FY 1999 Project Commissioned by
Environment Agency, Government of Japan

Technology Transfer Manual on Nature Conservation

March 2000

Overseas Environmental Cooperation Center, Japan

CONTENTS

PREFACE

The major contribution made by Japan major to development in Asia, Africa, Latin America and East Europe through international cooperation hardly needs mention. Great contributions have been made such fields as social infrastructure, health care, agriculture and education. The environment however, especially conservation of nature, is still a relatively new field in Japan's international cooperation efforts.

Following the UN Conference on Environment and Development (UNCED: Earth Summit), held in Rio de Janeiro in 1992, such concepts as biodiversity conservation and sustainable development, gained significance around the world in terms of the conservation of our natural resources. Japan's efforts in these areas are expected to gain further importance for developing countries.

Just as nature is infinite in its variety, the approaches to conservation of that nature varies from country to country. Wildlife conservation and management in each country reflect not only characteristics of the local nature itself, but also can be interpreted against the history and sense of values in that country. Not a few developing countries regard wildlife conservation as a major national policy and work to promote it by robust wildlife conservation laws and setting aside protected areas. In comparison with these efforts, Japan has pursued relatively modest measures in this area, but nevertheless still maintains numerous natural parks and protected areas and has managed to coexist with wildlife in spite of being such a small country.

Due to these varieties and differences, Japanese experts sent abroad, whose usual work experience is primarily in administration are often bewildered in the countries where they are dispatched. It is essential these experts are given the opportunity fully grasp the key differences between Japan and the local side

The purpose of this training manual transfer of technology is to assist the Japanese experts in review the system of natural environment conservation in Japan as a starting point for devising measures for transferring the kind of technology best suited to actual situation in the country to which they are dispatched. The manual will certainly provide the experts themselves with a unique stimulating opportunity to rethink system of their own country with that in countries with different nature and conservation systems. At the same time, it is hoped that this manual be of use to the experts in explaining Japanese nature and conservation systems to their counterparts. The opportunities to do so will grow, as the experts become familiar with the dispatched countries. Thus through discussion and comparison of the way things are done in the two countries, Japanese experts dispatched abroad will be able to pursue their assigned duties with all the more effectiveness.

(1) Overview of Japan

1-1) Land and Society

a) Location and Physical Features

Japan is an island nation situated off the eastern coast of the Asian continent. The nation's roughly 7,000 islands extend in an arc of about 3,000 kilometres northeast to southwest. Total land area, if the Northern Territories are included, is 377,837 square kilometres, nearly 1.5 times the land area of the United Kingdom.

b) Land Use

- Area by landforms: mountainous areas (230,331 km^2: 61,0%), hilly areas (44,337 km^2: 11,8%), plateau (41,471 km^2: 11,0%), lowland (51,963 km^2: 13,8%) and inland waters (9,232 km^2: 2,4%).
- Area by land use: rice fields, farms, orchards, etc. (69,294 km^2: 18,6%), forests, woodland and wasteland (268,531 km^2: 72,1%), building sites (17,702 km^2: 4,7%), trunk line and road sites (6,659 km^2: 1,8%), lakes, marshes and rivers (9,597 km^2: 2,6%) and seashores and unclassified land (761 km^2: 0,2%).

c) Population

As of 1st October, 1997, the population of Japan is about 126,166,000: 61,805,000 for men and 64,361,000 for women.

The ageing trend in Japan is moving forward in full force. In 1997, for the first time ever, there were more people in the 65-and-over age group (with an increase of 0.741 million over the year before) than in the 0-14 age group, whose numbers decreased by 0.28 million from 1996. There are now 59 times more people 100 years older than there were 37 yeas ago.

d) Population Concentration

Starting around 1960, there was a shift in population to the Tokyo, Osaka and Nagoya areas, with resulting depopulation of regional areas. From the 1980's, this shift in population continued only regarding the Tokyo area, but its pace has slowed since 1988. The population in these three urban areas now exceeds 43% of the total national population.

e) Religion in Japan

Since freedom of religion is guaranteed by the Constitution, the government does not conduct statistical surveys on religion. The "Religion Yearbook" issued by the Agency for Cultural Affairs contains data provided voluntarily by religious organisations. According to this data, the

number of members of religious organisations in Japan is about 208 million or close to twice the country's total population (Shintoism: 49.2%, Buddhism: 44.7%, Christianity: 1.5%, Other religions: 5.2%).

f) Total number and size of Homes

Japanese homes have been mocked as "rabbit hutches," but housing surveys carried out every five years show steady improvements. In the last 25years, the per capita floor space has increased 1.9 times from 5.6 tatami to 10.4 tatami (one tatami, or straw mat, is approximately 180cm × 90cm). The number of rooms per home has risen by about 26%. The total number of homes has roughly doubled.

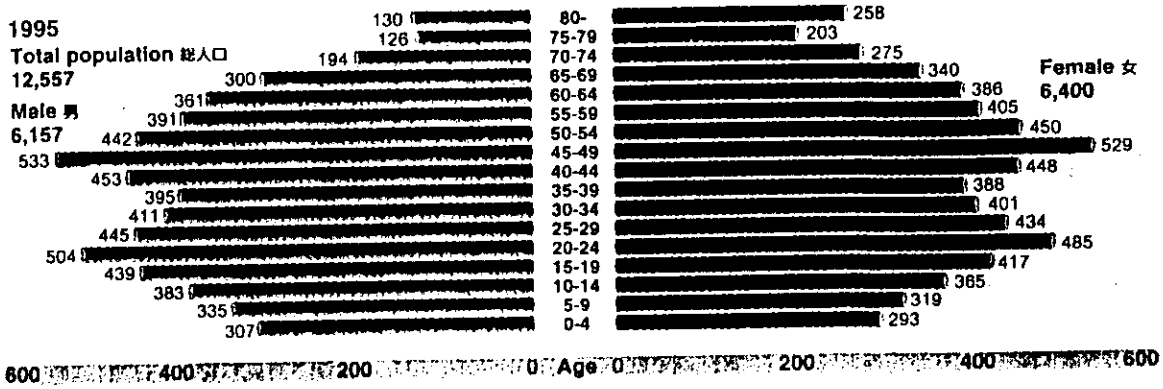
With respect to housing conditions, Japan still lags behind Europe and North America. In Tokyo, the cost of a residence is 12.9 times a person's annual income (9.5 times in the Osaka area,), in comparison to 2.9 times in New York.

国土庁 監修（1993）：**平成** 5 **年版 国土統計要覧 、大成出版社**

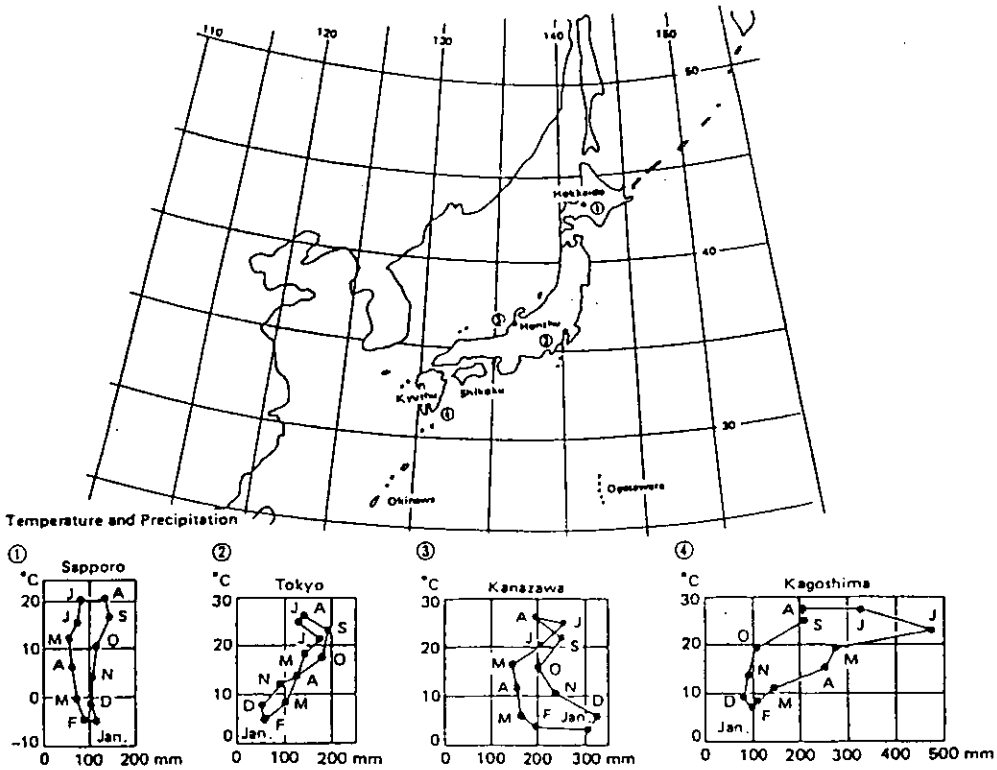
Asahi Shinbun (1998): Asahi shinbun Japan Almanac 1999

(1) Overview of Japan 1-1) Land and Society

Population in 1995



Location of Japanese Archipelago



Asahi Shinbun (1998): Asahi shinbun Japan Almanac 1999

Nature Conservation Bureau, The Environment Agency (1999): Nature Conservation in Japan

(1) Overview of Japan

1-2) Political and Economy

a) Capital City: Tokyo

b) Main ethnic group and Language: Japanese

c) Political System: constitutional monarchy (the Emperor: as the Symbol of State)

d) Legislation, Administration and Justice

According to the Constitution, the Diet is the sole legislative organ, the Cabinet is the executive organ and the law courts are the judicial organ. These three branches are separate. The Constitution is the basic law of the land, and none of the legislative, executive or judicial branches may violate its provisions.

e) Budget: Initial budget of FY1998 was ¥776,692(unit: 100million).

f) Gross Domestic Product

The gross domestic product (GDP) is the total amount of added value of goods and services created by producers with operations in a country, including foreign-affiliated enterprises and foreign workers. Whereas the GNP deals with the economic activity of all the members of a nation, including those living overseas, the GDP shows the size of economic activity and economic conditions that occur within a country. In Europe and the U.S., GDP-based statistics form the mainstream. In view of the increase in Japanese investments overseas, Japan, too, changed the base of statistics from GNP to GDP in 1993. The rate of increase in the GDP is the economic growth rate.

A breakdown of the world GNP/GDP in 1997 (nominal) is as follows: U.S.A. 78,240 (26.5%), Japan 41,951 (14.2%), EU 80,801 (27.4%) / Germany 20,899 (7.1%), France 13,941 (4.7%), U.K. 12,825 (4.3%), Italy 11,454 (3.9%), Asia 31,567 (10.7%), Latin America 20,031 (8.8%), Middle East 13,544 (4.6%), Oceania 4,661 (1.6%), East Europe 3,796 (1.3%), Africa 4,061 (1.4%) etc.

g) Domestic and Foreign Price Gap

The high level of prices in Japan is widely known. The Economic Planning Agency conducted a survey of Tokyo and four U.S. and European cities in terms of the overall cost of living. It found that the cost of living in Tokyo was 1.33 times higher than in New York, 1.28

times than in London, 1.19 times than in Paris and 1.24 times than in Berlin.

h) Education and Adult Literacy.

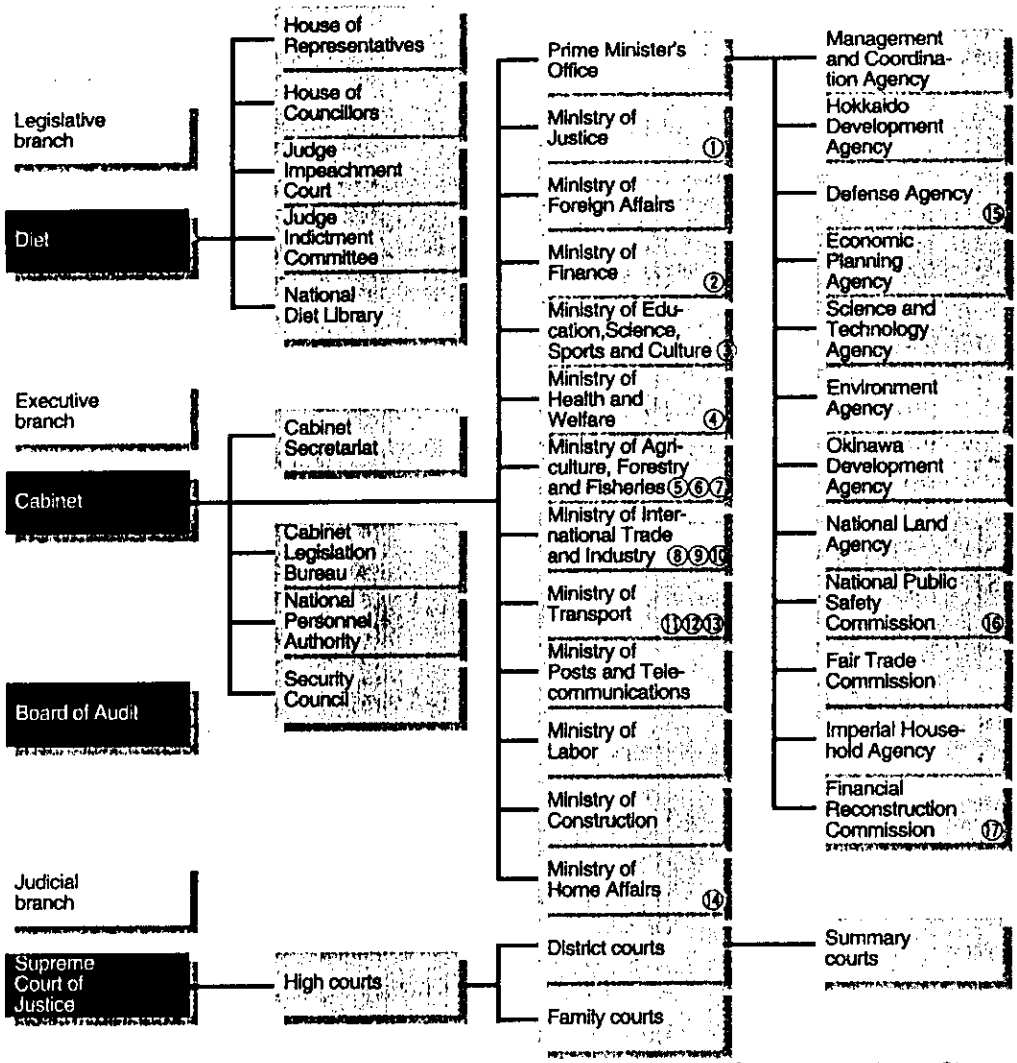
- Education system: 6-3-3-4 schooling system (9 years of compulsory education);
- Adult literacy rate: 99% (for both men and women) in 1989.

東京書籍 （1991）：世界各国要覧 6 訂版

Asahi Shinbun (1998): Asahi shinbun Japan Almanac 1999

(1) Overview of Japan 1-2) Political and Economy

Government organisation (As of Oct., 1999)

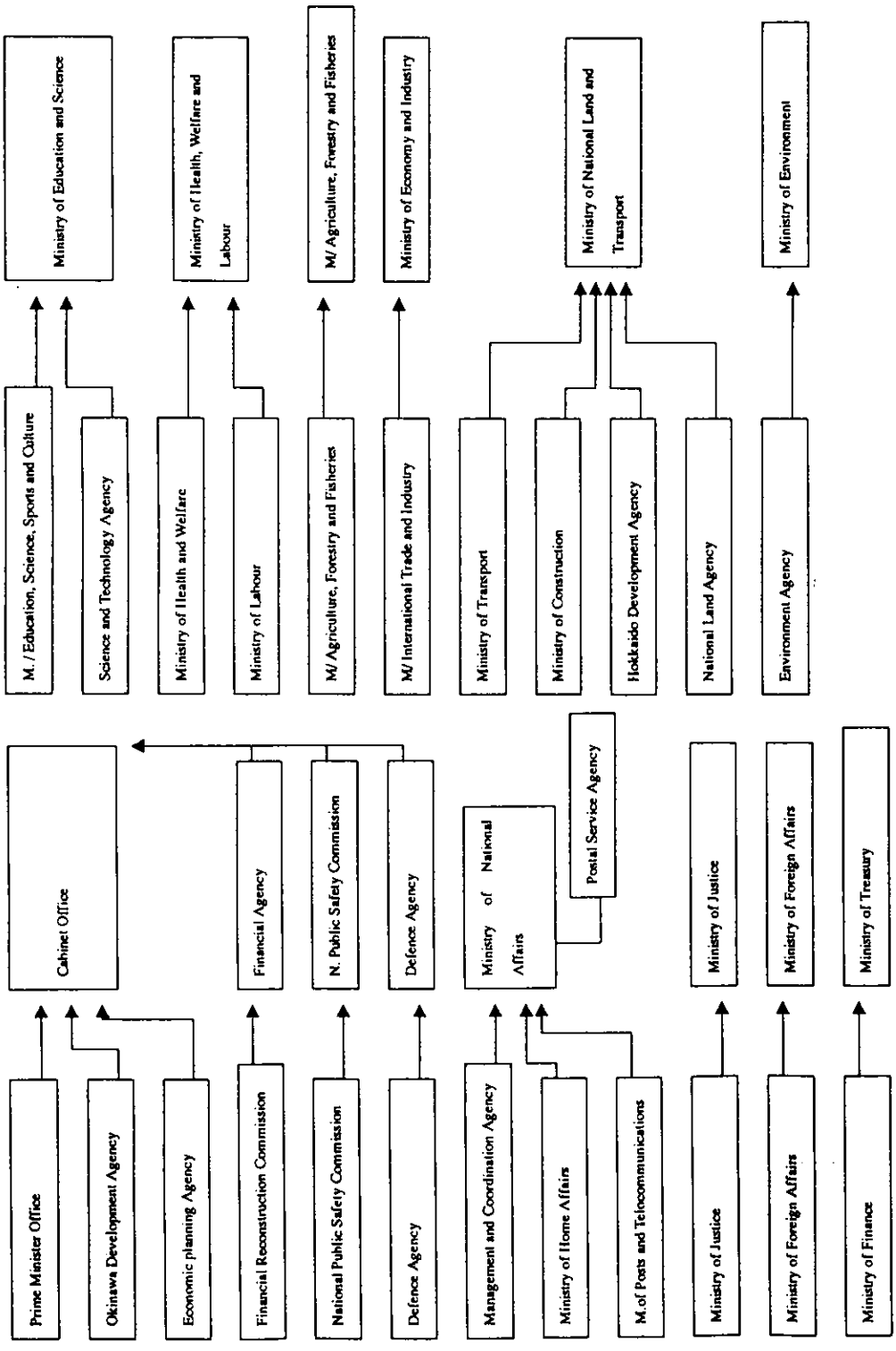


❶Public Security Investigation Agency ❷National Tax Administration ❸Agency for Cultural Affairs ❹Social Insurance Agency ❺Food Agency ❻Forestry Agency ❼Fisheries Agency ❽Agency of Natural Resources and Energy ❾Japanese Patent Office ❿Small and Medium Enterprise Agency ⓫Maritime Safety Agency ⓬Marine Accidents Inquiry Agency ⓭Meteorological Agency ⓮Fire Defense Agency ⓯Defense Facilities Administration Agency ⓰National Police Agency ⓱Financial Supervisory Agency

Asahi Shinbun (1998): Asahi shinbun Japan Almanac 1999

1) Overview of Japan 1-2) Political and Economy - for reference -

New National Government Ministries : as a result of the public call for administrative reform, starting in January 2001, the national government will be reorganised into 13 ministries.



Asahi Shinbun (1999): Asahi shinbun Japan Almanac 2000

(2) Nature in Japan

2-1) Topography

2-1-1) Geographical Features and Geological History

a) Geographical Features

The topography of the Japanese Archipelago is intensely undulating with mountainous areas, occupying some three fourths of the country. Most of these mountainous areas are steeply formed because of the erosive effect of the many. There are about 200 volcanoes, forming the volcanic belts of Chishima, Chokai, Nasu, Fuji, Norikura, Daisen and Kirishima. Earthquakes occur frequently in the archipelago.

b) Geological History

The Japanese Archipelago was part of the Eurasian Continent until the Tertiary period. The archipelago then separated from the continent and moved toward the Pacific Ocean in the Neogene period, during which time the Japan Sea was formed. It is thought that these islands gradually formed a shape similar to the present archipelago during the Diluvial epoch after an age when there were many islands of various sizes. The islands were at various times connected or severed from each other as the ground repeatedly rose or sank, and the glacial and inter-glacial periods came and went. All these geological and climatic changes greatly influenced formation of the diversified flora and fauna now found in the archipelago.

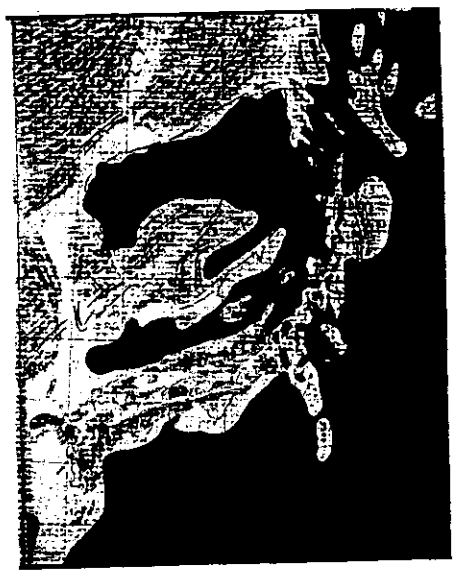
c) Climate

The Japanese Archipelago ranges a considerable distance from north to south and has mountainous areas with high elevation. Because of this there are varied climatic zones throughout the archipelago: the subarctic zone, the temperate zone and the subtropical zone. In the temperate zone, which occupies the largest area of the archipelago, seasonal changes in temperature are abrupt, and form four distinct seasons: spring, summer, autumn and winter. As for rainfall, the archipelago receives long rains during the early half of summer and autumn and heavy snows along the Japan Sea in winter.

湊 正雄 監修（１９７７）： 日本の自然, 平凡社
中村一明 他（1987）**：日本の自然** 1 **火山と地震の国、岩波書店**
市川浩一郎 他 編（1970）**：日本列島地質構造発達史、 築地書館**
安田喜憲 他（1998）**：図説 日本植生史、 朝倉書店**
中村和郎 他（1986）**：日本の自然** 5 **日本の気候、岩波書店**

1) 30 million Y.B.P.

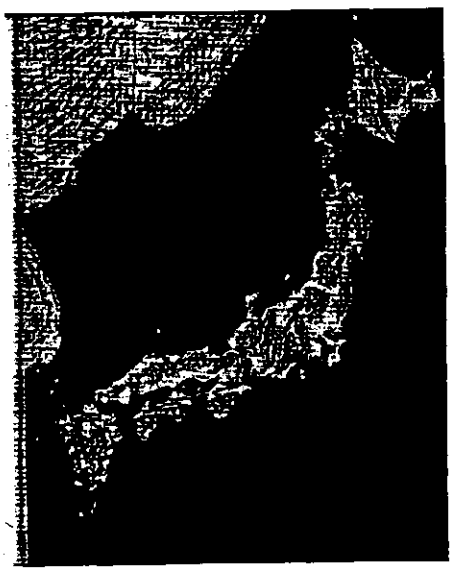
2) 14 million Y.B.P.



3) 380 thousand Y.B.P.

4) 20 thousand Y.B.P.

5) 6 thousand Y.B.P.



市川浩一郎 他 編（1970）：日本列島地質構造発達史、 築地書館

(2) Nature in Japan

2-1) Topography

2-1-2) Biogeographic Regions and Japan

a) Biogeographical Region of the World and Japan

Biogeographical region is a biological division of the Earth's surface embracing both faunal and floral characteristics. The distribution of plants and animals can be influenced both by the ecological and geographical factors. The former is their adaptability to the environment and the latter is the geographical barriers limiting their distribution. Hence, when studying the reasons for distribution, the analysis should be done, theoretically, species by species.

However, when handling larger taxonomic units, distribution areas common to all species belonging to the unit are recognised and division into regions becomes possible. The division is based on the resemblance of life forms of species and their systematic closeness, which is related to geological history.

Zoogeographically the earth is generally divided into the six regions shown on the map. This division is applicable to a larger number of animal groups, though there are some other ways of division differing according to the group of animals concerned.

Similarly, phytogeographically the earth is divided into six regions related more closely to latitude than zoologeographical regions.

Most of the Japanese Archipelago belongs to the Palaearctic region for animals and the Holarctic floral kingdom for plants, but Nansei Islands are thought to be part of the Oriental region for animals and the Southeast Asian region for plants. Honshu, Shikoku and Kyushu Islands have characteristics of the transition zone between the Palaearctic region and the Oriental region for animals: for example, Japanese serows, Japanese monkeys and Japanese giant flying squirrels inhabit in the northern end of Honshu Island.

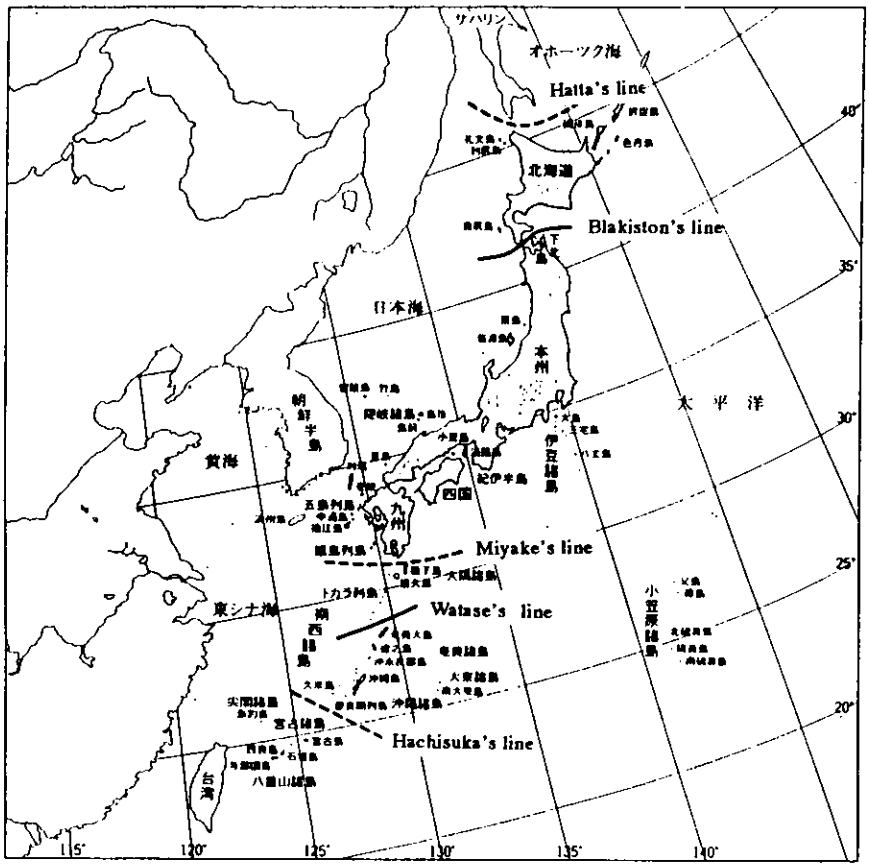
b) Biogeography in Japanese Archipelago

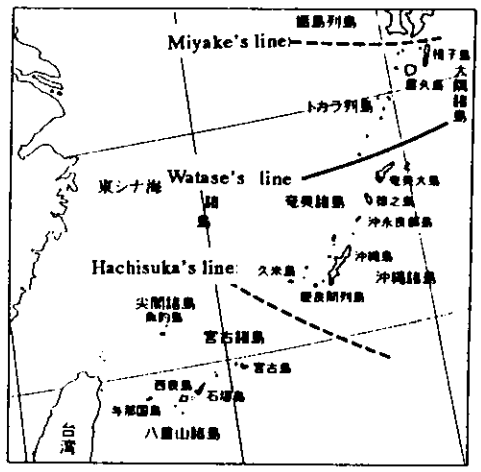
Straits between the islands are the boundaries of distribution for most of the species living in the Japanese Archipelago: the Tsugaru Straits and the Tokara Straits are particularly important. The boundaries regulating the species distribution are as follows:

- Blakiston's line (Tsugaru Straits): for mammals;
- Watase's line (Tokara Straits): for mammals, reptiles, amphibians and spiders: the Palaearctic region in the north and the Oriental region in the south;
- Hatta's line (Soya line): for reptiles, amphibians and freshwater invertebrates;
- Hachisuka's line: for birds;

- Miyake’s line: for insects: Japanese endemic species in the north and tropical species in the south.

環境庁 （1982）： 日本の自然環境
日高敏隆 監修（1996）： 日本動物大百科、 平凡社





◀▲日本の動物地理区
ブラキストン線　津軽海峡線ともいう．ブレーキストンとプライアーが1880年に『日本鳥類目録』で提唱した．この線より北をシベリア亜区，南を満州亜区とする．哺乳類の分布境界がこの線と合致するものが多い．
渡瀬線　1912年に渡瀬庄三郎が確認．この線より北を旧北区，南を東洋亜区とする．哺乳類・両生類・爬虫類・クモ類などの分布境界と合致するものが多い．
八田線　宗谷線ともいう．この線より北をシベリア亜区，南を満州亜区とする．両生類・爬虫類・淡水無脊椎動物の分布境界と合致するものが多い．
蜂須賀線　この線より北を全北区，南を旧熱帯区とする．鳥類の分布境界と合致するものが多い．
三宅線　これより北は日本特産の昆虫，南は熱帯型の昆虫が多い．

- Blakiston's line (Tsugaru Straits): for mammals;
- Watase's line (Tokara Straits): for mammals, reptiles, amphibians and spiders: the Palaearctic region in the north and the Oriental region in the south;
- Hatta's line (Soya line): for reptiles, amphibians and freshwater invertebrates;
- Hachisuka's line: for birds;
- Miyake's line: for insects: Japanese endemic species in the north and tropical species in the south.

日高敏隆 監修（1996）： 日本動物大百科、 平凡社

(2) Nature in Japan

2-2) Mammals

a) Characteristics of Mammals in Japan (I): Diversity and Endemism

In Japan, mammals are very rich in species due to both the diversified ecological environment, extending from the arctic zone to the subtropical zone, and complex processes that formed the Japanese Archipelago during which the islands were repeatedly connected and disconnected with the Asian continent. Indigenous mammals number 23 families, 60 genera and 109 species, of which terrestrial mammals comprise 20 families, 60 genera and 99 species. These numbers represent 2.4 to 2.6% of all mammal species currently found in the world.

In comparison with China, which has 414 mammal species, the number of terrestrial species in Japan is only 23.9% that of China. However, if the number of species is compared per unit area, Japan has six times more species than China since the land area of Japan is only 4% of that of China. In comparison between Britain and the Honshu Island, of which area sizes are similar, the ratio of number of species of terrestrial mammals is 48 in England and 58 in the Honshu Island. These comparisons show that the Japan has relatively high species diversity of mammals.

In addition, many of Japan's mammal species are endemic: 39 species of terrestrial mammals, comprising 39.4% of all the terrestrial species in the country, can be found nowhere else. In comparison, Britain has no endemic species of mammals. It is thought that a reason for this difference is derived from differences in formation and structure of the land itself. In he case of Britain, the most likely explanation is that no significant or specific evolution occurred in animals due to the fact that the vegetation and animal habitats were largely destroyed by glacial action in the Diluvial epoch and animals had not been able to survive for a long time. In Japan, on the other hand, animals were able to avoid extinction by taking advantage of the long, north-south orientation of the archipelago, and moved toward south during the cold glacial period northwards or into mountainous areas during the warm inter-glacial period.

b) Characteristics of Mammals in Japan (II): Qualitative

In comparison with the Asian Continent on the same latitude, mammals in Japan can be characterised as follows:

- No species inhabiting in grasslands or deserts; forest ecosystems are well established but arid ecosystems did not because of the rich rainfalls;
- No large carnivore species (tigers, leopards and lynxes);
- No species belonging to the Family Mustelidae (rasses, genettes and mongooses).

c) Distribution of Mammals in Japan: Mammal Geographic Zones

Japan is located over two faunal geographic zones: the Old Northern Zone and the Oriental Zone. The Old Northern Zone includes the main islands of Japan, north of Tokara Islands, in which the main species originated from the temperate and arctic zones. The Oriental Zone includes Amami Islands and Nansei Islands, south of the Watase's line, where the main species originated from the subtropical and tropical zones.

In Hokkaido, there are very few endemic species of mammals. While sixty-one percent of the Japan's mammal species are distributed only in Hokkaido and its associated islands, the same species also inhabit the northern areas of Sakhalin and Siberia.

In Honshu, Shikoku, Kyushu and their associated islands (with the exception of Tsushima), the basic species compositions of mammals are the same. At least 42% of the indigenous species are endemic with very old origins and comprise the originator species of the mammals now found in the main islands. Mammals inhabiting the main islands are roughly divided into two groups: one group having related species in North Korea, north-eastern China and further north, while the other group is related to species found in south China, the Himalayas and further south. The Mammals on Tsushima Island include several endemic species originating from North Korea.

In the Nansei Islands, mammals evolved and specialised because most of the islands are very small and have been isolated from the continent for a long time, since the early Diluvial epoch at least. Fifty-six percent of the indigenous species on the islands are endemic and some of them are so even on the genus level.

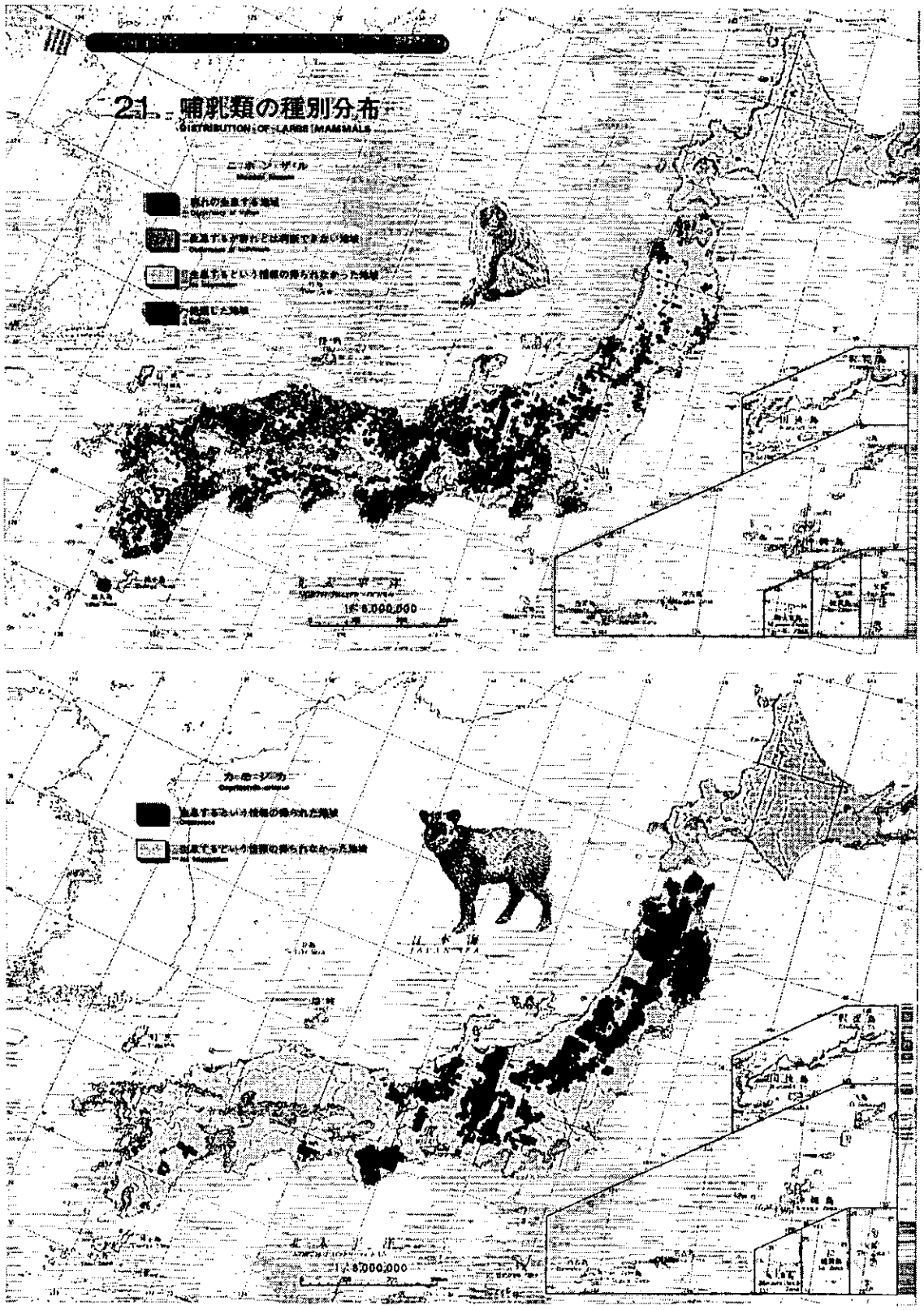
阿部 永（1998）：日本の哺乳類の多様性とその保護、モグラたち、そして野生動物たちの今は － 野生動物の保護をめざす「もぐらサミット」報告書、 比和町立自然科学博物館・比婆科学教育振興会、

日高 敏隆 監修（1996）： 日本動物大百科、１ 哺乳類、 平凡社

阿部 永 監修（1994）： 日本の哺乳類、 東海大学出版会

金子之史（1998）： 哺乳類の生物学 １ 分類、 東京大学出版会 （参照資料）

(2) Nature in Japan 2-2) Mammals



「日本の自然環境」環境庁 1982 年

(2) Nature in Japan

2-3) Birds

a) Migration of Birds

A great number of migratory birds seasonally flock from various breeding or wintering areas such as the Arctic circle, Alaska, Kamchatka Peninsula, Siberian Continent, Chinese Continent, Korean Peninsula, Malaysia, the Philippines, Australia etc to the Japanese archipelago, which stretches from 20 N to 45 N, and lies on the coast of the Eurasian Continent. According to the checklist of Japanese Birds, more than 600 species of birds including 100 subspecies have been recorded in Japan.

These birds are conveniently categorised into five types by moving pattern as follows. The residents, such as *Passer montanus, Phasianus colchicus, Corvus macrorphynchos* and others stay continuously in the same area all year around. The wanderers such as *Cettia diphone cantans, Garrulus gladarius japonicus, Troglodytes troglodytes fumigatus* and others that visit the Japanese archipelago in summer and go back to the wintering area across the sea are called summer visitors.

The following birds that come down and stay during the winter season in Japan are categorised as winter visitors: *Turdus naumanni eunomus, Anser albifrons, Cygnus cygnus*, etc. Birds such as *Calidris ruficollis, Arenaria interpres, Xenus cinereus, Pluvialis dominica*, etc. that just visit the Japanese Islands temporarily are called transients. *Otis tetrax*, *Zonotrichia leucophrys*, etc., which are found accidentally in Japan, are classified as stray birds.

b) Features of Japanese Avifauna

The percentage of migratory birds and the residents is 60 % and 40 %, respectively, in Honshu, Shikoku and Kyushu. In Hokkaido and the Ryukyu Islands the migratory birds occupy more than 80 % of the population and the rest are a resident. These percentages mean that the Japanese Islands are indispensable to migratory birds, and this is one of the avifaunal characteristics of the Japanese Archipelago.

Another characteristic of the Japanese avifauna is that many sea birds can be seen in and around the islands. Some of them, such as *Puffinus tenuirostris, Melanitta fusca* just pass through the vicinity of Japanese Islands, and the others spend a couple of months during the breeding season on scattered islands around Japan.

c) Zoogeography

Zoogeographically, most of the Japanese Islands are located at the south-eastern end of the Palaearctic region and part of the Ryukyu Islands is considered to belong to the Oriental Region

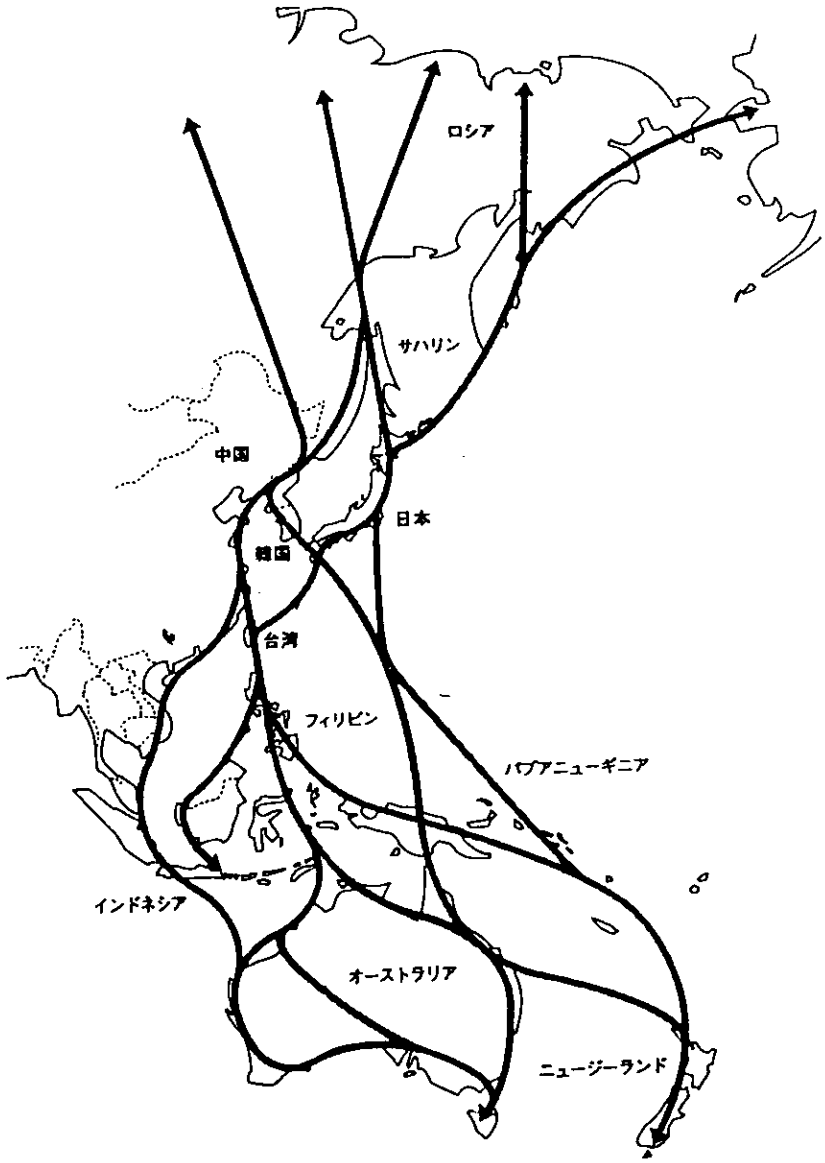
from the view point of Mammalian distribution. Birds that belong to the Oriental Region are observed in and around Ryukyu Islands, Siberian avifauna is distributed in Hokkaido, and Asian Continental birds can be seen in Honshu, Kyushu and Shikoku.

There are two important avian-geographical lines in the long Japanese archipelago: the Blakiston Line located between Hokkaido and Honshu and the Watarase Line located between Yaku Island and the Amami Islands.

There is significant difference in avifaunal distribution between Hokkaido and Honshu. For instance, *Picoides tridactylus, Ketupa blakistoni*, and *Pinicola enucleator*, are exclusively distributed in Hokkaido, while *Picus awokera* and others can be seen only in Honshu, and *Garrulus Iidthi, Scolopax mira, Sapheopipo noguchii* and others are distributed in the Amami Islands. Since the Japanese Islands were separated from the continent several billions of years ago, there are many endemic species and subspecies of birds in Japan. They are as follows: *Phasianus soemmerringii, Phasianus colchicus, Shynthiboramphus wumizusume, Picus awokera, Mottailla gradis, Erithacus akahige, Erithacus komadori, Prunella rubida, Turdus celaenops, Parus varius, Emberiza sulphurata, Garrulus Iidthi, Sapheopipo noguchii,* and *Megalurus pryeri*. The Izu Islands, Bonin Islands, Torishima Islands and Daito Islands in the Pacific Ocean far from the Japanese mainland each has peculiar avifauna such as *Turdus celaenops, Apalopteron familiare hahasima, Diomedea albatrus*, and *Otus scops interpositus*.

