Annual Report on the Environment in FY2008
Annual Report on the Sound Material-Cycle Society in FY2008
Annual Report on the Biodiversity in FY2008

Part 1

The Ministry of the Environment's Report on Comprehensive Measures

FY2008

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Part 1 The Ministry of the Environment's Report on Comprehensive Measures/ Incorporate Japan's Economy into the Sound Global Environment

Chapter 1

Current Environmental Conditions of the Earth and Japan

Our daily lives only exist on the basis of the global environment. We will present the current situations of the Earth and Japan as follows.

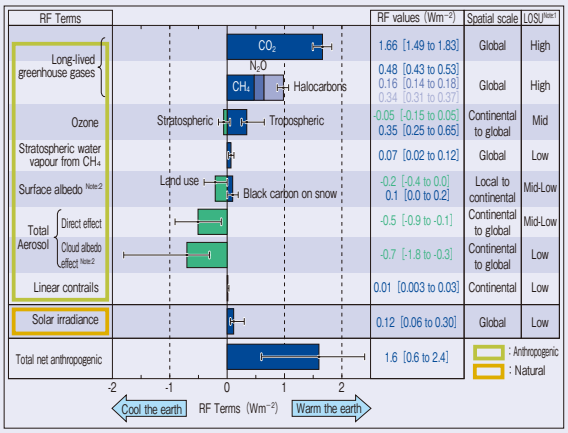
1 Status of Global Warming

The global climate changes due to a variety of factors, including the concentrations of atmospheric greenhouse gases such as carbon dioxide, airborne particulates and solar radiation. Internal climate variability that arises from natural changes within the system, such as El Nino also affect the global climate.

Although considering these factors, the IPCC (Intergovernmental Panel of Climate Change) states in it's Fourth Assessment Report (AR4) that "Most of the observed increase in global average temperatures since the mid-20th century is very likely due to the observed increase in anthropogenic GHG concentrations."

The concentration of atmospheric carbon dioxide, a

Figure 1-1-1 Radiative Forcing Components



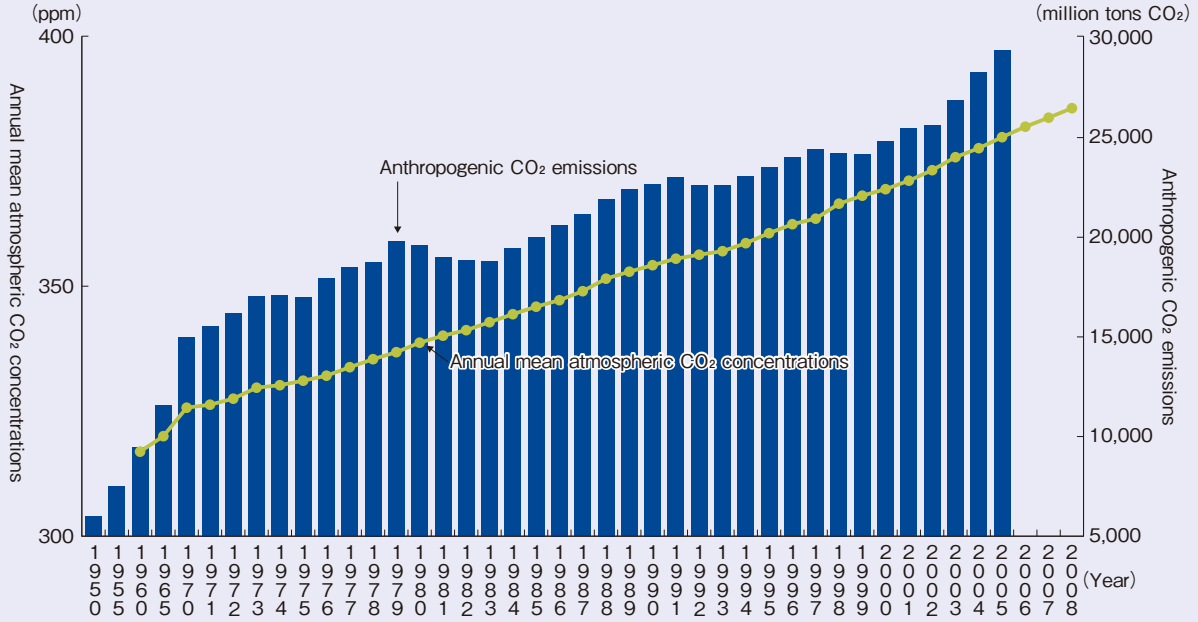
Note1: LOSU stands for "Level of Scientific Understanding."
Note2: Albedo indicates the ratio of the solar radiation reflected from Earth's surface.
Source: IPCC Fourth Assessment Report (AR4)

