nishi-Chugoku-Sanchi	147 ㊱ Kito-Nagato Kaigan	148 ㊲ Akiyoshida	149 ㊳ Tsurugisan	150 ㊴ Hidaka Sanmyaku-Erimo
			151 ㊵ Wakasa Wan	152 ㊶ Onuma	153 ㊷ Yatsugatake-Chushin Kogen	154 ㊸ Shimokita Hanto	155 ㊹ Tenryu-Okumikawa
			156 ㊺ Aso-Kuju	157 ㊻ Hida-Kiso Gawa	158 ㊼ Kurikoma	159 ㊽ Aichi Kogen	160 ㊾ Iriomote
			161 ㊿ Joshin'etsu Kogen	162 ㊱ Sado-yahiko-Yoneyama	163 ㊲ Nishi-Chugoku-Sanchi	164 ㊳ Kito-Nagato Kaigan	165 ㊴ Akiyoshida
			166 ㊵ Tsurugisan	167 ㊶ Hidaka Sanmyaku-Erimo	168 ㊷ Wakasa Wan	169 ㊸ Onuma	170 ㊹ Yatsugatake-Chushin Kogen
			171 ㊺ Shimokita Hanto	172 ㊻ Tenryu-Okumikawa	173 ㊼ Aso-Kuju	174 ㊽ Hida-Kiso Gawa	175 ㊾ Kurikoma
			176 ㊿ Aichi Kogen	177 ㊱ Iriomote	178 ㊲ Joshin'etsu Kogen	179 ㊳ Sado-yahiko-Yoneyama	180 ㊴ Nishi-Chugoku-Sanchi
			181 ㊵ Kito-Nagato Kaigan	182 ㊶ Akiyoshida	183 ㊷ Tsurugisan	184 ㊸ Hidaka Sanmyaku-Erimo	185 ㊹ Wakasa Wan
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			191 ㊿ Hida-Kiso Gawa	192 ㊱ Kurikoma	193 ㊲ Aichi Kogen	194 ㊳ Iriomote	195 ㊴ Joshin'etsu Kogen
			196 ㊵ Sado-yahiko-Yoneyama	197 ㊶ Nishi-Chugoku-Sanchi	198 ㊷ Kito-Nagato Kaigan	199 ㊸ Akiyoshida	200 ㊹ Tsurugisan

Presentation: Ministry of the Environment

7) Global environment conservation

(1) Transboundary movements of hazardous wastes

In addition to global warming, ozone layer depletion, acid rain, and marine pollutions, there are various global environmental problems. During the period from 1970's to 1980's, many environmental problems occurred such as: hazardous wastes that were exported from developed countries and improperly or illegally disposed of in developing countries where the regulations are loose and the treating costs are low, causing environmental pollution, and transport ships with load, of hazardous wastes that were rejected for unloading and are wandering on the oceans with no set destinations. Therefore, the international society has commonly recognized that problems of transboundary movements of hazardous wastes must be handled on a global scale. In 1992, the Basel Convention was established and Japan joined in 1993.

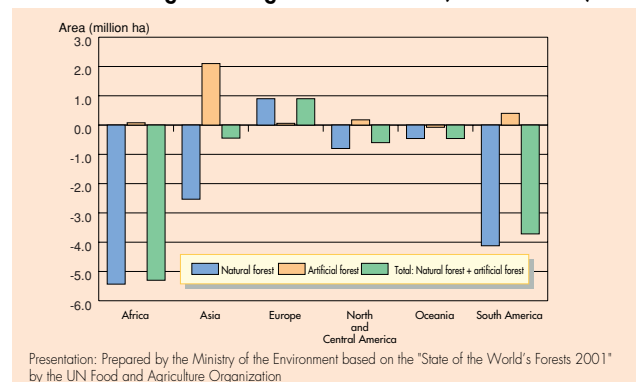
(2) Decrease of forests

Forests have many functions such as supply of habitation and breeding of wildlife as well as absorption of carbon dioxide. Over the period from 1990 to 2000, about 94 million hectares of forests were lost worldwide. Consequently, the importance of conservation and sustainable management of forests including illegal logging problems was recognized and in 2000, "UN Forum on Forests (UNFF)" was established and many activity proposals that were suggested in the past are being implemented and promoted.

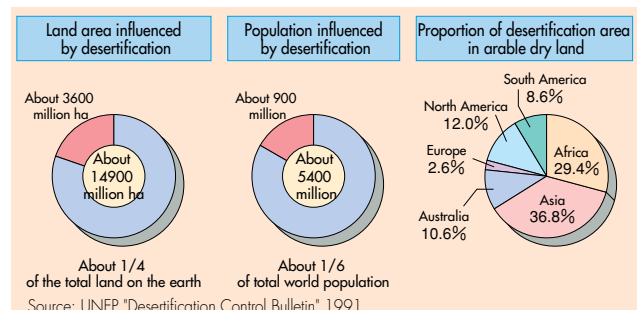
(3) Desertification

Serious global problems of desertification covers soil erosion, salinification, and reduction of natural vegetation species. The result of the survey conducted by UNEP indicates that the land area influenced by desertification accounts for about 1/4 of the total land, about 70% of the arable dry region and about 1/6 of the world population (about 900 million) is influenced by the desertification. Consequently, in 1996, the Convention to Combat Desertification took into effect and Japan ratified the Convention. Currently, various measures are being examined for effective implementation of the Convention.

Chronological change of forest areas (1990 to 2000)



Current condition of desertification



Environmental Conservation Measures to be Implemented in FY2002

Environmental conservation measures to be implemented in FY2002 based on the Basic Environment Plan are reported in the following Chapters.

Chapter 1 Creating a Socio Economic System Based on Sound Material Cycles with Minimal Environmental Burden

Chapter 2 Basis of Measures, and Measures to Promote Participation of All Segments of Society

Chapter 3 Measures to Promote International Action

Chapter 4 Effective Implementation of the Basic Environment Plan