阿部 學（1982）：**日本の鳥類、日本の自然環境、 環境庁**

(2) Nature in Japan 2-3) Birds



Migration route of shore birds in the Eastern Asia - Australasia

世界自然保護基金日本委員会(1995):東アジア渡り鳥ルートツアー報告書

(2) Nature in Japan

2-4) Amphibians and Reptiles

a) Amphibians and Reptiles of Japan

Eighty-four kinds (species and subspecies) of reptiles and fifty-eight kinds of amphibians are known in Japan. The amphibians can be subdivided into two orders: urodeles (19) and anurans (39). The figures in parenthesis give the number of species and subspecies. The reptiles can be subdivided into three categories: turtles (10; including 5 marine species), lizards (32) and snakes (42; including 9 marine species).

b) Characteristic Species

The abundance of salamander species is the prime characteristic of the Japanese herpetofauna. It is well known that the world's largest living amphibian, the Japanese giant salamander, *Andrias japonicus*, inhabits this country, but there are many other interesting salamanders as well. They are hynobiid salamanders. Speciation of this most primitive family of urodeles is noteworthy in Japan, and may be due to the complicated landscape. It is supposed that the mountain chains isolated the populations of these slow-moving animals, so that speciation occurred. Isolation of the Japanese Islands from the Eurasian continent occurred a long time ago, and it prevented more progressive competitors from invading Japan. This may be the reason why the primitive animals survived till the present time. They hynobiids arose in the eastern Eurasian continent and invaded Japan through the Korean peninsular or East China Sea. One may think that more species of the salamanders would inhabit their original home, but fewer are known in China than in Japan. Comparison between Japan and China reasserts the distinctiveness of the hynobiid fauna. The hynobiids are a unique family among herptiles that contains more species in Japan than on the continent. Ancestral hynobiids invaded Japan and differentiated into a number of species and subspecies on their way north, and finally reached Hokkaido. This assumption is supported by the morphological features of *Hynobius retardatus* which is distributed in Hokkaido.

Among the Salientia, *Babina* (Assasin Frogs), which are endemic to Amami and Ryukyus, are of special importance. This area belongs to an old geographic era and preserves many relic animals.

Endemic species of other amphibia and reptile of this area include *Tylotoriton andersoni* and *Geoemyda spengleri japonica* which are also relict. *Trimeresurus* spp. and *Eumeces* spp. also accomplished a unique evolution here.

Among the Salientia of mainland, it is of special interest from an evolutional standpoint that *Rana brevipoda porosa* appeared as the result of crossing between *R. brevipoda* and

R.nigromaculata. The evolution of *Bufo torrenticola*, a species living in torrents, in the mountain ranges of central Japan may be related to geological history. Three frogs, *Rhacophorus* spp., generally lay eggs in trees, but *Rhacophorus schlegeli* lays its eggs on the ground. This is assumed to be one of the types of adaptation to the north and is considered an example of evolution in the struggle against a cold environment.

c) Endemic Species and Evolution

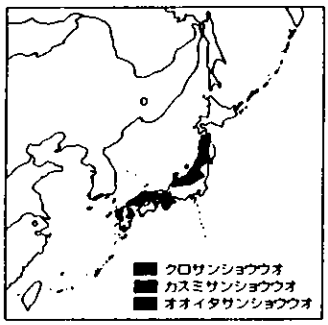
The lizards and snakes in mainland Japan including Hokkaido are mostly endemic species. They are supposed to have invaded Japan through the Korean Peninsula and evolved uniquely. Hokkaido and the southern Kurils are assumed to have been connected in that time and have many animals in common. Perhaps the Tsugaru Strait did not exist at that time but the Soya Strait did. It is supposed that the Korean Peninsular is the origin of progenitor types because many living *Takydromus* and *Agkistrodon* are found there. Many of the species, which live in Honshu, Shikoku, and Kyushu but not in Hokkaido, are also found on the Continent. Their absence is not due to climatic factors, because they are distributed much farther north on the Continent.

Those which came from the Continent through Taiwan and the Ryukyu Archipelago are *Buergeria japonica*, *Microphyla ornata*, *Japanulus plygonata*, *Takydromus smaragdinus*, and *Opheodrys* spp., etc. On this route, the amphibians and reptiles of Sakishima are rather close to those in southern China and Taiwan, and endemicity is less conspicuous than in the Ryukyu Archipelago.

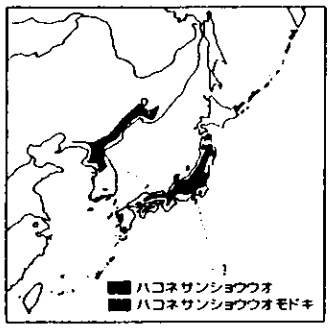
千石 正一（1982）：**日本の両生類･爬虫類、日本の自然環境、 環境庁**

(2) Nature in Japan 2-4) Amphibians and Reptiles

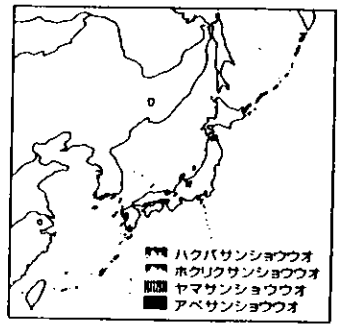
Distribution of Salamander



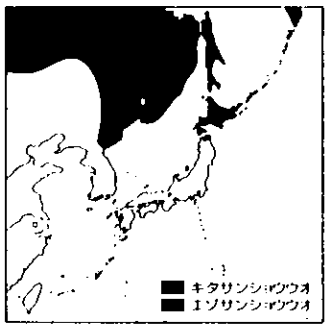
Japanese black salamander, *Hynobius nigrescens*
Clouded salamander, *Hynobius nebulosus*
: Oita salamander, *Hynobius dunni*



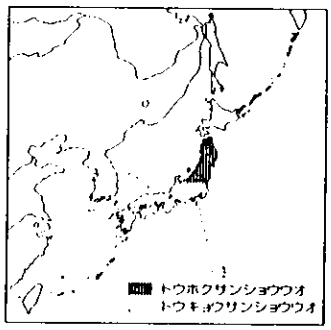
Japanese clawed salamander,
Onychodactylus japonicus
Onychodactylus fischeri



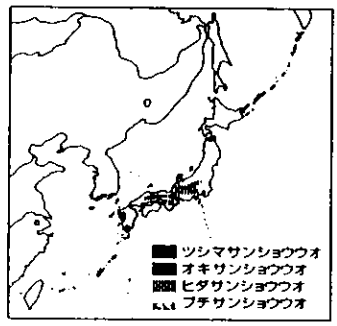
Hakuba salamander, *Hynobius hidamontanus*
Hokuriku salamander, *Hynobius takedai*
Japanese mountain salamander, *Hynobius tenuis*
Abe's salamander, *Hynobius abei*



Siberian salamander, *Salamandrella keyserlingii*
Hokkaido (Yezo) salamander, *Hynobius retardatus*

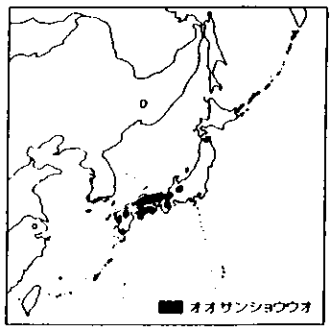


Tohoku salamander, *Hynobius lichenatus*
Tokyo salamander, *Hynobius tokyoensis*



Tsushima salamander, *Hynobius tsuensis*
Oki salamander, *Hynobius okiensis*
Hida salamander, *Hynobius kimurae*
Spotted salamander, *Hynobius naevius*

Amber-colored salamander, *Hynobius stejnegeri*
Odaigahara salamander, *Hynobius boulengeri*



Japanese giant salamander, *Andrias japonicus*

松井 正文（1996）両生類総論、日本動物大百科 第 5 巻 両生類・爬虫類・軟骨魚類（日高 敏隆 監修）．平凡社

(2) Nature in Japan

2-5) Insects

a) Diversity of Insect Fauna

Japan is noted for the diversity of its insect fauna. How many insect species can be found there, has never been answered with certainty. It was about 200 hundred years ago that Carol von Linne started the naming of living organisms, and only about one hundred years have elapsed since Japan opened its gates to modern biological science. This means that Japanese systematic biology still remains somewhat behind that of western countries.

However, we may attempt to estimate roughly the number of insect species found in Japan. In 1945 Kloet and Hincks published a book in which all the known British insects were listed, about 20,000 species. There may be some subsequent additions to the exact number, but we can compare the species number between the two countries with well-surveyed insect groups. Today, 58 species of butterflies and 43 species of dragonflies are known from the British islands, and 225 and 189 form the Japanese island. From this ration we can roughly that Japan has four or five times more insect species than Britain.

b) Plyletic Classification of Insects

We regret we have no compete list of Japanese insects which might reach about 100,000 and probably only about 10,000 species have been illustrated in books published in Japan.

We have a considerable number of very interesting and important insect species from the systematic point of view. They are a number of strictly endemic Japanese species and endemic, but commoner, East Asiatic species.

As an example of the former category we can mention Epiophlebiid dragonflies, a relic insect group represented by one species in Japan and another species in the Himalayas. Another archaic dragonfly, *Tanypteryx pryeri*, is a member of ten species surviving in the circum-Pacific area. A most primitive Orthopterous insect group, the Grylloblattodea, the representatives of which are subterranean, are found in Rocky Mountains and several scattered areas in the Far East, i.e., South Ussuri, Korea and the four large islands of Japan. These three groups of insects are recognised as the survivors (relics) from past ages.

As examples of widely ranging East Asiatic insects it is not appropriate to mention *Papilio xuthus* or *Pieris rapae*, but we may mention *Sasakia charonda*, two *Luehdorfia* species (*L.japonica* and *L.Puziloi*), *Lethocerus deyrolli*, together with *Terpnosia vacua*, and *Luciola cruciata*. These six Asiatic species have common or very close kin in continental Asia. *Nannophya pygmaea* is a tropical species extending from Southeast Asia to Japan, and its northernmost habitat is the northern end of the mainland of Japan.

The migratory insects visiting Japan, and quite often becoming established in Japan, are not interesting from a faunal viewpoint, but they include ver common insects and a number of extremely serious pests to Japanese agriculture.

c) Natural Habitats of Insects

In order to briefly study the natural habitats of Japanese insects we shall consider the above-mentioned insects as examples. As an example of low mountain insects we have the two *Luehdorfia* butterflies whose larvae are exclusively limited to *Asarum* plants (Aristorochiaceae). As lowland or plain insects we have *Terpnosia vacua*, *Sasaki charonda*, and many others. As for aquatic insects, the larvae of *Epiophlebia superstes* dwell in mountain cascades, the larvae of *Tanyptery pryeri* dwell in valleys with seepage water, *and Luciola cruciata* lives in clear running water on hillsides. *Lethocerus deyrollei* dwells in old lowland ponds and *Nannophya pygmaea* is confined to sphagnum swamps.

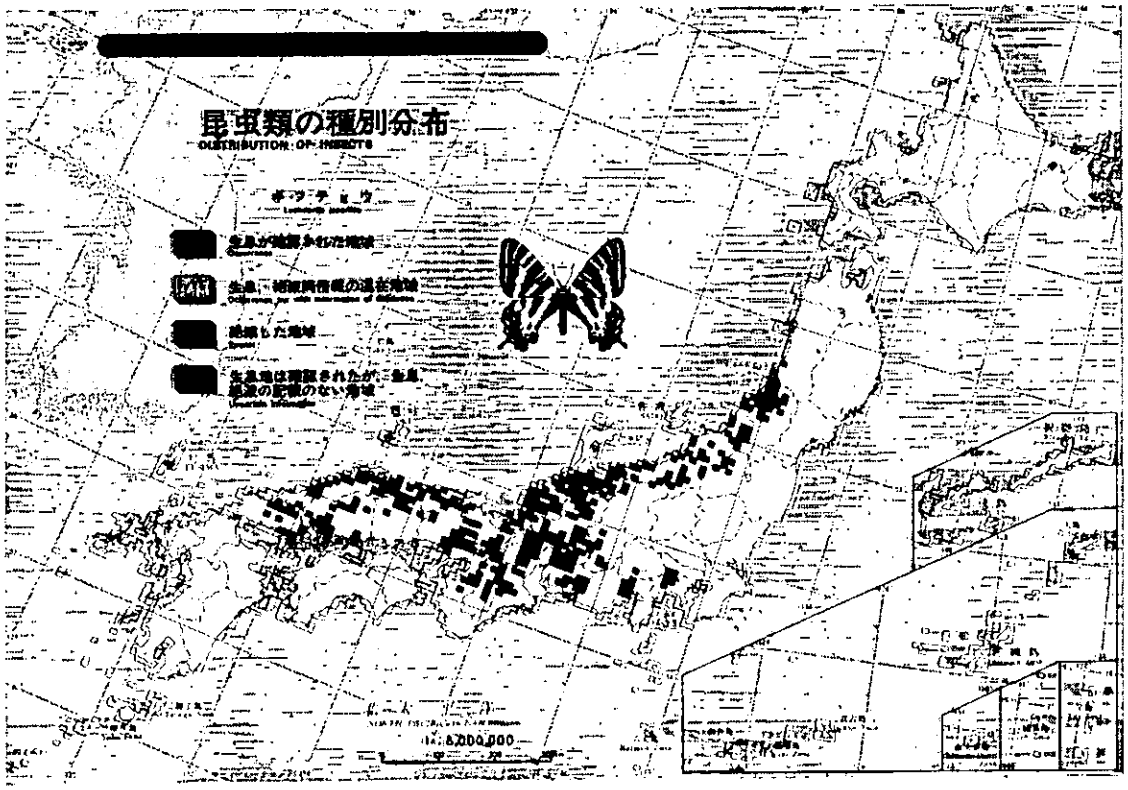
These insects which we have selected as examples can be treated as index species representing each particular environmental condition. In other words, the existence of any of these insects species indicates the presence of a particular natural environment.

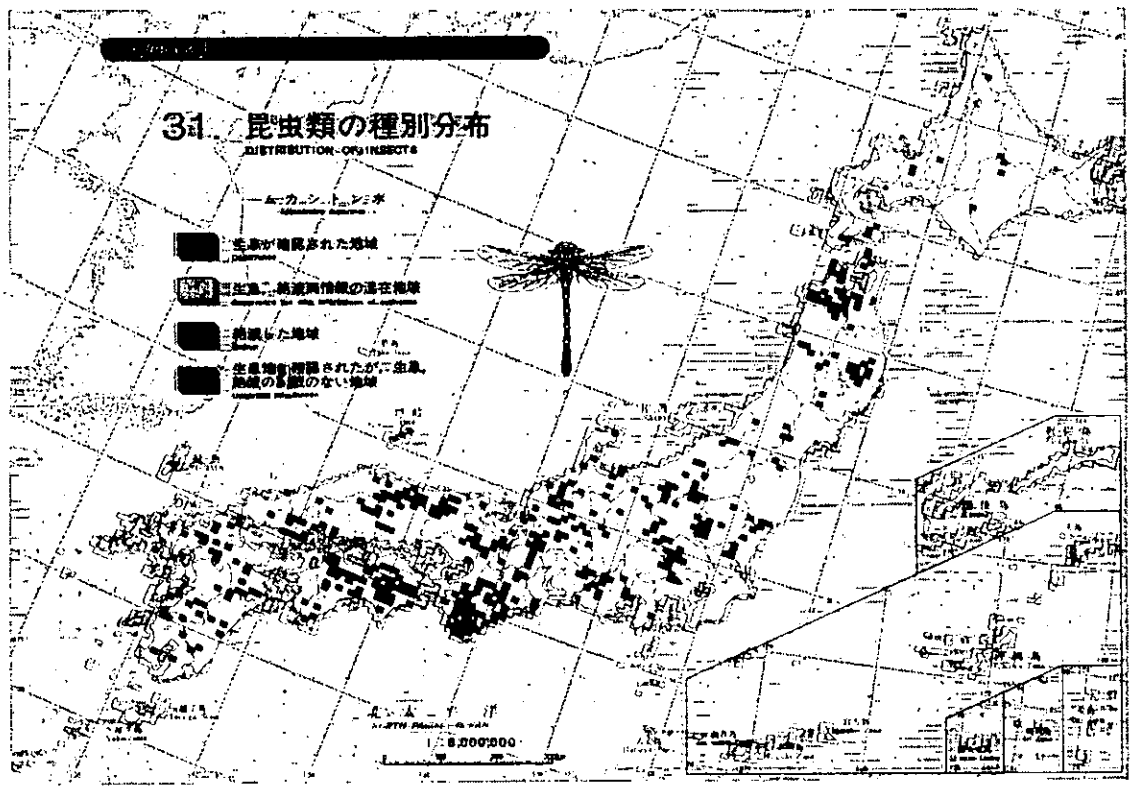
The butterfly species here mentioned tell of the presence of particular food-plants and their surrounding environment; aquatic dragonfly larvae, water-bugs, and firefly larvae denote respective limnological conditions. The subterranean Grylloblatids will be an indicator of a particular terrestrial constitution.

It should not be forgotten, however, that these insect species are basically subject to internal control, which may be influenced by environmental factors including the pressure of competitors.

朝比奈 正二郎（1982）： **日本の昆虫類、 日本の自然環境、 環境庁**

(2) Nature in Japan 2-5) Insects





日本の昆虫類、日本の自然環境、環境庁

(2) Nature in Japan

2-6) Plants

a) Forests of Japan

Because of the abundant precipitation in all seasons, Japanese vegetation is basically forest. Since Japan is located at medium latitude, the area where plants do not grow due to low temperature is limited to the top of the higher mountains in Honshu and Hokkaido.

Though a small country, the Japanese Archipelago is greatly extended from north to south and the difference of temperature by area is great; the mean annual temperature ranges between 2℃ and 22℃. In spite of the small which of the islands, there are high Japan is located between the Asian Continent and the Pacific Ocean, the influence of the monsoon is so great that the difference in temperature between summer and winter is great. Under this temperature regime, a variety of forest vegetation grows; there are laurel forests (evergreen broad-leaved forests), summer-green broad-leaved forests and evergreen coniferous forests. Further, because of the complicated topography and geological formations and the many volcanoes, local variation in soil is also great, and the variety of soil conditions in turn produce a diversity of plant communities.

b) Flora of Japan

The number of plant species that make up plant communities is also great. In Hokkaido, Honshu, Shikoku and Kyushu there are ca. 4,000 species of seed plants belonging to 900 genera, and 400 species of ferns, and in the Ryukyu Archipelago there are ca.1, 500 species of seed plants and 250 species of ferns. In the Bonin Islands 180 species of seed plants and 80 species of ferns are known, of which 107 and 20 species, respectively, are endemic. The species composition of the Ryukyu Archipelago and the Bonin Islands belongs to the Continental Southeast Asiatic Region, and that of the four main islands belongs to the Sino-Japanese Region. The four main islands are divided into four districts, Hokkaido, the Japan Sea district, the Pacific district, and Central Mountain district, on the basis of the climatic factors and vegetation.

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c) Comparison with Other Areas

Japanese flora is notably more diversified than that of other areas at a similar latitude, such as New Zealand and the northeastern part of North America. The British Isles for example, has only about 1,500 species of higher plants, while Ireland has about 1,000 species; although these areas are located in higher latitude than Japan. Generally, the reasons for this high diversity in Japanese flora are as follows:

- Wide range of temperature differences along the north-south axis of the archipelago;
- Steep mountainous areas of high altitude (over 3,000 m);
- The peculiarities of Japan's regional geological history.

There are no high mountains in southern Japan, which was once connected the tropical part of Asia, and the whole archipelago straddles the climatic boundary between the temperate and tropical zones. Over time, climatic changes moved this boundary moved up and down the north-south axis of the archipelago. During the glacial periods when the flora and fauna of northern Europe and America were repeatedly devastated, the plants and animals avoided extinction by moving south along the length of the archipelago to warmer areas. Japan is also has had the additional good fortune of being surrounded by the sea, and none of these climatic fluctuations in its history have ever brought a dry period to Japan. For all these reasons the flora and fauna has been able to survive, evolve and diversify to a much larger extent than that of northern Europe and America.

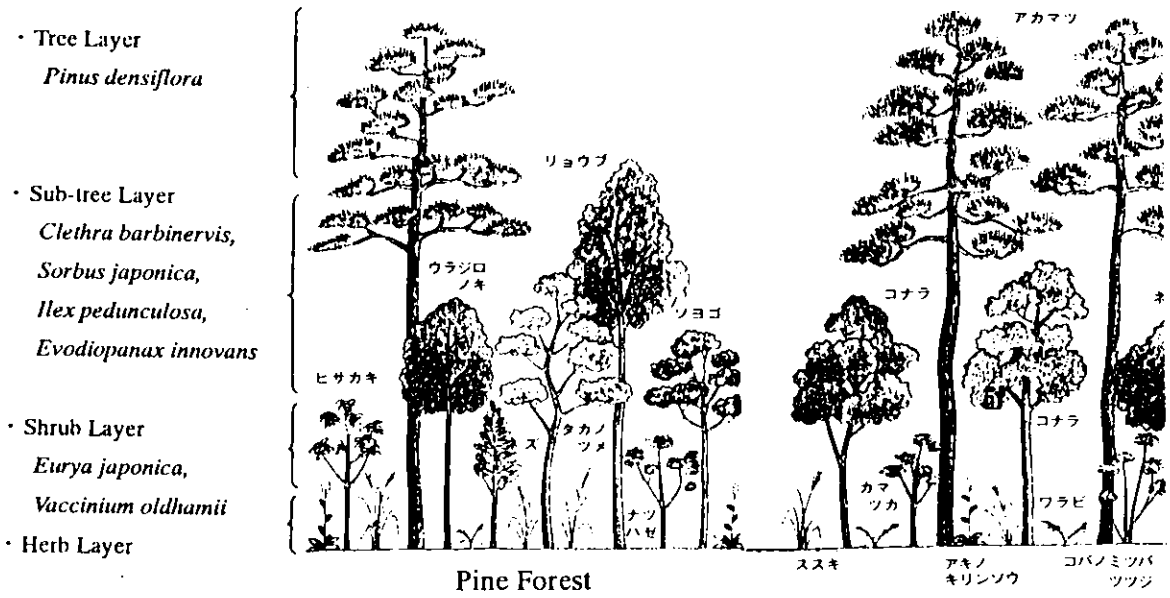
Japanese Flora / Comparison with Other Similar Regions of the World

Genus/Species	Pteridophytes,	Gymnosperms,	Dicotyledones,	Monocotyledones,	Latitude
Japan	81/401	17/39	737/2353	275/1064	30-45.5 (N.Lat.)
North-eastern region of North America	32/108	10/26	438/1727	178/974	36.5-48 (N.Lat.)
New Zealand	47/164	5/20	233/11249	115/438	34-47.5 (S.Lat.)

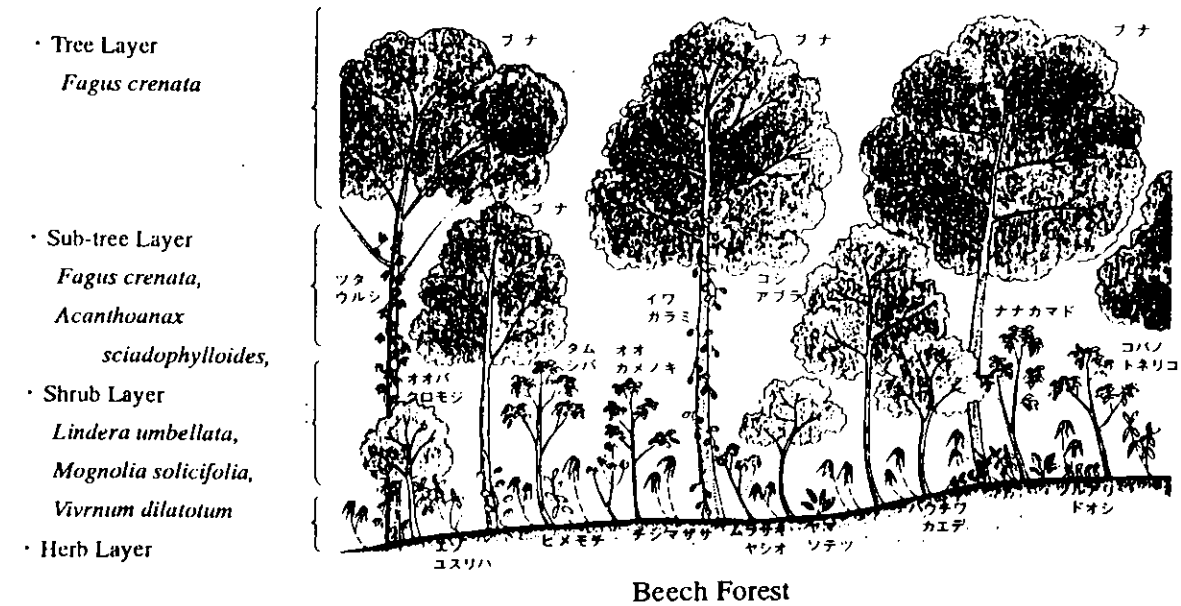
佐藤 大七郎（1982）：**日本の植物、 日本の自然環境、 環境庁**
堀越 増興 他 編（1996）：**日本の自然 6 日本の生物、 岩波書店**
前川 文夫 (1977)：**日本の植物区系、玉川大学出版局**

(2) Nature in Japan 2-6) Plants (1)

Typical Forest Types in Japan (1)



Pine Forest



Beech Forest

中西 哲也（1983）：日本の植生図鑑（1）森林、 保育社

(2) Nature in Japan 2-6) Plants (2)

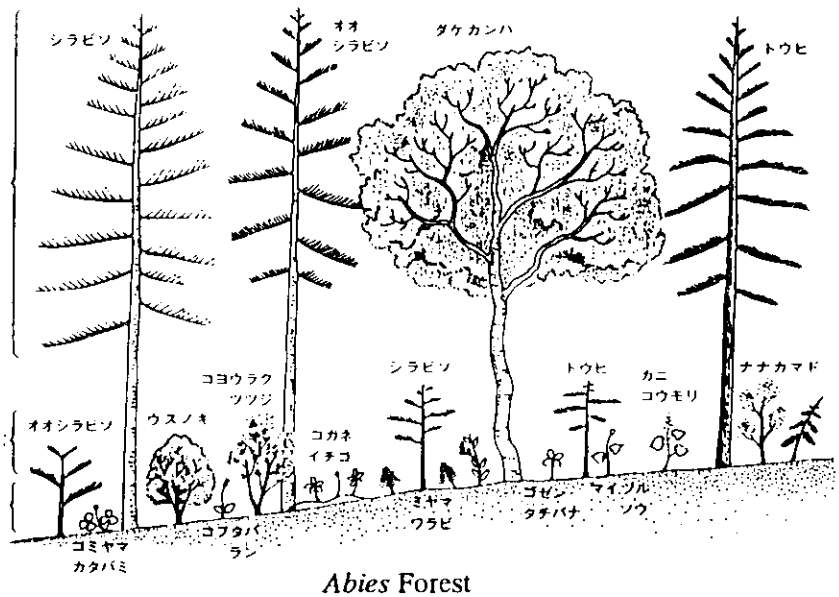
Typical Forest Types in Japan (2)

- Tree Layer
  Quercus glauca,
  Machilus thunbergii,
  Castanopsis sieboldii
- Sub-tree Layer
  Cleyera japonica,
  Ilex integra,
  Camellia japonica
- Shrub Layer
  Ligustrum japonicum,
  Neolitsea sericea,
  Aucuba japonica
- Herb Layer

Oak (Chinquapin) Forest

- Tree Layer
  Abies veitchii,
  A. mariesii,
  Picea jezoensis,
  Betula ermanii
- Shrub Layer
  Abies mariesii,
  Vaccinium hirtum,
  Sorbus commixta,

Herb Layer



Abies Forest

中西 哲也（1983）：日本の植生図鑑（1）森林、 保育社

(2) Nature in Japan

2-7) Vegetation

a) Zonation of vegetation

In the natural environment of Japan, the vegetation is mainly forest. With the change in temperature, Japanese forests change from south to north in the order of evergreen broadleaved, deciduous broadleaved, and evergreen coniferous forests. Vertically, a similar pattern of vegetational change occurs with change in temperature. The pattern of distribution of these types of forests is zonal and it is called forest zone, and many types of classification have been proposed since the late 1800's.

According to one of the most popularly widely used classifications, evergreen broadleaved forest is called warm temperate forest zone or evergreen oak (*Cyclobalanopsis* spp.) zone, deciduous broadleaved forest is cool temperate forest zone or beech (*Fagus crenata*) zone, evergreen coniferous forest is called boreal forest zone or *Abies sachalinensis / A. veichii* zone. Beside these classifications based on physiognomy, these are a variety of versions of pytosociological classification based on species composition of plant communities.

According to this phytosociological classifications, Camellietea-japonicae Region is equivalent to evergreen boadleaved forest zone, Fagetea-crenatae Region is deciduous broadleaved forest zone, and sub-arctic and sub-alpine natural vegetation represents evergreen coniferous forest zone.

Some features of those areas are as follows. In Camellieta-japoncae, Machilus thunbergii and *Castanopsis* spp. grow in forests near the seaside, whereas steep slopes and ridges, *Abies firma an*d *Tsuga sieboldii* are found. On the shallow soil of the seacoasts along the Pacific Ocean *Quercus phylliraeoides* grows, and *Pinus densiflora* occupies the poor soils of ridges.

In Fagetea-crenatae, which is represented by *Fagus crenata*, forests rich in *Quercus crispula* occupy ridges and dry slopes, and a rich flora of deciduous trees including *Fraxinus mandshurica* var. japonica, *F.spaethiana, Cercidiphyllum japonicum*, and *Aesculus turbinata* is found in moist bottomlands. Forest floors is often thickly covered with bamboo grass or dwarf bamboo, which is not seen in the equivalent types of forest in other parts of the world. The species of dwarf bamboo under beech forests on the snowy Pacific side and are different from the species on the very snowy Japan Sea side.

In sub-arctic and sub-alpine natural vegetation, the dominant species are *Abies veichii, A.mariesii* and *Tsuga diversifolia* in Honshu, and *A. sachalinensis* and *Picea jezoensis* in Hokkaido, but in Hokkaido a mixture of deciduous broadleaved species is common.

b) Human Activity and Vegetation

Vegetation growing presently without any direct human influence is called natural vegetation, and the classification of vegetation described above is based on the natural vegetation. Original vegetation means the vegetation before human activity started.

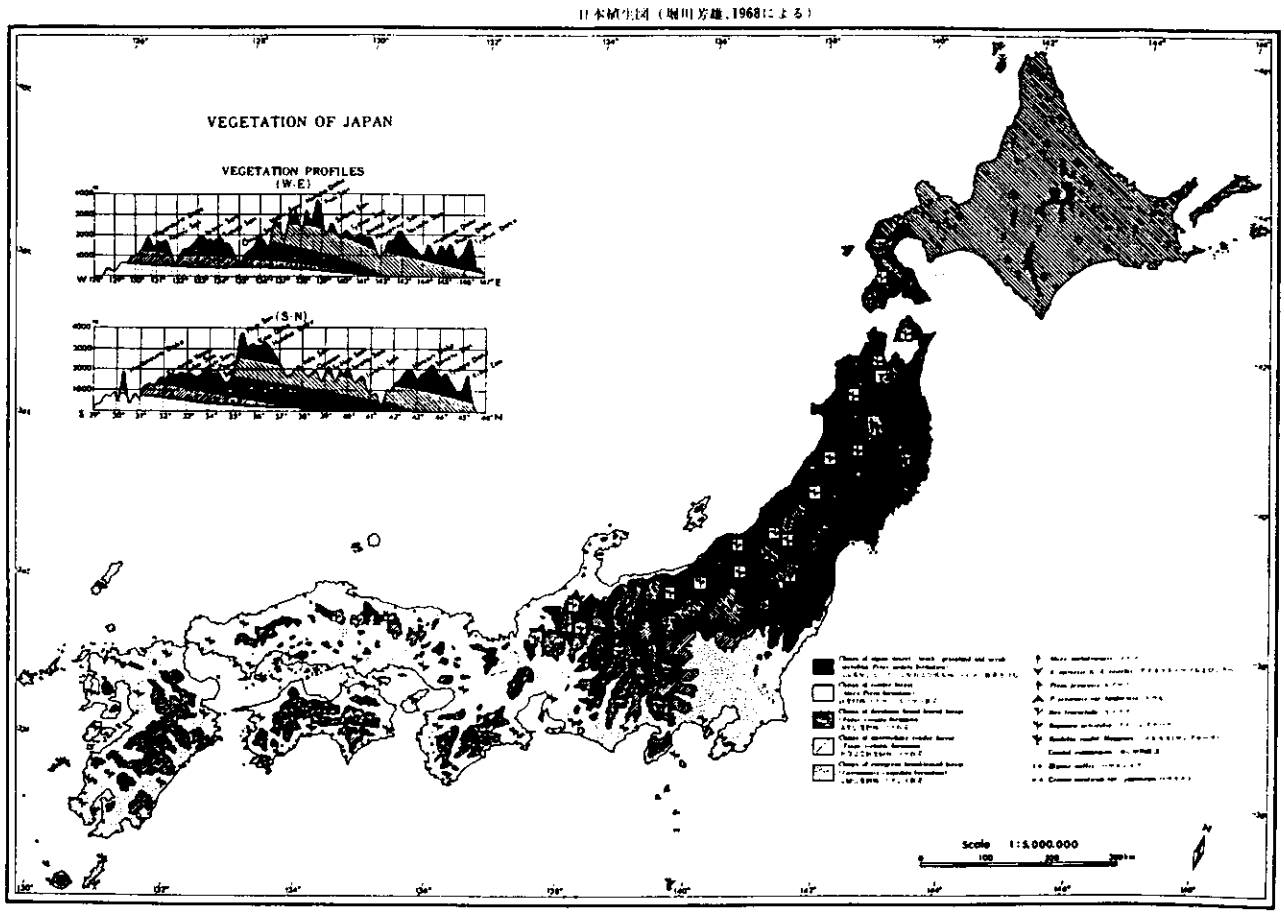
However, the vegetation actually found is modified by various activities of human beings and is different from natural vegetation. Natural vegetation is turned into such artificial vegetation types as paddy fields, agricultural lands, planted forests, grasslands, etc., which are quite different from natural types of vegetation. There are many forests which reverted to earlier stages of succession under the influence of forest fires or logging. Vegetation that is heavily influenced by human activity is called substitutional vegetation. The vegetation consisting of natural and substitutional vegetation is called actual vegetation.

Even if human influence is completely removed from actual vegetation, it will not necessarily go back to the original vegetation because of modifications of ground conditions. The vegetation which is supposed to come up finally after human influence is stopped is called potential natural vegetation.

佐藤 大七郎 （1982）： 日本の植生、日本の自然環境、 環境庁

(2) Nature in Japan 2-7) Vegetation

Vegetation of Japan



- Climax of alpine desert, heath, grassland and scrub
- Climax of conifer forest
- Climax of deciduous broad-leaved forest
- Climax of intermediate conifer forest
- Climax of evergreen broad-leaved forest

堀川 芳夫 (1968)：日本の植生地図、安田女子大学紀要 2 号

－ 佐々木 好之 編 (1973)：植物社会学、共立出版 より－

(3) Legal Systems of Japan

3-1) Concept and Outline of the Environment Law System

a) Environment Laws in Japan

Environment laws aim to protect, maintain and improve the environment. The concept of the environment laws first appeared in the latter half of the 1960s and the 1970s and the laws eventually came to be recognised under the scope of legislation.

In Japan, prevention of pollution became an urgent topic in the due to the pollution problems accompanying the rapid development of industry. Public protest movements and lawsuits for pollution occurred in many parts of the country, and preparation of legal restrictions on pollution progressed. The “Basic Law for Environmental Pollution Control” was established in 1967 and several laws for pollution control were enacted to prevent and control pollution.

Following this, the need began to be felt to extend this effort to protection and improvement of the natural environment, as well as pollution. To this effect, the Environment Agency was established in 1971 as an extra-ministerial bureau of the Prime Minister’s Office; the result of which was the establishment of environment laws in Japan which include both aspects of the pollution control laws and the nature conservation laws.

b) Environment Laws: Measures for Environment Conservation (Zoning)

Japan has only small area of potential as residential areas where the population is concentrated. In order to maintain the country’s leading industrial edge and the present standard of living, it is important rationalise the nation’s land use while preserving the natural environment. In the current national land policies, particularly for environmental conservation, a zoning method is widely used as an important legal measure. In this zoning system, an area is designated as a particular zone, such as industrial zone, nature conservation zone and residential zone, and activities in this zone are regulated in accordance with the land use objective.

There are three such nature laws the Natural Parks Law, the Nature Conservation Law and the Wildlife Protection and Hunting Law, all of which are directed at conservation of nature through the zoning method.

1) Natural Parks Law

This law succeeded the “National Parks Law” of 1931 and aims to conserve prime natural scenic areas as natural parks and to contribute to health, recreation and enlightenment of the people. This law effects strict control over the land use in natural parks. However, there are still limitations in the natural park system as for people-based nature conservation, as the primary objective of the Law remains to secure places of recreation for the people in scenic areas rather than conservation of the natural environment.

2) Nature Conservation Law

This law was established as a basic law to ensure the provision of conservation areas for prime areas of natural environment around the country. This law provided the basic concept, the legal system and the administration organs for nature conservation. To secure integrated conservation measures for natural environment, the “Basic Policy for Natural Environment Conservation” was created and Wilderness Areas and Nature Conservation Areas were established.

However, actual measures taken by the administration are limited to conservation of natural parks and a few natural forests remaining that are not included in the protection forests covered under the Forest Law. It must therefore be said that this law does fully meet the objective of providing a comprehensive legal framework for conservation of the natural environment.

3) Wildlife Protection and Hunting Law

This law aims to conserve wild animals that are important components of the natural environment. Under this Law, the Director General of the Environment Agency designates areas recognised as being of importance for the protection and reproduction of birds and mammals in Wildlife Protection Areas, where hunting is prohibited. Landowners in the areas are generally prohibited from performing activities with the potential to adversely affect protection and breeding of birds and mammals, unless a permit is issued by the Director General or Prefectural Governors.

4) Other Laws

Other legal systems in place that, while their primary objective is other than nature conservation, nevertheless indirectly contribute to it are the designation of protection forests under the “Forest Law” and a permit system for diversion of farms by the “Law Concerning the Improvement of the Agricultural Promotion Area”. These systems still serve their original objectives in the administration but are worth noting as measures that contribute to the conservation of forests

加藤 一郎 （1980）：環境法、環境科学大辞典（佐々学監修）、講談社
原田 尚彦 （1981）：環境法、弘文堂

[Laws Related to Conservation of Wildlife Habitat and Designated Conservation Area]

Law,	Categories,	Number of Areas	Total Size of Areas (ha)
Nature Conservation Law (1972)	① Wilderness Area	5	5,631
	(1) Entry Restricted Zone	1	367
	② Nature Conservation Area	10	21,593
	(1) Special Zone	9	17,266
	(2) Wildlife Protection Zone	7	14,868
	(3) Special Marine Zone	1	128
	(4) Ordinary Zone		4,199
	③ Prefectural Nature Conservation Area	514	73,279
			(as of March, 1993)
Natural Park Law(1952)	① National Park	28	2,051,337
	(1) Special Zone		1,454,124
	Special Protection Zone		255,488
	Marine Park Zone		1,087
	(2) Ordinary Zone		597,213
	② Quasi-national Park	55	1,332,532
	(1) Special Zone		1,242,183
	Special Protection Zone		66,439
	Marine Park Zone		1,352
	(2) Ordinary Zone		91,354
	③ Prefectural Natural Park	301	1,951,112
			(as of March, 1993)
Wildlife Protection and Hunting Law (1918)	① Wildlife Protection Area		477,235
	(1) National Wildlife Protection Area	56	194,978
	Special Protection Zone		104,978
	(2) Prefectural Wildlife Protection Area	3,430	2,923,269
	Special Protection Zone		141,015
			(as of March, 1993)
Law for the Conservation of Endangered Species of Wild Fauna and Flora (1992)	① Natural Habitat Conservation Area	5	260
	(1) Conservation Area	5	114
	Strict Protection Area	1	39
	(2) Monitoring Area		146
			(as of June, 1996)

水谷 知生（1996）：野生動物の保護制度に関する一考察、ﾜｲﾙﾄﾞﾗｲﾌ・ﾌｫｰﾗﾑ２（3）

(3) Legal Systems of Japan

3-2) Legal Systems for Nature Conservation

a) Legal Systems for Natural Environment Conservation

There are many laws for conservation of natural environment. The Environment Agency synthetically promotes sound conservation for natural environment in cooperation with other government ministries and agencies.

b) Administration and Legislation for Nature Conservation

Administration for nature conservation is covered by various government offices since the wide scope of nature conservation has to be undertaken within the jurisdiction of each office. The administrative positions are roughly divided into two types. One is administration whose mission is nature conservation: e.g. nature conservation by the Environment Agency and protection of scenic places and natural monuments by the Agency for Cultural Affairs. Another is administration for other purposes but indirectly contributes to nature conservation as results or as means for its activities: e.g. management of protection forests and afforestation by the Forestry Agency, erosion control and green tracts by the Ministry of Construction, and land use plans by the National Land Agency.

Administration concerning development used to be opposed to nature conservation but recently started showing interests in this area. Now it is usual that national plans such as Comprehensive National Development Plans and other reginal development plans pay consideration to natural environment. In the process of planning and implementing the programmes, it is required to endeavour to avoid negative impact on natural environment by pre-surveys, assessment and countermeasures for the environmental impact.

c) Outline of Conservation Measures for Natural Environment by Environment Agency

The Environment Agency takes various measures to conserve diverse natural environment and wildlife species in the country based on the four laws: the Nature Conservation Law, the Natural Parks Law, the Wildlife Protection and Hunting Law, and the Law for the Conservation of Endangered Species of Wild Fauna and Flora.

1) Nature Conservation Law

Based on this law, the “National Surveys on the Natural Environment” (Green Census) are implemented to acquire comprehensive understanding on the present states of natural environment and its alternation in the country; the survey subjects include vegetation, wild plants and animals, rivers, lakes, marshes, and marine areas. The survey has been conducted about every five years since 1973. Results of the survey are widely used as basic references

for policy making for natural environment conservation and environmental assessment.

Based on this law, natural areas keeping primeval conditions are designated to “Wilderness Areas” and those maintaining excellent natural environment to “Nature Conservation Areas”, Natural ecosystems of these areas are conserved by imposing regulations on certain activities and conducting academic research.

2) Natural Parks Law

Based on this law, areas of outstanding natural scenery are designated to “National Parks” or “Quasi-national Parks”, which are managed to conserve nature and utilised as places for outdoor recreation. A park plan is established for each natural park, which are divided into two plans: the conservation plan for conservation measures and zoning and the utilisation plan for regulation of park uses and provision of visitor facilities.

3) Wildlife Protection and Hunting Law

This law aims at conservation and management of wild birds and mammals in the country, which are divided into two groups: game and non-game. “Wildlife Protection Areas” are established to prohibit hunting and “Special Wildlife Protection Areas” are designated within the Wildlife Protection Areas to conserve the habitats of wildlife by regulating alteration beyond set standards.

4) Law for the Conservation of Endangered Species of Wild Fauna and Flora

The Environment Agency conducted research to understand the state of endangered species of wildlife, and the results were made public in 1991 as the Red Data Book, “Threatened Wild Fauna and Flora in Japan”. This book reveals a fact that many species of mammals, birds, reptiles, amphibians, fishes, and insects are in serious conditions.

Since the Wildlife Protection and Hunting Law covered only bird and mammal species, the Law for the Conservation of Endangered Species of Wild Fauna and Flora (Endangered Species Law) was enacted in 1993 to systematically protect endangered species of wildlife. In this law, “Endangered Species of Wild Fauna and Flora” and “Natural Habitat Conservation Areas” are designated and necessary regulations and programmes are provided based on three principles: protection of individuals, conservation of habitats, and breeding and rehabilitation programmes.