Table 1-1-1 Ranking of Global Temperature for Individual Years

Ranking	Year	Temperature anomalies (℃)
1	1998	+0.37
2	2005	+0.32
3	2006	+0.31
	2003	+0.31
	2002	+0.31
6	2007	+0.28
7	2004	+0.27
	2001	+0.27
9	1997	+0.24
10	2008	+0.20
11	1990	+0.19
12	1995	+0.16

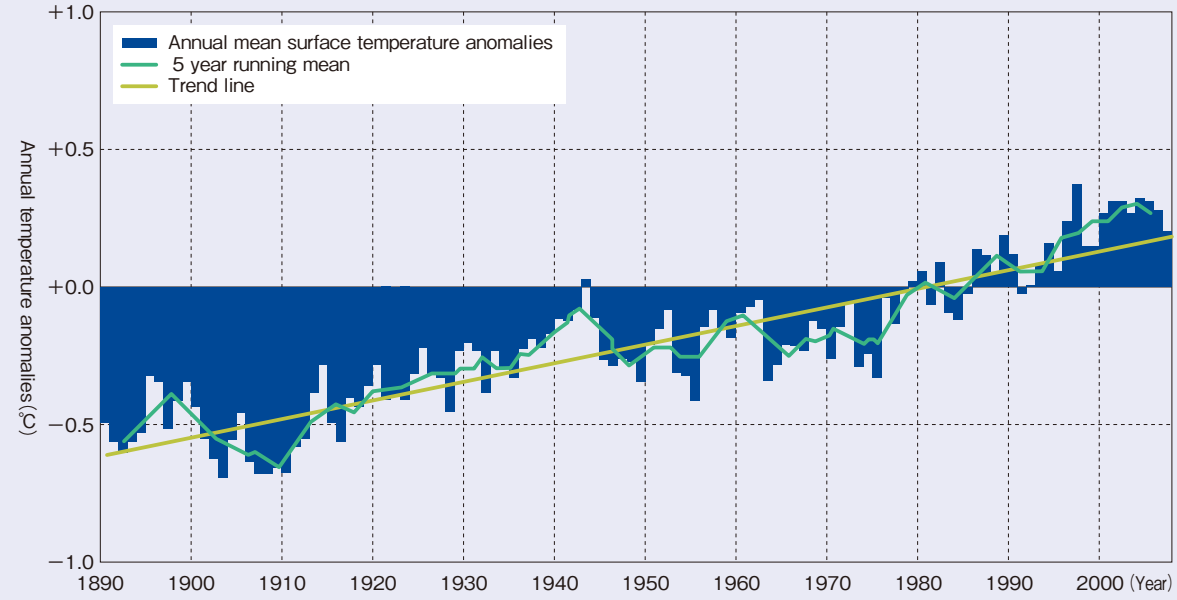
Source: Japan Meteorological Agency's website

Figure1-1-2 Atmospheric CO_2 Concentrations and Anthropogenic CO_2 Emissions



Note : Base observation point: Mauna Loa, Hawaii (Latitude 19 degrees 32 minutes north and longitude 155 degrees 35 minutes west). The annual average concentrations is from the National Oceanic and Atmospheric Administration (NOAA)/Earth System Research Laboratory (ESRL)'s website (http://www.esrl.noaa.gov/gmd/ccgg/trends/)
ppm: the ratio of parts per million of dry air (volume ratio) Source: NOAA/ESRL, Oak Ridge National Laboratory

Figure1-1-3 Global Annual Mean Surface Temperature Anomalies



Source: Japan Meteorological Agency's Website

major constituent of greenhouse gases, and its anthropogenic emissions are on an upward trend (Figure1-1-3).

The status of global warming can be seen in the Figure1-1-2. According to the AR4, the global annual mean surface temperature is increasing by 0.74℃ per one hundred year. Especially in recent years we have seen more years with high temperatures and the global annual mean temperature of each year since the beginning of the 21st century ranks among the 10 hottest years since 1891 (Table1-1-1). The Japan Meteorological Agency considers the La Nina phenomenon that occurred from the spring of 2007 to the spring of 2008, to be a factor of the lower average global temperature in 2008, compared to recent years.

Disasters caused by abnormal climate events including hurricanes, cyclones, torrential rain, droughts, and heat waves have frequently occurred worldwide, and ecosystem disturbance supposedly caused by climate change has also been reported. Although global warming may not have led to all these phenomena, various research suggests that these negative impacts will be even greater if global warming continues.

2 Status of the Atmospheric Environment and Water Environment

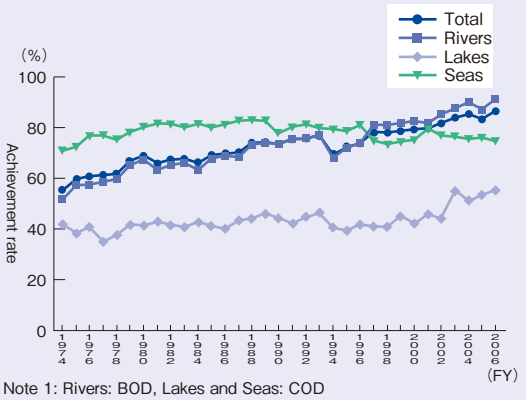
Regarding air pollution, 2,006 nationwide stations including 1,561 ambient air pollution monitoring stations (hereinafter referred to as "AAPMSs") and 445 roadside air pollution monitoring stations (hereinafter referred to as "RAPMSs") are conducting regular observations.

Regarding the status of the air pollution in FY2007, most AAPMSs have been meeting the achievement level of the EQS (Environmental Quality Standard) for nitrogen dioxide in recent years, and have achieved a 100% rate for two consecutive years. The level was also achieved at 94.4% of the RAPMSs (Figure1-2-1).

The achievement level of the EQS for Suspended Particulate Matter of the AAPMSs was 89.5%, and that of the RAPMSs was 88.6%, down slightly compared to FY2006 (Figure1-2-2).

Regarding the water environment, in terms of Chemical Oxygen Demand (COD) for lakes, the EQS achievement level fell to 50.3% on items related to the conservation of the living environment (Living Environment Item), and the figure shows that there still remain water areas with a low achievement rate, including those containing too much organic matter (Figure1-2-3).

Figure1-2-3 Trends in Achievement of BOD/COD Environmental Standards

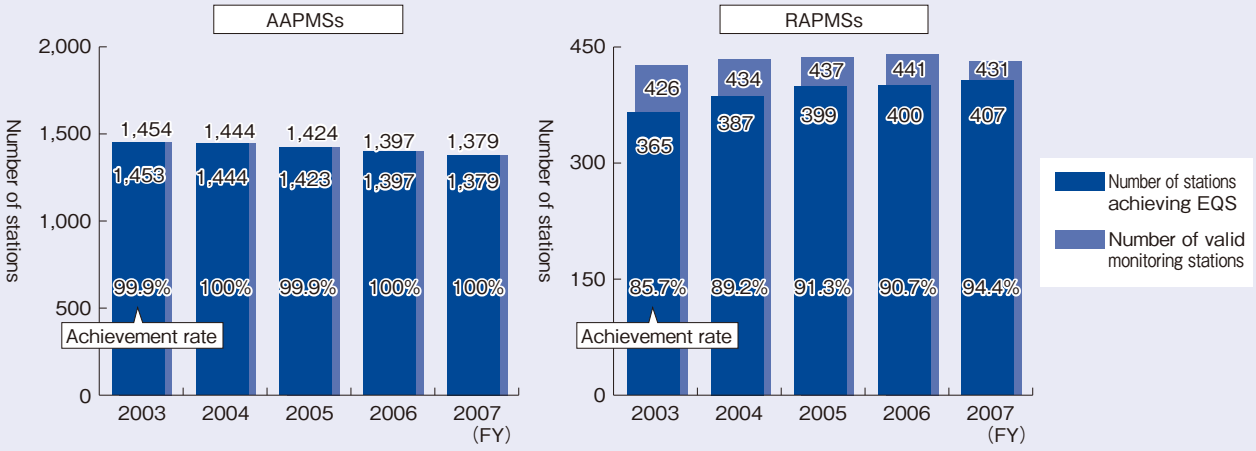


Note 1: Rivers: BOD, Lakes and Seas: COD

2: Achievement rate (%) = (The number of water areas achieving the standards / The number of water areas applicable) ×100