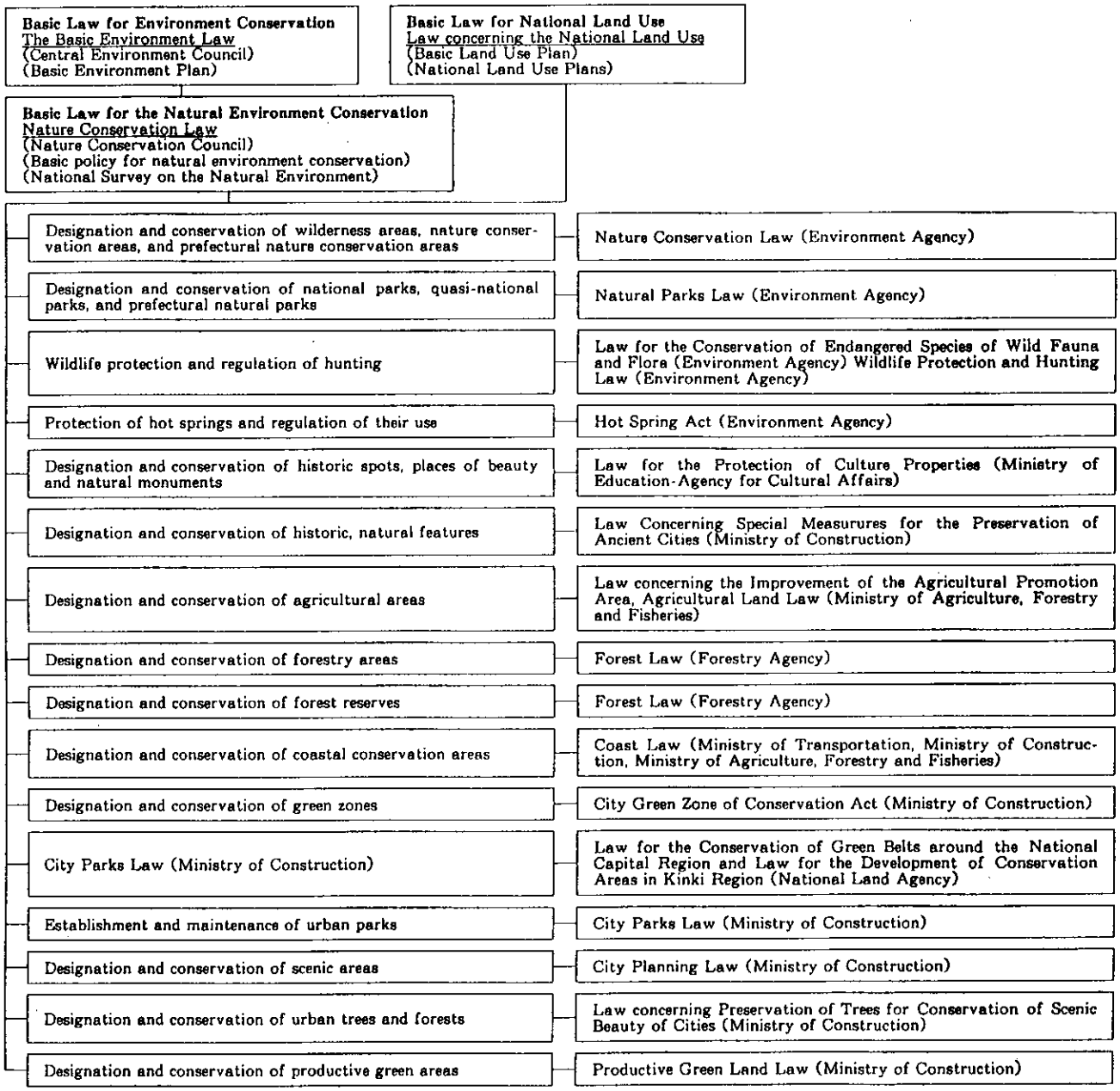
環境庁自然保護局（1997)、人と自然との共生をめざして、環境庁自然保護局、－その役割と仕事－

宇野 佐 （1980)：自然保護、環境科学大辞典（佐々学監修)、講談社

酒向 貴子（1994)、生物多様性保全のためのわが国の取り組み、環境庁の活動を中心として、地球環境ハンドブック（不破敬一郎編)、朝倉書店

(3) Legal Systems of Japan 3-2) Legal Systems for Administration of Nature Conservation

Laws Relating to Nature Conservation



Nature Conservation Bureau, The Environment Agency (1999): Nature Conservation in Japan

(3) Legal Systems in Japan

3-3) Basic Environment Law

a) Basic laws

Basic laws are established to specify directions of the basic policies for important subjects for the government. The contents of the provisions are mainly for a basic philosophy, obligations, programmes and concrete measures, such as basic plans, annual reports and deliberative councils. The basic laws play a role to link between the Constitution and individual laws. The specific measures are undertaken by individual laws, budgetary measures, and implementation guidelines for administration. The basic laws are the same as the individual laws in terms of the legal form but, in essence, are superior to other laws. At present, there are 12 basic laws including the “Basic Environment Law”.

b) Basic Philosophy of the Basic Environment Law

In Article 3 of the Basic Environment Law, based on the basic recognition for environment and people, the basic philosophy for environmental conservation is stated as follows:

- Environment is limited and depends on the delicate balance in ecosystems;
- Environment is the basis for life of human being and common property sharing with the future generations;
- Human being receives a lot of benefits from environment, as well as affects the environment in various ways. Therefore, we must make every effort for environmental conservation to enjoy blessing from the environment and to succeed the sound and rich environment to the future generations.

Article 4 provides the vision of what the Japanese society should be like, which is environmentally friendly and sustainable, and how to approach such society. Article 5 provides that Japan must actively work on conservation of global environment.

c) Guidelines for Planning Measures

Article 14 of the Basic Environment Law states directions and methods for planning and implementation of conservation measures. In relation to conservation of natural environment, the following points are given:

- To secure biodiversity at three levels: ecosystems, species and genes;
- To conserve diversified natural environment systematically following natural and social conditions in each area, from primeval natural areas to green spaces and watersides in the urban areas;
- To keep rich commune between nature and people, which benefits recovery of mental health,

relaxation and promotion of environmental education.

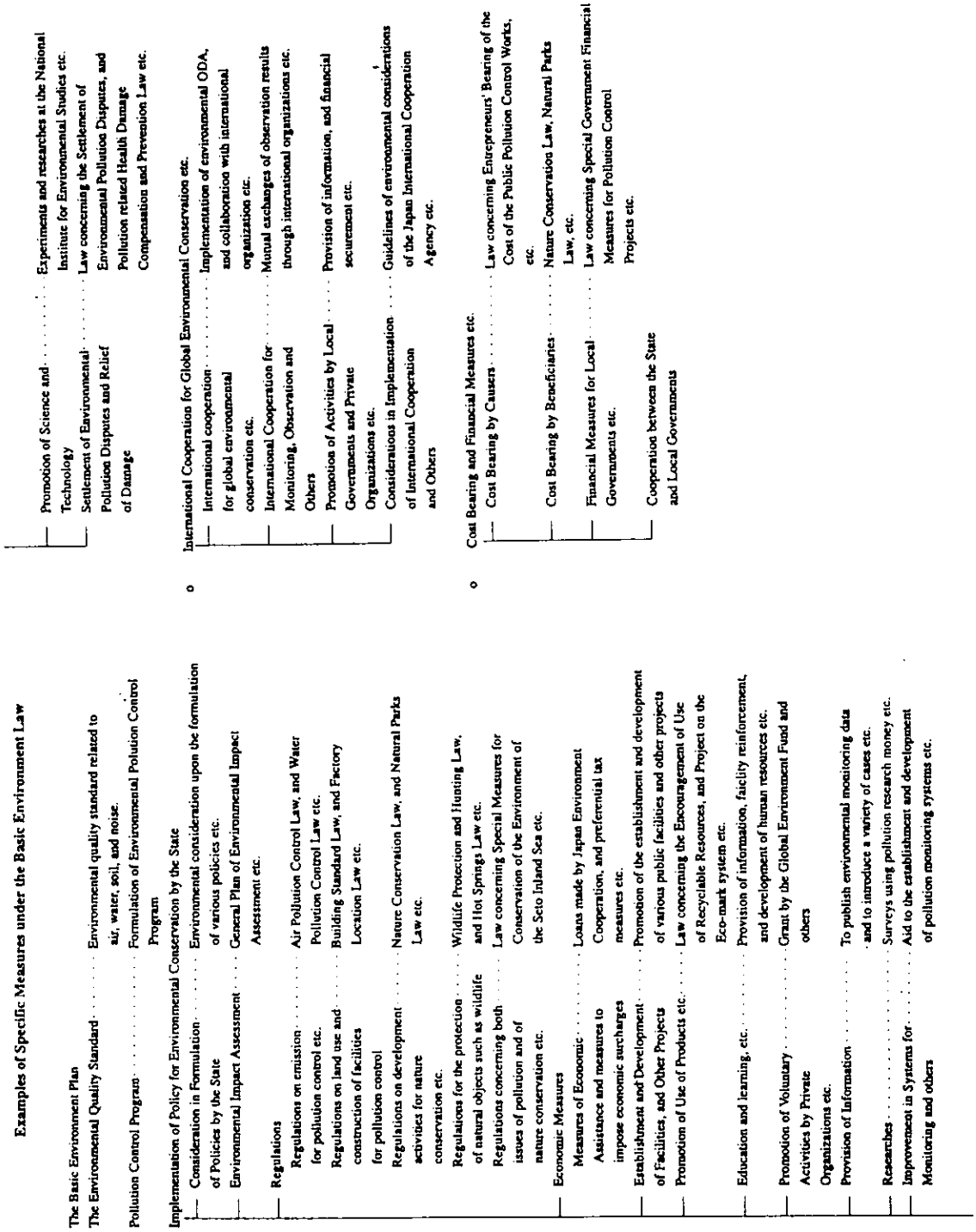
d) Basic Environment Plan

The Law provides that the Prime Minister shall consult to the Central Environment Council and establish, by a Cabinet decision, the “Basic Environment Plan” to indicate the basic direction of measures for environment conservation. The Basic Environment Plan was adopted in December 1994.

e) Promotion of Environmental Impact Assessment

The Law provides to take necessary measures to legally take in environmental impact assessment, which is vital to prevent negative impact of human activities on the environment.

自然保護年鑑刊行会（1996）：環境基本法で自然保護はどうとりあげられているか？、自然保護年鑑４、日生社
木原 啓吉（1998）：環境基本法、自然保護ハンドブック（沼田眞 編）、朝倉書店



Japan International Cooperation Agency (JICA) (1999): Textbook for the Group Training Course in Nature Conservation and Natural Parks Management, FY99, "Basic Policies"

(3) Legal Systems of Japan

3-4) Nature Conservation Law: Law No 85, 1972 enacted on June 22, 1972

(a) Purpose

This Law is a general law that stipulates basic policies of natural conservation. The Law has built up, at the same time, a system of designating natural conservation areas, for which the Act provides measures for conservation. Future administrative measures for nature conservation will be taken in accordance with the purpose of the Law.

(b) Substance

1) Stipulation of basic policies of natural conservation (Article 12)

The provision stipulates that the State make basic policies of nature conservation. A Cabinet decision was made on October 26, 1973 in accordance with this provision, and the decision was made public on November 6 in the same year.

2) Organisation of the Nature Conservation council (Article 13)

The Nature Conservation Council investigates and discusses matters under its control, empowered by the Nature Conservation Law, the Natural Parks Law, Wildlife Protection and Hunting Law, Law for the Conservation of Endangered Species of Wild Fauna and Flora. The Council also investigates and discusses important matters on nature conservation, in response to inquiries form the Director General of the Environment Agency or the Ministries concerned. The Council is empowered to give its views on important matters relating to nature conservation.

3) National surveys on the natural environment (Article 4)

The Law stipulates that basic surveys be made on topography, geology, fauna and flora, and wildlife almost once every five years, with the view of obtaining basic data necessary for the planning of measures to be taken for nature conservation (Refer to Chapter 4)

First survey	: 1973
Second survey	: 1978 and 1979
Third survey	: 1983 to 1987
Fourth survey	: 1988 to 1992
Fifth survey	: 1993 to 1998

4) Wilderness areas (Articles 14, 17 and 19)

The Director General of the Environment Agency designates wilderness areas from among the state-, prefecture- or municipal-owned land where wilderness is

maintained without any influence of human activities and who environment the Director considers especially necessary to conserve.

In wilderness areas, all deed that may give impact to the natural environment are prohibited in principle, with a view to preserving wilderness. The Director General of the Environment Agency is empowered to designate entry restricted zones in wilderness areas, if he considers it especially necessary to do so.

5) Nature conservation areas (Articles 22, 25, 26 and 27)

The Director General of the Environment Agency designates nature conservation areas from among areas (other than wilderness areas) where forests, grasslands, rivers, lakes, and/or the sea sustain good natural environment and which especially need to be conserved in view of natural and social conditions there.

In nature conservation areas, special zones (including wildlife protection zones) and special marine zones are designated according to the condition in the area. Specific deeds are prohibited in these zones until permission is obtained from the Director General of the Environment Agency.

6) Prefectural Nature Conservation Areas (Article 45)

Prefectural nature conservation areas are designated by Prefectural Governors in accordance with the prefectural regulations, from among areas that are almost equivalent in natural environment to nature conservation areas and whose environment especially needs conservation in view of natural and social conditions there.

7) Conservation plans (Articles 15 and 23)

Conservation plans include plans on regulations or facilities for nature conservation in wilderness areas or nature conservation areas.

The Director General of the Environment Agency makes plans accepting advice from the Prefectural Governors concerned and the Nature Conservation Council.

Japan International Cooperation Agency (JICA) (1999): Textbook for the Group Training Course in Nature Conservation and Natural Parks Management, FY99, “Basic Policies”

(3) Legal Systems of Japan 3-4) Nature Conservation Law

Structure of the Nature Conservation Law

Purpose (Art 1) The Law synthetically promotes national nature conservation, coupled with other laws for nature conservation.	Execution of National surveys on the natural environment (Art. 4) i. National surveys have been made almost once every five years ii. National surveys are made on topography, geology, flora and fauna.	
	Basic policies for nature conservation (Art. 12) (Prime Minister → Nature Conservation Council → Cabinet decision → Official announcement) i. Basic initiative on nature conservation ii. Basic matters on the designation, etc. wilderness areas and nature conservation areas	Notification No. 30 of the Prime Minister's office, November 6, 1973

Wilderness areas (Art. 14 to 21)	(Designation) Director General of the Environment Agency ↔ The Prefectural Governors concerned ↔ Nature Conservation Council → Public announcement i. Maintenance of wilderness ii. Area requirement (1,000 hectares or more, as a rule) iii. Lands Owned by the State, prefectures or municipality (excluding reserved forests)	(Restriction of activities) i. Construction and expansion of structures, changing configuration or quality of land → Permission from the Director General of the Environment Agency ii. Entry restricted zones may be designated.
Nature conservation areas (Art. 22 to 30)	Director General of the Environment Agency ↔ The heads of the local public bodies concerned ↔ Nature Conservation Council Residents interested → Public announcement i. Alpine or subalpine forests, grasslands, excellent natural forests, singular topographic or geological features, excellent coasts, lakes, and marshes ii. Area requirements iii. Excluding natural parks	i. Special zones a. Construction and expansion of structures, changing configuration or quality of land → Permission from the Director General of the Environment Agency (Permission is mostly entrusted to Governors.) b. Wild life protection zones may be designated. ii. Special marine zones Permission required, as in the case of special zones iii. Ordianry zones Construction of structures larger than the stipulated scale → Notification to the Director General of the Environment Agency (Notification is submitted to the Governor in most cases.)
Prefectural nature conservation areas (Art. 45 to 50)	Prefectural Governors designate areas in accordance with the prefectural regulations.	Designated in accordance with prefectural regulations, with the same requirements as for nature conservation areas

Japan International Cooperation Agency (JICA) (1999): Textbook for the Group Training Course in Nature Conservation and Natural Parks Management, FY99, "Basic Policies"

(3) Legal Systems of Japan

3-5) Natural Parks Law : Law No.161, 1957 enacted on June 1, 1957

(a) Purpose

The Natural Parks Law intends to conserve excellent scenic beauty of Japan with characteristic ecosystems or configuration forever in its original state as much as possible. In accordance with the law the Director General of the Environment Agency designates areas of natural beauty as National, Quasi-national, which, open to the public, will contribute to peoples health, recreation, and culture.

The Law stipulates that Prefectural Governments can designate Prefectural Natural Parks equivalently in accordance with the prefectural regulation.

(b) Substance

1) Designation of Parks (Articles 10 and 41)

National Parks are designated by the Director General of the Environment Agency accepting advice from the Nature Conservation Council. Also the Director General of the Environment Agency designates Quasi-national Parks in response to application from the Prefectural Government concerned, accepting advice form the Nature conservation Council. Prefectural Natural Parks are designated by the Prefectural government in accordance with prefectural regulations.

2) Park Plan (Articles 2 and 12)

Park Plan refers to regulations for protection or use of parks, or plans of park facilities. Park Plan forms the basis of protection, maintenance, and management of natural parks as well as the basis of facilities maintenance. Regarding National Parks, the Director General of the Environment Agency decides the park plan, accepting advice from the Nature Conservation council. Regarding Quasi-national Parks, the Director General of the Environment Agency decides major parts of the plan in response to application from the Prefectural Governor concerned, accepting advice from the Nature Conservation council. The other parts of the plan are decided by the Governors.

Park plans are classified into protection plans and utilisation plans. Protection plans are aimed at restricting such activities as injure scenic beauty or ecosystems of natural parks, while utilisation plans are intended for effective and appropriate use of natural parks for outdoor recreational activities.

3) Park Permissions (Articles 2, 14 15 and 16)

Park Permissions are executed in accordance with the park plan. It includes, for

example, construction of roads, picnic area, lodgings, rest-place, and facilities for vegetation restoration by State, prefectural government or private enterprise.

In principle, Park Permissions are executed by the State regarding National Parks, and by the Prefectural Governments regarding Quasi-national Parks. It is, however, difficult for the State or Prefectural Governments alone to execute Park Permissions, and hence it is stipulated that part of Park Permissions may be executed by local public bodies, with consent of the Director General of the Environment Agency or Prefectual Governors, or may be executed by private enterprises, with approval from the Director General of the Environment Agency or Prefectural Governors.

4) Restriction of activities in natural parks, etc.

The natural park system of Japan is built on what is called a zoning system. It is assumed that economic activities and daily deeds are performed in the park. However, if these activities or deeds cause considerable hindrances to scenic beauty, they need to be restricted from the viewpoint of park protection.

The Law stipulates, in protection of natural parks, that special zones, special protection zones, or marine park zones designated in National or Quasi-national parks, in accordance with park plan (i.e.plans concerning the regulation for the protection), with the view of controlling specific deeds under a license system. The Law also stipulates that notification be submitted regarding specific deeds in ordinary zones other than those zones mentioned above.

Characteristics and restrictions in each zone are described below.

① Special protection zones (Article 18)

Special protection zones refer to those zones where the excellent scenic beauty or wilderness is maintained in a park. They are the most important place of special zones in a park.

② Special zones (Article 17)

Special zones refer to those places with landscape and ecosystem that are important from the viewpoint of protection or utilisation of parks. Emphasis is laid on harmony between development and nature conservation in these zones. At the necessity of natural beauty conservation considerably differs from place to place, the Law stipulates that special zones (excluding special protection zones) be classified into three types, namely, class I, class II and class III special zones, in making plans concerning the regulation for the protection to maintain landscape and ecosystem of these zones (Enforcement Regulations Article 9-2)

③ Marine park zones (Article 18-2)

Marine park zones refer to those underwater spheres having landscape and ecosystem.

④ Ordinary zones (Article 20)

Ordinary zones refer to park zones that are not designated as special zones or marine park zones. Ordinary zones are those zones inseparable from special zones indispensable for utilisation of parks. Change in natural conditions of these zones needs to be restricted, though to a smaller extent than in the case of special zones, with the view of protecting scenic beauty.

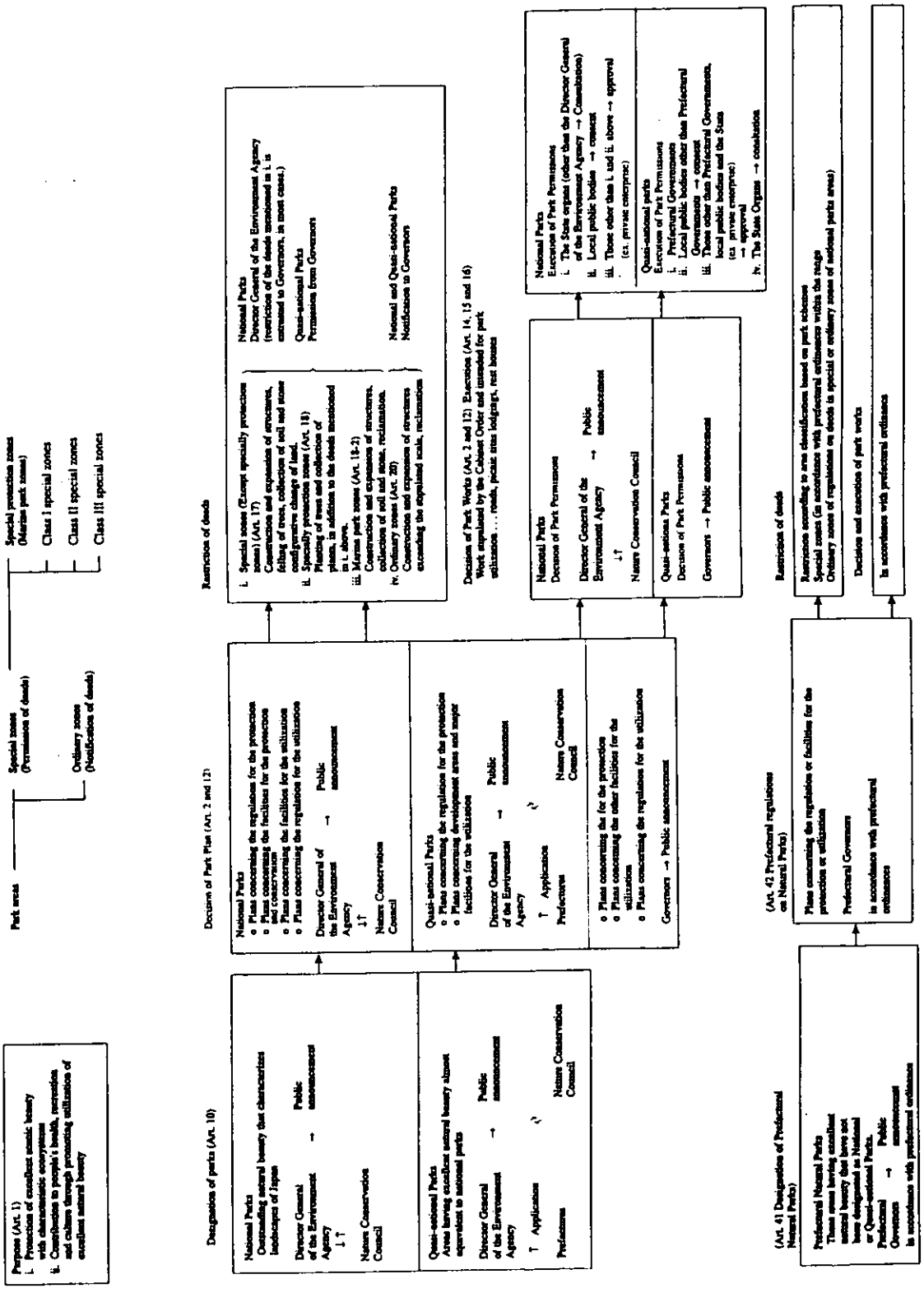
5) Town Sites (Article 23)

Town sites are designated with the view of preventing facilities scattered over a park from injuring landscape and ecosystem of the park. These areas are designated also for effective use of various facilities maintained in group in specified sites, with a view to promoting appropriate use of parks.

Japan International Cooperation Agency (JICA) (1999): Textbook for the Group Training Course in Nature Conservation and Natural Parks Management, FY99, “Basic Policies”

(3) Legal Systems of Japan 3-5) Natural Parks Law

Structure of the Natural Parks Law



Japan International Cooperation Agency (JICA) (1999): Textbook for the Group Training Course in Nature Conservation and Natural Parks Management, FY99, "Basic Policies"

(3) Legal Systems of Japan

3-6) Wildlife Protection and Hunting Law (Law No 32, 1918)

(a) Purpose

The purpose of this Law shall be to protect and increase wildlife, to control pest and prevent the danger caused by hunting through the execution of wildlife protection projects and effectuation of hunting for the purpose of the improvement of living environment and contribution to the promotion of agriculture, forestry and fisheries.

(b) Substance

1)Wildlife protection project plan (Articles 1-2 and 1-3)

The prefectural governor shall establish a full-scale plan of projects for wildlife, in accordance with the standard specified by the Director-General of the Environment Agency, in order to actively promote and coordinate wildlife protection projects, from the medium-term point of view and taking into consideration regional characteristics.

The eighth plan is presently underway (FY 1997 – FY 2001).

2) Regulations for the protection of wildlife (Articles 1-14, 2 etc.)

In addition to the prohibition of the capture of wildlife, except the capture of game species, the following measures have been taken to protect and increase game species, including the establishment of restrictions on the type, area, period, hunting method, etc.

①Restriction on game species

②Restriction on hunting area

③Restrictions on hunting period and the number of captures

④Restriction on hunting methods and means of hunting

⑤Prohibition of the capture of young birds and collection of eggs

3) Hunting license and hunter's registration (Articles 3 through 8-17)

Any individual who intends to practice hunting must be granted an appropriate hunting license issued by the prefectural governor of his/her place of residence and, in addition, register with the prefectural governor who governs place of his/her intended hunting.

4) Wildlife Protection Area, Special Protection Area, Designated Special Protection Area (Article 8-8)

①Wildlife Protection Area

The Director-General of the Environment Agency or the prefectural governor, when he deems it necessary for protection and reproduction of wildlife, may establish the

wildlife protection area for a duration not exceeding 20 years. Wildlife protection areas are established to protect and to promote the reproduction of birds and mammals, and the hunting of wildlife is prohibited within such areas. Persons who hold any rights regarding the land or standing trees have to give precedence to any actions of the Director-General of the Environment Agency and/or the prefectural governors aiming at providing facilities for nest building, supply of water and food on land and in standing trees for wildlife.

②Special Protection Area

The Director-General of the Environment Agency or the prefectural governor, when he deems it necessary for protection and reproduction of wildlife, may designate a special protection area within a wildlife protection area for a duration not exceeding that of the wildlife protection area in which such a special protection area is placed. Felling of standing trees and/or bamboo, construction of any structures, reclaiming wetlands and the like shall require permission of the Director-General of the Environment Agency or the prefectural governor, unless such action is of minor scale.

③Establishment and designation of wildlife protection area and special wildlife protection area.

When establishing a wildlife protection area and when designating a special wildlife protection area, the opinions of local groups making their livelihood in agriculture, forestry and fisheries, as well as hunters and wildlife protection groups, and any others who are concerned will be heard. The case is then reviewed by the Nature Conservation Council in the government or prefecture concerned, and then in accordance with the Law, the area is established or designated as such for a maximum of 20 years (subject to renewal). The Director-General of the Environment Agency establishes a wildlife protection area where the protection of wildlife is of particular importance from a national viewpoint, and such cases shall be discussed as necessary with the Minister of Agriculture, Forestry and Fisheries.

5) Restriction on Circulation of Wildlife (Articles 13-2 and 20-1 and 20-2)

It is prohibited to circulate wildlife captured and/or eggs of bird collected in violation of the provisions of this Law. The sales of copper pheasant are also prohibited.

Importing/exporting certain wildlife and eggs of bird is regulated.

6) Hunting area (Article 14)

The hunting area is the area where active protection and reproduction of wildlife subject to hunting are pursued through releasing wildlife and the like, in which the number of hunters entering the area, hunting period, wildlife permitted for hunting and the number of captures are restricted. The person who intends to establish a hunting

area is required to obtain permission from the Director-General of the Environment Agency.

7) Surveillance/control System (Articles 19-1 and 19-2)

While surveillance/control is exercised by officers of the Environment Agency or the prefecture, the prefectural officials who are responsible for actual surveillance/control are designated as special judicial policemen (1,212 as of FY 1997). A wildlife protection official (part-time prefectural employee; 3,253 as of FY 1994) who is placed for each town/village is responsible for controlling hunting, as well as promoting/spreading the philosophy of protecting wildlife.

8) Permission to Pest Control (Articles 12 and 13)

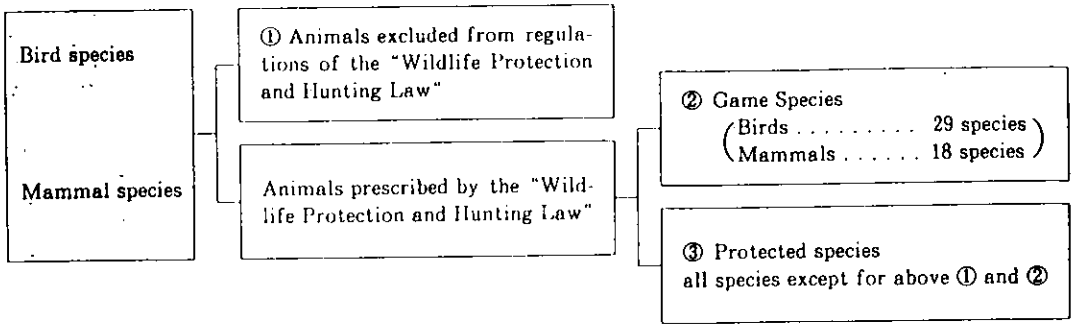
Pest, which may cause damage to agricultural and forestry products, may be captured for repellent purposes under permission by the Director-General of the Environment Agency or the prefectural governor in order to minimise the damage. Capture for special purposes, such as capture for scientific research, as well as capture of certain species for breeding as a pet, and the like, is also approved.

Breeding following capture is subject to additional approval by the prefectural governor.

Japan International Cooperation Agency (JICA) (1999): Textbook for the Group Training Course in Nature Conservation and Natural Parks Management, FY99, “Wildlife Management”

(3) Legal Systems of Japan 3-6) Wildlife Protection and Hunting Law

Game Species and Protected Species



Hunting Licenses

License classification	Hunting tackles	Number of licenses issued (as of 1991)
A class	Net, Trap	16,000
B class	Shotgun, Rifle	228,000
C class	Airgun, Firearm using compressed gas	15,000

Nature Conservation Bureau, The Environment Agency (1995): Nature Conservation in Japan

(3) Legal Systems of Japan

3-7) Law for the Conservation of Endangered species of Wild Fauna and Flora (Law No 75, 1992)

a) Purpose

Recognising that species of wild fauna and flora are important components of ecosystems, as well as having essential value for humanity, the Law for the Conservation of Endangered Species of Wild Fauna and Flora (LCES) aims to ensure the conservation of endangered species of wild fauna and flora, and contribute to the conservation of natural surroundings for present and future generations.

b) Substance

1) The National Guidelines for Conservation of Endangered Species

The Government must adopt "The National Guidelines for the Conservation of Endangered Species". These guidelines include the fundamental concept and basic approaches for protection of organisms, protection and rehabilitation of natural habitats, maintenance of viable population, and other items necessary for the conservation of Endangered Species.

2) Definition

① "Endanger" means that there is a threat of extinction. In other words, the population of a species has decreased, or is decreasing, to the level at which its survival is at risk, or the habitat of a species has degraded or decreased or is degrading or decreasing.

②"Endangered Species" refers to all species in danger of extinction. They are divided into four categories, "National Endangered Species", "Designated National Endangered Species", "International Endangered Species" and "Temporarily Designated Species".

③"National Endangered Species" means endangered species known to exist in Japan. They are designated by the government. Migratory species would also be so designated if it is considered to be in danger of extinction in Japan.

④"Designated National Endangered Species" means species whose population in the wild is in danger of extinction, even though the commercially domesticated or cultivated population is ample. This type of species may be in danger of extinction due to illegal overexploitation because of their commercial value.

⑤"International Endangered Species" means species that are listed in CITES Appendix **I** or in Japan's bilateral convention or agreement with the U.S., Australia and Russia. Although these conventions and agreements request the contracting parties to regulate

only the international trade of these species, transferring within Japan should also be regulated so as to ensure the enforcement of the conventions and agreements.

⑥"Temporarily Designated Endangered Species" means species that are designated by the Director General of the Environment Agency.

If a new species, or a species thought to be extinct, is found, the Director General of the Environment Agency will designate the species as "Temporarily Designated Endangered Species". The duration of the designation is limited to three years.

3) Prohibition on Acquisition, Transfer and Trading of Endangered Species

①Hunting, gathering, killing or damaging (hereafter "acquisition") of live Endangered Species except International Endangered Species is prohibited unless the Director General of the Environment Agency permits the acquisition for the purpose of research, investigation, instruction or rehabilitation. Acquisition of live organisms without permission is allowed in case of emergency, or if it is necessary for their protection.

②Transfer of organisms of Endangered Species including eggs, seeds, live and processed intact organisms, parts and processed parts (specified by cabinet order, hereafter "organisms and others") either on a commercial or non-commercial basis, is prohibited.

The exception is allowed in such cases as,

- when the Director General of the Environment Agency permits transfer for the purpose of research, investigation, instruction or rehabilitation,
- when organisms and others of Designated National Endangered Species are transferred,
- when Designated Specific Parts which are parts of International Endangered Species and their processed parts, are transferred,
- when live organisms of National Endangered Species which are "taken" without permission in case of emergency or for their protection, and their parts and processed parts are transferred, or when organisms and others of registered International Endangered Species and specific materials with prior-registration are transferred.

③International Trading of organisms and others of National Endangered species (except those of Designated National Endangered Species) is prohibited either on a commercial as well as non-commercial basis except if conditions adopted by the Government have been fulfilled. The Director General of the Environment Agency will permit international trading so long as it does not threaten the survival of the Endangered Species.

4) Registration of Organisms and Their Parts of International Endangered Species

To ensure the enforcement of CITES, those who intend to transfer an International Endangered Species in Japan must first register the organisms and others. Transfer of a registered International Endangered Species, either on a commercial or non-commercial basis, must be made with the registration certificate corresponding to the said organism and others.

5) Registration of Businesses, which deal in Designated National Endangered Species

①Designated National Endangered Species are in danger of extinction because of their commercial value. For that reason, businesses which deal in Designated National Endangered Species must ensure that they will not deal in Designated National Endangered Species taken illegally.

②Businesses which deal in Designated National Endangered Species, whether they are retail businesses or wholesale businesses, must be registered. If they do not deal in Designated National Endangered Species in an appropriate manner, the Director General of the Environment Agency must order the business to improve their business practices, or order suspension of the business for three months.

6) Habitat Conservation

①For the purpose of ensuring the conservation of National Endangered Species, the natural habitats of National Endangered Species are designated by the Director General of the Environment Agency as “Natural Habitat Conservation Areas”.

②One type of Natural Habitat Conservation Area is the “Conservation Area”. In this area, construction, modification of land, mining, reclamation, changing of the water level, tree felling and other habitat modifications are prohibited without the permission of the Director General of the Environment Agency. If it is necessary and appropriate, the Director General may designate “Protection Areas” and “Strict Protection Areas” in Conservation Areas. In a protection area, in addition to the prohibited actions listed above, introduction of alien species and the taking of any other species are also prohibited without prior permission. In a “Strict Protection Area”, the Director General prohibits entrance to the area without prior permission.

③Another type of Habitat Conservation Area is a “Monitoring Area”, which functions as a buffer zone. In this area, construction, modification of land, mining, reclamation and changing of the water level are regulated. Those who intend to engage in these actions in the area must first give notice to the Director General. If the Director General finds that the action may affect the conservation of the National Endangered Species, he/she will order the party in question to take necessary and appropriate measures or to stop the action.

④Before designation of the Natural Habitat Conservation Areas, the Director General must hold a public hearing.

7) Programmes for Rehabilitation of National Habitats and Maintenance of Viable Population

Since the stable survival of Endangered Species may not be achieved by the protection of each organism or its natural habitat alone, the Government may promote the rehabilitation of natural habitats and the maintenance of viable populations of National Endangered Species. The Environment Agency will establish a programme promoting the rehabilitation of natural habitats and maintenance of viable population in cooperation with other Ministries and Agencies if appropriate.

Japan International Cooperation Agency (JICA) (1999): Textbook for the Group Training Course in Nature Conservation and Natural Parks Management, FY99, “Wildlife Management”

(3) Legal Systems of Japan

3-7) Law for the Conservation of Endangered species of Wild Fauna and Flora

Extinct Species in Japan

	Scientific name	English name
Mammals	*Canis lupus hodophilax*	Japanese wolf
	Canis lupus hattai	Ezo wolf
	Zalophus californianus japonicus	Japanese sea lion
	Pteropus loochoensis	Okinawa flying fox (Okinawa fruit bat)
	Pipistrellus sturdeei	Bonin pipistrelle
Birds	*Nycticorax caledonicus crassirostris*	Rufous night heron (Ogasawara island subspecies)
	Tadorna cristata	Crested shelduck
	Poliolimnas cinereus brevipes	White-browed crake (Iwo islands sub-species)
	Columba jouyi	Ryukyu wood pigeon
	Columba versicolor	Bonin wood pigeon
	Halcyon miyakoensis	Miyako kingfisher
	Dryocopus javensis richardsi	White-bellied black woodpecker (Far east subspecies)
	Troglodytes troglodytes orii	Wren (Daito island subspecies)
	Turdus terrestris	Bonin island thrush
	Cettia diphone restrictus	Borodino bush warbler (Daito islands subspecies)
	Parus varius orii	Varied tit (Daito islands subspecies)
	Apalopteron familiare familiare	Bonin islands honeyeater (Mukoshima islands subspecies)
	Chaunoproctus ferreorostris	Bonin islands grosbeak
Brackish-water or fresh-water fishes	*Oncorhynchus kawamurae*	
	Pungitius kaibarae	
Insects	*Ishikawatrechus intermedius*	
	Rakantrechus elegans	

http://www.eic.or.jp/canet/en/soc/reddata.html

(3) Legal Systems of Japan

3-8) Environmental Impact Assessment

3-8-1) System of Environmental Impact Assessment in Japan

a) Environmental Impact Assessment

Environmental Impact Assessment (EIA) is the process of: i) surveying, predicting and assessing the possible impact that a project will have on various aspects of environment; ii) studying the possible measures for environment conservation relating to the project; and iii) assessing the possible overall environmental impact of such measures.

b) Development of EIA System

Since the establishment of National Environment Policy Act (NEPA) in USA in 1964, EIA systems have been developed in many countries. At present, all the OECD member nations (29) have the legal systems outlining procedures for EIA.

Japan started working on EIA at a Cabinet meeting in June 1972, which stipulated "Environmental Protection Measures for Public Works". This agreement provided that the administrative agencies instruct the project undertakers to survey and examine potential environmental impact, countermeasures and alternative plans and to take the necessary measures based on the studies.

After that, regulations for EIA were provided in the Port and Harbour Law and the Public Water Areas Reclamation Law (both amended in 1973). A policy for EIA was prescribed in the Basic Policy for Natural Environment Conservation based on the Nature Conservation Law (1972). EIAs were also undertaken for such sites as power stations (1977) and superexpress trains (1979) following administrative guidance. For local public organisations, the establishment of a local ordinance in Kawasaki (1976) and the provision of guidelines by Fukuoka Prefecture (1973) are examples. As the result, EIAs were carried out for a large-scale national project, Honshu-Shikoku Connecting Bridge, and large-scale local projects for industrial development in the Eastern Tomakomai, Mutsuogawara, etc.

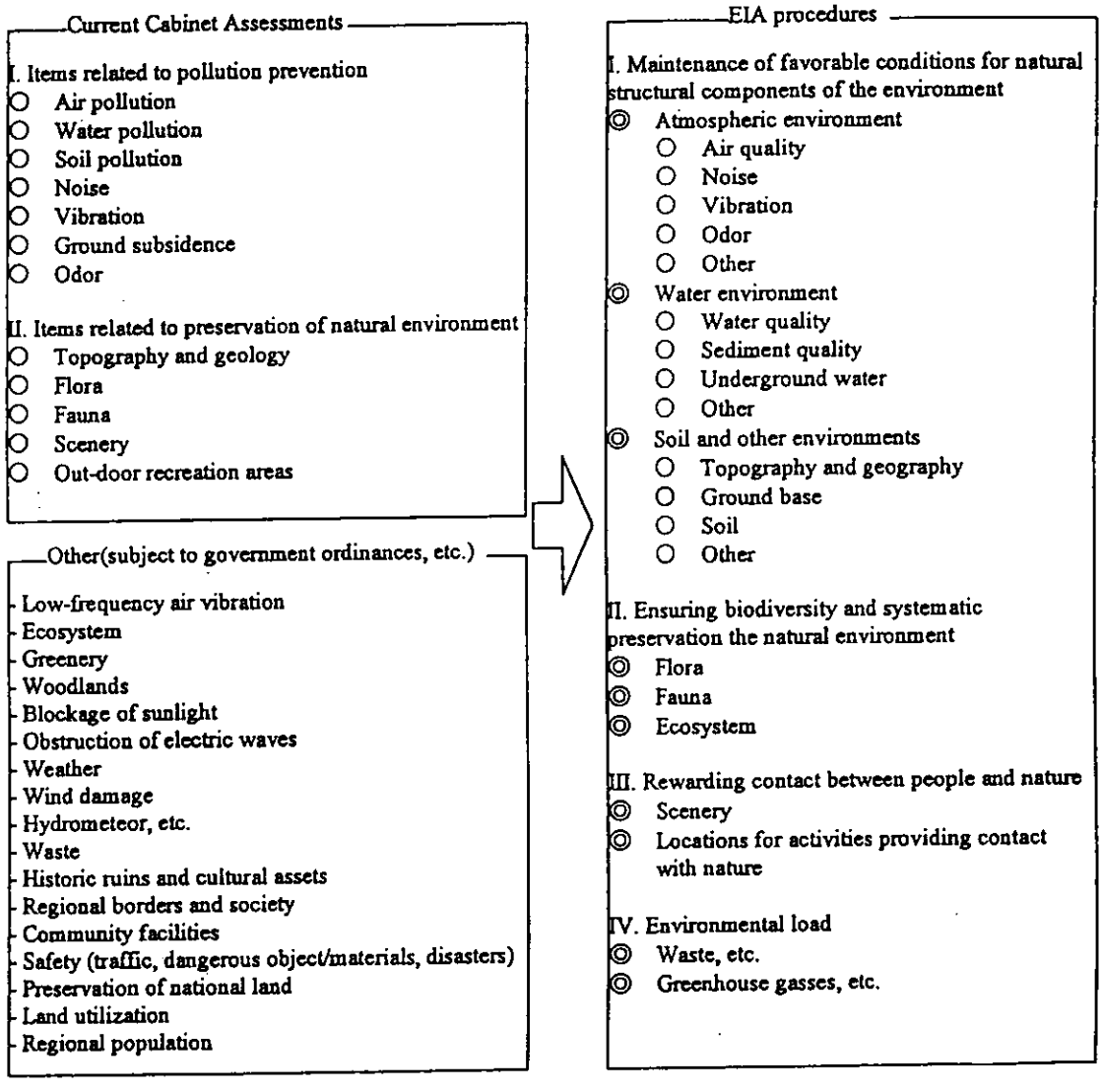
While EIAs were conducted based on the individual laws and administrative guidance, the proper and smooth implementation of EIA through unified procedure became a significant policy issue. The Environment Agency therefore started working toward institutionalisation of EIA based on a report by the Central Environmental Pollution Control Council, however the bill for EIA was eventually shelved and withdrawn. To undertake effective measures in this situation, a Cabinet decision for "Implementation Scheme for Environmental Impact Assessment", based on the bill, was made in 1984, following which a total of 426 cases of EIA were carried under the guidelines.

Following the Earth Summit in 1992, the Basic Environment Law was established the following year in 1993, and included a clause concerning promotion of EIA; This provided the first legal justification for EIA as a national policy. Based upon this clause, the Environment Agency worked on examining and analysing EIA comprehensively to set up an EIA system in cooperation with other authorities concerned. After receiving a report by the Central Environment Council and making a Cabinet decision for the government bill for EIA, the Environmental Impact Assessment Law (EIA Law) was eventually adopted into law in June 1997.

生物の多様性分野の環境影響評価技術検討会（1999）：生物の多様性分野の環境影響評価技術検討会中間報告書、 生物の多様性分野の環境影響評価技術（1）－スコーピングの進め方について－　　環境庁

(3) Legal Systems of Japan 3-8) Environmental Impact Assessment 3-8-1) System of Environmental Impact Assessment in Japan

Scope of Environmental Factors Used as Items for Surveys, etc.



Japan International Cooperation Agency (JICA) (1999) : Textbook for the Group Training Course in Nature Conservation and Natural Parks Management,, FY99, "E.I.A."

(3) Legal Systems of Japan

8) Environmental Impact Assessment

3-8-2) Purposes and Projects Concerned for Environmental Impact Assessment Law

a) Purposes of EIA Law

Article 20 of the Basic Environment Law requires the government to take necessary measures to promote EIA. Based on this article, the EIA Law provides concrete procedure for EIA as a national system. Purposes of the EIA Law are as follows:

- To recognise that EIA is extremely important for environment conservation;
- To secure measures for environment conservation relating to the projects by providing the EIA procedures and assessing the possible overall environmental impact;
- To contribute to securing healthy and culturally-meaningful life for the people of present and future generations.

b) Projects Concerned for EIA Law

Projects subject to the EIA Law are large-scale ones that may cause serious impact on environment and that are implemented, authorised or approved by the national government. This law provides a screening system to determine the necessity of implementing EIA in consideration of the project and local characteristics. There are two classes for the projects as follows:

- Class-1 Project: a project of a scale for which EIA must be conducted;
- Class-2 Project: a project with an environmental impact corresponding to that of Class-1 Project, for which whether an EIA is to be conducted or not shall be determined on an individual basis by the authorities concerned.

生物の多様性分野の環境影響評価技術検討会（1999）：生物の多様性分野の環境影響評価技術検討会中間報告書、 生物の多様性分野の環境影響評価技術（1）－スコーピングの進め方について－　　環境庁

(3) Legal Systems of Japan 3-8) Environmental Impact Assessment 3-8-2) Purposes and Projects Concerned for Environmental Impact Assessment Law

Projects Subject to EIA Law

indicates differences between Cabinet Assessment and EIA Law

Projects subject to Cabinet Assessment	Projects subject to EIA Law		
	Type of project	Class-I Project scale	Class-II Project scale
1. New construction of roads, etc.	1. Roads		
• National expressways • Metropolitan Expressway, Hanshin Expressway, specified municipal expressways (four lanes or more) • National roads (four lanes and 10 km or more)	• National expressways • Metropolitan Expressway, etc. • National roads • Large-scale roads for forestry	All All (four lanes) Four lanes and 10 km or more Two lanes and 20 km or more	At least 7.5 and under 10 km At least 15 and under 20 km
2. New dam construction and other river projects	2. Rivers		
• Dams (capacity water area of 200 hectares or more, first-class rivers) • Bank and watergate to control water level floodway under the jurisdiction of the Ministry of Construction (capacity water area of 100 hectares or more, after completion of new construction or renovation) • Lake and reservoir development (changes in shape of land of 100 ha or more) • Flood way (changes in shape of land of 100 ha or more)	• Dams • Bank and watergate to control water level floodway • Lake water level adjustment facilities • Flood way	Capacity water area of 100 ha or more Capacity water area of 100 ha or more Changes in shape of land of 100 ha or more Changes in shape of land of 100 ha or more	At least 75 and under 100 km At least 75 and under 100 km At least 75 and under 100 km At least 75 and under 100 km
3. Railroad construction, etc. • Shinkansen super-express railway railroad	3. Railroads • Shinkansen super-express railway railroad (including standard Shinkansen super-express railway) • Railroads	All 10 km or more	—— At least 7.5 and under 10 km
4. Airports (runways of 2,500 m or longer)	4. Airports	Runways of 2,500 m or longer)	At least 1,875 m and under 2,500 m
	5. Power plants • Hydraulic • Thermal (excluding geothermal) • Thermoelectric (geothermal) • Nuclear	30,000 kw of power or more 15,000 kw of power or more 10,000 kw of power or more All	At least 22,500 and under 30,000 kw At least 11250 and under 150,000 kw At least 7,500 and under 10,000 kw ——
5. Land-fill and land reclamation • Land-fill or land reclamation exceeding 50 ha in area • Final waste disposal sites of 30 ha or more in area	6. Final waste disposal sites	30 ha or more	At least 25 ha and under 30 ha
	7. Public water land-fill or land reclamation	Exceeding 50 ha	At least 40 ha and under 50 ha
6. Land readjustment work (100 ha or more in area)	8. Land readjustment work	100 ha or more	At least 75 ha and under 100 ha
7. Development of new urban residential area (100 ha or more in area)	9. Development of new urban residential area	100 ha or more in area	At least 75 ha and under 100 ha
8. Creation of industrial complex (100 ha or more in area)	10. Creation of industrial complex	100 ha or more in area	At least 75 ha and under 100 ha
9. Urban infrastructure development (100 ha or more in area)	11. Urban infrastructure development	100 ha or more in area	At least 75 ha and under 100 ha
10. Development of distribution complex (100 ha or more in area)	12. Development of distribution complex	100 ha or more in area	At least 75 ha and under 100 ha
11. Land creation by public cooperation	13. Land creation by public cooperation		
• Agricultural land improvement corporations (500 ha or more in area) • Environment cooperation (100 ha or more in area) • Housing and urban improvement corporations (100 ha or more in area) • Regional redevelopment promotion corporations (100 ha or more in area)	• Environment cooperation • Housing and urban improvement corporations • Regional redevelopment promotion corporations	100 ha or more in area 100 ha or more in area 100 ha or more in area	At least 75 ha and under 100 ha At least 75 ha and under 100 ha At least 75 ha and under 100 ha
	• Port and harbor plan	Land-fill or dredging area of 300 ha or more	

Japan International Cooperation Agency (JICA) (1999) : Textbook for the Group Training Course in Nature Conservation and Natural Parks Management,, FY99, "E.I.A."

(3) Legal Systems of Japan

8) Environmental Impact Assessment

3-8-3) Outlines of Procedure for Environmental Impact Assessment

a) Screening

The screening system is to determine whether an EIA is to be conducted or not for Class-2 Projects by the administrative agencies that authorise the projects. For each project type, criteria for determination are provided for in the relevant ministerial ordinances, based on the basic items provided by the Director General of the Environment Agency.

b) Scoping

Scoping is a system to select the items of EIA and the methods for surveys, prediction and assessment for each project; environmental impact by each project is different due to the characteristics of projects and localities. Project undertakers are required to make a proposal for the scoping document, which outlines the items and methods for EIA, in consideration of these characteristics. After hearing and accounting the views of governors, municipal heads and residents (no limitation in localities) with public announcements and inspections, the undertakers finalise selecting the items and methods. This process makes it possible to change the project plans at the early phase of the projects.

c) Implementation of EIA and Draft Environmental Impact Statement

The undertakers are required to survey, predict and assess the environmental impact, to examine the measures for environmental conservation, to prepare a draft Environmental Impact Statement (EIS) and to hear the views of governors, municipal heads and residents (no limitation on localities) through public announcements and inspections. The draft EIS includes the results of the EIA, follow-up surveys and a comprehensive assessment of the environmental impact.

d) Environmental Impact Statement

The undertakers are required to put their views against the views on the draft EIS, to revise or supplement the contents of the project plans or EIA and to prepare an EIS. The Director General of the Environment Agency provides his/her views on the EIS to the administrative agencies authorising the projects as the need arises. Considering the views, the administrative agencies provide their views to the undertakers. Following this, the undertakers re-examine the EIS in consideration of these views, revise or supplement the contents as necessary and make a final EIS open to public announcements and inspections as the output of the EIA

procedure.

e) Examination of Environment Conservation for Authorisation

The administrative agencies concerned examine whether the projects are properly designed for environment conservation based on the final EIS for licensing and approval of the projects. Depending on the results, the administrative agencies can reject the projects or impose the conditions concerning environment conservation on the authorisation.

f) Follow-up Surveys

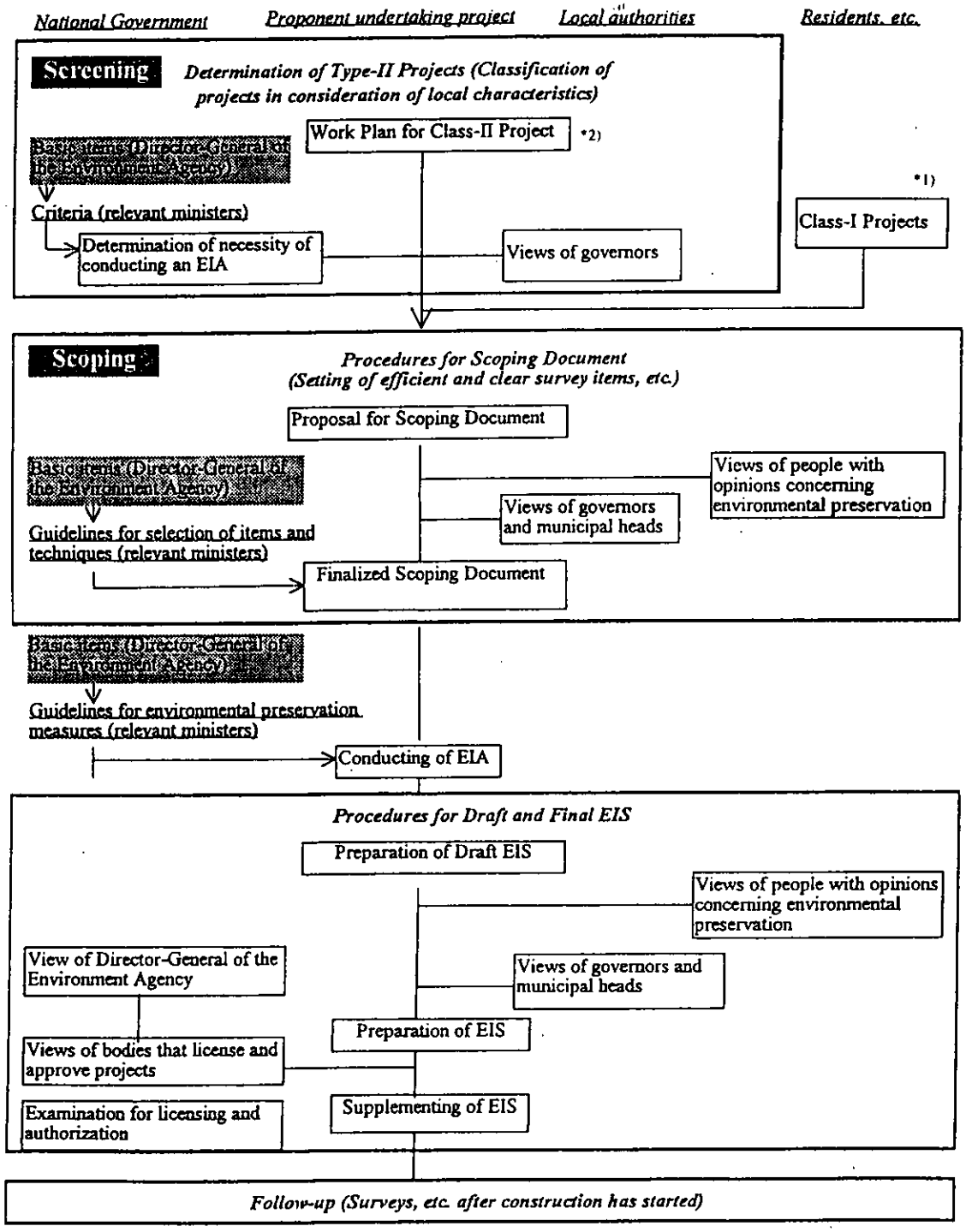
As a measure for environment conservation, the follow-up surveys to understand the environmental conditions after undertaking the projects are to be described in the draft and final EIS due to the uncertainties inherent in the prediction.

生物の多様性分野の環境影響評価技術検討会（1999）：生物の多様性分野の環境影響評価技術検討会中間報告書、 生物の多様性分野の環境影響評価技術（1）－スコーピングの進め方について－　　環境庁

(3) Legal Systems of Japan 3-8) Environmental Impact Assessment

3-8-3) Outlines of Procedure for Environmental Impact Assessment

Flow Diagram of Environmental Impact Assessment Law Procedure



Japan International Cooperation Agency (JICA) (1999): Textbook for the Group Training Course in Nature Conservation and Natural Parks Management, FY99, "E.I.A."

(3) Legal Systems of Japan

3-9) Law for the Protection of Cultural Properties, Hot Spring Law, Forest Law

a) Law for the Protection of Cultural Properties

This law aims at contributing to the promotion of cultural awareness in Japan and the rest of the world by preserving and utilising cultural properties. There are five categories of cultural properties provided under the law as follows:

- Tangible cultural properties: buildings, pictures, sculptures, industrial arts, ancient documents, archaeological specimens, etc.;
- Intangible cultural properties: dramas, music, industrial techniques, etc.;
- Folk-cultural properties: manners, customs and daily utensils, works of art, religions, etc.;
- Monuments: ruins, scenic beauty places, animals, plants, geological features and minerals;
- Groups of historic buildings: traditional or historic scenic villages and rows of houses.

These cultural properties are those important cultural assets of the Japanese people created and nurtured throughout our long history, and the nature and scenery of the country that are closely related to these assets. “Monuments” and “Groups of historic buildings” can be regarded as nature in a broad sense. Monuments with high value can be designated as “historic sites”, “places of scenic beauty” or “natural monuments” for national protection by the Minister of Education, Science and Culture.

For animals and plants, the natural monuments are designated by either species or area. Although the system of natural monuments has played some role as a law in the preservation rare species, the designation is restricted to academically significant species or areas while no distinction is made between the level of designation for wild animals and domestic varieties. There are also no standards for habitats and no provision for conservation and management of rare species.

b) Hot Spring Act

Japan is one of those countries in the world blessed with a remarkably large number of hot springs. The vastly-popular hot spa as a health resort is a top recreational attraction for the Japanese people. Hot springs are regarded highly as natural resource, and in July 1948, the Hot Spring Law was established to preserve in perpetuality our hot springs, regarded nationally ensure their wise use, and in so doing serve for the welfare of the Japanese public. To achieve this end, the Law institutes certain regulations. For instance, there is a need to acquire a permit when exploitation of a hot spring is newly commenced or extended from the prefectural governor or from the mayor of the city where a responsible health centre is located, when a hot spring is offered as a public bath or as drinking water.

c) Forest Law

This law is aimed at increasing the productivity of the nation's forests by systems of forestry schemes, protection forests and cooperative associations of forest owners; with the aim of conserving the land as a resource for the healthy growth of the national economy. Although the law is not directly targeted at conservation of natural environment, it nevertheless does provide that "Nation-wide Forest Plan" should take into consideration conserving the natural environment and promotion of the functional role to the public played by forests. In Protection Forests designated by the Minister of Agriculture, Forestry and Fisheries, permits are required for the cutting of trees and alterations to landforms.

Furthermore, although not a law in itself the system of Protected Forests designated by the Forestry Agency plays a highly important role for conservation of natural environment. These Protected Forests come is several categories, and are nevertheless regarded as such having a role to play in the conservation of nature and logging for timber production generally does not occur in these forests. Forest Biosphere Reserves are aimed at the preservation of virgin natural forests and the protection of wildlife comprises 26 areas totalling approximately 320,000 ha as of 1997. Specific Animal Habitat Reserves are aimed at the protection of breeding areas and habitats of specific categories of animals species ①whose numbers are declining, ②that congregate in a specific location, and ③which are in need protection for some other reason, which collectively serve as a vehicle for academic studies, and comprise 27 small areas totalling some 12,000 ha as of 1997.

自然保護年鑑刊行会（1996）：６．自然とのふれあいの増進、自然保護年鑑３、日生社

藤巻 裕蔵 他（1995）：野生動物の保護管理、野生動物学外論（田名部雄一他）、朝倉書店

川道 美枝子（1997）：野生哺乳類の保護に係わる法律、レッドデータ 日本の哺乳類、日本哺乳類学会

Japan International Cooperation Agency (JICA) (1999): Textbook for the Group Training Course in Nature Conservation and Natural Parks Management, FY99, "Basic Policies"

(3) Legal Systems of Japan

3-9) Law for the Protection of Cultural Properties, Hot Spring Law, Forest Law

Number of Cultural Properties Designated by the Japanese Government. (as of April 1, 1999)

Designation	Important cultural properties Fine and applied arts Buildings	12,087 9,920 2,167	National treasures Fine and applied arts Buildings	1,050 841 209
	Historic sites, places of scenic beauty and/or natural monuments Historic sites Places of scenic beauty Natural monuments	2,585 1,402 264 919	Special historic sites, places of scenic beauty and/or natural monuments Special historic sites Special places of scenic beauty Special natural monuments	157 57 28 72
	Important tangible folk-cultural properties	194		
	Important intangible folk-cultural properties	194		
	Important intangible cultural properties Performing arts Craft techniques	(individuals) (groups) 31 specific skills 47 individuals 11 (collective recognition) 37 specific skills 46 individuals 13 (group recognition)		
Selection	Important Preservation districts for groups of historic buildings	52		
	Selected Conservation Techniques	(individuals) (groups) 36 specific skills 38 individuals 16 specific skills 18 groups		
Listing	Listed Tangible Cultural Properties	1,103		

Note: A given place may fall into more than one of the three categories of historic site, place of scenic beauty, and natural monument. To avoid repetition, any such place is only counted in one category

Agency for Cultural Affairs, http://www.bunka.go.jp/English/4/4-III.html

(3) Legal Systems of Japan

3-10) National Biodiversity Strategy

a) Background

During the late 1980's there developed a strong awareness of the need to devise international measures to conserve biodiversity. To this effect the "Convention on Biological Diversity" was adopted in 1992, and came into effect in 1993. In Japan, although various authorities had hitherto initiated policies on biodiversity conservation, the signing of the Treaty brought about the conviction that these disparate efforts should be brought into league with each other under single, comprehensive national basic policy. To this effect, the Basic Environment Law, which serves a guiding principle for the planning and implementation of conservation measures, was established in 1993. This was followed by the Basic Environment Plan adopted in 1994, in which is outlined in the National Biodiversity Strategy

b) Basic Policy of the National Strategy

1) Basic concept

The modern day phenomenon of mass production, mass consumption and mass disposal has come under question as we attempt to realign our existence towards sustainability. Central to this is the concept that mankind is an integral part of the planet's ecosystem.

Conservation and sustainable use of biodiversity are vital not only for the present generation but also for the future generations. To conserve biodiversity on a global scale, it is essential to implement conservation measures and programmes by all countries as well as through regional and international cooperation.

2) Long-term objectives and immediate political objectives

Long-term objectives to be achieved by the mid 21st century are as follows:

- To ensure conservation and sustainable use of biodiversity at both national and local level, from prefectures to villages, with regard to regional characteristics of the country and its wildlife distribution;
- To ensure the proper management of comparatively large areas as protected areas, and interconnected with each other so as to maintain reproduction and biomass production as well as diversity, and in so doing enable the wildlife to evolve and adapt to future conditions to the maximum extent Immediate political objectives to achieve the above objectives are as follows:
- Protect wildlife from the threat of extinction;
- To properly conserve important areas for biodiversity conservation;
- To utilise the components of biodiversity (i.e. species and their habitat) in a sustainable

manner.

Furthermore, since biodiversity conservation and its sustainable use are matters of equal concern to all mankind, promotion of conservation measures fitting Japan's international status, at international level and in cooperation with other countries.

c) Development of Measures Based on the National Strategy

1) Conservation measures

Promoting the designation of protected areas and further improvement in their management: e.g. Nature Conservation Areas, Natural Parks, Wildlife Protection Areas, Protected Forests, Protected Waters and Natural Monuments. In addition, pursue efforts to conduct proper development in the surrounding areas as well as to conserve secondary natural environment and biodiversity in the urban areas. Conservation and management of endangered species of wildlife is reinforced and further improved.

2) Countermeasures for development

As far as social and capital development is concerned, biodiversity conservation is taken into consideration by proper environmental impact assessment and mitigation of negative impact on environment. Rehabilitation and creation of wildlife habitats are actively promoted mainly in the secondary natural areas and the urban areas.

3) Research and information

Enrichment of scientific knowledge on biodiversity, the fundamental basis of conservation measures are promoted, as well as research activities for evaluation and monitoring of biodiversity. In addition, the networking of professional expertise and the preparation inventories of wild plants and animals are promoted.

4) Local activities

Activities at local level, from prefectures to villages, are supported to promote proper conservation measures for biodiversity in due accordance with the particular local environmental socio-economic conditions.

5) International cooperation

Biodiversity conservation is a subject of common concern for all mankind, contributions at a global level leads to its enhancement. These efforts include international cooperation with developing countries together with joint participation in international research and, monitoring projects and the networking of information. The economic activities of Japan should be done in a manner as not to adversely affect the biodiversity of the world.

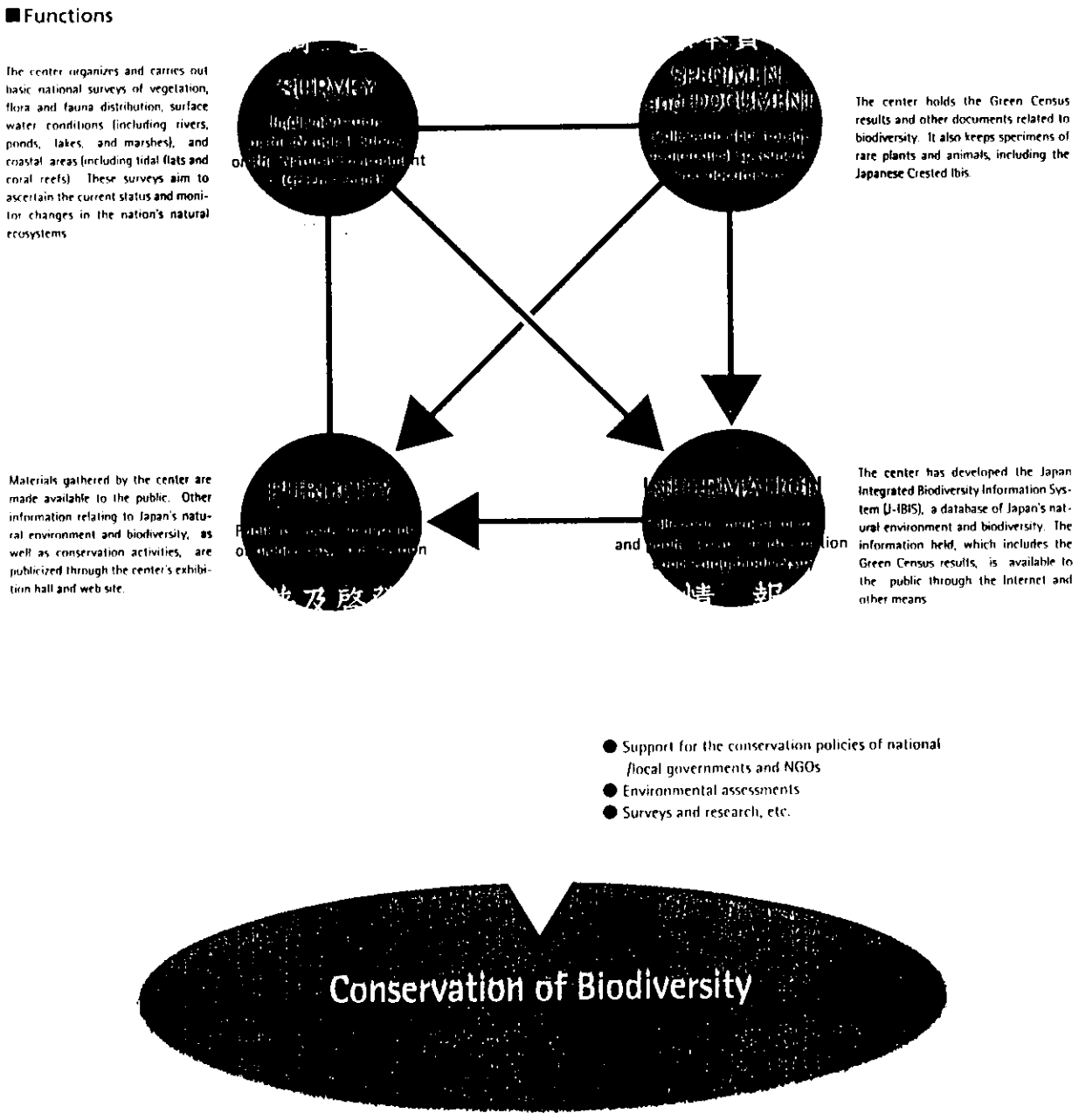
d) Review and Revision of the National Strategy

The national strategy and its implementation are reviewed every year by the "Inter-ministerial

Coordinating Committee for the Convention on Biological Diversity” and the results are made public. Revision of the national strategy is made about every five years, after hearing the views of people from a range of backgrounds and occupations.

自然保護年鑑刊行会（1996）**：生物多様性の保全をどう進めるか？、自然保護年鑑 ４、日生社**

Function of the Biodiversity Center of Japan
(Nature Conservation Bureau, Environment Agency)



Nature Conservation Bureau, Environment Agency: Biodiversity Center of Japan

(3) Legal Systems of Japan

3-11) International Conventions

3-11-1) CITES

a) Purposes and Contents of the Convention

The “Convention on International Trade in Endangered Species of Wild Fauna and Flora” (CITES) was adopted in Washington, USA in March 1973 to conserve endangered species of wildlife through regulating the collection and international trade by both exporting and importing countries. The convention came into effect in 1975. Japan ratified the convention in 1980 and in Japan the convention is usually referred to as the “Washington Convention”. There are 146 countries of the party ratifying the convention as of December 1999.

The convention controls international trade in threatened species of wild plants and animals by listing them on Appendix I, II and III, which are principally not only for live specimens, eggs and seeds but also for partial, derivative and processed items. The countries of the party are given a right to seek “reservation” on some particular species, in which case, those countries are regarded as the non-party countries as for the species on reservation. The countries of the party are required to designate “Management Authority” to issue export and import permits and “Scientific Authority” to advise scientifically to the Management Authority.

b) Measures for CITES in Japan

1) Systems

In Japan, the Management Authority is the Ministry of International Trade and Industry for the export and import and the Fisheries Agency for the introduction from the sea, while the Scientific Authority is the Environment Agency and the Ministry of Agriculture, Forestry and Fisheries. In order to implement the convention properly, the “Liaison Meeting for Government Offices Concerning CITES” was established with the chair of the Environment Agency.

2) Control of export and import

Control of exports and imports based on the convention is implemented through the Foreign Exchange and Foreign Trade Control Law, the Customs Law and the Ordinances for Export and Import Trade Control.

3) Control of domestic trade

To implement trade control more effectively, the Endangered Species Law includes provisions for the control of domestic trade and transfer in Appendix I species of CITES that are designated as “International Endangered Species”.

4) Role of Japan

Japan had been internationally criticised as an insincere and unenthusiastic country as regards obeying the convention. An example is resolution criticism presented at the Asia-Pacific Regional Seminar in 1984. One of the reasons for the criticism was that Japan had placed nine items on reservation at the time of ratification of the convention and at one time placed the maximum of 14 items to protect its domestic industries.

In view of this, Japan established a liaison meeting for the government offices concerned and started making efforts to resolve the outstanding issues and improve its trade management system. As a result, the number of items on reservation was reduced to six species of whale in 1995. Japan has been internationally gaining trust in recent years and was selected as a chair country of the CITES Standing Committee at the 9th Conference of the Parties. It is expected that Japan will continue actively contribute to proper implementation of the convention in the future.

自然保護年鑑編集委員会編（1996）**：ワシントン条約とは？、世界と日本の自然は今 自然保護年鑑３、日正社**

(財）国立公園協会編 （1998）**：１９９８ 自然公園の手引き、 国立公園協会**

(3) Legal Systems of Japan 3-11) International Conventions 3-11-1) CITES

Number of Species on the CITES Appendices

	Appendix I	Appendix II	Appendix III
Mammals	219 spp. + 21 sspp. + 14 popns.	364 spp. + 54 sspp. + 14 popns.	56 spp. + 11 sspp.
Birds	145 spp. + 13 sspp. + 2 popns.	1263 spp. + 32 sspp.+ 1 popn.	149 spp.
Reptiles	62 spp. + 4 sspp. + 5 popns.	383 + 10 sspp. + 3 popns.	19 spp.
Amphibians	13 spp. + 1 ssp.	68 spp.	–
Fish	8 spp.	28 spp.	–
Invertebrates	64 spp. + 5 sspp.	2006 spp. + 1 ssp.	–
Plants (estimate)	310 spp. + 3 ssp. + 1 popn.	24881 spp. + 3 ssp. + 1 popn.	5 spp. + 1 popn.
Total	821 spp. + 47 sspp. + 22 popns.	28993 spp. + 100 sspp. + 18 popns.	229 spp. + 11 sspp. + 1 popn.

The most endangered species

Appendix I: Includes all species threatened with extinction which are or may be affected by trade.

Other species at serious risk

Appendix II: a) Includes all species which although not necessarily currently threatened with extinction may become so unless trade is subject to strict regulation; and b) Other species which must be subject to regulation in order that trade in certain specimens of species referred to in sub- paragraph (a) above may be brought under effective control, i.e., species similar in appearance.

Appendix III: All species which any Party identifies as being subject to regulation within its jurisdiction for the purpose of preventing or restricting exploitation. The cooperation of other Parties, is therefore, needed.

CITES: http://www.wcmc.org.uk/cites/eng/append/species.shtml

(3) Legal Systems of Japan

3-11) International Conventions

3-11-2) Ramsar Convention

The “Convention on Wetlands of International Importance Especially as Waterfowl Habitat” (Ramsar Convention) was adopted in Ramsar, Iran in February 1971 to conserve internationally important wetlands as the habitats of waterfowls and other diversified wildlife. In the convention, a wetland is defined as marshes, swamps, moors, peat bogs and bodies of water, including off-shore coastal areas to a depth of less than 6 m at low tide. As far as wetlands importance as waterfowl habitat, a wetland includes most water-related areas, including mangrove woodlands, tidal flats, lakes, rivers, wet woodlands, rice fields and dams.

The convention states that the countries of the party have an obligation to designate at least one internationally important wetland in terms of ecology, botany, zoology, limnology and hydrology and to register it on a list managed by the Convention Secretariat. The countries of the party also have an obligation to take measures to conserve and utilise the registered wetlands and to report ecological changes and other threats to those wetlands to the Convention Secretariat. 117 countries have ratified the convention as of December 1999 and a total of 1,011 sites comprising approximately 72 million hectares are registered as the Ramsar wetlands around the world.

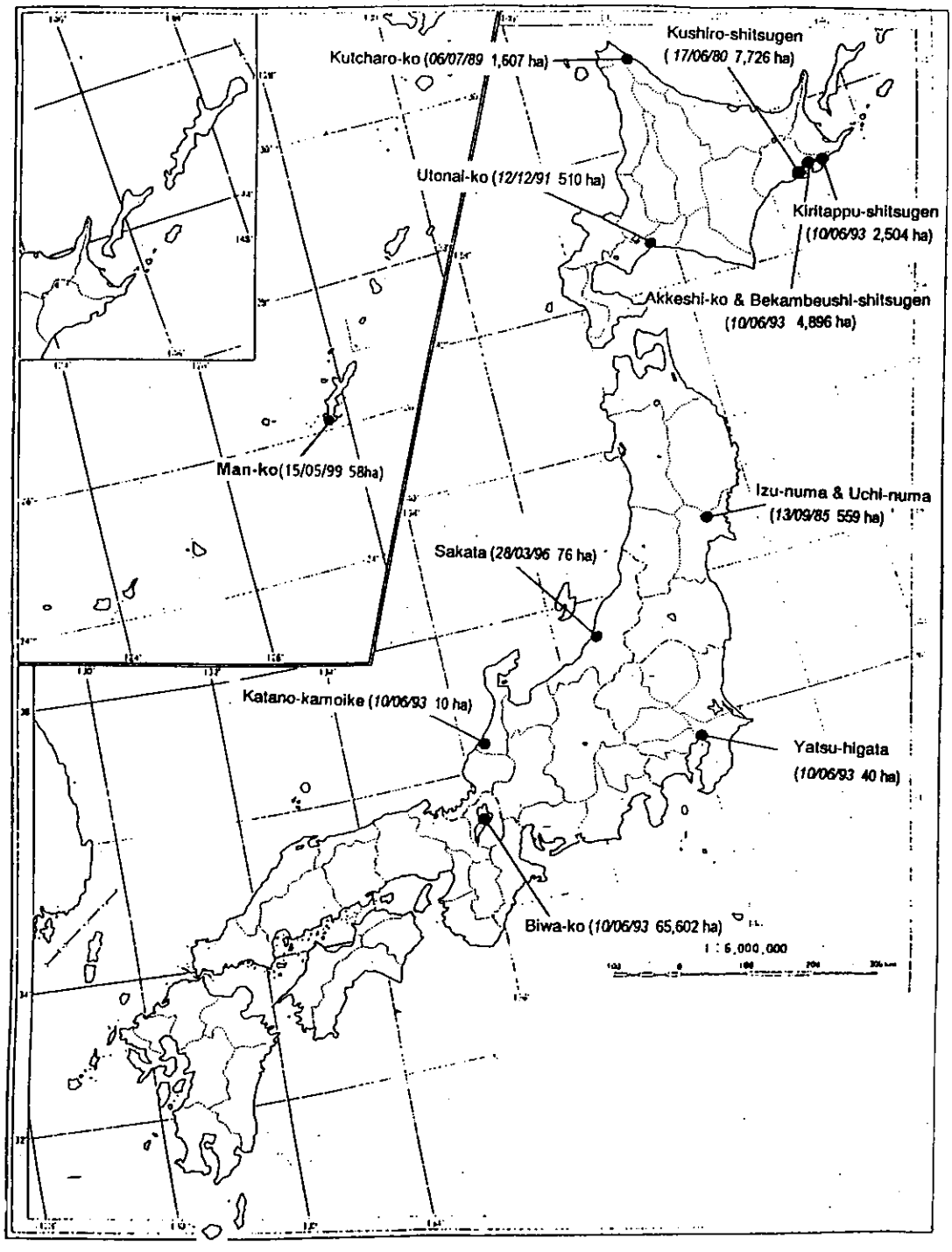
Japan ratified the convention in October 1980 and registered Kushiro Marsh, an important breeding area for red-crowned cranes, as the first Ramsar wetland in Japan. Ten more wetlands were registered by 1999: The Lakes of Izu/Uchi, Lake Kutcharo, Lake Utonai, Kiritappu Marsh, Lake Akkeshi/Bekanbeushi Marsh, Yatsu Tideland, Katano-kamo Pond, Lake Biwa, Sakata and Manko. These wetlands provide important wintering, transit or breeding areas for waterfowls, such as swans, geese, ducks, snipes and plovers.

The Conference of the Parties for the convention is held every three years, at which the countries of the party report and discuss the present state of the wetlands, conservation programmes and wise use of the wetlands, as well as the implementation of the convention itself and international cooperation. At the 4th Conference of the Parties in 1989, the need for technical support for proper conservation and management of the wetlands in developing countries led to the establishment of a “wetland conservation fund”. The Standing Committee Meetings are held by the Convention Secretariat, which also manages and applies the fund to the wetland conservation projects in cooperation with governments and NGOs. The 5th Conference of the Parties was held in Kushiro in June 1993, attended by about 1,200

participants from 95 countries.　9 resolutions and 15 recommendations were adopted.

不破 敬一郎 編著（1994）：ラムサール条約、地球環境ハンドブック、朝倉書店
ほかに；山下 弘文（1998）：湿地の保護と共生（ラムサール条約）、自然保護ハンドブック（沼田 眞 編）、朝倉書店

Wetlands of International Importance (Ramsar Sites) in Japan



井上 晋 (1998):ラムサール条約への登録のための新たな湿地の指定、野生生物保護行政、野生生物保護行政研究会

(3) Legal Systems of Japan

3-11) International Conventions

3-11-3) Convention on Biological Diversity

a) Putting the Convention into effect

Conservation of wildlife and the threats of extinction for species were mentioned in "Declaration on the Human Environment" at the UN Conference on the Human Environment in 1972 and ten years later in the Nairobi Declaration at the UNEP High Level Committee in 1982. UNEP first started working to establish a comprehensive framework for wildlife conservation by introducing the concept of "biodiversity" in 1987. After several meetings and conferences, the "Convention on Biological Diversity" was adopted in Nairobi, Kenya in May 1992 and signed by 157 countries including Japan in the UN Conference on Environment and Development (UNCED: Earth Summit) in June 1992. Japan ratified the convention in May 1993 and the convention came into effect in December 1993.

b) Biodiversity

The convention seeks to conserve biological diversity at three levels, ecosystems, species and genetic, and to ensure its sustainable use.

1) Diversity of ecosystems

The survival of all species depends on the health of the ecosystems they inhabit, and as such maintenance of diversity species also demands maintenance of diversity of ecosystems.

2) Species diversity

The fact that at present the rate of extinction of species is progressing faster than has ever experienced. No amount of human effort can recreate a species once it has become extinct. A species once extinct takes with into extinction its unique adaptations to its environment, adaptations which may have been of indispensable use for human existence in the future, such as for development of medicine and crops. Also, species not only depend on their environment, but also contribute to it, and the greater the variety of species on Earth, the richer that environment, on which we also depend, becomes

3) Genetic diversity

Genetic diversity is vital for the maintenance of adaptive ability of a species. It is the variation in genetic structure that enables a species to evolve and adapt to changes in its environment such as disease outbreaks, climatic change. Without a wide genetic pool to resource, a species chances of survival weaken

c) Discussions at the Convention Negotiations

Major issues discussed through negotiations for the convention are as follows:

1) Objectives of the Convention

Although developing countries asserted that technical transfers and funding assistance should be also be treated as objectives of the convention, these items were instead regarded as measures. The objectives were finally limited to three points: i) conservation of biodiversity; ii) sustainable use of biodiversity; and iii) fair distribution of benefits derived from the genetic resources.

2) Conservation measures

Provision of a global list, which would select internationally important areas and species and give priority for conservation and international cooperation, was deleted after objections from the developing countries and a few developed countries. However, it appears that significance of the conservation was not missed since the conservation measures by each country were comprehensively provided for in the convention.

3) Access to and technical transfer of genetic resources

Many developing countries strongly demanded that the developed countries the return benefits derived from the genetic resources collected in those developing countries and to promote technical transfer of biotechnology. On the other hand, developed countries insisted that protection of the intellectual property rights is indispensable for the advancement of technical development by private corporations. As a result, both the requests were provided for in the convention.

4) Financial issues

Developing countries requested the establishment of a new fund while developed countries insisted on the use of existing mechanisms, such as the Global Environmental Facility. It was concluded that until proper reforms were in place, the Global Environmental Facility would temporarily provide the machinery for the interim, and financial management would until then function under administration and guidance by the Conferences of the Parties.

渡辺 綱男（1994）**：生物多様性条約、地球環境ハンドブック（不破 敬一郎 編)、朝倉書店**

(3) Legal Systems of Japan 3-11) International Conventions

3-11-3) Convention on Biological Diversity

Content of the Convention on Biological Diversity

1. Purpose of the Convention (Article 1)
    i. Conservation of biological diversity
    ii. Sustainable use of the elements of biological diversity
    iii. Equitable distribution of benefits drawn from genetic resources
2. Measures for Conservation (Articles 6-14)
    i. Establishment of national strategies for conservation of biological diversity and integration of the strategies into related plans and policies
    ii. Selection and monitoring of the important area and species
    iii. *In-situ* conservation: Establishment of the system for protected areas, conservation and restoration of the ecosystems
    iv. *Ex-situ* conservation: preservation under captivity, breeding, and reintroduction to the wild
    v. Sustainable use and management of biological resources
    vi. Socio-economic measures to promote conservation of biological diversity
    vii. Research, training, education and information dissemination
    viii. System for environmental impact assessment
3. Access to Genetic Resources and Technology Transfer (Articles 15, 16, and 19)
    i. Acknowledge the sovereignty of the country possessing genetic resources and access to the resources should be based on mutual agreement
    ii. Secure participation of the resource-providing country to research, and benefit from the resource should be distributed equitably
    iii. Technology transfer to developing country should be done under conditions that are fair and advantageous to the developing countries. The Convention acknowledges the protection of intellectual property rights.
4. Financial Mechanism (Articles 20, 21, and 39)
    i. Developed countries are to provide new and additional funding to cover additional costs on the developing countries resulting from signing the Convention
    ii. Global Environmental Facility (GEF) was designated as the temporal mechanism for fund-giving
5. Safety regarding Biotechnology
    i. Establish measures to regulate the use and release of biotechnologically manipulated organisms
    ii. Consider the appendix regarding the safe transport and handling procedures of biotechnologically manipulated organisms. Exporting country of such organisms are to provide information on proper use and handling measures to the importing countries.

渡辺 綱男（1994）：生物多様性条約、地球環境ハンドブック（不破 敬一郎 編)、朝倉書店

(3) Legal Systems of Japan

3-11) International Conventions

3-11-4) Desertification Convention

According to the International Convention to Combat Desertification, 'desertification' is defined as deterioration of the land due to factors such as climatic change and human activity, in arid, semi-arid and arid semi-wet areas. In this case, 'land' includes soils, water resources, ground surfaces and vegetation. 'Deterioration' refers to a decline in the resource potential of the land by one or more influencing processes, such as soil erosion, siltation and rising salinity.

There are two main causes of desertification. One factor is climatic atmospheric circulation around the glob, and the other is a human impact through actions that exceed the land capacity in fragile ecosystems. Once the land has become a desert an enormous and costly amount of effort is required for its restoration. For this reason protection of those lands as yet unaffected or having being affected very little is the more feasible and effective approach for anti-desertification measures

According to a UNEP report made in 1991, approximately 3.6 billion ha of land is affected by desertification, comprising quarter of all land area the Earth. Furthermore, approximately 70% of the arable land in arid, semi-arid and arid semi-wet areas suffer desertification. The land affected by desertification in Africa is about 1.0 billion hectares (73% of the arable land) and in Asia is about 1.3 billion hectares (71% of the arable land); the two areas of which combined comprise two thirds of all the areas affected by desertification throughout the world. The population affected by desertification is estimated 900 million - equal to one sixth of the world's population. These figures indicate that desertification is a serious threat to human existence in the developing countries.

International measures for desertification started in earnest at the 'UN Conference on Desertification' in 1977. In this conference, a Plan of Action to Combat Desertification was adopted, and actions to be taken by each county and international institute were recommended. Following this, a centre for planning and taking action on combating desertification was established in UNEP.

However, according to an evaluation made in 1991, the situations of desertification had not been improved because of insufficient basic knowledge on desertification and thus prevented the implementation of measures that were effective. Specifically, the following were indicated as causes:

① Low priority assigned at both internal and international level;

② Lack of funding support;
③ Lack of coordination with socio-economic development plans;
④ Little participation from local people;
⑤ Lack of consideration for political and social factors.

In the Earth Summit in June 1992, it was adopted in the “Agenda 21” to request the UN General Assembly to adopt the Convention on Combating Desertification. After establishment of the Inter-governmental Negotiating Committee for the Convention on Combating Desertification, the convention was adopted in June 1994 and came into effect in December 1996.

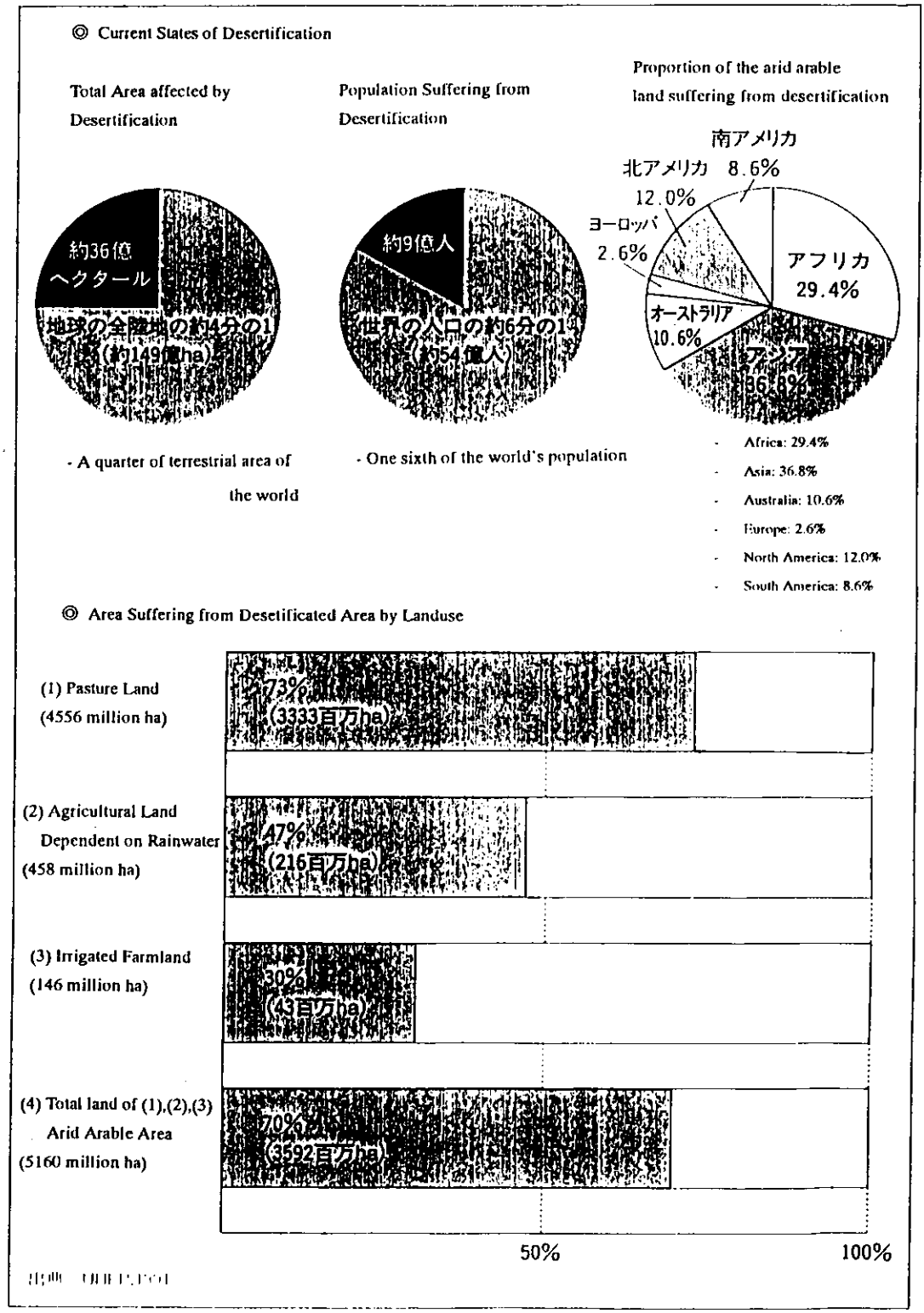
The Convention consists of a preamble, a main body and appendices to implement control of desertification in four regions: Africa, Asia, Latin America/Caribbean and North Mediterranean. Two additional resolutions were adopted following the Convention: provisional measures and urgent actions for Africa. The Convention provides the framework for measures for both developed and developing countries. In addition, other significant aspects of the Convention are:

- To indicate direction of the basic measures as ’principles’;
- To require the countries of the party affected by desertification to establish the action plans;
- To require all the countries of the party to report measures for controlling desertification to the Conference of the Parties;
- To deal with fund provision as a central issue;
- To establish a Scientific Committee to provide information and advice on science and technology.