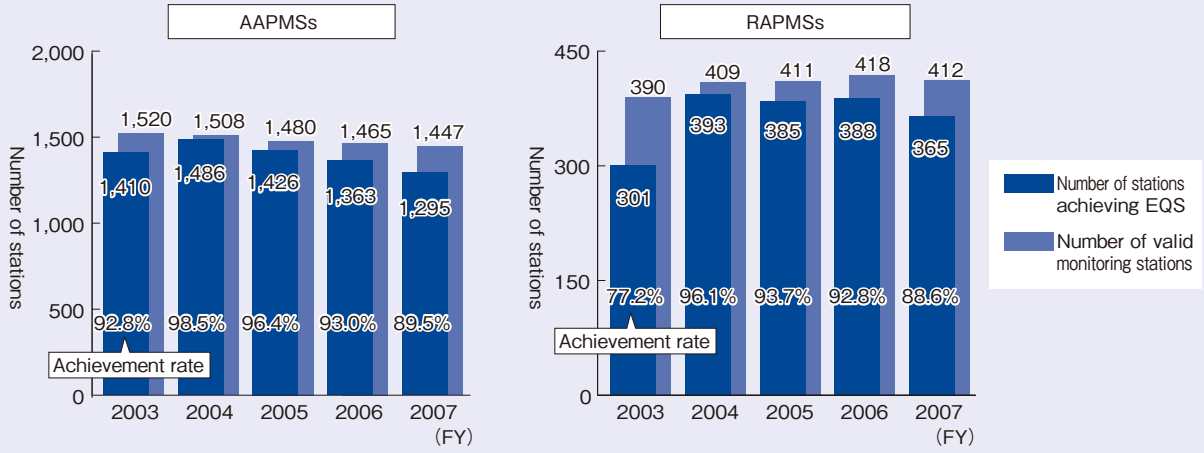
Source: Measurement results of the quality of public water areas in FY2006, Ministry of the Environment

Figure1-2-1 Changes in Achievement of NO_2-Related EQS (FY2003 - 2007)



Source: Ministry of the Environment, FY2007 Report on the State of Air Pollution

Figure1-2-2 Changes in Achievement of SPM-Related EQS (FY2003 - 2007)



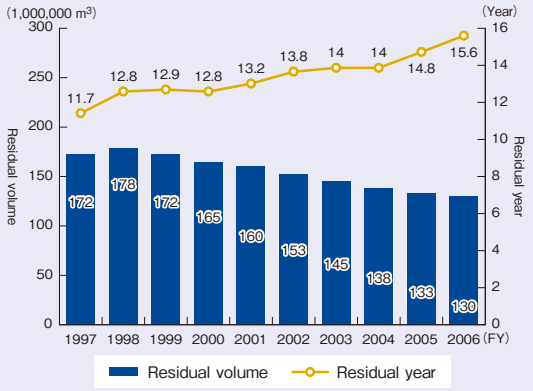
Source: Ministry of the Environment, FY2007 Report on the State of Air Pollution

3 Status of Waste Generation

The securing of new disposal sites is still facing a tough situation (Figure1-3-1, Figure1-3-2), due to the residual time of final disposal sites becoming an issue.

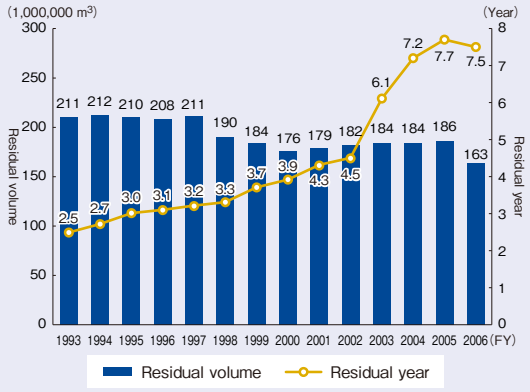
Marine litter, such as plastics and driftwood have recently become an issue on Japanese coasts.