環境庁地球環境部編（1998）**：地球環境キーワード辞典、 中央法規出版**

(3) Legal Systems of Japan 3-11) International Conventions

3-11-4) Desertification Convention



環境庁地球環境部編（1998）：地球環境キーワード辞典、 中央法規出版

(3) Legal Systems of Japan

3-11) International Conventions

3-11-5) World Heritage Convention

a) Outlines of the Convention

The “Convention Concerning the Protection of the World Cultural and Natural Heritage” was adopted at the 17th UNESCO General Assembly in November 1972 and came into effect in December 1975. The objective of the Convention was to preserve cultural and internationally valuable cultural resources and the natural environment by making a list of the world heritage and providing financial assistance to conservation measures each country.

The world heritage has two categories: cultural heritage and natural heritage. Cultural heritage is defined as monuments, buildings and ruins with historically or academically outstanding universal value, while the natural heritage is defined as characteristic natural areas, threatened wildlife habitats and natural landscape with aesthetically or academically outstanding universal value. There are 153 countries of the party ratifying the Convention as of 1998 and a total of 552 sites listed as world heritage: 418 cultural heritages, 114 natural heritages and 20 complex heritages.

b) Systems of the Convention

- Obligations to the countries of the party
- To recognise, protect, preserve, maintain and pass on the national heritage to the future generations.
- To avoid measures that harmful to the national heritage of other countries.
- To present a list of the national heritage to qualify for listing as world heritage to the World Heritage Committee.
- To Regularly pay contributions to the World Heritage Fund.
- To support fund-raising efforts by UNESCO for the World Heritage Fund.
- To encourage their citizens to value and respect their national heritage through education and public relations programmes.

2) Recommendation for world heritage listing

Based on the Criteria for Inclusion in the World Heritage List, the World Heritage Committee examines listing of the areas recommended for the world heritage by each country; Prior to this, the IUCN examines the natural heritage and ICOMOS examines the cultural heritage. World heritage that is extremely threatened and requires urgent measures for conservation are registered in the “threatened world heritage list” and examined for financial assistance with the World Heritage Fund.

c) World Heritage in Japan

Japan ratified the World Heritage Convention in 1992 and recommended Yaku Island and the Shirakami Mountains as natural heritage and the Buddhist Monuments in the Horyuji Area and Himeji Castle as cultural heritage; these sites were registered in the world heritage list in 1993. Other cultural heritages are the Historic Monuments of Ancient Kyoto (1994), Historic Villages of Shirakawago/Gokayama (1995), Itsukushima Shrine (1995) and the Hiroshima Atomic-bomb Dome (1995). In November 1998the 22nd Conference of the World Heritage Committee was held in Kyoto, Japan.

d) Conservation and Management of Natural Heritage in Japan

1) Outline

① Yaku Island

Yaku Island has a unique ecosystem and outstanding natural scenery: Yaku cedars several thousand years old, numerous endemic and endangered species of plants and animals and a distinctive vertically stratified vegetation zones. The heritage site is strictly protected through its designation as a Wilderness Area, National Park (Special Protection Zone and Special Zone) and Natural Monument.

② The Shirakami Mountains

The Shirakami Mountains is an internationally unrivalled area of beech forest, renowned for its well-preserved pristine state and the diversity of its flora and fauna. The area is a noteworthy model of the ecologically ongoing process within the various stages of plant communities. The heritage site is strictly protected as a Nature Conservation Area (Special Zone and Wildlife Protection Zone), National Park (special protection zone) and Forest Biosphere Reserve (preservation zone).

2) Conservation measures

To conserve these natural heritages, a number of measures have been introduced in the form of patrols, research, provision of signboards and allocation of ecological management officers, under a system started in 1995. Two World Heritage Centres have also been established on each of both Yaku Island and in the Shirakami Mountains Furthermore, a Liaison Meeting was established by administrative agencies of the central and local governments to ensure proper and smooth management of these natural heritage sites. Management plans for these sites were produced by the Environment Agency, the Forestry Agency and the Agency for Cultural Affairs and submitted to the Convention Secretariat in November 1995.

自然保護年鑑編集委員会編（1996）：世界遺産条約とは？、世界と日本の自然は今 自然保護年鑑３、 日正社
（財）国立公園協会 編 （1998）：１９９８ 自然公園の手引き、国立公園協会

(3) Legal Systems of Japan 3-11) International Conventions

3-11-5) World Heritage Convention

A List of Some World Heritage Sites

- ARGENTINA: 1984 Iguazu National Park
- AUSTRALIA: 1981 Great Barrier Reef
- CANADA: 1984 Canadian Rocky Mountain Parks
- CHINA: 1987 The Great Wall, 1987 Mount Taishan
- COSTA RICA/PANAMA: 1983 Talamanca Range-La Amistad Reserves/ La Amistad National Park
- ECUADOR: 1978 Galapagos National Park
- EGYPT: 1979 Memphis and its Necropolis - the Pyramid Fields from Giza to Dahshur, 1979 Nubian Monuments from Abu Simbel to Philae
- FRANCE: 1979 Palace and Park of Versailles, 1981 Palace and Park of Fontainebleau
- GERMANY: 1984 The Castles of Augustusburg and Falkenlust at Brühl
- GREECE: 1987 Archaeological Site of Delphi, 1987 The Acropolis, AthensHONDURAS: 1982 Río Platano Biosphere Reserve
- HUNGARY: 1987 Budapest, including the Banks of the Danube with the district of Buda Castle
- INDIA: 1983 Ajanta Caves, 1983 Taj Mahal, 1987 Sundarbans National Park
- ITALY/HOLY SEE: 1980 Historic Centre of Rome, the properties of the Holy See in that city enjoying extraterritorial rights, and San Paolo fuori le Mura
- ITALY: 1980 Church and Dominican Convent of Santa Maria delle Grazie with "The Last Supper" by Leonardo da Vinci
- NEPAL: 1979 Sagarmatha National Park, including Mt. Everest, 1984 Royal Chitwan National Park
- NEW ZEALAND: 1998 New Zealand Sub-Antarctic Islands
  * Westland/Mount Cook National Park and Fiordland National Park, previously inscribed on the World Heritage List, are part of this site.
- PAKISTAN: 1980 Archaeological Ruins at Moenjodaro
- PERU: 1983 City of Cuzco, 1987 Manu National Park
- SPAIN: 1984 Alhambra, Generalife, and Albayzin, Granada
- UNITED KINGDOM: 1987 Palace of Westminster, Abbey of Westminster, and St. Margaret's Church, 1988 The Tower of London
- UNITED REPUBLIC OF TANZANIA: 1979 Ngorongoro Conservation Area, 1981 Serengeti National Park
- UNITED STATES OF AMERICA: 1978 Yellowstone National Park, 1979 Grand Canyon National Park, 1979 Independence Hall, 1984 Yosemite National Park
- DEMOCRATIC REPUBLIC OF THE CONGO: 1979 Virunga National Park, 1981 Kahuzi-Biega National Park
- RUSSIAN FEDERATION: 1990 Kremlin and the Red Square

自然保護年鑑編集委員会編（1996）：世界遺産条約とは？、世界と日本の自然は今 自然保護年鑑３、 日正社

(3) Legal Systems of Japan

3-11) International Conventions

3-11-6) MAB and Biosphere Reserves

Biosphere Reserves are established not being based on a specific convention but as a part of the international scientific plan of "Man and the Biosphere Programme" (MAB) by UNESCO.

a) Man and the Biosphere Programme (MAB)

The Man and the Biosphere Programme (MAB) began in 1971 as an international joint programme following the International Biological Programme. MAB has implemented research, training, demonstration and information services for the relationship between human activities and biospheres. The objective of the programme was to establish scientific bases and train specialists to work on conservation and rational use of natural resources together with issues concerning human settlement and activities. Fourteen projects were started with establishment of the project areas in the early 1970s. Results of the projects were evaluated in 1990 and the decisions were reached:

- Development and utilisation of a network of Biosphere Reserves;
- Activities to coordinate biodiversity conservation with sustainable use, including social, and economic development and the maintaining cultural values;
- Strengthening the development of human resources and research institutes as well as cooperation with programmes conducted by the United Nations and other international institutes.

In Japan the main activities related to MAB are academic research within Japan, overseas academic joint research, publicity work and international cooperation within the Asia-Pacific region.

b) Biosphere Reserves

Biosphere Reserves have a number purposes such as nature conservation, research, training and sustainable use of resources. It is crucial that human activity is regarded as a fairly important component in the reserves. The reserves are divided into the following three zones, each with a specific conservation objective:

- Core area: in the central area, for preservation of biodiversity without human interference;
- Buffer zone: in the outer areas, for human habitation and limited resource usage ;
- Transition area: the outermost areas without specific boundaries, for activities for sustainable development.

Biosphere Reserves are categorised by the IUCN as Type IX Protected Areas, and often

registered to cover existing National Parks. There were 57 areas registered as the first reserves in 1976. By 1990 however this had increased to a total of 285 areas in 71 countries. In Japan, four areas totalling 116 116,000ha were registered in 1980: Shiga Highlands, Hakusan, Odaigahara/Mt. Omine and Yaku Island. These areas are covered under all or part of the Special Protection Zones in National Parks or Wilderness Areas. All the buffer zones in these areas fall under the categories of Special or Ordinary Zones in National Parks; however no Transition Areas have been designated in Japan.

c) Biosphere Reserves in Japan: Hakusan

Hakusan National Park was designated as a Biosphere Reserve in 1981 principally because of the extensive size of its Special Protection Zone and its existing system of nature conservation and management, research and education. The Special Protection Zone of the park was designated as the core area of the reserve and the Special Zones as the buffer zone.

However, this designation did not attract much attention either at national or local level, and neither has the reserve has not been taken up as a subject for “Basic Studies for Human Existence and Natural Environment” sponsored by the Ministry of Education, Science and Culture. There was also very little publicity or educational work directed at the public t and no budget was allocated for any of the programmes concerned.

National efforts for the conservation of he Hakusan area have resulted in the establishment of four separate protected areas, all overlapping one another: Hakusan National Park (47,700 ha: Environment Agency), Hakusan Wildlife Protection Area (35,912 ha: Environment Agency), Hakusan Forest Biosphere Reserve (14,826 ha: Forest Agency) and Hakusan Japanese Serow Nature Reserve (53,662 ha: Agency for Cultural Affairs)

All these areas, with the exception of the Forest Biosphere Reserve, were established without any of the land being in possession by the authorities concerned. This is a factor that makes control of the land use difficult. Many protected areas duplicated each other and the boundaries are not integrated because of differing standards imposed institution. Administrative systems at the field level are also complicated by the various offices concerned for each protected area: the national park office, prefectural offices, regional forestry offices and the boards of education. On area that has been left particularly unclear is that which agency is responsible for protection and management of wild animals populations and their habitats.

薄木 三生（1994）：自然保護地域の種類と設定状況、地球環境ハンドブック（不破 敬一郎 編）朝倉書店
有賀 祐勝 （1998）：MAB（人間と生物圏計画）、自然保護ハンドブック（沼田 眞 編）、朝倉書店
堂本 暁子 （1997）：バイオスフェアリザーブ（生物圏保存地域）と生物多様性、ワイルドライフ・フォーラム２（４）野生生物保護学会
水野 昭憲 （1996）：白山生物圏保存地域と野生動物保護、ワイルドライフ・フォーラム２（３）、野生生物保護学会

(3) Legal Systems of Japan 3-11) International Conventions

3-11-6) MAB and Biosphere Reserves

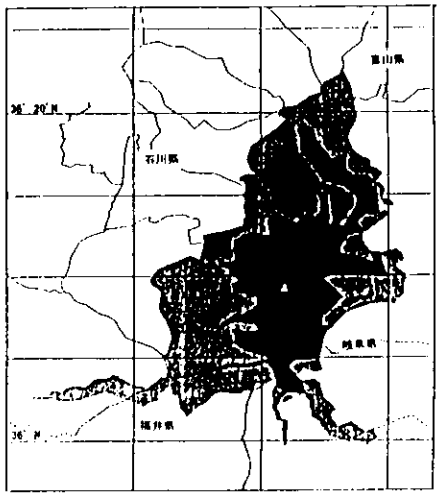


Fig-1 : Hakusan National Park･MAB Biosphere Reserve

Core Area = National Park Special Protected Zone

Buffer Zone = National Park Special Zone

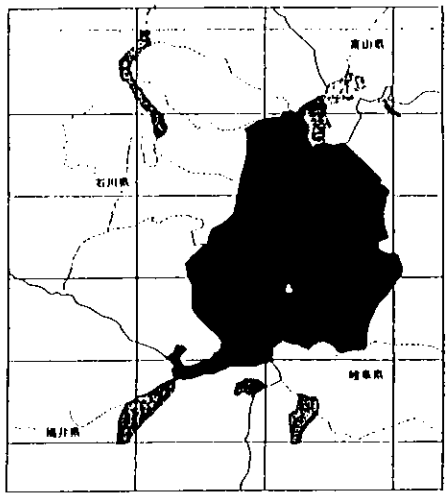


Fig-2 : Hakusan National Wildlife Protection Area

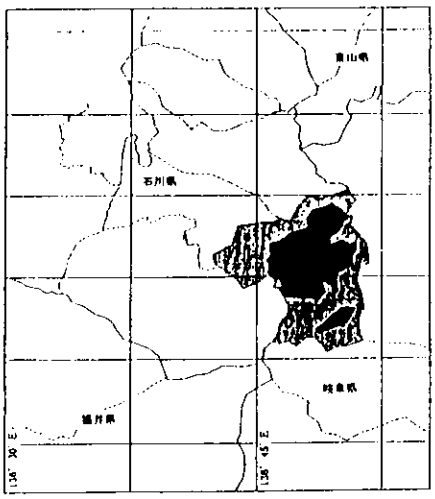


Fig-3 : Hakusan Forest Biosphere Reserve

Preservation Area

Utilisation Area

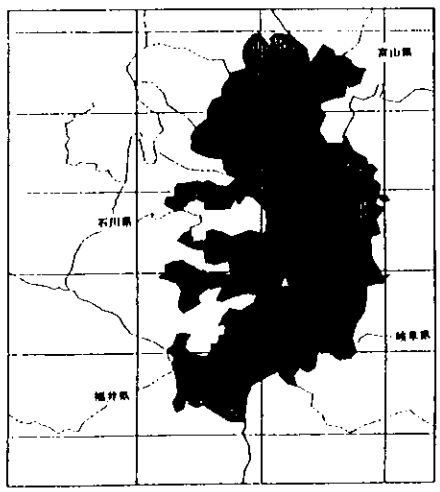


Fig-4 : Hakusan Japanese Serow Nature Reserve

水野 昭憲 (1996)：白山生物圏保存地域と野生動物保護、ワイルドライフ・フォーラム２（３)、野生生物保護学会

(3) Legal Systems of Japan

3-11) International Conventions

3-11-7) Conventions and Agreements for Protection of Migratory Birds

Japan concludes bilateral conventions or agreements for protection of migratory birds, birds in danger of extinction and their environment with USA, Australia, China and Russia.

a) Convention between Japan and USA for Protection of Migratory Birds

This convention was signed in 1972 and came into effect in 1974. Main contents of the Convention are; control of the capturing of migratory birds (190 species), protection of endangered species of birds (67 species/subspecies), exchange of information and conservation of the environment. In order to evaluate implementation of the Convention and to exchange the information, Japan and USA alternately hold the bilateral meeting every two to three years.

b) Agreement between Japan and Australia for Protection of Migratory Birds

This convention was signed in 1974 and came into effect in 1981. Main contents of the agreement are: control of the capture of migratory birds (76 species), protection of endangered species of birds (36 species/subspecies), exchange of information and conservation of the environment. Japan and Australia alternately hold bilateral meetings every two years. At the 9th meeting in Tokyo in 1997, both the countries exchanged information on the conservation measures those were taken following the previous meeting and agreed to tackle snaring of albatrosses by longline fishing as a new agenda. In addition, results of the research for one species of snipe were reported and new joint research project for snipe and tern species was planned.

c) Convention between Japan and Russia for Protection of Migratory Birds

This convention was signed in 1973 and came into effect in 1988. The main contents of the convention are: control of the capture of migratory birds (287 species), protection of endangered species of birds (29 species/subspecies), exchange of information and conservation of the environment. Japan and Russia alternately hold bilateral meetings every two years. At the 4th meeting in Tokyo in 1996, Japan reported the results of a joint research for an eagle species, and both the countries agreed to continue to implement similar joint research in the future. Research on a species of snipe started in 1997.

d) Agreement between Japan and China for Protection of Migratory Birds

This convention was signed and came into effect in 1981. The main contents of the

agreement are: control of the capture of migratory birds (227 species), exchange of information and conservation of the environment. In order to evaluate the conservation measures of the previous meeting, Japan and China alternately hold bilateral meetings every two years. Apart from this agreement, both countries have been implementing a joint programme for the protection and captive breeding of the Japanese crested ibis, one of the most endangered species in the world.

(財)国立公園協会編 （1998）：1998 自然公園の手びき、国立公園協会
環境長 編（1997）： 平成 9 年版「環境白書、各論」 大蔵省印刷局

(3) Legal Systems of Japan 3-11) International Conventions

3-11-7) Conventions and Agreements for Protection of Migratory Birds

Wild Birds in Japan

- Resident Birds: Species that stay in Japan year around
- Migratory Birds

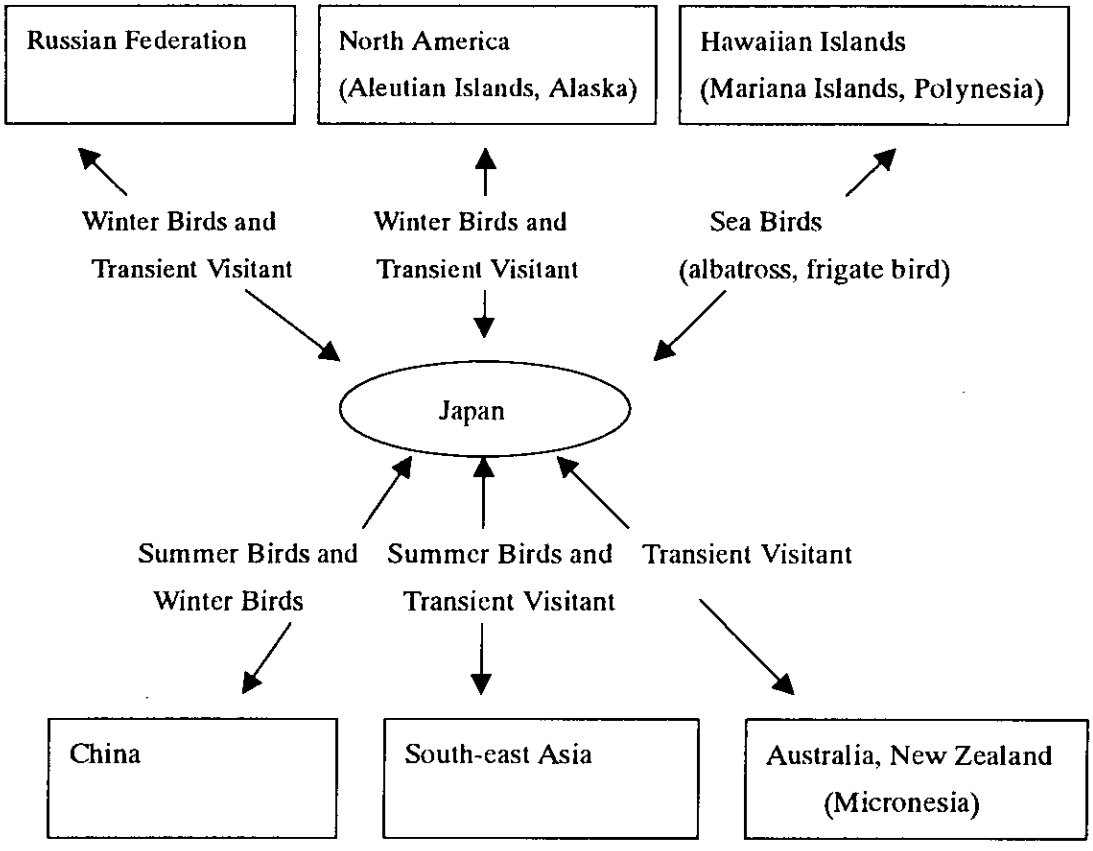
Summer Birds: Species that come from the south to breed in Japan in the spring and go back to the south in the fall.

Winter Birds: Species that come from the north in the fall to overwinter in Japan and go back to the north in the spring.

Transient Visitant : Species that temporarily stay in Japan during their migration between their breeding sites in the north and overwintering sites in the south.

Occasional Visitant: Species whose natural range does not include Japan but visit Japan by accident.

Bird Migration



(財)国立公園協会編 (1998) : 1998 自然公園の手びき、国立公園協会

(4) Protected Areas in Japan

4-1) Outlines of Protected Area Systems in Japan

a) Protected Areas System Under the Nature Conservation Law

1) Wilderness Areas

To conserve primeval natural environment, natural areas with primeval features and of a certain consistency are designated as Wilderness Areas where, based on the policy of leaving the area to natural succession, strict protection measures including prohibition of activities altering natural features are taken. To date, five areas with a total area of 5,600 ha have designated as Wilderness Areas.

2) Nature Conservation Areas

The Nature Conservation Area system aims to conserve natural areas of a certain consistency by regulation of activities and systematic conservation projects, etc. Natural areas to be designated include forests made up mostly of natural forests, water and waterside areas with their outstanding natural environment including coasts, lakes, tidal flats, rivers and oceans, and outstanding natural habitats of plants and animals.

To date, 10 areas with a total area of 21,598 ha have been designated.

b) Protected Area Systems for Nature Conservation Unique to Local Governments

With the aim of conservation the natural environment around residential areas, local authorities have their own protected area systems such as the Green Zone Conservation Area and Local Zone Conservation Area, etc. aside from the Prefectural Nature Conservation Area.

c) Natural Parks

Twenty-eight National Parks, 55 Quasi-national Parks, and 301 Prefectural Natural Parks have been designated under the Natural Parks Law to conserve Japan’s scenic areas and promote their utilisation.

Natural parks, making up about 14.1% of the total area of the country, contain diverse ecosystems based on the natural vegetation, etc., full of variety in areas ranging from the subarctic zone to the subtropical zone and from the alpine zone to the coastal region. In natural parks, inhabiting wildlife, marine animals and plants, and their habitats are positioned as components of natural scenery. To protect them, the regulations are being implemented.

d) Natural Habitat Conservation Area

Preventing the extinction of species of wild fauna and flora poses as an urgent task because they are important components of ecosystems and indispensable for mankind to lead an

abundant life. Endangered species of wild fauna and flora in Japan are designated as National Endangered Species in accordance with the “Law for the Conservation of Endangered Species of Wild Fauna and Flora.” To preserve their habitats, areas are designated as Natural Habitat Conservation Areas and, in particular, important areas are treated as Managed Areas. Acts in the areas are regulated under a permission system. Areas outside the Protection Zone are treated as Monitoring Areas where natural environment will be conserved by making notification of acts mandatory.

Priority areas to be designated as Natural Habitat Conservation Areas will be selected among those areas such as areas where National Endangered Species inhabit with good conditions and habitats of a large size. For species of a wide range of distribution, main habitats in each major distribution area try to be designated as Natural Habitat Conservation Areas. These efforts will be taken to avoid the extinction of the species.

Protection guidelines have also been established for each Natural Habitat Conservation Area according to the ecological features of the designated species, environment management is performed to maintain the living conditions of the designated species, and periodic surveillance of the conservation areas and surveys of the living conditions of the designated species are conducted.

Furthermore, Projects for Rehabilitation of Natural Habitats and Maintenance of Viable Populations are also implemented actively to maintain and improve habitat conditions of the Natural Habitat Conservation Areas.

e) Protection Areas for Birds and Mammals

Serving as important components of nature, birds and mammals play a significant role in maintaining the ecosystems, and are crucial to realising a rich living environment for man. For purposes of the conservation and propagation of birds and mammals, indispensable areas have been set up as Protection Areas for Birds and Mammals (Wildlife Protection Areas) based on the “Law for the Protection of Birds and Mammals and Hunting (Wildlife Protection and Hunting Law) “ and capturing and hunting are prohibited. Especially important areas are designated as Special Protection Areas (Special Wildlife Protection Areas), and various acts are regulated for the conservation of the living environment for the diverse variety of birds and mammals.

f) Natural Monuments

Based on the “Law for the Protection of Cultural Properties” efforts are presently underway in Japan to commemorate nature that is abundantly diverse and contributes to the formation of the indigenous culture, and preserve nature that is valuable academically as natural monuments.

The law designate the following as natural monuments that shall be preserved: animals and plants indigenous to Japan including rare species, primeval forests (natural forests) with differing climaxes, the various vegetation of marshes and mountainous areas, and secondary natural environments such as manmade village mountains. Increased to a total number of 955, the natural monuments contribute enormously to the conservation of biological diversification in Japan.

g) Protected Forests, etc.

Parts of national forests are classified as “Nature Conservation Forests” where management priority is given to conservation of natural environment such as primeval-like forest ecosystems based on the “National Forest Management Bylaw”. These forests should be managed leaving as they are, in principle, without any forestry works.

Among the National Conservation Forests, those that especially play an important role in the protection of natural environment such as protection of rare wild animals and preservation of genetic resources are designated as “Protected Forests” and intensive efforts are made to conserve natural environment in accordance with the “National Forest Management Bylaw” and “Guidelines for Establishing Protected Forests”. Protected Forests are classified into seven categories according to object to protect and objectives of protection: “Forest Biosphere Reserve”, “Forest reserve”, “Forest Genetic Resources Reserve”, “Forestry Tree Genetic Resources Reserve”, “Plant Community Reserve”, “Specific Animal Habitat Reserve”, “Specific Geographical Feature Reserve” and “Local Symbol Forest Reserve”. Protected Forests totalled 787, comprising about 470 thousand hectare.

h) Protected Waters

Water areas suitable for the spawning of aquatic animals, as a habitat for young fish, and for the growth of seedings of aquatic animals and plants are specified as protected waters in accordance with the Preservation of Fisheries Resources Law.

Reclaiming, dredging, and work that changes the flow rate, water level, etc. of rivers within the protected areas are restricted. At presence protected waters consisted of 2,200 km of rivers, 240 ha of lakes, and 3000 ha of sea surfaces. Protection activities that have been conducted within the designated areas include everyday management of surveillance and guidance to prevent poaching, increased awareness and education of residents and fishermen, and PR activities as well as the development of spawning areas and surveys of the environment and resources beneath the sea so that the relevant environment within the areas can be maintained.

i) International Protected Areas

There are three types of international protected areas in Japan registered and/or approved in accordance with international conventions or a programme as shown below. As of June 1995, there were 15 such areas with a total area of about 220,000 ha (excluding overlapping designated areas in Yaku Island).

① Two areas (Yaku Island and Shirakami Mountains and) for the World Heritage Convention,

② Eleven areas (e.g. Kushiro Marsh, Lakes Izu/Uchi and Yatsu Tideland) for the Ramsar Convention,

③ Four areas (Yaku Island, Odaigahara/Mt. Omine, Hakusan and Shiga Highlands) for the MAB.

Council of Ministers for Global Environmental Conservation, Government of Japan (1995): National Strategy of Japan on Biological Diversity.
(http://www.eic/or/jp/eanet/en/pol/nsj/index.html)

(4) Protected Areas in Japan 4-1) Outlines of Protected Area Systems in Japan

Laws Concerning Ecosystem Conservation and Protected Areas Designated by These Laws.

Law	Year of Enactment	Protected Areas
Nature Conservation Law	1972	Wilderness Area
		Nature Conservation Area
Law for Conservation of Endangered Species of Wild Fauna and Flora	1992	Natural Habitat Conservation Area
Wildlife Protection and Hunting Law	1963	Wildlife Protection Area
		Wildlife Special Protection Area
Natural Parks Law	1957	Special Zone
		Special Protection Zone
Law for the Protection of Cultural Properties	1950	Nature Reserve
Preservation of Fisheries Resource Law	1951	Protected Waters, etc.
Fisheries Law	1949	Capturing Prohibited Area
		Capturing Regulated Area, etc.
Guidelines for Establishing Protected Forests, etc.	1915	Forest Biosphere Reserve, etc.

堂本 暁子（1997）：バイオスフェアリザーブ（生物圏保存地域）と生物多様性、ワイルドライフ・フォーラム２（4)、野生生物保護学会

4-2) History of Establishment of Protected Areas

4-2-1) Legislation for Nature Conservation before National Parks Law

The National Parks Law was established in March 1931. This law has had epoch-making significance in the history of measures for natural environment conservation. The law was modelled after the national park systems in the USA and saw the introduction of moderately large areas of National Parks, in which human activities are controlled and facilities for their utilisation are provided. The objectives of the Law are to conserve natural scenery of aesthetic value and landscape, plants and animals of academic worth, to offer opportunities for the improvement of the health of the public and to secure places for recreation.

This Law has a predecessor however, in that the concept of nature conservation had been already incorporated to the legislative systems in the Meiji era in the 19th Century.

It was the Meiji government that adopted a national policy of overtaking the Western developed countries through modernisation efforts. Specifically, a policy of enhancing the wealth and military strength of the country was adopted and westernisation and industrial development were strongly promoted.

As result of these policies, the countryside was developed, the forest areas were cleared, the seashore was reclaimed and urbanisation advanced. As a consequence of this, ancient shrines and temples, famous places of scenic beauty and historical interest, primeval forests and natural coasts were destroyed and much magnificent natural scenery and landscape, plants and animals of scientific value were lost. A further consequence was the increased incidence of natural disasters and loss of places for relaxation throughout the country.

In the second half of the Meiji era, the authorities took note of these adverse impacts, and gradually began to initiate legislative systems for the conservation of nature. Under the Forest Law established in 1897, a system of Protection Forests was introduced in order to conserve water resources, scenic beauty, etc. and served to protect the remaining forests from felling as well as to preserve scenery with historical and cultural value.

A system of protecting important birds and mammals from overhunting was introduced under the Hunting Regulation in 1892, which was later upgraded to the Hunting Law in 1895, and a system of Wildlife Protection Areas was adopted under the same law in 1918.

As for an urban planning system, local ordinances were set in place in Tokyo and other major cities around 1888. In 1919, the City Planning Law was established incorporating a system for maintaining city parks and green areas, as well as to protect places of scenic beauty from overdevelopment.

The Historical Spot, Scenic Beauty and Natural Monument Preservation Law was established in 1919. Prior to the establishment of the later-to-come National Parks Law, the Law devised an epoch-making system for the preservation of exceptional natural scenic areas and academically important animals, plants, rocks, landscapes and geological features. Under the Law historical spots, scenic beauty places and natural monuments were designated, regardless their ownership, and controlled or prohibited altering of the landscape and the felling of trees. This system of restriction for conservation by the government without possessing the lands and objects is believed to take initiative to the later national park systems.

林 修三（1981）：第一章 総説、自然保護行政のあゆみ、環境庁自然保護局

(4) Protected Areas in Japan

(4) Protected Areas in Japan 4-2) History of Establishment of Protected Areas

4-2-1) Legislation for Nature Conservation before National Parks Law

List of National Parks As of March 31,1999

Number	National Park	Data of Designation	Area(ha)	Prefecture
1	Rishiri-Rebun-Sarobetsu	Sept. 20, 1974	21,222	Hokkaido
2	Shiretoko	June 1, 1964	38,633	〃
3	Akan	Dec. 4, 1934	90,481	〃
4	Kushiro Shitsugen	July 31, 1987	26,861	〃
5	Daisetsuzan	Dec. 4, 1934	226,764	〃
6	Shikotsu-Toya	May 16, 1949	99,302	〃
7	Towada-Hachimantai	Feb. 1, 1936	85,409	Aomori, Iwate, Akita
8	Rikuchu Kaigan	May 2, 1955	12,198	Iwate, Miyagi
9	Bandai-Asahi	Sept. 5, 1950	186,404	Yamagata, Fukushima, Niigata
10	Nikko	Dec. 4, 1934	140,021	Fukushima, Tochigi, Gunma, Niigata
11	Joshin'etsu Kogen	Sept. 7, 1949	189,062	Gunma, Niigata, Nagano
12	Chichibu-Tama	July 10, 1950	121,600	Saitama, Tokyo, Yamanashi, Nagano
13	Ogasawara	Oct. 16, 1972	6,099	Tokyo
14	Fuji-Hakone-Izu	Feb. 1, 1936	121,850	Tokyo, Kanagawa, Yamanashi, Shizuoka
15	Chubu Sangaku	Dec. 4, 1934	174,323	Niigata, Toyama, Nagano, Gifu
16	Hakusan	Nov. 12, 1962	47,700	Toyama, Ishikawa, Fukui, Gifu
17	Minami Alps	June 1, 1964	35,752	Yamanashi, Nagano, Shizuoka
18	Ise-Shima	Nov. 20, 1946	55,549	Mie
19	Yoshino-Kumano	Feb. 1, 1936	59,798	Mie, Nara, Wakayama
20	San'in Kaigan	July 15, 1963	8,784	Kyoto, Hyogo, Tottori
21	Setonaikai	Mar. 16, 1934	62,790	Hyogo, Wakayama, Okayama, Hiroshima, Yamaguchi, Tokushima, Kagawa, Ehime, Fukuoka, Ooita
22	Daisen-Oki	Feb. 1, 1936	31,927	Tottori, Shimane, Okayama
23	Ashizuri-Uwakai	Nov. 10, 1972	11,166	Ehime, Kochi
24	Saikai	Mar. 16, 1955	24,636	Nagasaki
25	Unzen-Amakusa	Mar. 16, 1934	28,287	Nagasaki, Kumamoto, Kagoshima
26	Aso-Kuju	Dec. 4, 1934	72,678	Kumamoto, Ooita
27	Kirishima-Yaku	Mar. 16, 1934	54,833	Miyazaki, Kagoshima
28	Iriomote	May 15, 1972	12,506	Okinawa
		Total:	2,046,635	

Nature Conservation Bureau, The Environment Agency (1999): Nature Conservation in Japan

4-2) History of Establishment of Protected Areas

4-2-2) Development of Nature Park System

a) Introduction of National Parks Law

In 1931, the National Parks Law, which marked the start of Japan's national park system, was established to conserve areas of notable scenic value and to promote their utilisation. Other factors which were conducive to the enactment of the National Parks Law included the promotion of local industries by attracting tourists from home and abroad with the prospect of acquisition of foreign currencies, the fostering of a sense of devotion among the population to the nation itself and to their home provinces.

b) The Early Era of National Parks

In March 1934, Setonaikai, Unzen and Kirishima National Parks were the first national parks to be designated, and by the outbreak of World War II, a total of 12 national parks had been designated. These national parks were classified into two types: those for the conservation of scenic beauty and those oriented for tourism purposes. Akan National Park, Daisetsuzan National Park and Chubu Sangaku National Park belonged to the former type, while Nikko National Park, Fuji Hakone National Park, Setonaikai National Park and Unzen National Park were assigned the latter category.

c) After World War II

After the end of World War II, the designation of new national parks and the expansion of the existing national parks areas were actively promoted for the purpose of promotion of sightseeing recreation and the tourist industry, both considered as contributing to the country's post-war economic reconstruction.

In 1946, Ise-Shima National Park was designated as the country's first post-war national park, and by 1955 seven national parks had been newly designated.

In 1950, a partial revision of the National Parks Law, led to the inauguration of the designation of Quasi-national Parks.

d) Rapid Growth of the Economy and the National Parks Law to the Natural Parks Law

The Natural Parks Law, enacted in 1957, provides for addition of Quasi-National Parks and Prefectural Natural Parks to the national park system of the country.

Following this, the rapid growth of the Japanese economy throughout the 1960's and 1970's resulted in extraordinary increases in the both the average income and to the amount of leisure time available to the people, which in turn contributed to the sharp increase in the number of

visitors to natural parks. In accordance with these developments, the designation of natural parks was further accelerated.

During that period, however, grave concern was voiced over the disturbance to nature caused by excessive development activities, together with increases environmental pollution in urban areas, both of which came to be issues of serious concern to Japanese society.

e) Current Developments

As a measure directed at resolving these burgeoning environmental concerns, the Environment Agency was established in 1971, which took over responsibility for administrative management of natural parks from the Ministry of Health and Welfare. Ever since, the central government has been emphasising the importance of conservation of the natural environment, particularly preservation of the country's natural ecosystems.

At present, the Environment Agency, in its running of the country's natural park system is making every effort to reconcile the two inseparable objectives of protection and utilisation of Natural Parks

自然保護年鑑編集委員会 編（1992）：自然公園とは？、世界と日本の自然は今 自然保護年鑑３、日正社

Japan International Cooperation Agency（1998）:Textbook for the Group Training Course in Nature Conservation and Natural Parks Management, FY99, "Natural Parks"

4-2-2) Development of Nature Park System

List of Quasi-national Parks As of March 31, 1999

Number	Quasi-national park	Data of designation	Area(ha)	Prefecture
1	Shokanbetsu-Teuri-Yagishiri	August 1, 1990	43,559	Hokkaido
2	Abashiri	July 1, 1958	37,261	〃
3	Niseko-Shakotan-Otaru Kaigan	July 24, 1963	19,009	〃
4	Hidaka Sanmyaku-Erimo	October 1, 1981	103,447	〃
5	Onuma	July 1, 1958	9,083	〃
6	Shimokita Hanto	July 22, 1968	18,728	Aomori
7	Tsugaru	March 31, 1975	25,966	〃
8	Hayachine	June 10, 1982	5,463	Iwate
9	Kurikoma	July 22, 1968	77,122	Iwate, Miyagi, Akita, Yamagata
10	Minami-Sanriku Kinkazan	March 30, 1979	13,902	Miyagi
11	Zao	August 8, 1963	39,635	Miyagi, Yamagata
12	Oga	May 15, 1973	8,156	Akita
13	Chokai	July 24, 1963	28,373	Akita, Yamagata
14	Echigo Sanzan-Tadami	May 15, 1973	86,129	Fukushima, Niigata
15	Suigo-Tsukuba	March 3, 1959	34,309	Ibaraki, Chiba
16	Myogi-Arafune-Saku Kogen	April 10, 1969	13,123	Gunma, Nagano
17	Minami Boso	August 1, 1958	5,685	Chiba
18	Meiji Memorial Forest Takao	December 11, 1967	770	Tokyo
19	Tanzawa-Oyama	March 25, 1965	27,572	Kanagawa
20	Sado-Yahiko-Yoneyama	July 27, 1950	29,464	Niigata
21	Noto Hanto	May 1, 1968	9,672	Toyama, Ishikawa
22	Echizen-Kaga Kaigan	May 1, 1968	9,246	Ishikawa, Fukui
23	Wakasa Wan	June 1, 1955	21,091	Fukui, Kyoto
24	Yatsugatake-Chushin Kogen	June 1, 1964	39,857	Yamanashi, Nagano
25	Tenryu-Okumikawa	October 1, 1969	25,723	Nagano, Shizuoka, Aichi
26	Ibi-Sekigahara-Yoro	December 28, 1970	20,219	Gifu
27	Hida-Kiso Gawa	March 3, 1964	18,075	Gifu, Aichi
28	Aichi Kogen	December 28, 1970	21,705	Aichi
29	Mikawa Wan	April 10, 1958	9,464	Aichi
30	Suzuka	July 22, 1968	29,821	Mie, Shiga
31	Muroo-Akame-Aoyama	December 28, 1970	26,308	Mie, Nara
32	Biwako	July 24, 1950	97,601	Shiga, Kyoto
33	Meiji Memorial Forest Minoo	December 11, 1967	963	Osaka
34	Kongo-Ikoma-Kisen	April 10, 1958	23,119	Osaka, Nara, Wakayama
35	Hyonosen-Ushiroyama-Nagisan	April 10, 1969	48,803	Hyogo, Tottori, Okayama
36	Yamato-Aogaki	December 28, 1970	5,742	Nara, Nara
37	Koya-Ryujin	March 23, 1967	19,198	Nara, Wakayama
38	Hiba-Dogo-Taishaku	July 24, 1963	7,808	Tottori, Shimane, Hiroshima
39	Nishi-Chugoku Sanchi	January 10, 1969	28,553	Shimane, Hiroshima, Yamaguchi
40	Kita-Nagato Kaigan	November 1, 1955	12,384	Yamaguchi
41	Akiyoshidai	November 1, 1955	4,502	〃
42	Tsurugisan	March 3, 1964	20,961	Tokushima, Kouchi
43	Muroto-Anan Kaigan	June 1, 1964	6,225	〃
44	Ishizuchi	November 1, 1955	10,683	Ehime, Kochi
45	Kita-Kyushu	October 16, 1972	8,107	Fukuoka
46	Genkai	June 1, 1956	10,158	Fukuoka, Saga, Nagasaki
47	Yaba-Hita-Hikosan	July 29, 1950	85,023	Fukuoka, Kumamoto, Oita
48	Iki-Tsushima	July 22, 1968	11,950	Nagasaki
49	Kyushu-Chuo Sanchi	May 15, 1982	27,096	Kumamoto, Miyazaki
50	Nippo Kaigan	February 15, 1974	8,518	Oita, Miyazaki
51	Sobo-Katamuki	March 25, 1965	22,000	〃
52	Nichinan Kaigan	June 1, 1955	4,542	Miyazaki, Kagoshima
53	Amami Gunto	February 15, 1974	7,861	Kagoshima
54	Okinawa Kaigan	May 15, 1972	10,320	Okinawa
55	Okinawa Senseki	May 15, 1972	3,127	〃
		Total:	1,343,181	

Nature Conservation Bureau, The Environment Agency (1999): Nature Conservation in Japan

(4) Protected Areas in Japan

4-3) Natural Parks

4-3-1) Designation of Natural Parks : National, Quasi-national and Prefectural Natural Parks

a) Category

Legal basis of National Parks is the Natural Parks Law. The Law aims to conserve scenic areas and their ecosystems, to promote their utilisation, and to contribute to the health, recreation and environmental education of the people. In compliance with this law, natural parks are categorised following 3 parks.

1) National Parks

The place of greatest and national-level natural scenic beauty and ecosystems, worthy of the names of the national scenic and out-standing ecosystem's sites in Japan.

2) Quasi-national Parks

The place of great natural scenic beauty at the district-level and next to the National Parks.

3) Prefectural Natural Parks

The places of prefectural-level importance and designated by the prefectural governors concerned.

b) Designation

1) National Park

Designated by the Director General of the Environment Agency after conferring with related governmental agencies and consulting with the Nature Conservation Council. 28 parks, 2.05million hectares (ca. 5.4% of the area of the country).

2) Quasi-national Park

Designated by the Director General of the Environment Agency by proposal of the Governor of the Prefecture concerned after conferring with related governmental agencies and consulting with the Nature Conservation Council. 55 parks, 1.34 million hectares (ca. 3.6% of the area of the country).

3) Prefectural Natural Parks

Designated by the prefectural governments in accordance with the prefectural ordinance. 306 parks, 1.95 million hectares (ca. 5.2% of the total area of the country).

c) Guideline on Selection of Natural Parks

1) Landscape

① National Parks

Typical scenic beauty in Japan. Scenic beauty judged superb by international standards.

② Quasi-national Parks

Level of scenic beauty comparable to that for National Parks.

③ Prefectural Natural Parks

Typical scenic beauty in each prefecture

2) Criteria of Landscape

① National Parks

ⅰ. Scale of Landscape

Magnificent scenic beauty covering an enormous area (in principle, 30,000ha or more: 10,000ha or more in the case of parks consisting mainly of coasts).

ⅱ. Natural Grade

In principle, must have a wilderness with an area of 2,000ha or more as the central scenic beauty and also meet the following conditions:

- No possibility of an ecosystem or a few ecosystem being changed by development activities or occupancy by humans;
- Scientific, educational or recreational importance of the species of animals and plants.
- Great natural scenic beauty;

In principle, the total length of the coastline must be 20km or more in the case of parks consisting mainly of coasts.

ⅲ. Degree of Variety

Must consist of two or more scenic elements and also have scenery full of variety.

② Quasi-national Parks

ⅰ. Scale of Landscape

Scenic beauty covering a relatively large area (in principle, 10,000ha or more: 3,000ha or more in the case of parks consisting mainly of coasts).

ⅱ. Natural Grade

In principle, must have a wilderness with an area of 1,000ha or more as the central scenic beauty and also meet the following condition:

- Its ecosystem is kept intact.

In principle, the total length of the coastline must be 20km or more in the case of parks consisting mainly of coasts.

ⅲ. Degree of Variety

None

3) Land Ownership

4) Industries

5) Utilisation

6) Location

① National Parks

Geographical distribution is not taken into consideration.

② Quasi-national Parks

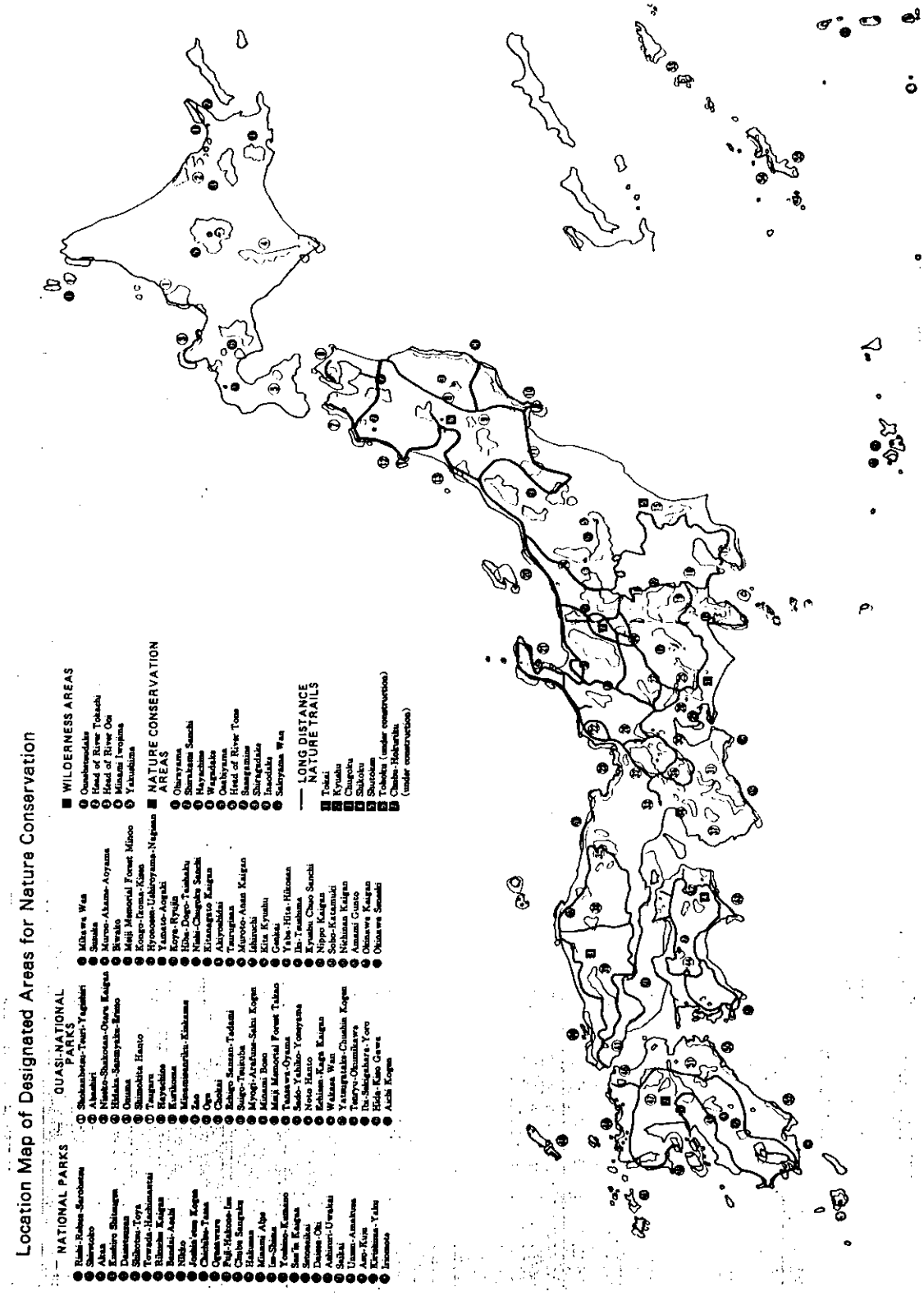
Proper national distribution is necessary from the standpoint of easy utilisation.

Japan International Cooperation Agency (JICA) (1999): Textbook for the Group Training Course in Nature Conservation and Natural Parks Management, FY99, Natural Parks

Nature Conservation Bureau, The Environment Agency (1999): Nature Conservation in Japan

(4) Protected Areas in Japan 4-3) Natural Parks

4-3)-1) Designation of Natural Parks : National, Quasi-national and Prefectural Natural Parks



Nature Conservation Bureau, The Environment Agency (1999): Nature Conservation in Japan

(4) Protected Areas in Japan

4-3) Natural Parks

4-3-2) Park Plan

Regulation for protection and facilities for utilisation of National Parks are planned by the Environment Agency and revised about every five years. For Quasi-national Parks, planning is elaborated by the prefectures concerned under the guidance of the Environment Agency to follow the standards of National Parks.

Park Plan refers to regulations for protection or use of parks, or plans of park facilities, forming the basis of protection, maintenance, and management of national parks as well as the basis of facilities maintenance. Those are classified into protection plans and utilisation plans.

Protection plans are aimed at restricting such activities harmful to the scenic beauty or ecosystems of natural parks, while utilisation plans are intended for effective and appropriate use of natural parks for outdoor recreational activities.

a) Protection Plan

1) For Conservation

Japan is one of the more densely populated countries. Most of its land area, with the exceptions of upper mountain areas, areas of religious importance and lands unsuitable for cultivation, are now utilised by the people for a wide variety of economic activities. Furthermore, almost all private land owners occupy only small plots of land. If any national parks were designated, many economic activities had already been undertaken within national park areas.

Therefore designated areas as national parks cover not only state-owned lands (most of which are national forests) and local government-owned lands, but also many private-owned lands. At present, 24% of the whole national park areas, particularly located in western part of Japan and coastal areas, are private-owned lands.

Several activities such as agriculture, forestry and tourism & recreational industries can also be undertaken within the park areas. Management measures to regulate inappropriate development activities are always taken into consideration through the zoning system by the Environment Agency.

All park areas are classified into four zones such as the special protection zone, the marine park zone, special zone and the ordinary zone according to natural grades of ecosystems and scenic beauty, degree of human impact to the natural environment, and also of importance for visitor use.

The following map illustrates an example of national park conservation and utilisation plan of

Rishiri Island, Rishiri-Rebun-Sarobetsu National Park close to northernmost Main Island, Hokkaido.

2) Regulatory Plan for Protection

The regulatory plan for protection is designed to classify natural parks into several zones on the basis of scenic beauty and ecosystem (zoning system).

① Special Zones

a. Criteria of Selection

The special zone is defined as a zone which has places with great scenic beauty (excluding the sea surface beyond the beach-line at the neap tide). Special zones are selected from among the following areas:

i. Zone where it is necessary to preserve the excellent natural environment;

ii. Zone where it is necessary to preserve the proper environmental quality, particularly important as the land for utilisation;

iii. Zone where shrines, temples, historic sites, holy grounds and places famous, in legend or villages which have buildings of peculiarly localised architectural style mix exquisitely with the surrounding natural scenery;

iv. Zone where it is necessary to restore natural scenic beauty and it is considered possible to do so;

v. Other zones where it is necessary to preserve natural scenic beauty.

b. Classification of Special Zones

Special zones are classified into special protection zone and other special zones (which are further divided into Class I, Class II, Class III). Special zones must be classified on the basis of their respective characteristics in terms of scenic beauty. It is also necessary to ensure that appropriate measures to protect and manage individual special zones without impairing any other benefit and protection of the law.

i. Special Protection Zones

The special protection zone is defined as a zone where it is essential to preserve scenic beauty and ecosystem. Special protection zones are selected from among the following zones.

- Zones where specific landscape and ecosystem retain these primeval state;
- Zones which are likely to be affected by human work, such as alpine zones, alpestrine zones, ‘fushochi’ and swamps;
- Zones which are important as places for wild growth of plants and habitats of wild animals;
- Zones which has unique topographical or geological features or where unique natural phenomena occur;
- Zones with planted trees which are very advanced in years and therefore are valued highly by scientists and researchers.

ii. Classification of Special Zones by Types of Land

Special zones except special protection zone have a wide variety of elements and therefore the necessity of preservation of natural beauty differs form one zone to another. For this reason, these zones are divided into Class Ⅰ, Class Ⅱ, Class Ⅲ.

② Ordinary Zone

The ordinary zone is defined as a zone except special and marine park zones in natural park areas. The following zones falls under this category.

a. Villages, tracts of farmland or forests which are integrated with special zones in terms of topography, appearance and other scenic elements and which require protection of natural scenery although not so urgently as special zones.

b. Surrounding zones which are necessary in protection or utilising special zones.

3) Facility Plan for Protection and Conservation

The facility plan for protection and conservation is designed to determine policies on the layout and maintenance of individual facilities necessary in ensuring safety in the protection and utilisation of landscape and ecosystem.

b) Utilisation Plan

1) For Visitor Use

The Utilisation Plan is to facilitate appropriate access to and within parks and accommodation for park visitors. The plan includes how to arrange the exclusive town site so as to concentrate park accommodations in limited areas, and also how to arrange facilities required for traffic system, lodging and camping, nature observation, and other various outdoor activities.

2) Facility Plan for Utilisation

The facility plan for utilisation is designed to determine policies on the systematic layout and maintenance of the town site and the facilities as set forth in Article 4(1)-(9) of the regulations relative to the enforcement of the Natural Parks Law, which are considered effective in attracting visitors, for the purpose of actively promoting the utilisation of those facilities of natural parks which are best suited for visitors.

Important points to note in working out a facility plan for utilisation are as listed below:

- The facility plan for utilisation should not designed to cover all the existing facilities or all prospective facilities. It should be designed to determine policies on the layout and maintenance of only those facilities which are indispensable in promoting the proper utilisation of the natural park;
- The facility plan for utilisation should be designed to decide on facilities necessary in promoting the proper utilisation of the natural park and the most appropriate sites for them on the basis of the prospects for their realisation.

① Town Site

a. Criteria of Selection

The Town Site is defined as a place for facilities selected with utmost emphasis on the systematic utilisation and maintenance in the natural park. Town sites are selected in the following places. Minute care should be taken to ensure that town sites are not concentrated in a certain part within the natural park.

- Site where it is possible to construct facilities without causing a large-scale change in the surrounding landscape and ecosystem;
- Site where environmental conditions are good for human health;.
- Sites which are well protected against disasters;
- Site whose ownership is suited for the formulation and implementation of the park plan.

b. Location

In principle, town sites should be located within Class Ⅱ special zone. A location where town sites are to be prepared should be selected taking into account such natural conditions as the lay of the land and the prevalent plants and also the type and scale of each facility within the natural park.

c. Policies on the Provision of Facilities

Policies on the Provision of the facilities should be worked out for each of the following groups of facility sections. However, policies on the basic facilities such as the roads and water supply/sewerage that cover a whole site should be worked out for each of such facilities.

② Independent Facilities

The independent facilities within a national park are divided into independent facilities (except the roads and transportation facilities), the roads and the transportation facilities.

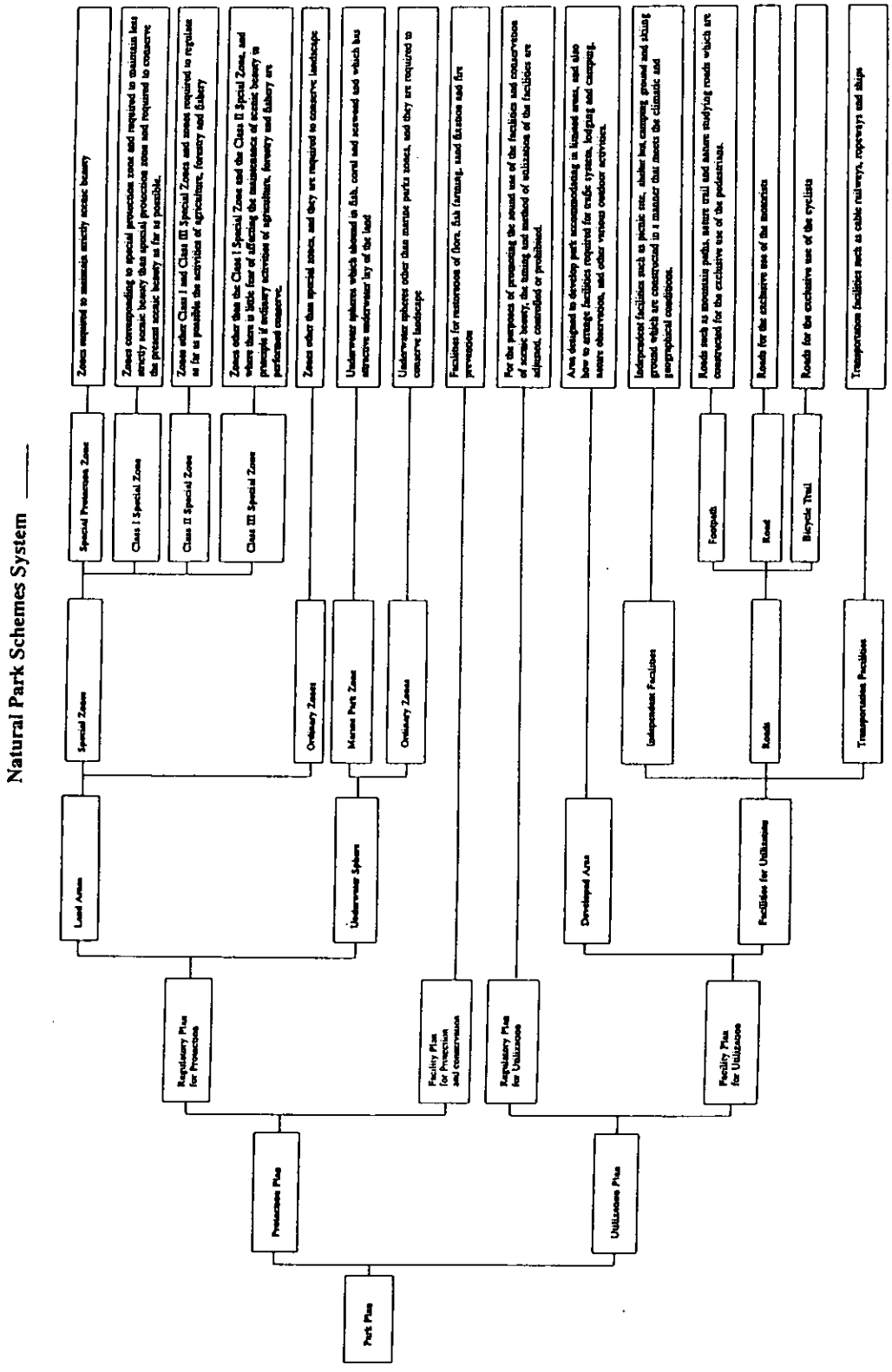
a) Roadways, b) Bicycle Trail, c) Footpaths, d) Lodging, e) Transportation Facilities (the ropeway and the cable railway)

3) Regulatory Plan for Utilisation

The regulatory plan for utilisation is worked out when it is necessary to promote their proper use and preservation on the natural scenery. In the regulatory plan for utilisation, facilities with which special adjustment, regulation or prohibition of the term and method or utilisation is required, are decided.

Japan International Cooperation Agency (JICA) (1999): Textbook for the Group Training Course in Nature Conservation and Natural Parks Management, FY99, Basic Policies

(4) Protected Areas in Japan 4-3) Natural Parks 4-3-2) Park Plan



Japan International Cooperation Agency (JICA) (1999) : Textbook for the Group Training Course in Nature Conservation and Natural Parks Management,, FY99, "Natural Parks"

(4) Protected Areas in Japan

4-3) Natural Parks

4-3-3) Management Plan, Administrative System, Control of Various Human Activities

a) Management Plan

The management plan of a national park is prepared at National Park and Wildlife Office in order to promote its appropriate protection and recreational use which meet the specific needs and conditions of each national park area.

In Japan, under the zoning system, the national park is usually managed jointly by the State, prefecture and the like. The management plan is prepared for each district of the park to give joint administration a sense of rationality and consistency.

The management plan comes into force only after consulting all prefectural governments and main municipalities in jurisdiction, private corporations in sight-seeing business, NGOs, and experts in the field of natural environmental conservation, and finally after obtaining an approval with the Director-General of Nature Conservation Bureau.

Contents of management plan are as follows:

- Matters concerning with the management of landscape and ecosystem;
- Matters concerning with regional development and arrangement;
- Matters concerning with education and guidance of its users and the like;
- Matters concerning with improving regional beauty and views;
- Others.

b) Administrative System

Management of national parks system in Japan is carried out by the Environment Agency in close cooperation with prefectural governments, municipality authorities concerned as well as land owners and private sectors. There are 56 Ranger Stations under 11 National Park and Wildlife Offices.

Management of quasi-national parks and prefectural natural parks is implemented by the prefectural governor concerned.

Law enforcement on national parks, in accordance with the Natural Parks Law, is undertaken by the national park rangers and other staff members and the local government officials in collaboration with land owners and private sectors.

c) Control of Various Human Activities

To conserve outstanding ecosystems and scenic beauty, many activities liable to deteriorate natural environment, are prohibited without prior permissions and licenses from the

Director-General of the Environment Agency or the Governor of the prefectural government concerned. With reference to the ordinary area, large-scale activities have to be notified in advance to the management authorities.

Permissions are issued in accordance with the Guideline to Assess on Various Development Activities in National Parks Areas elaborated by the Environment Agency.

d) Vehicle Access Control

Snowmobiles and off-road vehicles have gained popularity in recent years in Japan, and the negative impacts of these activities to the natural vegetation and wildlife have become issues of concern. As a countermeasure, the Director-General of the Environment Agency designated part of special protection areas of national and quasi-national parks to apply restriction on such activities. As of October 1996, 25 areas (total of 191,737 ha) in national parks and 9 areas (total of 42,490 ha) were designated for access control.

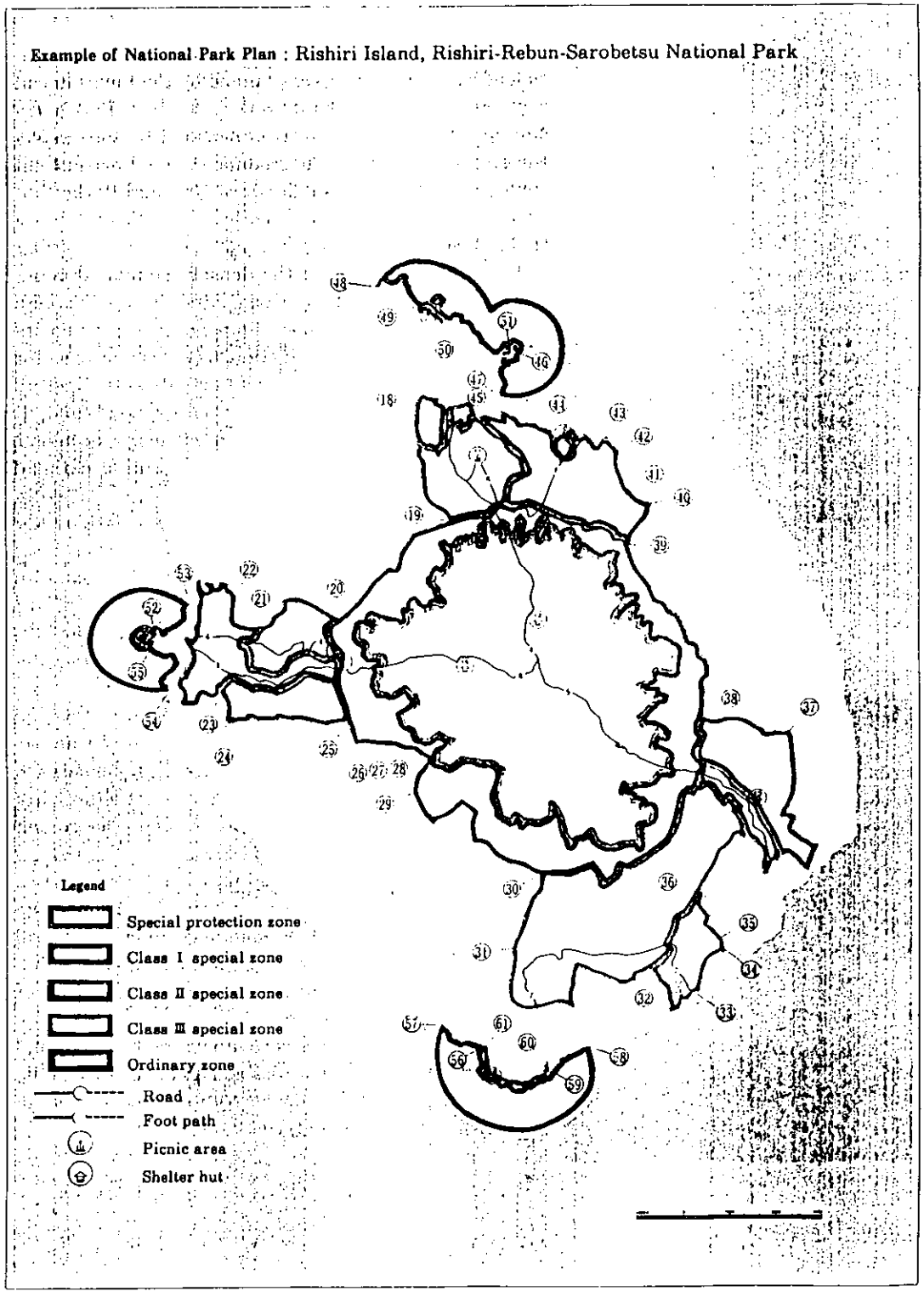
自然保護年鑑編集委員会 編（1996）：総説、自然と共に生きる時代を目指して 自然保護年鑑４、日正社

Japan International Cooperation Agency (JICA) (1999): Textbook for the Group Training Course in Nature Conservation and Natural Parks Management, FY99, Natural Parks

Nature Conservation Bureau, The Environment Agency (1999): Nature Conservation in Japan

(4) Protected Areas in Japan 4-3) Natural Parks

4-3-3) Management Plan, Administrative System, Control of Various Human Activities



Nature Conservation Bureau, The Environment Agency (1999): Nature Conservation in Japan

(4) Protected Areas in Japan

4-3) Natural Parks

4-3-4) Number of Visitors, Budget, Tax, Purchase of Privately-Owned Lands, Contribution to Local Economy

a) Number of Visitors

Natural Park visitation increased dramatically during the period of Japan's rapid economic growth (1960-70s). In recent years, the number exceeds one billion visitors annually. Such huge numbers of visitors is distinguishing feature of natural parks in Japan. While demonstrating the popularity of the natural park system, the resulting widely spread trash, crowding on the trails, and inadequate facilities, as well as the lack of proper information system are causing severe problems for the park management. Exactly who should bear the cost burden of any remedial measures is still unresolved.

b) Budget

The total budget of the Nature Conservation Bureau of the Environment Agency for FY1995, 1996, and 1997 were ¥13,084,580,000, ¥15,061,386,000 and ¥16,577,872,000, respectively.

(National Park Association in Japan: 1998)

c) Reduction of Tax Pertaining to Nature Conservation

1) Exceptional Deduction form Capital Gains

When a piece of land in a special zone of a National or Quasi-national Park or in a special zone of Nature Conservation area is purchased by the State or a local public body, the lower between ¥20 million and the sum of capital gains exceptionally deducted, with respect to income tax and corporation tax, for long-term capital gains. For short-term capital gains, ¥20 million is exceptionally deducted.

When a Protection area of National Endangered Species, a habitat of precious natural wildlife, specific birds, or protected birds under the Treaty on Migratory Birds in a special protection zone of a wildlife protection area is purchased by the Government of Japan or a local public body, ¥15 million is exceptionally deducted from capital gains.

Since 1979, the exceptional deduction from capital gains (i.e.¥15million) has been applied also to those pieces of land in special zones of prefectural natural parks or special zones of prefectural nature conservation areas that are recognised by the Director General of the Environment Agency as highly restricted areas.

2) Exclusion from Property Taxation

In 1974, the Local Taxes Act was amended. Exclusion from property taxation was

introduced, as a result, to special protection zones of National and Quasi-national Parks as well as to first class special zones (i.e., areas classified as forests, wildernesses, ponds or marshes), with a view to the promotion of nature conservation and coordination between nature conservation and private rights. Regarding second class special zones, at the same time, it was considered to rational that property tax be mitigated for those areas that were considered to be regulated in the same manner as special protection zones and first class special zones, and a notification was issued to that effect form the Ministry of Home Affairs.

Then in 1975, the notification was revised to the effect that it was rational that property tax be mitigated for those areas in special zones of prefectural Natural Parks that were considered to be regulated in the same manner as special protection zones of National or Quasi-National Parks and first class special zones, in view of balance among these areas.

Further in 1977, the Ministry of Home Affairs notified that it was rational that property tax be mitigated for those areas in special zones of nature conservation areas (i.e., area classified as ponds or marshes, forests, or wildernesses) that were regulated in the same manner as nature conservation areas.

3) Special Measure Pertaining to Nature Conservation Corporations

Preferential measures were introduced to the tax system in April 1985, regarding income tax, corporation tax, real estate acquisition tax, and property tax, with a view to further promoting national trust activities.

These measures are applied to contributions from corporations that are performing operations for conservation and utilisation of excellent natural environment (nature conservation corporations) and whose sound management is ensured. In April 1986, a non-taxation system was introduced to gift tax for these corporations' inherited property when such property is donated.

4) Other Measures

Since 1985, tax benefits have been given to the corporation (natural environmental Conservation Corporation) which is engaged in the business to conserve natural environment and to use environment efficiently and wisely, and at the same time operates under optimal management. The purpose of such benefits is to promote National Trust activities.

In 1986, the tax exemptive measures were also taken for the bestowal of inherited properties.

d) Purchase of Private-Owned Lands

Japanese natural park system regulates the activities which entail adverse effects on the natural environment and resources. The land owners, who could not acquire permissions or licenses, may receive compensation from the government. One of ways of compensation as well as strengthening management in outstanding ecosystems is to purchase the privately-owned

lands within national parks areas.

The policy to purchase important areas such as the special protection zone and the Class Ⅰ special zone was started in 1972 for national parks and in 1976 for the quasi-national parks. From 1991, this concept was expanded to the Class Ⅱ, Class Ⅲ special zones.

Such purchase was executed by means of public bonds issued by prefectural governments. The expenses of the principal to redeem were subsidised by the national government. 6,507 ha. were purchased by the prefectural governments and total amount of bonds issued reached to ¥12.34 million yen until the end of March 1995.

e) Contribution to the local Economy

There is no doubt that natural parks contribute to the economy of local communities (such as in the form of revenue from tourism), however studies on the socio-economic aspects of parks is currently lacking in Japan. This can possibly be attributed to the fact that no entrance fees are charged by Japanese natural parks.

自然保護年鑑編集委員会 編（1996）：総説、自然と共に生きる時代を目指して 自然保護年鑑４、日正社

（財）国立公園協会 編（1998：1998 自然公園の手びき、国立公園協会

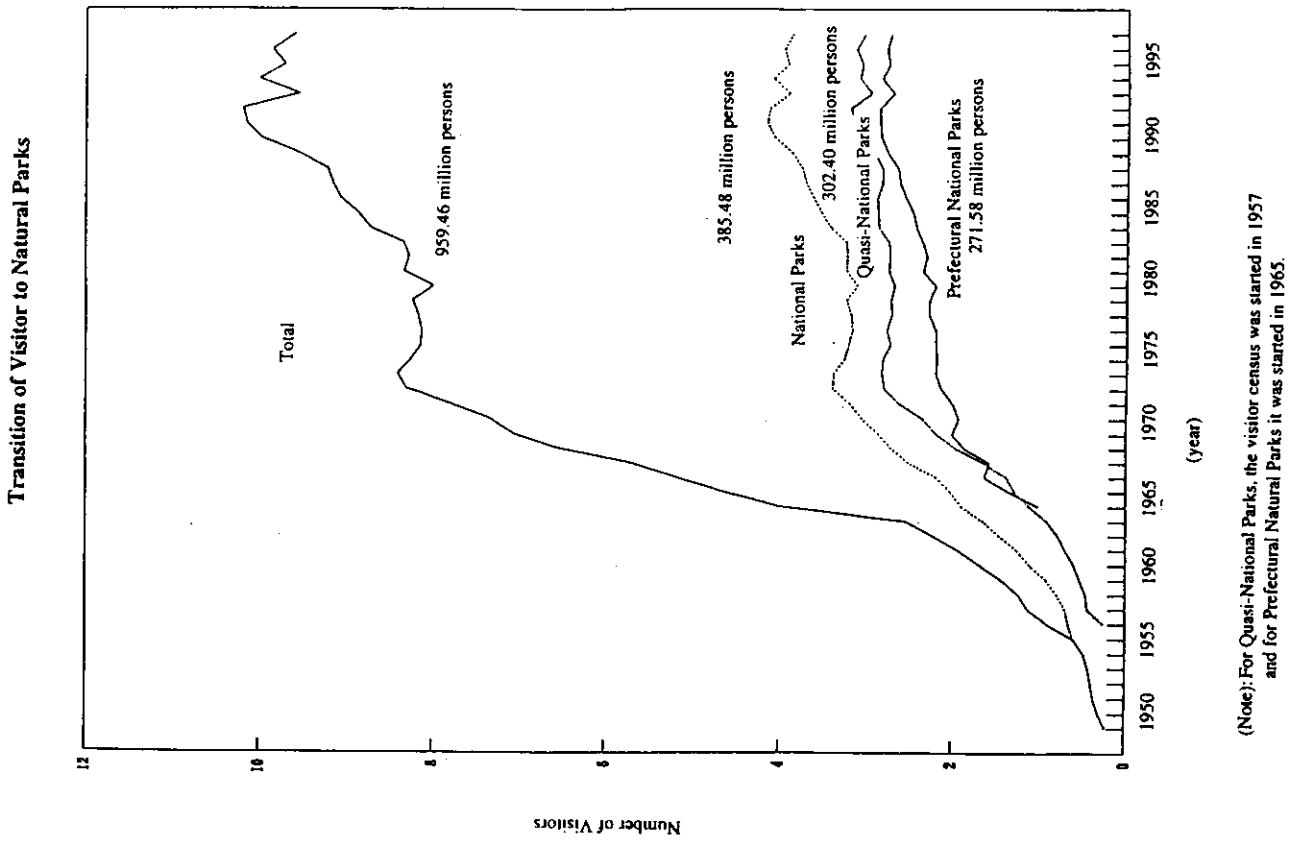
（財）政策科学研究所（1978）：環境庁委託業務報告書 自然公園計画策定段階における社会・経済的影響予測手法に関する調査報告書

Japan International Cooperation Agency (JICA) (1999): Textbook for the Group Training Course in Nature Conservation and Natural Parks Management, FY99, Basic Policies

Nature Conservation Bureau, The Environment Agency (1999): Nature Conservation in Japan

(4) Protected Areas in Japan 4-3) Natural Parks

4-3-4) Number of Visitors, Budget, Tax, Purchase of Privately-Owned Lands, Contribution to Local Economy



Classified Zones in Natural Parks

(as of March 31, 1999)

Item	Number of parks	Park area (ha)	Ratio to the National land area* (%)	Breakdown					
				Special zone				Ordinary zone	
				Special protection zone		Area (ha)		Area (ha)	
				Area (ha)	Ratio (%)		Ratio (%)		Ratio (%)
National park	28	2,046,635	5.41	265,509	13.0	1,456,628	71.2	590,007	28.8
Quasi-national park	55	1,343,181	3.55	66,490	5.0	1,249,997	93.1	93,184	6.9
Prefectural natural park	306	1,951,761	5.16	-	-	693,100	35.5	1,258,661	64.5
Total	389	5,341,577	14.13	331,999	6.2	3,399,725	63.6	1,941,852	36.4

Note: National land area 37,785,464 hectare as of October 1998 by the National Land Institute.

Japan International Cooperation Agency (JICA) (1999) : Textbook for the Group Training Course in Nature Conservation and Natural Parks Management,, FY99, "Natural Parks"

(4) Protected Areas in Japan

4-3) Natural Parks

4-3-5) National Park Rangers and Nature Conservation Bureau

a) Outlines of Ranger System

1) History

In USA, national civil servants referred to as Park Rangers are employed to manage National Parks and guide the visitors. In Japan, although such a ranger system was under consideration before the war, the system began in earnest in 1953 with employment of 12 park technical officials. Subsequently in 1958, the number of the officials was fixed at 40.

As of 1992, there were a total of 128 such rangers, or National Park Managers as they are known. The rise in the workload and scope of duties has led to the recent increases in their numbers, both by direct recruitment and through transfers from the Forestry Agency, and other agencies. Meanwhile, 28 National Parks in Japan have been divided into 11 blocks, each block administered by a National Park and Wildlife Offices or National Park Manager Station.

2) Duties

No National Park is the same as any other, and likewise no park's management requirements are the same. The realities of the field demand special care and skills, especially with regards to maintenance of scenic assets, and park ranger duties in Japan are as follows:

- To carry out field surveys required to substantiate or recommend review existing plans of the park; produce draft plans; and to coordinate the views of local stakeholders;
- To direct and regulate the developers to avoid harming the scenic beauty of the parks; to report examination of approval and permission for a wide range of development activities to the central office; and to promote programmes for beautification and management of vegetation;
- To manage the visitor facilities properly and to provide direction to the visitors as to their proper (and improper) use
- To monitor the status of land use and management requirement of the facilities and to undertake the necessary improvements.

b) Park Volunteers and Sub-rangers

Apart from the park rangers, who are officials of the Environment Agency, private citizens are also employed on a voluntary basis to work nature conservation and visitor services; and play an important role in the management of the parks.

1) Park volunteers

The park volunteers work in National Parks, patrolling areas to collect garbage, introducing

the visitors to the natural history of the park to through field interpretations and slide shows; and providing general instructions how to best utilise the park. There are about 1,700 volunteers working in 33 areas of 21 National Parks as of December 1995.

2) Sub-rangers

The sub-rangers comprise mostly students, who work under supervision of the park rangers on a casual basis and allocated to areas with high visitation during the summer vacation. The sub-rangers, many of whom have good knowledge and experience in nature conservation, receive many inquiries from students during the course of their duties.

c) Nature Conservation Bureau

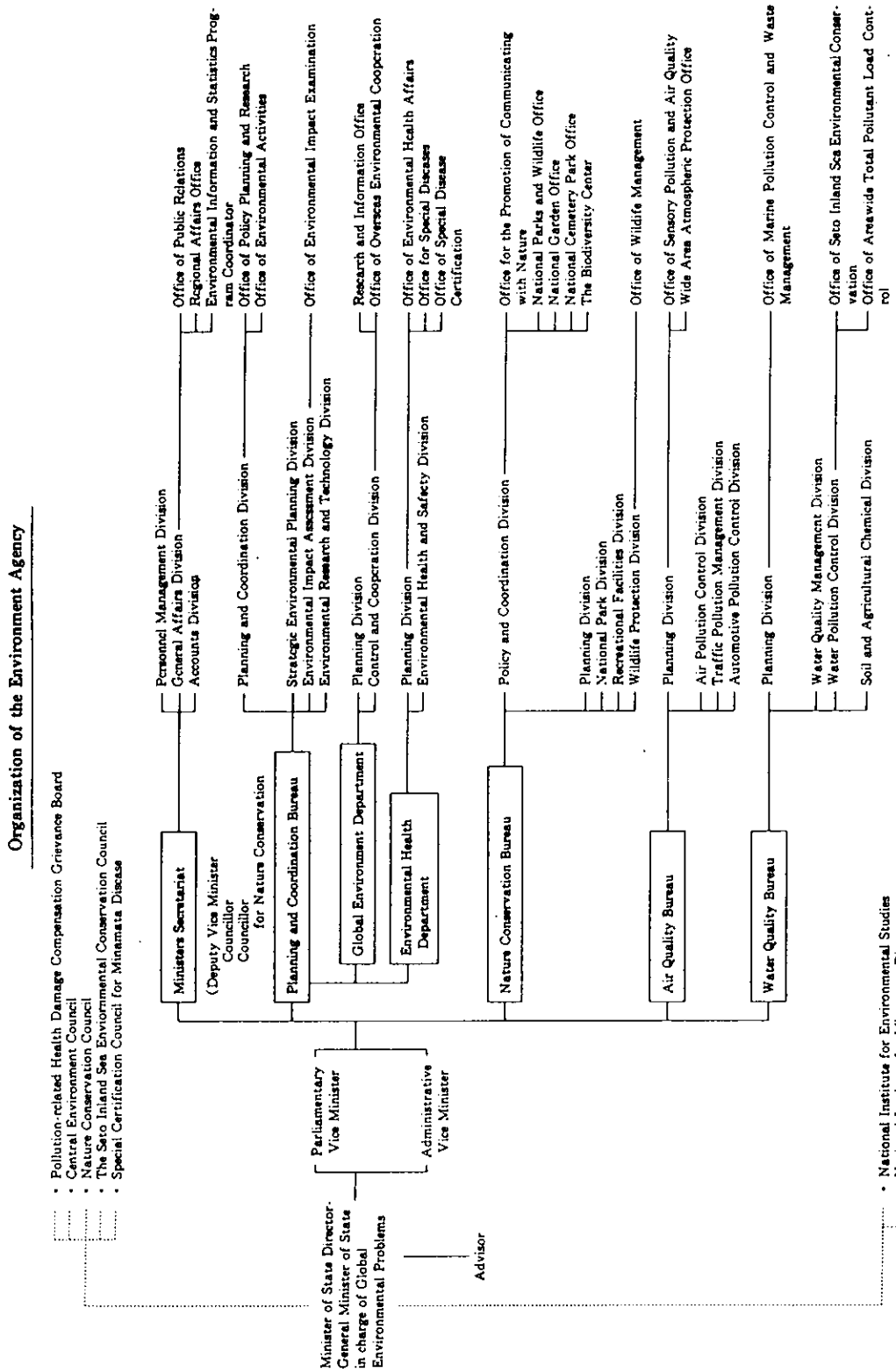
The administrative agencies concerned with nature conservation are the Environment Agency as well as the National Land Agency, the Ministry of Education, Science and Culture, the Ministry of Agriculture, Forestry and Fisheries, the Ministry of Construction.

The Environment Agency incorporates the Nature Conservation Bureau, the main duties of which are general coordination for conservation and management of the natural environment. The Bureau consists of five divisions (Policy and Coordination, Planning, National Park, Park Facilities and Wildlife Protection) and three offices (Wildlife Management, Promotion of Communing with Nature and the Biodiversity Center). In addition, it maintains a number of branch offices are located in regional areas, namely the National Park and Wildlife Offices, the National Garden Office and the National Cemetery Park Office.

自然保護年鑑編集委員会 編（1992）：総説、世界と日本の自然は今 自然保護年鑑３、日正社

環境庁（1992）：自然と人とのよりよい関係を求めて 環境庁自然保護局 －その役割と仕事－

4-3-5) National Park Rangers and Nature Conservation Bureau



Nature Conservation Bureau, The Environment Agency (1999): Nature Conservation in Japan

(4) Protected Areas in Japan

4-3) Natural Parks

4-3-6) Programmes for Provision of Places for Communing with Nature and their Beautification

a) Provision of Public Facilities

To satisfy the public desire for communion with nature, the Environment Agency is providing public facilities fitting to the natural features of the natural parks and other natural areas in the people's vicinity. In National and Quasi-national Parks, basic visitor facilities, such as visitor centres, public toilets and camping sites have been provided for both conservation of the diversified natural environment, so that the visitors can experience the park in safety and comfort. There are also general programmes for conservation and restoration of the natural environment and for provision of visitor facilities within the core areas of some typical parks as well as a programme to provide core facilities for communing with nature and nature studies. Outside the natural parks, areas for recreational use have been relax have been provided to enhance opportunities for communing nature in people's vicinities well as its conservation and utilisation.

b) The Green Diamond Plan

The report Special Improvement Project to Promote Coexistence with Nature released by the Nature Conservation Council in June 1995 identified the need to develop measures for the formation of a network of places to commune with locally-diversified nature. The report also states the need to further enrich measures to make distinctive yet user-friendly parks providing opportunities to commune with nature.

The Green Diamond Plan, launched in 1995, is a to enrich conservation of the natural environment in core areas of representative National/Quasi-national Parks and to enhance utilisation of the parks through encouragement of nature experience and learning. This plan consists of the following four programmes:

- Conservation and restoration of the natural environment: vegetation, animal populations, scenery, etc.;
- Provision of field locations for nature experience: high-grade nature of suitably sufficient area.
- Provision of visitor facilities at bases for the utilisation: orientation, guidance, conservation activities, etc.;
- Provision of visitor facilities at bases for directing utilisation: access control, guidance, information services, etc.

c) Eco-museum

This programme is to provide the core facilities for the park visitors, particularly children, to commune with and learn about natural things, such as wildlife and vegetation, in the main utilisation areas of National/Quasi-national Parks. The Eco-museum is composed of an ’Eco-museum centres’ and an ‘Eco-field’. The Eco-museum centre provides a number services to the visitors, in the form of general information on nature through interpretation; nature experience and studies; guidance for the proper use; and support for volunteer activities. The Eco-field on the other hand provides opportunities for field experience and observations along nature trails between the Eco-museum centre and the nature observation facilities.

d) Beautification Programme

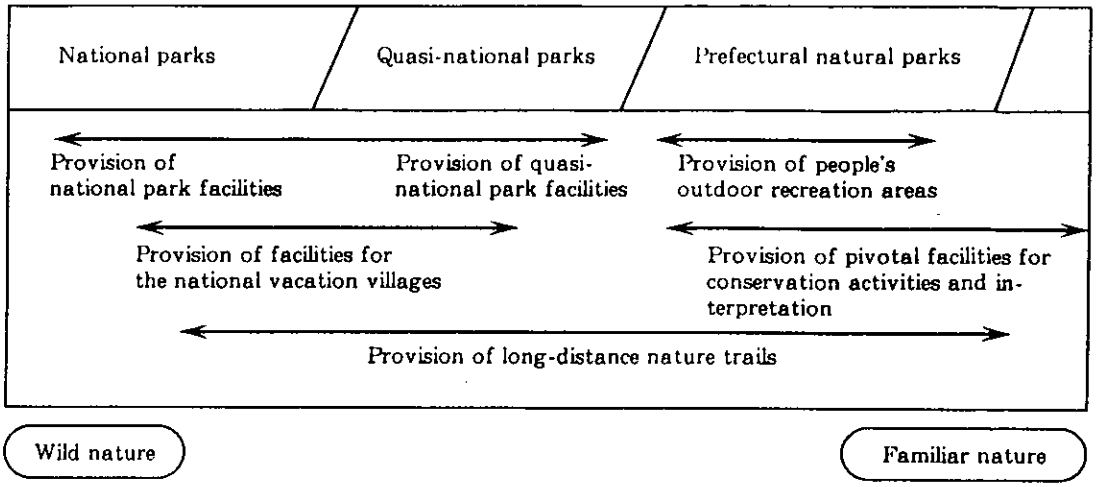
Garbage produced by the park visitors not only lowers the aesthetic beauty of nature, but also may result in pollution effects, which can manifest itself in such form as offensive odours. To enhance beautification and cleanup of major areas, particularly the more popular National Parks, this programme assists increation and strengthening of ‘beautification groups’ to work in the field and provides subsidies for their activities. This programme has designated the first Sunday of August as Natural Parks Clean Day, when activities for beautification and cleanup are conducted concurrently at national level in cooperation with the local governments concerned.

環境庁自然保護局（1997）：**6. 自然とのふれあいの推進、人と自然の共生をめざして 環境庁 自然保護局 －その役割と仕事－**

(4) Protected Areas in Japan 4-3) Natural Parks

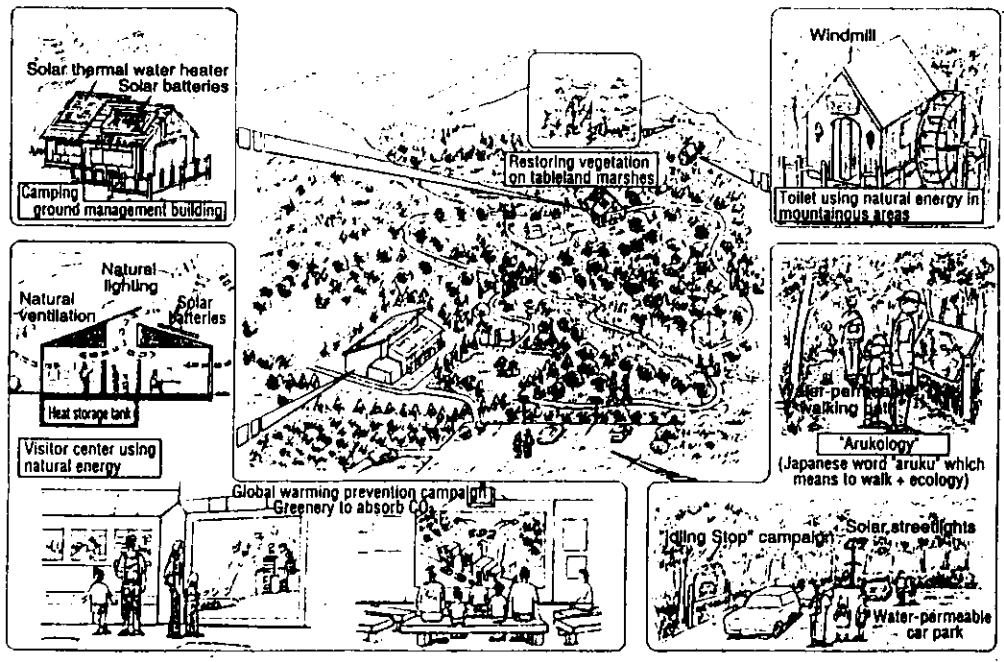
4-3-6) Programmes for Nature Commune Places and Beautification

System for Provision of Natural Parks



Special Improvement Project to Promote Coexistence with Nature

("Coexistence Plan 21")(Global Warming Prevention Campaign Focus Areas)



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Nature Conservation Bureau, The Environment Agency (1999): Nature Conservation in Japan

(4) Protected Areas in Japan

4-3) Natural Parks

4-3-7) Characteristics of Natural Parks in Japan

a) National Sense of Awareness of National Parks

The natural park system including National Parks is a system to conserve natural scenic areas of exceptional value, as well as to promote public health, relaxation and environmental education through increased visitor use. According to the National Opinion Poll on Nature Conservation and Utilisation by the Prime Minister's Office in 1991, the number of people who 'do not know' the natural park system occupied more than 30% of the respondents. Also according to the survey, the main purposes for visiting natural parks were sightseeing (50.6%), 'going for drives' (30.0%) and mountain climbing, hiking, basking in the sea and basking in the forest (29.7%). The survey results tend to indicate that to the Japanese populace at large, a national park is a place for scenic recreation and not much more.