Figure1-3-1 Changes in Residual Volume and year of Final Disposal Site (Municipal solid waste)



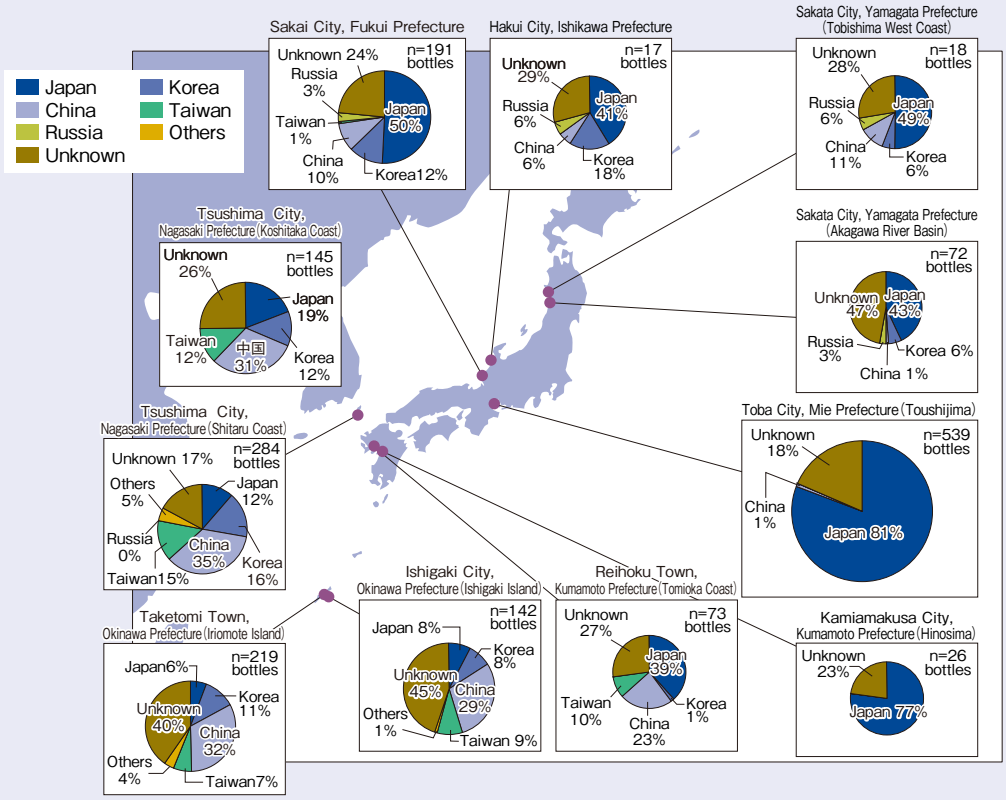
Source: Ministry of the Environment

Figure1-3-2 Changes in Residual Volume and year of Final Disposal Site (Industrial waste)



Source: Ministry of the Environment

Figure1-3-3 Country-Specific Aggregate of Plastic Bottles



Source: Ministry of the Environment, Model Research Policy in FY2007・2008 on Reducing Marine Litter in Japan

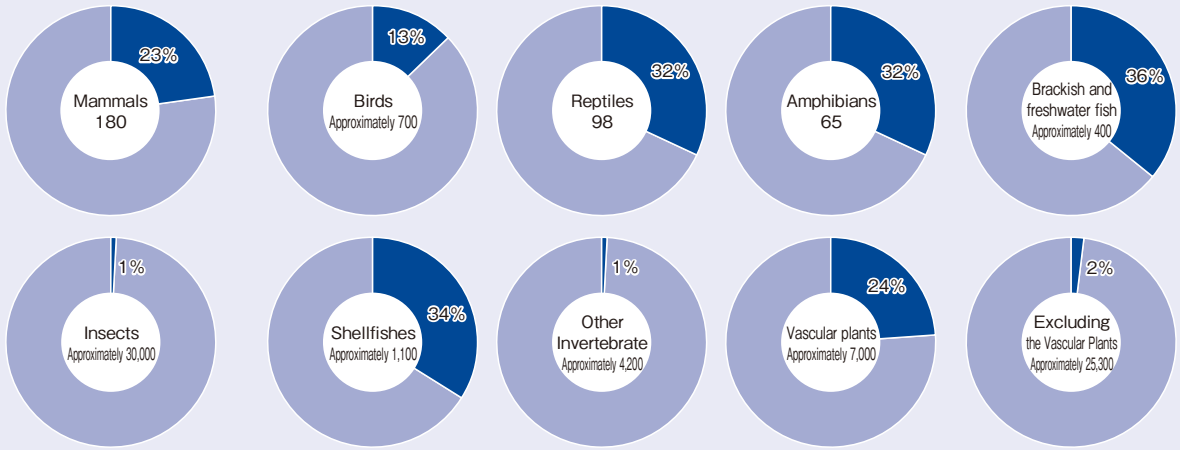
4 Status of Biodiversity

At the 8th meeting of the Conference of the Parties to the Convention on Biological Diversity (COP8) (hereinafter referred to as "Convention on Biological Diversity"), the Secretariat of the Convention on Biological Diversity announced the second Global Biodiversity Outlook (GBO2), assessing the status of biodiversity using 15 indicators. The results showed that biodiversity is still being lost, with12 indicators showing negative trends although some indicators, including Coverage of Protected Areas, had made progress. Regarding the status of Japan's biodiversity, according to the Red List of the Ministry of the Environment, more than 30% of reptiles, amphibians, brackish and freshwater fish, and shellfishes, more than 20% of mammals and vascular plants, and more than 10% of birds living in Japan are classified as threatened species (Figure1-4-1, Table1-4-1).

Table1-4-1 Number of Endangered Species in Japan

	Taxonomic Group	Number of Species for Assessment (a)	Extinct	Extinct in the Wild	Threatened Species (b)			Near Threatened Species	Data Deficient	Number of Threatened Species (b/a)
					Critically Endangered + Endandered		Vulnerable			
					A(Critically Endangered)	B (Endangered)				
Fauna	Mammals	180	4	0	15	20	7	18	9	23%
	Birds	Approximately 700	13	1	21	32	39	18	17	13%
	Reptiles	98	0	0	3	10	18	17	5	32%
	Amphibians	65	0	0	1	9	11	14	1	32%
	Brackish and Freshwater Fish	Approximately 400	4	0	61	48	35	26	39	36%
	Insects	Approximately 30,000	3	0	110		129	200	122	1%
	Shellfishes	Approximately 1,100	22	0	163		214	275	73	34%
	Other Invertebrate	Approximately 4,200	0	1	17		39	40	39	1%
	Subtotal for Fauna		46	2	510		492	608	305	
Flora	Vascular Plants	Approximately 7,000	33	8	523	491	676	255	32	24%
	Excluding the Vascular Plants	Approximately 25,300	41	2	287		175	118	172	2%
	Subtotal for Flora		74	10	1301		852	373	204	
Total			120	12	1811		1344	981	509	

Figure1-4-1 Ratio of Threatened Species in Japan (Ratio of Species Assessed)



Note 1: The number of species of Fauna for assessment (including sub-species etc.) is quoted from "A list of Native Species of Wildlife in Japan" (edited by the Environment Agency, 1993,1995, 1998), and other sources.
2: Among Flora, the number of species of vascular plants for assessment (including sub-species etc.) is quoted from the total given by the Japanese Society for Plant Systematics (JSPS).
3: Among Flora (excluding the vascular plants), the number of species of Bryophytes, Algae, Lichens and Fungi for assessment (including sub-species etc.) are obtained from studies by the Ministry of the Environment.
4: Insects, Shellfishes, Other Invertebrate Animals, and Non Vascular Plants are grouped into the Category of "Critically Endangered + Endangered" and are not classified as "Critically Endangered" nor "Endangered".

Brief definitions of categories are as follows:
Extinct: Species considered to be already extinct in Japan
Extinct in the Wild: Species existing in captivity only
Critically Endangered + Endangered: Species in danger of extinction
Vulnerable: Species facing growing danger of extinction
Near Threatened: Species with a fragile basis of their existence
Data Deficient: Species that cannot be assessed because of insufficient information
Source: Ministry of the Environment