This illustrates a basic difference between Japan and countries such as the USA and Germany, where visitation of National Parks and Wildlife Reserves has led to changes in lifestyle and has greatly contributed to intensifying movements towards nature conservation. In the light of this, Japan may have to consider revising its national park policies and the role that they play in the lives of its people.

b) Comparisons with National Parks in the Western Countries

In Western countries, land ownership in national parks can be classified into two categories. In the USA and Canada national parks are considered as being 'constructed'' in that total jurisdiction over the land in the parks is held by the authorities while in the UK and Japan a national park is simply an "area" designated to the parks authorities, regardless of the ownership. In the New World, the former is the norm due to the large territories available within those countries. In fact some Western European countries established this type of park in their overseas territories after USA established the world first park in 1872. On the other hand, in the countries whose land is either small in area or fully-developed the parks are necessarily modelled after the UK system since there are few or no vacant areas for the establishment of large parks. In this type of arrangement, conservation of the natural environment and scenery can only be realised through regulation or placing limitations on human activities within the parks. In Japan, national park conservation measures are based mainly on the imposition of regulation, while in the UK, a contractual arrangement or "nature conservation easement", is the main measure employed to coordinate the landowners' rights with conservation objectives.

As for the number of individual parks, Japan can easily stand comparison with the USA,

Canada and the UK. However, the favourable comparison stops there, as there remain large gaps between Japan and these countries as far as total area of the parks per head of population the number of park management personnel assigned per unit area of park, the number of park personnel employed per 100,000 people and the management cost per head of population. Another major difference exists between the USA and Canada, and the UK, in that the former generally designate vast areas of virgin wilderness to the parks, while UK designates farming/mountain villages and scenery because of the few areas of virgin nature remaining. In Japan on the other hand, parks have the features of both: wilderness areas such as Shiretoko, Daisetsu Mountains and the Chubu Mountains, as well as scenic areas with a blend of nature and human culture and lifestyle, such as Setonaikai and Aso-kuju.

c) IUCN Categories

IUCN places categories on National Parks and other protected areas throughout the world and compiles the UN list for Protected Areas about every five years. In the 1990 version, National Parks divided into two general categories: Type II (National Park) and Type V (Protected Landscape). Of the 28 National Parks in Japan, 15 are categorised as type II and the remaining 13 as type V.

自然保護年鑑編集委員会 編（1992）：日本の国立公園は諸外国とどう違う、世界と日本の自然は今 自然保護年鑑３、日正社

薄木 三生（1994）：自然保護地域の種類と設定状況、地球環境ハンドブック（不破 敬一郎 編）、朝倉書店

(4) Protected Areas in Japan 4-3) Natural Parks

4-3-7) Characteristics of Natural Parks in Japan

Comparison of National Parks (Canada, US, UK, Japan)

	Canada	US	UK	Japan
Land Ownership	Park Authority Owned	Park Authority Owned	Area designation without regarding to land ownership	Area designation without regarding to land ownership
Number	34	48	10	28
Area (million ha)	18.2	19.4	1.36	2.00
Proportion to total land area	2%	2%	6%	5%
Per-capita area (m^2)	7100	800	240	160
Staff Size (persons)	4000	9500	630	110
Management Area per personnel (ha)	4500	2000	2000	18000
Personnel per capita (/100,000)	16	4	1.1	0.1
Volunteers	4000			3000
Annual Visitation		300 million		400 million
Operational Budget (billion yen)	50	190		3.6
per capita (yen)	2000	800		30

自然保護年鑑編集委員会 編（1992）：日本の国立公園は諸外国とどう違う、世界と日本の自然は今 自然保護年鑑３、日正社

(4) Protected Areas in Japan

4-4) Wilderness Area and Nature Conservation Area

The Nature Conservation Law, which provides the basic frames for nature conservation, is to protect and manage natural resources and natural ecosystems in cooperation with other related laws. In accordance with this Law, Wilderness Areas, Nature Conservation Areas and Prefectural Nature Conservation Areas are established.

a) Category

1) Wilderness Area

Area that preserves its original characteristics without any influence of human activities.

2) Nature Conservation Area

Natural area that preserves its valuable natural environment , as

① alpine and subalpine vegetation;
② valuable natural forests;
③ typical landscape, geology and natural phenomena;
④ river, lake, marsh, and sea coast with valuable wildlife;
⑤ marine area with valuable wildlife;
⑥ habitats of plants and wildlife preserving a natural environment comparable to ①-⑤.

3) Prefectural Nature Conservation Area

Area that preserves a natural environment almost equivalent to a Nature Conservation Area, but does not include marine areas.

b) Designation

Wilderness Areas and Nature Conservation Areas are designated by the Director General of the Environment Agency after conferring with related governmental agencies and consulting with the Nature Conservation Council.

Prefectural Nature Conservation Areas are designated after conferring with the Director General of the Environment Agency by the Governor of the Prefecture concerned.

The areas designated so far are:

- Wilderness Areas : 5, ca. 5,631 ha;
- Nature Conservation Areas : 10, ca. 21,593 ha;
- Prefecture Nature Conservation Areas: 519, ca. 73,609 ha.

c) Regulation

1) Wilderness Area

In a restricted entry zone even entrance is prohibited except by permission of the Director General of the Environment Agency. In other zones all activities influencing natural ecosystems are prohibited except when permitted by the Director General of the Environment Agency.

2) Nature Conservation Area and Prefectural Nature Conservation Area

In a wildlife protection area capture and collection of designated animals and plants are prohibited except by the permission of the Director General of the Environment Agency or the Governor of the Prefecture concerned, respectively. In a special zone certain activities except those permitted by the Director General of the Environment Agency or Governor concerned according to the guidelines, are prohibited. In other zones certain activities must be reported to the Director General of the Environment Agency or the Governor concerned, respectively.

d) Regarding the Wilderness Area, from the standpoint of the valuableness and rareness, general and scientific survey took place from 1980-84. Further, for the Nature Conservation Area, a comprehensive academic survey has been carried out since 1985.

Japan International Cooperation Agency (JICA) (1999): Textbook for the Group Training Course in Nature Conservation and Natural Parks Management, FY99, Natural Parks

Nature Conservation Bureau, The Environment Agency (1999): Nature Conservation in Japan

(4) Protected Areas in Japan 4-4) Wilderness Area and Nature Conservation Area

Wilderness Area Total : 5 areas 5,631 ha. as of March 31, 1999

District	Prefecture	Area (ha)	Land ownership	Data of designation	Features of natural environment	Remarks
Onnebetsudake	Hokkaido	1,895	National forest	Feb. 4, 1980	Alpine vegetation mainly composed of creeping pines	No entry restricted zone
Head of River Tokachi	Hokkaido	1,035	〃	Dec. 28, 1977	Virgin forest of silver fir and fir tree	〃
Head of River Ooi	Shizuoka	1,115	〃	Mar. 22, 1976	Temperate zone conifer forest and subarctic zone conifer forest	〃
Minami Iwojima (Island)	Tokyo	367	〃	May 17, 1975	Tropical and subtropical vegetation, geographical features eroded by wave, sea birds	All areas designated as entry restricted zone (on June 24, 1983)
Yakushima (Island)	Kagoshima	1,219	〃	May 17, 1975	Temperate zone evergreen broadleaved forest mainly composed of natural cedar and pasania	No entry restricted zone

Nature Conservation Area Total : 10 areas 21,593 ha. as of March 31, 1999

District	Prefecture	Area (ha)	Land ownership	Data of designation	Features of natural environment	Remarks
Ohirayama	Hokkaido	674	National forest	Dec. 28, 1977	Natural forest of beech trees(*Fagus crenata*) located nearly to the northern limit, Limestone rock vegetation.	All areas designated as special zone and wildlifeprotection zone.
Shirakami sanchi	Aomori Akita	14,043	〃	Oct 7, 1992	The largest natural beech forest in Japan Valuable flora and fauna, ex Black woodpecker	Part of areas designated as special zone and wildlife protection zone
Hayachine	Iwate	1,370	〃	May 17, 1975	Alpine and subalpine vegetation, characteristec vegetation of Serpentine's mountain area, Vertical distribution of beech-tree's zone to alpine zone vegetation.	All areas designated as special zone. Part of them designated as wildlife protection zone.
Wagadake	Iwate	1,451	〃	May 21, 1981	Beech tree forest, Natural forest of "mountain recess oak"(*Quercus mongolica* ver.), creeping pine forest, permanent snowfield vegetation.	All areas designated as special zone and wildlife protection zone.
Osabiyama	Tochigi	545	〃	Mar. 16, 1981	Alpine and subalpine vegetation, Natural beech forest.	All areas designated as special zone.
Head of River Tone	Gunma	2,318	〃	Dec. 28, 1977	Alpine low tree forest, beech trees, Natural forest of *Quercus mongolica* var., permanent snowfield vegetation, snowbridge zone's characteristic vegetation	All areas designated as special zone and wildlife protection zone.
Sasagamine	Ehime Kochi	537	National forest and private forest	Mar. 31, 1982	Beech tree forest, "Shikoku-Shirabe" (evergreen conifier belonging to pine species)	All areas designated as special zone. Part of them designated as wildlife protection zone.
Shiragadake	Kumamoto	150	National forest	Mar. 21, 1980	Natural beech forest located close to the southern limit distribution.	All areas designated as special zone.
Inaodake	Kagoshima	377	〃	May 17, 1975	Evergreen broad-leaved forest mainly composed of witch-hazels and "Urajiro oaks" (belong to beech tree's species)	All areas designated as special zone.
Sakiyamawan (Bay)	Okinawa	128	Sea Surface	May 28, 1983	Large groups of "Azami"coral, coral reef	All areas designated as marine special zone.

Nature Conservation Bureau, The Environment Agency(1999) : Nature Conservation in Japan

(4) Protected Areas in Japan

4-5) Wildlife Protection Areas

a) Establishment of Wildlife Protection Area

To promote protection of the wildlife species and their habitats, the Environment Agency, according to the Wildlife Protection and Hunting Law, establishes two kind of protected areas. Those are Wildlife Protection Areas and Wildlife Special Protection Areas. Prefectural governor also establishes same kinds of protected areas which are locally important.

When establishing a wildlife protection area and when designating a special wildlife protection area, the opinions of local groups making their livelihood in agriculture, forestry and fisheries, as well as hunters and wildlife protection groups, and any others who are concerned will be heard. The case is then reviewed by the Nature Conservation Council in the government or prefecture concerned, and then in accordance with the Law, the area is established or designated as such for a maximum of 20 years (subject to renewal).

1) Wildlife Protection Area

The Director General of the Environment Agency or the prefectural governor, when he deems it necessary for protection and reproduction of wildlife, may establish the wildlife protection area for a duration not exceeding twenty (20) years. Wildlife protection areas are established to protect and to promote the reproduction of birds and mammals, and the hunting of wildlife is prohibited within such areas. Persons who hold any rights regarding the land or standing trees have to give precedence to any actions of the Director General of the Environment Agency and/or the prefectural governors aiming at providing facilities for nest building, supply of water and food on land and in standing trees for wildlife.

There are 3,767 Wildlife Protection Areas with the area of 3,601 thousand hectares as of the end of March 1999.

2) Special Protection Area

The Director General of the Environment Agency or the prefectural governor, when he deems it necessary for protection and reproduction of wildlife, may designate a special protection area within a wildlife protection area for a duration not exceeding that of the wildlife protection area in which such a special protection area is placed. Felling of standing trees and/or bamboo, construction of any structures, reclaiming wetlands and the like shall require permission of the Director General of Environment Agency or the prefectural governor, unless such action is of minor scale.

b) Problems of Wildlife Protection Areas

It is relatively difficult to establish new Wildlife Protection Areas even if they are proposed in

“Plan for Wildlife Protection Programme”, which is reviewed every five years. To establish the protection areas, public hearings must be held to hear opinions from the persons and parties concerned. Usually a plan for the establishment is not accepted if there are objections from a part of the attendants. Therefore, the rate of designation of the new protection areas to the proposed ones is relatively low: in some local government body, the rate of the designation is only 30 to 60%.

Even for the protection areas established, the conservation system is not sufficient. The number and dimension of the protection areas are limited. The period of the designation is twenty years and sometimes it is not renewed. Since the protection areas are designated without surveys on flora and fauna in and around the areas, many of them do not have data on wildlife species and populations; it is unknown that a protection area covers the home ranges of large mammals. Outside the protection areas, hunting with rifles or traps is allowed almost everywhere except city areas, etc.

Japan International Cooperation Agency (JICA) (1999): Textbook for the Group Training Course in Nature Conservation and Natural Parks Management, FY99, “Wildlife Management”

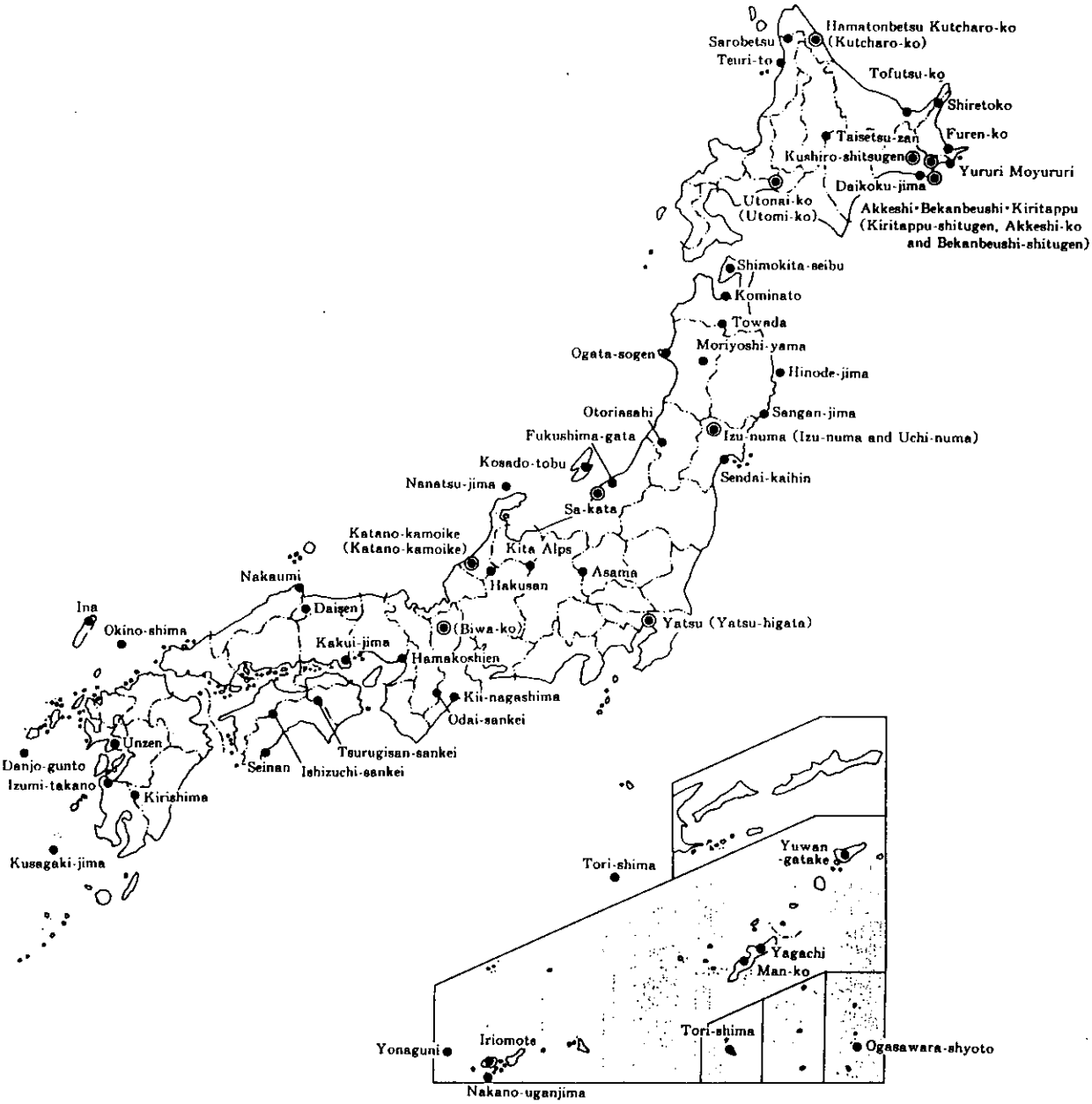
Nature Conservation Bureau, The Environment Agency (1999): Nature Conservation in Japan

川道 美枝子（1997）：野生哺乳類の保護に関わる法律、レッドデータ 日本の哺乳類（日本哺乳類学会 編）、文一総合出版

(4) Protected Areas in Japan 4-5) Wildlife Protection Areas

■National Wildlife Protection Areas and Ramsar Sites

●National Wildlife Protection Areas
◉Ramsar Sites (Designated wetlands for inclusion in a List of Wetlands of International Importance)



Nature Conservation Bureau, The Environment Agency(1999) : Nature Conservation in Japan

(4) Protected Areas in Japan

4-6) National Forests and Protected Forests

4-6-1) Management of National Forests

a) Role of National Forests

National forests under the jurisdiction of the Forest Agency, totalling 7,600,000 hectare, account for about 20% of the land area and about 30% of the forest area of Japan. Since most of the national forests lie in the mountainous backbone of the country ,and there are more primeval-like natural forests compared to private forests, national forests have more forests where public benefit functions should be particularly performed, such as the conservation of national land**,** conservation of headwaters, conservation and formation of natural environment, and to allow the forests to be used by the public for health and relaxation. On the other hand, with long-term plans, national forests, according to the plans provide in sustainable forms various types of wood, accounting for about one quarter of the domestic supply volume of Japan (1993). In addition, various activities in national forests such as timber production greatly helps to develop rural communities that otherwise are economically weak, though providing forest products and land to meet the requirements of local residents and industries, providing infrastructure for living such as forest roads, and increasing employment opportunities. The management of the national forest, as a central entity for forest and forestry, aims at contributing to development of nation's economy and people's lives by securing various functions.

b) Basic Policy for Management of National Forests

In order to fulfil the above-mentioned roles, the following eight management points of national forests must be emphasised:

i. conservation of national land;
ii. conservation of headwaters;
iii. conservation and formation of natural environment;
iv. promotion of health and cultural use of national forest;
v. timber supply in various species and characters;
vi. coordination of forestry activities in national forest and non-national forest;
vii. improvement of forestry techniques, training and dissemination, and;
viii. contribution to development local communities.

To promote forest management accordingly, National Forest Operation should be managed under the following basic policies:

1) Establish a "Regional Forest Plan of National Forests" for every forest area (158 areas in

the whole country)corresponding to the same area for private forests based on the “ Forest Law, ” and promote suitable forest management and forestry production according to characteristics of each area through coordination between private and national forests, and upstream and downstream area based on the “ River Basin Management System”.

2) To answer the various needs of the people accurately and fulfil tasks appropriately, by clarifying the function to be emphasised among various overlapping functions of forests categorise forests into the following four Types:

i. forests whose principal function is conservation of land (Land Conservation Forest),
ii. forests whose principal function is conservation of natural environment (Nature Conservation Forest),
iii. forests whose principal function is utilisation of recreation and public welfare such as for recreation(Recreation and Welfare Forest), and
iv. forests whose principal function is timber production and other industrial utilisation.(Timber Production Forest)

In addition, efforts should be made in all forests to conserve headwaters. Each forest should be managed properly with appropriate techniques to perform principal function. In view of the importance of fulfilling public benefit functions of forests such as conserving nature, tie-ups with national land and environment administrative policies should be strengthened for the management of the national forest.

c) Promotion of Forest Management for Nature Conservation

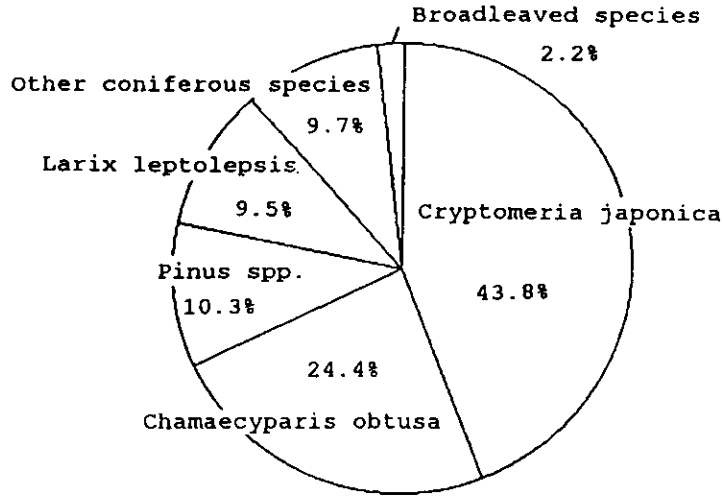
Among national forests, forest where principal function to be performed is conservation of natural environment is classified as Nature Conservation Forests. In Principal, they are protected and managed by leaving as they are without human manipulation, and also aimed for conservation in the protected areas by designating there forests as the Protected Forests.

Council of Ministers for Global Environmental Conservation, Government of Japan (1995): National Strategy of Japan on Biological Diversity.
(http://www.eic/or/jp/eanet/en/pol/nsj/index.html)

(4) Protected Areas in Japan 4-6) National Forests and Protected Forests

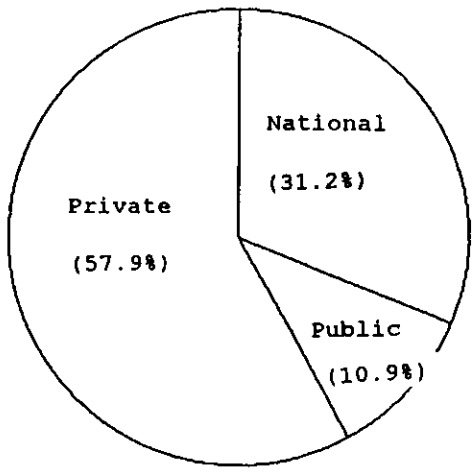
4-6-1) Management of National Forests

Forest Resources and Ownership



Note:
1) *Pinus spp.* are *Pinus densiflora*, *P.thunbergii* and other *Pinus* species.
2) Other coniferous species mainly include *Abies sachalinensis*, *Picea glehnii* and *P.jezoensis*.

Area of Man-made Forest by Planted Species (1995)



Forest Area by Ownership (1995)

Course in Nature Conservation and Natural Parks Management, FY99, "Forest Conservation"

(4) Protected Areas in Japan

4-6) National Forests and Protected Forests

4-6-2) Protected Forests

Appropriate protection and management are implemented for "Nature Conservation Forests" and "Protected forests" based on the guidelines on the procedures for selection and designation, and management of the forests pursuant to the "National Forest Management Bylaw" and the "Guidelines for Establishing Protected Forests". Actually, management is carried out by grasping situation of protected forests through patrols by staff of district forest offices such as forest rangers giving instructions to visitors and calling for attentions from them preventing damage by forest fires, disease and harmful insects, and taking necessary measures to recover the damage caused by large scale forest decay or landslides. In addition, necessary measures are taken for the protection of the populations, and maintenance and conservation of habitats, according to the characteristics of each object to be protected.

The seven types of Protected Forests are outlined as follow.

a) Forest Biosphere Reserve

The objective of Forest Biosphere Reserve is to contribute to maintaining the natural environment comprised of forest ecosystems, protecting animals and plants, preserving genetic resources, and academic studies, by preserving primeval-like natural forests representing the main forest zones in Japan and rare primeval-like natural forests with features seen only in respective region. As of April 1, 1995, there have been designated 24 such reserves, comprising about 313 thousand hectare, and two more are scheduled to be designated soon.

b) Forest Genetic Resources Reserve

The objective of Forest Genetic Resources Reserve is to preserve, in forest ecosystems, genetic resources of organisms that comprise natural ecosystems together with forests and have potential of sustainable use in the future. As of April 1, 1995, two such reserves have been designated comprising about 11 thousand hectare, and eleven more are planned to be designated in coming years.

c) Forest Tree Genetic Resources Reserve

The objective of Forestry Tree Genetic Resources Reserve is to preserve, in forest ecosystems, the genetic resources of major forestry tree species and rare tree species. As of April 1, 1995, 336 such reserves have been designated, comprising about 9 thousand hectare.

d) Plant Community Reserve

The objective of Plant Community Reserve is to maintain representative plant communities of the natural flora of Japan and local regions and historically and academically valuable individuals along with contributing to academic studies. Specifically, designated within this category are the areas with plant communities that become increasingly rare or exist in critical areas of distribution of the species, and with plant communities and individuals that need protection. As of April 1, 1995, 341 such reserves have been designated, comprising about 90 thousand hectare.

e) Specific Animal Habitat Reserve

The objective of Specific Animal Habitat Reserve is to protect the breeding areas and habitats of specific animals and contribute to academic studies. Specifically, designated within this category are the breeding areas and habitats of animals that become increasingly rare, the breeding areas and habitats of animal groups not found elsewhere, and the breeding areas and habitats of animals that need protection. As of April 1, 1995, 26 such reserves have been designated, comprising about 12 thousand hectare.

f) Specific Geographical Feature Reserve

The objective of Specific geographical Feature Reserve is to protect peculiar topographic and geological features in Japan, and to contribute to academic studies. As of April 1, 1995, 30 such reserves have been designated, comprising about 31 thousand hectare.

g) Local Symbol Forest Reserve

The objective of Local Symbol Forest Reserve is to protect present of which local municipalities strongly desire to maintain because they serve as significant symbols of the respective regions and contribute to development of the local community. Local Symbol Forest Reserve is set under the condition that an agreement with a term up to 30 years is made between Director of Regional Forest Office and a head of local municipalities. As of April 1, 1995, 28 reserves have been designated, comprising about 2 thousand hectare.

Council of Ministers for Global Environmental Conservation, Government of Japan (1995): National Strategy of Japan on Biological Diversity.
(http://www.eic/or/jp/eanet/en/pol/nsj/index.html)

(3) Protected Areas in Japan 4-6) National Forests and Protected Forests

4-6-2) Protected Forests

Protected Forests in National Forest (April, 1999)

Type	Subject	No.	Area (ha)
1. Forest biosphere reserve	To conserve undisturbed natural forests in order to facilitate maintenance of natural environment consisting of forest ecosystem, protection of wild animals and plants, conservation of gene resources, and scientific researches.	26	320,020
2. Forest organisms genetic resource reserve	To conserve gene resources which consist of important part of natural ecosystem within the forests to retain possibility for future use.	10	28,599
3. Forestry woods genetic resource reserve	To conserve gene resources of scarce tree species and main tree species for forestry activities.	331	9,286
4. Forest vegetation reserve	To maintain specific plant communities representing Japan or regions and certain individual trees and plants having historic and scientific value. And to facilitate development of forest management technology and scientific researches.	350	107,413
5. Specific animals habitat reserve	To maintain important habitat for specific animals and to facilitate development of scientific researches.	31	16,033
6. Specific geography or geology reserve	To maintain unique topography, soil structure and the natural features to facilitate development of scientific researches.	32	30,080
7. Local symbol forests reserve	To maintain forests, for which strong requests for conservation are submitted by local governments because of their important value such as symbols for the area, and to facilitate development of the region.	32	2,308
Total		812	513,739

Japan International Cooperation Agency (JICA) (1999) : Textbook for the Group Training Course in Nature Conservation and Natural Parks Management, FY99, "Forest Conservation"

(4) Protected Areas in Japan

4-7) Present Situations and Problems on Nature Protected Areas

a) System of Protected Areas - Outline

There are four categories of protected areas established and managed by laws under the jurisdiction of the Environment Agency: Nature Conservation Areas, Natural Parks, Wildlife Protection Areas and Natural Habitat Conservation Areas.

1) Spatial allocation

Not all protected areas are established for the same reason and the specific conservation objectives vary from maintaining vast scenic landscapes to preservation of habitats for specific plant and animal species. The Basic Policy for Natural Environment Conservation states that nature's variety should be systematically conserved, Nature Conservation Areas and Natural Parks are designed not to duplicate of the kind of nature covered by the other. As a result, Nature Conservation Areas are designated outside Natural Parks while areas in Natural Parks duplicating Wilderness Areas lose their validity as National Parks. Thus protected areas are ranked in order of from high to low priority as: Wilderness Area, National Parks, Quasi-national Parks, Nature Conservation Areas, Prefectural Natural Parks and finally Prefectural Nature Conservation Areas.

Meanwhile, the protected areas based on different laws, such as "Wildlife Protection and Hunting Low" and "Natural Parks Low", are established to be likely unrelated each other. Because of this, for example, National Park area is not necessarily prohibited hunting except in the area of Special Protection Zone.

2) Procedures of designation and establishment

Procedures to designate and establish these protected areas are similar, except as far as the obligation to hold public hearings. The consultation and agreement with the local administrative offices concerned are indispensable while there is no obligation to obtain an agreement from landowners because the establishment of a protected area is not considered as an infringement on land ownership.

However, as a current tendency, opinions and demands from landowners are often brought in through consultation process with the local administrative offices. As a result, the cases to get an agreement with landowners are increasing recently.

The procedures to designate the protected areas reflect the times and process of establishment of the laws themselves. The Wildlife Protection and Hunting Law was established in 1918 by the Ministry of Agriculture and Commerce and the National Parks Law in 1931 by the Ministry of the Interior. The original objectives of both these laws included promotion of regional development, agriculture, forestry and fisheries as well as nature conservation, and the

procedures for the designation were relatively simple. The other laws under the jurisdiction of the Environment Agency are all newly established laws and targeting principally at nature conservation, however procedures became tighter and less flexible to avoid conflicting with legislation by other government offices concerned. In contrast, the procedures for designation of Natural Habitat Conservation Areas under the most recent Endangered Species Law are the best regulated in terms of content, but most difficult to be completed.

3) Area and area selection

Natural Parks make up the largest area of protected areas: 53,000 km^2 amounting to 14% of the country, while Wildlife Protection Areas cover 33,000 km^2. Nature Conservation Areas occupy only 1,000 km^2 and Natural Habitat Conservation Areas amount to almost nothing.

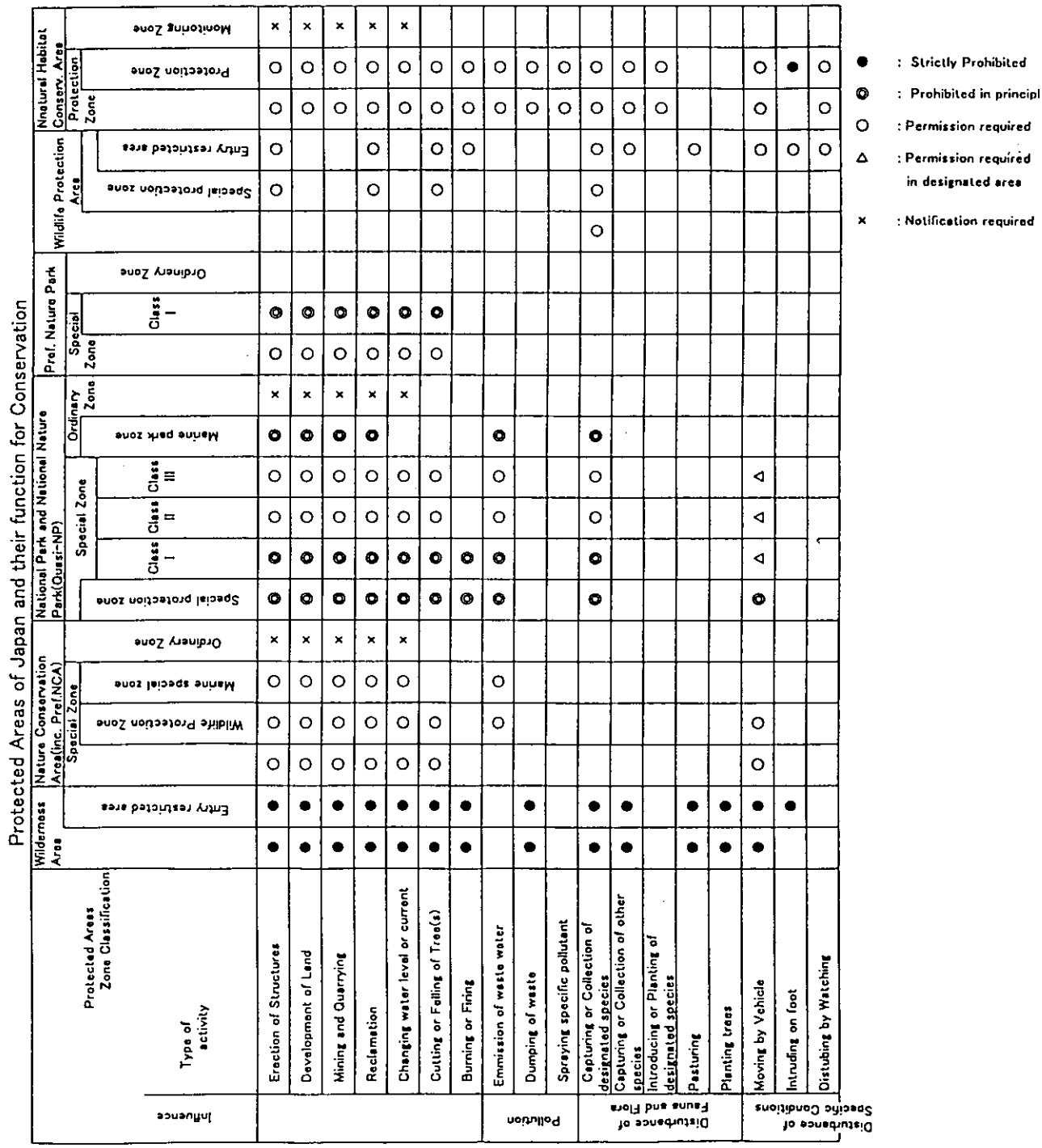
The areas presently designated to Nature Conservation Areas have relatively large area and belong to two types: i) alpine and sub-alpine vegetation (over 1000 ha); and ii) outstanding natural forests (over 100ha). There are other three types requiring smaller minimum areas (over 10 ha): i) unique topography, geographic features and natural phenomena; ii) outstanding natural coastline, lakes, marshes, bogs, rivers and marine areas; and iii) habitats and breeding sites of wild plants/animals and precious man-made forests. However, only one of these designations is assigned to one particular area of Sakiyama Bay Nature Conservation Area. At present the objective of the Nature Conservation Law to conserve relatively small areas of natural environment outside Natural Parks is seems to be not achieved well.

b) Evaluation for Effect of Regulation in Protected Areas

Taking all factors such as severity of regulations and actual implementation into consideration, the functions of nature conservation are evaluated in the protected area systems at national level from more to less effective in the following order: Wilderness Areas, Natural Habitat Conservation Areas, National/Quasi-national Park (special protection zone), National/Quasi-national Park (class I special zone), Nature Conservation Area (Special Zone: Wildlife Protection Zone), National/Quasi-national Park (Class II/III Special Zone), Wildlife Protection Areas (Restricted Entry Zone) and Wildlife Protection Areas (Special Protection Zone).

幸丸 政明（1997）**：国立公園等自然保護区の現状と課題、ワイルドライフ･フォーラム 2**（4）**、野生生物保護学会**

(4) Protected Areas in Japan 4-7) Present Situations and Problems on Nature Protected Areas



Kohmal M.(1999), Text Material for JICA Country Focused Training Course in Wildlife Conservation and Management (African Countries), FY99, "System of Protected Areas in Japan"

(5) Wildlife Conservation and Management in Japan

5-1) Basic Policy and Strategy of Wildlife Conservation

a) Basic Concepts

Wild animals and plants serve as the basic components of ecosystems, and their diversity helps maintain the balance of the ecosystems. Japan is blessed with natural environmental variety, and despite being small, it is home to a large variety of wild plants and animals including endemic species. At present, however, a large number of animal and plant species in Japan are threatened. To maintain a diversity of wild animals and plants in Japan, we should, at the very least, avoid human extinction of any species or unique population/community. Not only should endangered and rare species be conserved, but a variety of fauna and flora, including ordinary species, established in the area should also be conserved in their totality. In utilising wild plants and animals as genetic resources, it is necessary to conserve their biological diversity by ensuring sustainable use of them. It is extremely significant from the viewpoint of conserving biological diversity to avoid, through appropriate management practices, ecosystem disturbance which is caused by a rapid increase in certain bird or mammal population.

b) Basic Strategy

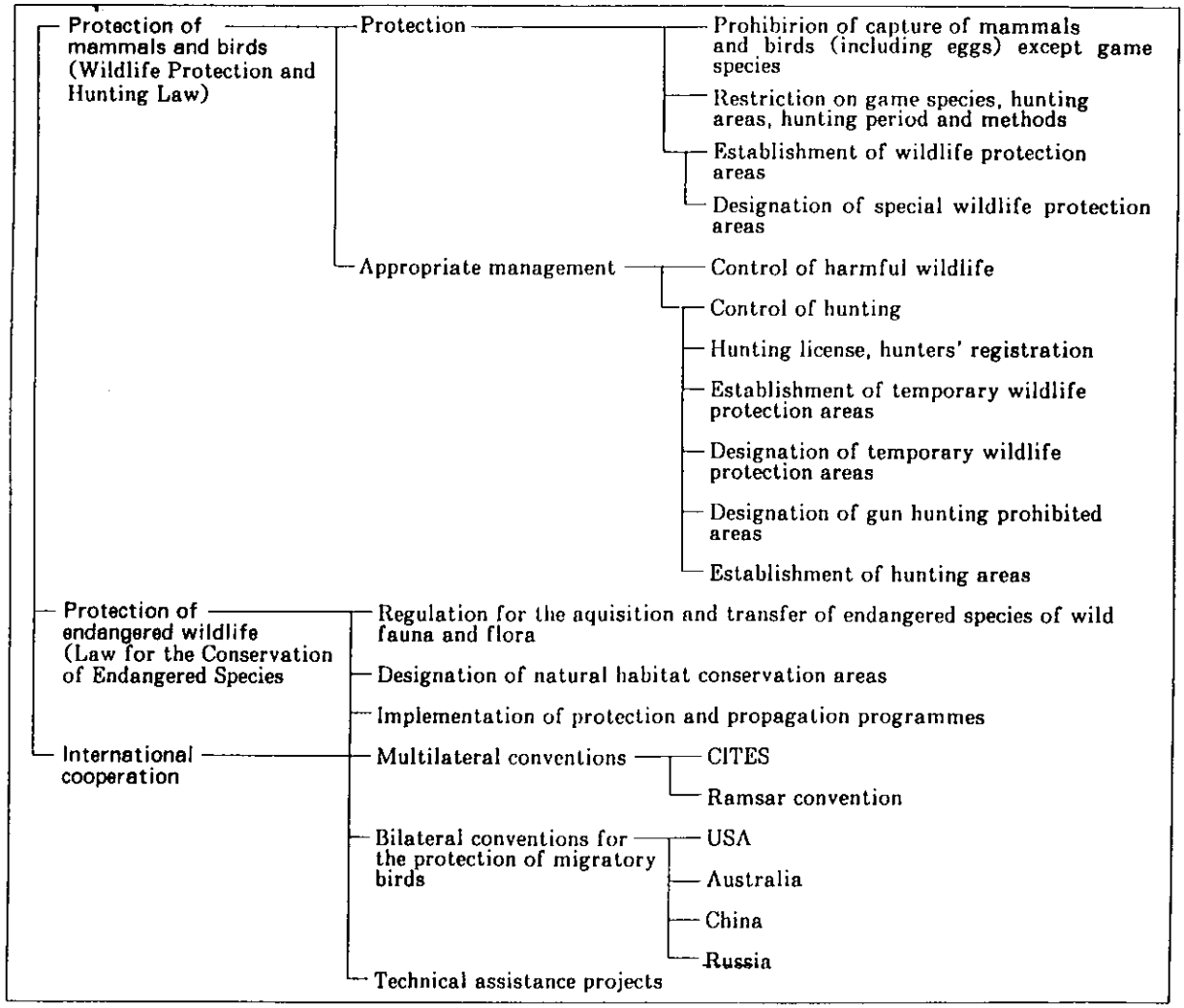
In order to protect valuable wildlife, it is very important to protect their habitats, to regulate hunting and illegal poaching strictly and to implement necessary measures to preserve endangered species.

Japanese wildlife protection system has made it possible to conserve wildlife by enforcing the Wildlife Protection and Hunting Law, and the Law for the Conservation of Endangered Species of Wild Fauna and Flora.

Council of Ministers for Global Environmental Conservation, Government of Japan (1995): National Strategy of Japan on Biological Diversity.
(http://www.eic/or/jp/eanet/en/pol/nsj/index.html)
Nature Conservation Bureau, The Environment Agency (1999): Nature Conservation in Japan

(5) Wildlife Conservation and Management in Japan 5-1) Basic Policy and Strategy of Wildlife Conservation

■Wildlife protection system of Japan



Nature Conservation Bureau, The Environment Agency(1999) : Nature Conservation in Japan

(5) Wildlife Conservation and Management in Japan

5-2) Hunting Systems

a) Introduction

In many countries, the first category of wildlife to be given protected species has usually been the birds and mammals because of their position at the top of the food chain in local ecosystems, as well as for importance as a hunting resource for people. In Japan, the basis for the wildlife conservation systems is the Wildlife Protection and Hunting Law, established for regulation of hunting and conservation of the animals' habitat. At present, all wild bird and most species of mammals inhabiting the country are covered under this comprehensive law.

b) Outlines of Wildlife Protection Systems

The Wildlife Protection and Hunting Law has three objectives: protection of birds and mammals, prevention of damage caused by birds and mammals and prevention of hunting hazards. Through such measures as by regulating the capture, transfer, breeding and export/import of these animals and development activities in their habitats.

c) Regulation of Capturing

1) Birds and mammals for hunting

Under the Wildlife Protection and Hunting Law, birds and mammals living in the country are classified into two categories: game species, for hunting; and protected species, of which the capture, injuring and killing are prohibited. At present, there are 30 bird species and 17 mammal species designated as game animals. Those species are basically as follows:

- The species' habitat is intact and the population can withstand hunting pressure reasonably well.
- Species considered harmful to agriculture and forestry.
- Species whose fur, meat and other derivatives has usage value.

2) Hunting licences

There is a wide range of regulations covering hunting activities designed to prevent overhunting and hunting accidents. Anyone wishing to hunt is required to obtain a hunting licence through an examination process undertaken by the Prefecture concerned. There are three classes of the hunting licences: for nets/traps, shotguns/rifles and airguns respectively. At present, about 76,000 are in possession of a hunting licence, of which 87% are for shotguns/rifles.

3) Hunting season

Hunting is allowed only in the hunting season, based not only on the breeding and migrating

seasonal considerations of the birds but agriculture, forestry and outdoor recreation seasons as well. The hunting season is principally from 1st October to 31st January in Hokkaido and from 15th November to 15th February in the rest of the country.

4) Hunting areas

① Wildlife Protection Areas

As mentioned above (see 4-5:Wildlife Protection Areas).

② Hunting prohibited areas

Areas in which hunting is prohibited are Wildlife Protection Areas, National/Quasi-national Parks (Special Protection Zone), Wilderness Areas, Gun-hunting Prohibited Areas in urban vicinities and recreation areas, and Temporary Wildlife Protection Areas with a maximum limitation period of three years

5) Changes in the pattern of hunting

In 1992, 2.93 million birds and 330,000 mammals were hunted. The number has been declining each year as the number of hunters declines.

6) Special permission for capture

Exceptions are made for certain specific cases, such as for academic studies and control of species considered harmful, and the Director General of the Environment Agency or the Prefectural Governors grants a permit for the capture of birds.

7) Control of harmful animals

Damage to agricultural crops, forestry resources or even harm to people can sometimes be caused by wild animals, and in these cases pest control measures are one of the measures taken. This control is implemented regardless the hunting regulations, such as the issue of special hunting permission, season and areas. This form of control however is necessarily managed under security guidelines that ensure that the species is not overhunted or hunted within the boundaries of a Wildlife Protection Area.

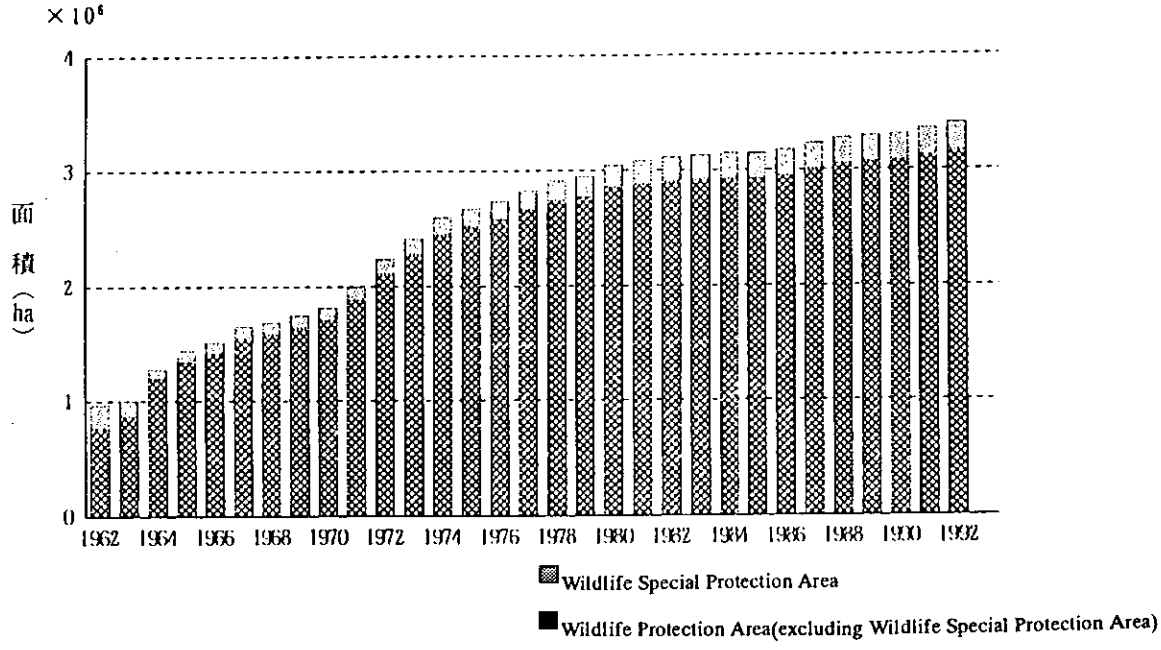
8) Current changes

In 1992, the number of animals controlled was 1.28 million birds and 100,000 mammals. The number has since been increasing due to a rise in incidence damages to agriculture crops and forestry products specifically by deer, wild boars, monkeys and crows.

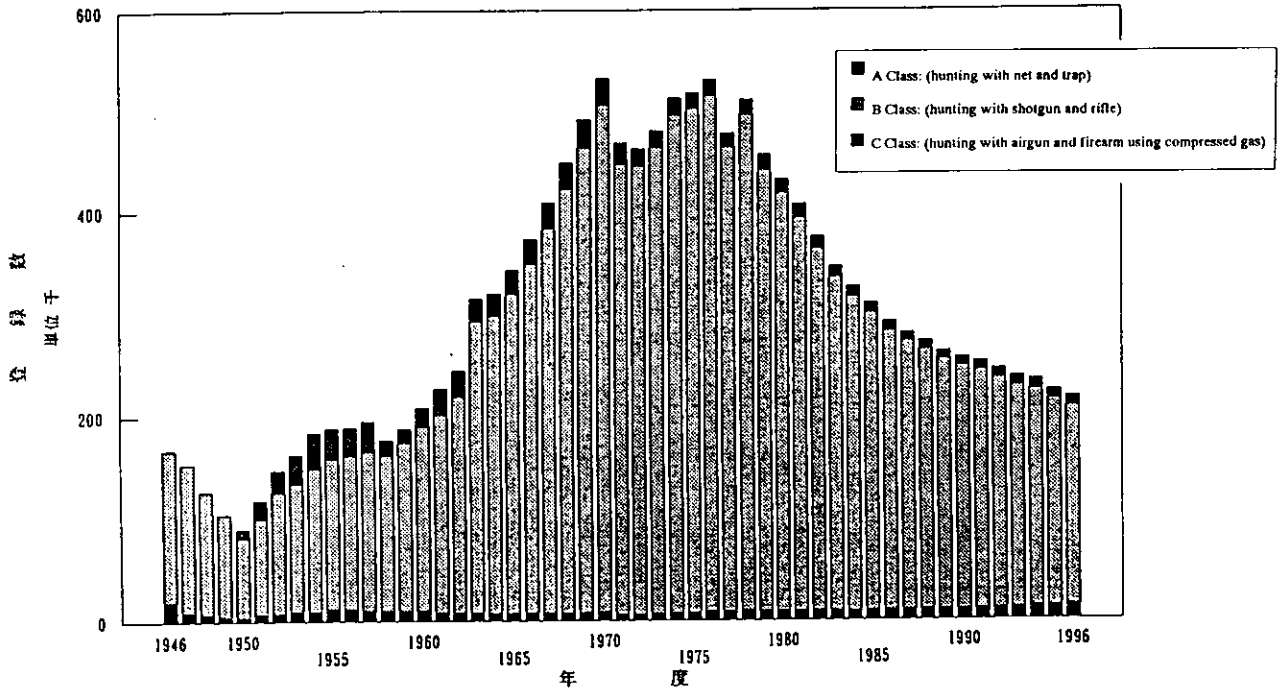
自然保護年鑑刊行会（1996）**：野生生物保護のしくみは？、自然保護年鑑 ４、日生社**

(5) Wildlife Conservation and Management in Japan 5-2) Hunting Systems

a) Changes of the Area for Wildlife Protection Area and Wildlife Special Protection Area



b) Changes of the Number of Registered Person for Hunting



水谷 知生（1996）：野生動物の保護制度に関する一考察、ワイルドライフ・フォーラム 2（3）、野生生物保護学会

高橋 正浩（1998）：狩猟鳥獣の捕獲を禁止、制限する件の変更について、野生生物保護行政、野生生物保護行研究会

(5) Wildlife Conservation and Management in Japan

5-3) Conservation of Endangered Species (Law for Conservation of Endangered Species of Wild Fauna and Flora)

a) Law for Conservation of Endangered Species of Wild Fauna and Flora

Recognising the importance of species of wild fauna and flora, as well as having essential value for humanity, the Law for the Conservation of Endangered Species of Wild Fauna and Flora aims to ensure the conservation of endangered species of wild fauna and flora, and contribute to the conservation of natural surrounding for present and future generations.

b) Definition

Endangered species known to exist in Japan are designated as National Endangered Species (NES) and the species that are listed in CITES (Convention on International Trade in Endangered Species of Wild Fauna and Flora) Appendix 1 or in Japan's bilateral convention or agreement with neighbour countries are designated as International Endangered Species (IES).

c) Prohibition on Acquisition and Transfer of Endangered species

Hunting, gathering, killing or damaging of live NES is prohibited unless the Director General of the Environment Agency permits for the specific purposes. And transfer of organisms of Endangered Species including processed intact organisms, parts and processed parts either on a commercial or non-commercial basis, is prohibited except when the Director General of the Environment Agency permits transfer for the specific purposes.

International trading of organisms and others of NES is prohibited either on a commercial as well as non-commercial basis except in the case that conditions adopted by the Government have been fulfilled.

d) Regulation on Transfer of Parts IES (International Endangered Species)

Those who intend to transfer non-processed parts of designated parts in Japan must first register the parts. Registration can be made, if

① the parts have been produced from domesticated or cultivated animals or plants or

② obtained before CITES measures were imposed.

Without registration, transfer is allowed only if the Director General of the Environment Agency permits the transfer for the specific purpose.

e) Habitat Conservation

The natural habitats of NES are designated by the Director General of the Environment

Agency as Natural Habitat Conservation Areas. This area is classified into two types of zones. One type is a Protection zone. In this zone, certain activities such as construction or cutting trees are regulated by the Director General of the Environment Agency. Another type is a monitoring zone, which functions as a buffer zone.

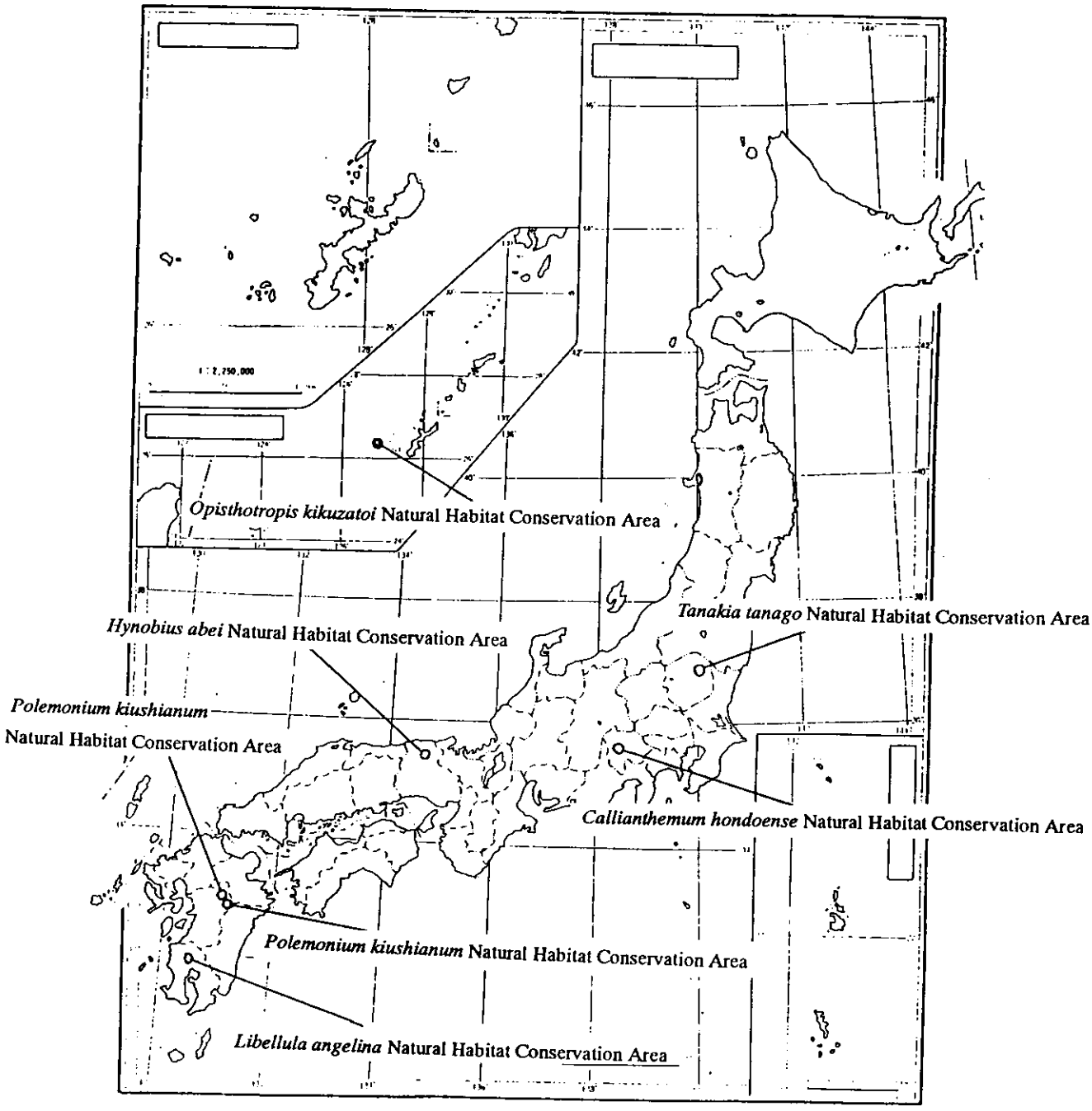
f) Rehabilitation of Natural Habitats and Recovery of a Viable Population

Since the stable survival of Endangered Species may not be achieved by the regulations on acquisition and transfer of each organism and human activities in their natural habitat alone, the Government may promote the rehabilitation of natural habitats and the recovery of viable populations of National Endangered Species. The Environment Agency will establish a programme promoting the rehabilitation of natural habitats and maintenance of viable populations in cooperation with other Ministries and Agencies. The programme may be implemented by the Environment Agency or other Ministries or Agencies, Local Government and NGOs if appropriate.

Nature Conservation Bureau, The Environment Agency (1999): Nature Conservation in Japan

(5) Wildlife Conservation and Management in Japan 5-3) Conservation of Endangered Species (Law for Conservation of Endangered Species of Wild Fauna and Flora)

Location of Natural Habitat Conservation Area



柴田 泰邦（1998）:生息地等保護区の指定について、野生生物保護行政、野生生物保護行政研究会

(5) Wildlife Conservation and Management in Japan

5-4) Wildlife Conservation and Management by Other Systems

a) Wildlife Protection by Natural Monument System

The natural monument system aims to protect the diverse wildlife in Japan at all levels-species, community, ecosystem-as academically valuable nature. The natural monument system serves to commemorate nature in Japan and protect the natural assets, which are the setting for the indigenous culture of the nation. National monuments, designated by taking into consideration the climatic zones and different forest and vegetation types, as well as secondary nature made by man, play an enormous role in the protection of biological diversity in Japan.

The natural monument system is generally known among the public because of its long history, and is expected to continue to provide positive results in the protection of biological diversity. Its systematic designation of natural monuments which include not only birds and mammals and endangered species, but creatures other than birds and mammals, and the various vegetation and ecosystems should prove to further the protection of biological diversity.

To thoroughly implement the protection and management of designated national monuments, efforts should be made to establish effective protection and management measures through the establishment of technological systems rooted in conservation biology and collaborative efforts between relevant local and national organisations.

b) Protection and Management of Forest Wildlife in National Forest

Efforts should be implemented to protect wildlife in national forests by promoting appropriate forestry operations taking account of the maintenance and formation of natural environments such as the conservation of habitats of wild animals and plants, grasping situation of wild animals and plants through patrols carried out by district forest office staffs such as forest rangers, preventing forest damage such as forest fires and guiding visitors into the forests. Illegal actions in national forests such as illegal hunting and stealing of alpine vegetation will be kept under control by judicial police officials in accordance with the “Law Concerning Temporary Measures for the Designation of Judicial Police Officials, Etc.”

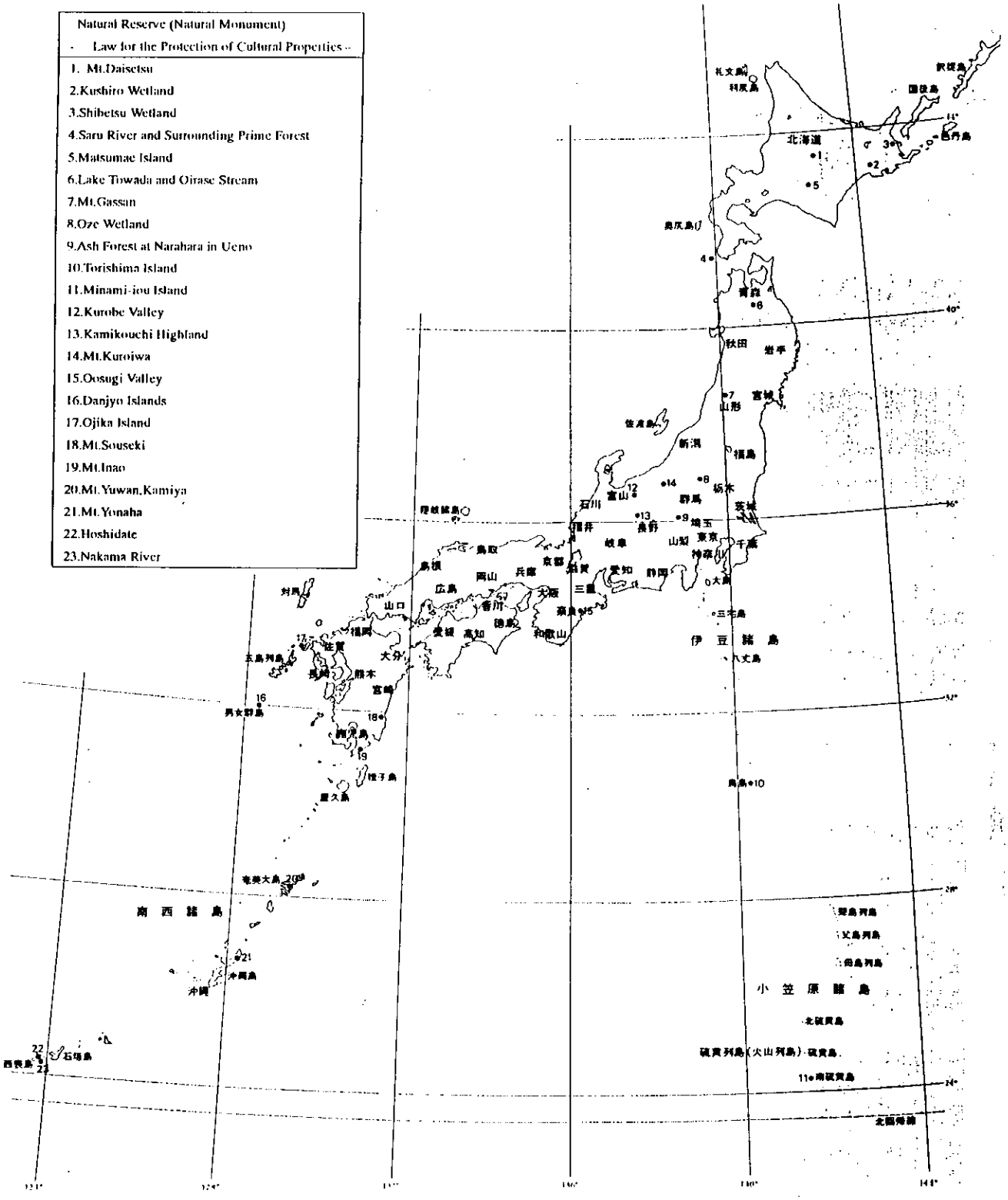
The protection and breeding of wild animals and plants which require special protection should be implemented by appropriate protection and management measures in Nature Conservation Forests and Protected Forests. The “Programme for Protection and Management of Rare Species of Wild Fauna and Flora” should be applied to rare species of wild fauna and flora such as designated by the “Law for the Conservation of Endangered Species of Wild Fauna and Flora”. Activities carried out under the programme include patrols for the protection and

conservation of the individuals, research on protection and management methods of forests required for the maintenance and establishment of habitats, maintenance and establishment of habitats, and measures required for the protection of other rare animal and plant species.

Council of Ministers for Global Environmental Conservation, Government of Japan (1995): National Strategy of Japan on Biological Diversity.
(http://www.eic/or/jp/eanet/en/pol/nsj/index.html)

(5) Wildlife Conservation and Management in Japan

5-4) Wildlife Conservation and Management by Other Systems



加藤 陸奥雄 他編（1984）：日本の天然記念物

(5) Wildlife Conservation and Management in Japan

5-5) Research and Monitoring

5-5-1) National Survey on the Natural Environment

a) Outline of the Survey

The Environment Agency, in compliance with the Nature Conservation Law of 1972, undertakes the National Surveys on the Natural Environment once every five years. The survey is popularly known as the Green Census, which covers topography, geology, fauna and flora, typical natural landscapes, etc.

Development activities caused by urbanisation coupled with economic growth continuously put pressure on natural landscape as well as biosphere. Thus it should be necessary to be reviewed the state of natural environment at comparatively short intervals. The First Survey on the Natural Environment was carried out in 1973, the Second in 1978/1979, the Third in 1983 to 1987, the fourth in 1988 to 1992, the Fifth in 1993 to 1998 and the Sixth begun from 1999.

The results of the Green Census provide important and essential database for elaboration of nature conservation policies in Japan. For instance, most of the survey results are kept in magnetic tapes for data base, and are utilised for drawing up some of the national plannings related to nature conservation, such as National Land Use Plan, National Development Plan and National Parks Management Plan.

■ National Surveys on the Natural Environment (Nature Conservation Law ; Article 13)
The Law stipulates that basic surveys be made on topography, geology, fauna and flora, and wildlife almost once every five years, with the view of obtaining basic data necessary for the planning of measures to be taken for nature conservation.

b) Survey Objectives

Main objectives of the Survey are as follows:

① to collect information on the present state of Japanese natural environment throughout the country;

② to analyse the long-term change of the natural environment by accumulating the results of the Survey carried out every five years;

③ to utilise the results of the Survey for policy development on nature and natural resources conservation and management in Japan.

a) Utilisation of Data

For the purpose of appropriate and efficient utilisation of large amount of environmental information obtained by periodical Green Census surveys, the Environment Agency established environmental information data bank and system for its use.

Since analysing and summing up the survey results of the First Green Census, the Agency has kept such results in magnetic tapes for data base files through replacing the results with numeral or symbolic data. This database is made use of analysis works in the field of governmental and local administration and of research, as fundamental data for drawing up various planning, etc.

In addition, the results of the surveys themselves are printed as several types of publication and are opened to the public, which can be purchased by anybody.

1) Analysing

The database of the results of the survey is utilised for various analysing works by:

① cross analysis within Green Census data, or;

② cross analysis between Green Census and another numeric database such as National Land Numeral Information, Meteorological Information, etc.

These analysing results together with publication and maps are also made use of various planning works especially at the national and prefectural level, i.e. National Land Use Plan, National Development Plan, National or Quasi-national Parks Management Plan, etc. In addition, the results become very important materials for Environment Impact Assessment.

2) Publication

The results of the Survey have been published in the form of reports and maps.

① The First Survey

- Comprehensive report: Report on the national survey of the natural environment, 1976
- Map: Actual vegetation map (1/200,000), 1975 and 1976, 53 sheets.

② The Second Survey

- Reports on each survey (prefectural or/and national level).
- Comprehensive report: Report on the second national survey of the natural environment, 1983.
- Maps : Wildlife and plant distribution map (1/200,000), 1981, 53 sheets
  : Actual vegetation map (1/50,000), 608 sheets

③ The Third Survey

- Reports on each survey (prefectural or/and national level).
- Comprehensive report: Report on the third national survey of the natural environment, 1989.
- Maps : Natural environment map (1/200,000), 1989, 53 sheets
  : Actual vegetation map (1/50,000), 685 sheets

- List of plants in Japan, 1987

④ The Fourth Survey

- Reports on each survey (Big tree survey, Lake and marsh survey).
- Comprehensive report: Report on the fourth national survey of the natural environment, in print.
- Maps : Natural environment map (1/200,000), in print,53 sheets
  : Distribution map of coral reefs (1/100,000), 1996, 4 sheets

⑤ The Fifth Survey

- Reports on each survey (Big tree survey, Lake and marsh survey).
- Comprehensive report: Report on the fourth national survey of the natural environment, in print.
- Maps : Natural environment map (1/200,000), in print,53 sheets
  : Distribution map of coral reefs (1/100,000), 1996, 4 sheets

Japan International Cooperation Agency (JICA) (1999): Textbook for the Group Training Course in Nature Conservation and Natural Parks Management, FY99, Basic Policies

Nature Conservation Bureau, The Environment Agency (1999): Nature Conservation in Japan

Nature Conservation Bureau, The Environment Agency (1995): Aspect of Nature

(5) Wildlife Conservation and Management in Japan 5-5) Research and Monitoring

5-5-1) National Survey on the Natural Environment

Outline of The Fifth National Survey on the Natural Environment

The Fifth National Survey on the Natural Environment (1993-1998)

Survey	Outline
Vegetation survey	As in the fourth survey, effective survey is to be carried out to obtain nationwide present state of vegetation, utilizing satellite pictures via Landsat, etc.
Specific plant communities survey	Among plant communities in Japan, survey is to be carried out to obtain information of important plant communities such as those of scientific values and those requiring protection in terms of their habitats and growing conditions. In the third survey, monitoring and selecting surveys were carried out on 5,085 selected plant communities. In the fifth survey, further monitoring surveys are to be conducted in order to grasp their conditions after the third survey.
Environmental indicator species survey	With participation and cooperation of volunteer citizens, survey is to be carried out on the condition of distribution of popular and familiar animals and plants. Survey species indicate and represent state of nature. Upon implementing the survey, efforts will be made to improve exactness and efficiency of the survey. Additionally, transition trend of distribution is to be surveyed for species with particularly significant environmental indices among those studied in the fourth survey.
River survey	Survey is to be conducted on the 113 rivers nation-wide, mainly main streams of the first class rivers designated by the Ministry of Construction, surveyed in the third survey to grasp the artificial modification on the rivers, the state of fish species.
Wetland survey	Marshes at inland are to be surveyed, which form important ecosystems as diverse and unique habitats of animals and plants, being contact points of waters and lands in order to grasp the distribution and present conditions of marshes in Japan.
Typical ecosystem survey	General and detailed survey is to be carried out again on the areas monitored in the fourth survey as well as on some additional areas in terms of vegetation, fauna, topography, geology, meteorology, land utilization, etc. in order to accumulate basic data for grasping the characteristics of the ecosystems which differ in the natural environment and degrees of human disturbances.

The Biodiversity Survey

Survey	Outline
Biological diversity survey (Species diversity survey)	Survey is to be carried out in order to grasp the distribution of wild animals and plants in Japan, while more detailed survey is to be carried out about living conditions particularly on rare and endangered species.
Biological diversity survey (Ecosystem diversity survey)	Concerning areas where Japan's representative type of ecosystem is existing, the ecosystem is to be investigated through components species in the ecosystem and its structure.
Biological diversity survey (Genetic diversity survey)	This survey is prosecuted for animal and plant species which have comparatively distinct genetic variations among regional populations. Its primary purposes are, as a case study, to find out the distribution, morphological characteristics, and genetic variations of each regional population and to develop techniques for general survey concerning genetic diversity in the future.

Japan International Cooperation Agency (JICA) (1999) : Textbook for the Group Training Course in Nature Conservation and Natural Parks Management, FY99, "Basic Policies"

(5) Wildlife Conservation and Management in Japan

5-5) Research and Monitoring

5-5-2) Research for Identification and Review of Endangered Species

a) Research Objectives

With the view to establishing a full picture of the species under threat of extinction and to increase public awareness of this threat, in 1986 the Environment Agency launched a study to identify those species of animal and plant requiring urgent conservation measures. In 1991, the results of this survey were compiled into the 'Red Data Book, Threatened Fauna and Flora in Japan: Vertebrates and Invertebrates', However, because of the new IUCN categories for threatened species, a review of the contents has become necessary to include more up to date information on the species' and changes in habitat conditions, and in 1995, the Environment Agency began review of the animal phyla, mammals, birds, reptiles, amphibians and fish.

b) Methodologies for Research

For the review work, a Committee for Identification and Evaluation of Threatened Species of Wild Fauna and Flora, was established under the Nature Conservation Bureau in the Environment Agency and working groups for revision of the Red Data Book under this committee.

c) Identification of Species to be Listed

Based on the new IUCN categories, new ranks for threatened species were defined as follows:

- Extinct: species believed to have become extinct in Japan;
- Extinct in the wild: species existing only in captive breeding or cultivation;
- Threatened (I): critically endangered or endangered species;
- Threatened (II): vulnerable species;
- Near threatened: species existing on a fragile basis;
- Insufficient Data;
- Locally threatened populations (as an appendix).

d) Identification Results

Total 245 species were identified as threatened species: 47 species of mammals, 90 species of birds, 18 species of reptiles, 14 species of amphibians and 76 species of freshwater fishes.

e) Conservation Measures in the Future

The results of this review work will be published and distributed to central and local government offices concerned, to encourage these offices to incorporate consideration of threatened species in planning programmes. For critically endangered species, further detailed research on their condition in the wild will be carried out and the case for designation as 'National Endangered Species' will be examined based on the Endangered Species Law.

自然保護年鑑編集委員会 編（1989） 緊急に保護を要する動植物の種の選定調査、自然保護年鑑２、日生社

■Number of Japanese Taxa Listed in the Red Data Book of Japan Based on New Categories

		Known Japanese Taxa	Extinct (EX)	Extinct in the Wild (EX)	Threatened			Near Threatened (NT)	Data Deficient (DD)	Number of Threatened Taxa
					Critically Endangered and Endangered		Vulnerable (VU)			
					Critically Endangered (CR)	Endangered (EN)				
Vertebrate	Mammals	app. 200	4	0	11	20	16	16	9	47
	Birds	app. 700	13	1	17	25	48	16	15	90
	Reptiles	97	0	0	2	5	11	9	1	18
	Amphibians	64	0	0	1	4	9	5	0	14
	Brackish & Freshwater Fishes	app. 300	3	0	29	29	18	12	5	76
Plants	Vascular Plants	7,087	17	12	471	410	518	108	365	1,399
	Bryophytes	app. 1,800	0	0	110		70	4	54	180
	Algae	app. 5,500	5	2	34		6	24	0	40
	Lichenes	app. 1,000	3	0	22		23	17	17	45
	Fungi	app.16,500	28	1	51		11	0	0	62

Nature Conservation Bureau, The Environment Agency(1999):Nature Conservation in Japan

(5) Wildlife Conservation and Management in Japan

5-6) Rehabilitation and Maintenance Programme

To prevent extinction of wildlife species, programmes for rehabilitation of natural habitats and maintenance of viable populations should be implemented timely, aptly and pursued actively as the need arises. The Endangered Species Law stipulates that programmes are to be promoted not only by the Environment Agency but also in cooperation with many partners, such as the government offices concerned, local public offices and private organisations. In addition, provision of wildlife conservation centres to serve as base facilities has been initiated to comprehensively promote research and public awareness.

a) Iriomote cat

The Iriomote wildcat exists only on Iriomote Island, a part of Okinawa Prefecture, and the number is estimated at about 100. The Iriomote Wildlife Conservation Center was established in 1995 As a base for conservation measures being implemented such as monitoring surveys using remotely-controlled cameras and radio tracking; as well as ecological studies for pathology and parasitology; and public awareness programmes to reduce the incidence of road kills.

b) Tsushima cat

The Tsushima cat exists only on Tsushima Island, in Nagasaki Prefecture and the number is estimated to be less than 100; making it one of the most endangered species in Japan. The conservation measures being implemented include studies to assess the population, distribution and habitats through the use of questionnaires interviews, and observation of field signs; ecological and behavioural studies using radio tracking methods; and feeding and capturing for captive breeding. To serve as a base for these operations the Tsushima Wildlife Conservation Center began construction in 1997.

b) Blakiston’s fish-owl

The Blakiston’s fish-owl once ranged over all of Hokkaido but now is restricted to Eastern Hokkaido, with an estimated number of around 100. A DNA analysis for this species recently undertaken indicates that the population may be too small to be viable. As result conservation measures implemented in the form of feeding, installation of nestboxes, marking surveys, devising an action plan for pairing and breeding at Kushiro Wildlife Conservation Center. In February 1995, a rehabilitation/maintenance programme undertaken by Kushiro City was approved as the first programme based on the Endangered Species Law.

c) Japanese crane (Red-crowned crane)

Red-crowned cranes once ranged over all of Hokkaido but at one time declined to about 20 in number through over-hunting and development activities in their habitat. After that, the population increased mainly by feeding programmes conducted during winter and was counted at 598 in a comprehensive survey carried out in January 1996. A DNA analysis for this species recently undertaken shows very little difference between the population in Kushiro and that in China, but an extremely high degree in the blood relationship in the Kushiro population. The conservation measures implemented are aerial surveys for the population and distribution in the breeding season; general surveys and feeding during winter; and establishment of an action plan to increase the range of the species.

d) Short-tailed albatross

The Short-tailed albatross, the largest sea bird in the Northern Hemisphere, was once heavily hunted for its feathers and was once thought to be extinct. In 1951 however the species was rediscovered on Tori Island, one of the Izu Islands, and later in the Senkaku Islands in 1971. The present number is estimated at about 700. The conservation measures taken are improvements to their breeding sites, inducing the birds to move to selected safe nesting sites through use of decoysand and satellite-tracking monitoring survey.

e) Japanese golden eagle

The Japanese golden eagle, a large largest raptorial bird at the top of the forest food chain, has been experiencing a declining breeding rate in recent years and the number is currently estimated at about 300. Conservation measures are translocation of a chick to a pair in Kyushu and studies to determine the factors impeding the breeding performance and mortality in the Western Japan.

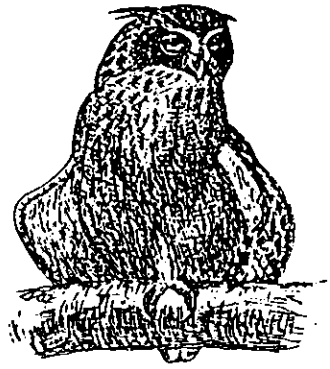
f) Other Species

Surveys on the population, distribution and habitat, as well as habitat restoration programmes have been implemented for some other species: Abe's salamander *Hinobius abei* (Kyoto and Hyogo), a bitterling *Tanakia tanago* (Kanto District), Jacob's ladder *Polemonium kiushianum* (Mt. Aso) and some endemic plant species in Ogasawara Islands.

自然保護年鑑刊行会（1996）：絶滅のおそれのある野生生物をどう守るか？、自然と共に生きる時代を目指して 自然保護年鑑４、日生社

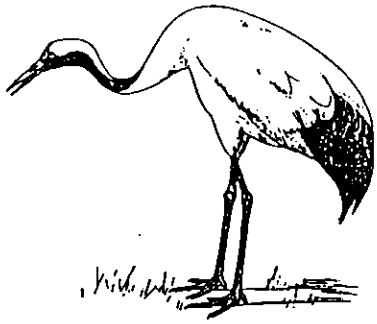
(5) Wildlife Conservation and Management in Japan 5-6) Rehabilitation and Maintenance Programme

Blakiston's fish owl *Ketupa blakistoni*

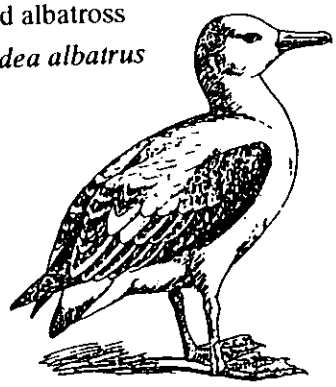


Golden eagle *Aquila chrysaetos*

Japanese crane *Grus japonensis*



Short-tailed albatross
Diomedea albatrus



List of Wildlife Center	Location
Kushiro Wildlife Center (Blakiston's fish owl)	Kushiro, Hokkaido
Sado Wildlife Center (Japanese crested ibis *Nipponia nippon*)	Sado, Niigata
Iriomote Wildlife Center (Iriomote cat *Mayailurus iriomotensis*)	Iriomote island, Okinawa
Tsushima Wildlife Center (Tsushima cat *Felis euptilura*)	Kamiagata, Nagasaki
Haboro Wildlife Center / under construction (Guillemot *Uria aalge*)	Haboro, Hokkaido
Yambaru Wildlife Center / under construction (Okinawa rail *Rallus okinawae*, Pryer's woodpecker *Sapheopipo noguchii*)	Okinawa

自然保護年鑑刊行会（1996）：絶滅のおそれのある野生生物をどう守るか？、自然と共に生きる時代を目指して 自然保護年鑑４、日生社
岡田 要（1965）：新日本動物図鑑、北隆館

Techniques are been gradually developed for the each of the various environmental restoration requirements encountered across the country. In Ozegahara, for example, repeated trampling by hikers in to a degree far beyond the carrying capacity of the environment - stripped areas of the moorland of its vegetation. Since the situation was regarded as critical, and the natural restoration would take too long to take effect, a variety of plants species were managed to plant to accelerate the restoration process.

The swift destruction of vegetation and accompanying degradation of the natural habit is typically observed in volcanic eruptions. The sudden accumulation of ejecta and lava on the ground cancels the existing succession process of the vegetation which then has to rebuild itself for the beginning.

This phenomenon can be seen in all over Japan because of the numerous volcanoes throughout the country: Sakura Island, Mt. Fuji, Mt. Aso, Mt. Kirishima, Mt. Asama, Mt. Tokachi, Mt. Usu, Mt. Hugen, Mt. Toshima-komagatake, Mt. Showa-shinzan, etc. According to a study on the succession process on Mt. Toshima-komagatake that has been undergoing for more than 40 years, the succession in areas with no vegetation cover does not always follow a pattern from annual plants to perennial plants or from lichen, moss to higher plants. In fact, the reverse can happen: woody plants become established first, followed by lichen and moss. From this viewpoint, aerial dissemination of perennial and woody plants, such as wormwoods and alders, was carried out with helicopters on Mt. Usu covered with ejecta by the eruption.

In cases of human-induced disturbance on land, such as dam construction, restoration is undertaken with plant species that are effective in the early stages of planting: e.g. alders and locust tree. For poor land with little topsoil, it is important to cover the ground surface with such pioneer species even temporarily.

For coastal dunes and sandy beaches that been stripped of vegetation, the restoration of vegetation cover is carried out in a way similar to that mentioned above. Reestablishment of coastal forest stands however, also requires that the sand dunes be stabilised, and the restoration process beginning with the planting of pioneer species followed by the rest of the succession ‘set’ species. In Erimo Promontory, the coastal vegetation has been developed in this manner for about 50 years; as a result, the fish catch has increased fourfold.

There are many examples which indicate the increase in fish catch in coastal areas following reestablishment of inland forests. In Lake Akkeshi, known for its oysters, experienced a steady decline in oyster production as a result of a drop in the water temperature in spring after

forests were lost along the Bekanbeushi River that flows into the lake. However, production went back on the increase after the forests were re-established through a pilot reforestation programme in the upper watershed area. Although the reforestation programme itself was for a different purpose, it nevertheless contributed to the conservation of ecosystems outside its range.

The succession of vegetation is also affected by animal communities from migratory locusts in grasslands to large herbivores in forests. Deer and serow often cause serious damage to trees, especially in years when their main food source of bamboo grasses is covered after heavy snows. On one small island in Lake Toya, in Hokkaido the isolated deer population there progressively ate up into local extinction species after species plant on the island in order of palate preference. Now the only plants left are those not normally eaten by deer. There are also many examples of the association between vegetation and domestic animals, and the effect the latter can have on the former. Koshimizu Flower Moorland is a beautiful coastal moorland on the Okhotsk Coast. The present moorlands were actually created by the grazing action of horses and cattle raised there over the years. Recently however, the area was designated as Abashiri Quasi-national Park, and the domestic livestock were removed and the controlled burning that also took used to take place was also halted. The result was a gradual invasion of other grass species that began to dominate the original grassland plant community. As a consequence, starting in 1995 restoration measures were commenced, beginning with the reintroduction of controlled burning and grazing on an experimental basis. Recently, the grasslands are showing signs of gradual recovery to their original state

辻井 達一（1998）：生態系の退行、自然保護ハンドブック（沼田 眞 編）、朝倉書店

(5) Wildlife Conservation and Management in Japan 5-7) Changes to Vegetation and Restoration

Example of natural recovery of vegetation in 2m×2m plot at bare area in Oze wetland.

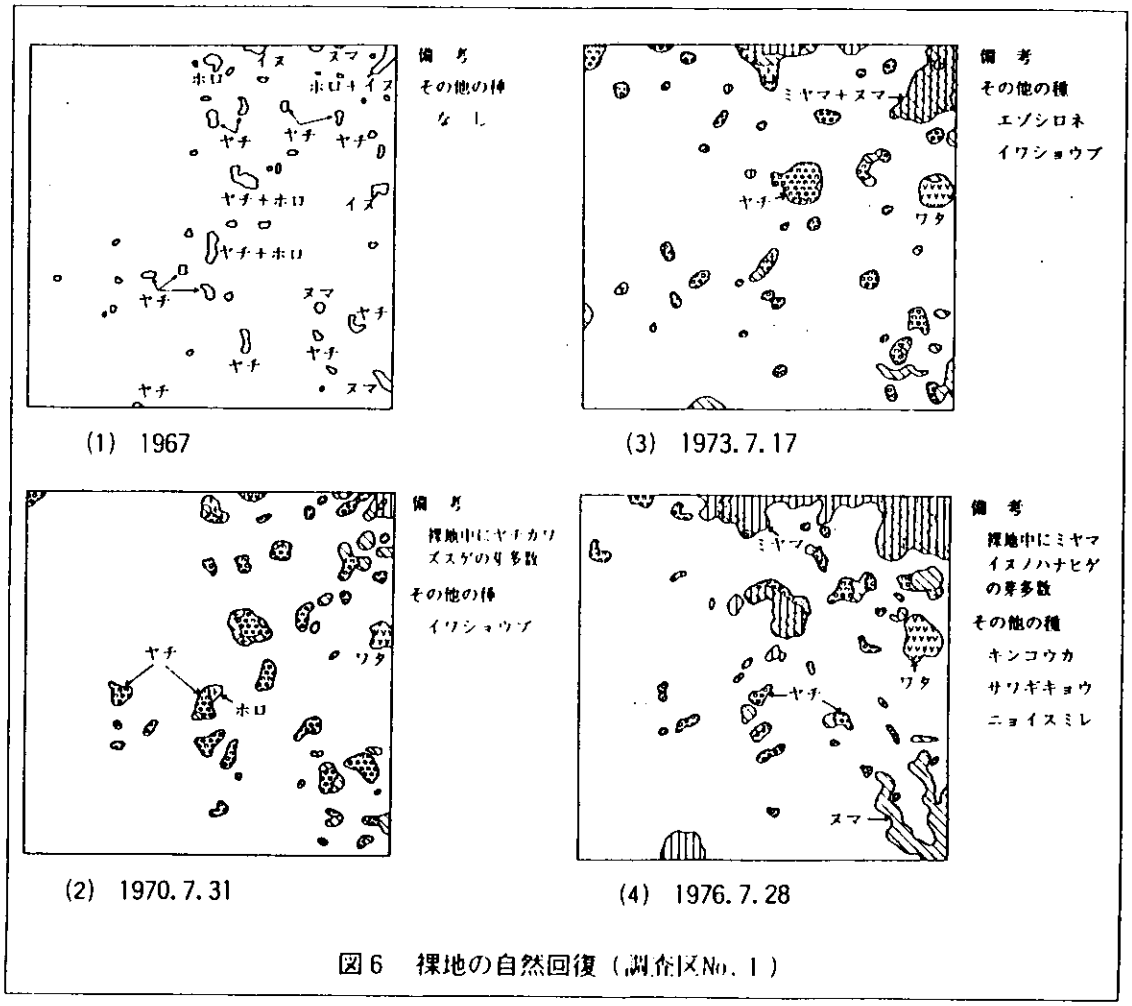


図6 裸地の自然回復（調査区No. 1）

The patches show growth of several grass species.
For ten years, recovery is not proceeding well.

菊地 慶四郎 他（1991）：永遠の尾瀬、自然とその保護、上毛新聞社

(5) Wildlife Conservation and Management in Japan

5-8) Damage by and Coexistence with Wild Animals

a) Effect on Human Livelihood by Wild Animals

There are not so many opportunities for us to encounter wild animals in everyday life. In farming and mountain villages, however, damage to farm and forest products by deer and monkeys are serious problems. This trend has been increasing to the extent causing declines in productivity and resulting abandonment of farmlands. Crop damage by deer and wild boars has been an on-going struggle for farmers ever since the human race took up agriculture. More recently there are records of systematic control measures for these animal pests during the Tokugawa (Edo) period (1603～1868). Nowadays, the relationship between people and these animals has become even more problematic because of the vastly expanded and varied use of the land by people.

Bear number and habitats are declining in some areas because of increasing conflict with people. Capture and control of harmful birds and mammals have been implemented, however while the total number of problem animals caught has increased, so has the damage to crops. This indicates that much more effective measures for coexistence between conservation of wildlife and the agricultural and forestry communities need to be developed.

b) Case 1: Sika deer

At present, sika deer are animals causing the heaviest damage to agriculture and forestry. Deer damage n Tochigi Prefecture, mainly to forestry, is rapidly increasing. The deer are also ravaging the natural vegetation in Oku-Nikko, the core area of Nikko National Park. As a result, Tochigi Prefecture has established a conservation and management plan for sika deer aimed at coexistence between deer and people. The plan consists of three main objectives: to restore the balance in the natural ecosystem, to secure stability of agriculture and forestry operations, and to secure habitats for deer. The conservation measures taken are capture to maintain the population density at appropriate levels and monitoring surveys to determine the population dynamics, distribution, habitat condition, nutrition status and damage to vegetation. The survey results will reflect the effectiveness of the countermeasures.

In severe stricken areas, it is generally most important to base the implementation of deer management on ecological surveys of the population to determine their population, distribution, home ranges, habitats and damage to vegetation. Once the management objectives are established on the results of these surveys population control can be conducted by fencing, hunting or controlling the harmful animals.

c) Case 2: Asian black bear

Black bears have long been controlled by hunting and controlling the harmful animals because of such actions as scraping the bark off trees and other damage to forest products, and harm to people. As a result, in western Japan the population has shrunk in size and become endangered. The population in the Western Chugoku Mountains is around 250-300, and Hiroshima Prefecture is working towards coexistence between people and black bears by means of the following:

- Environmental restoration through reforestation of broadleaf trees in remote habitats;
- Establishment of facilities such as electric fences to prevent the damage;
- Maintenance of the population size by driving captured individuals to remote habitats;
- Public awareness activities directed at the local people.

It is necessary to the measures to conserve the local populations and prevent the damage by each area since the situations of damage and the population sizes are different even within the Western Japan.

Both the level and type of damage varies from area to area, even within western Japan, and thus management approaches for the conservation of black bear populations must be carefully examined area by area.

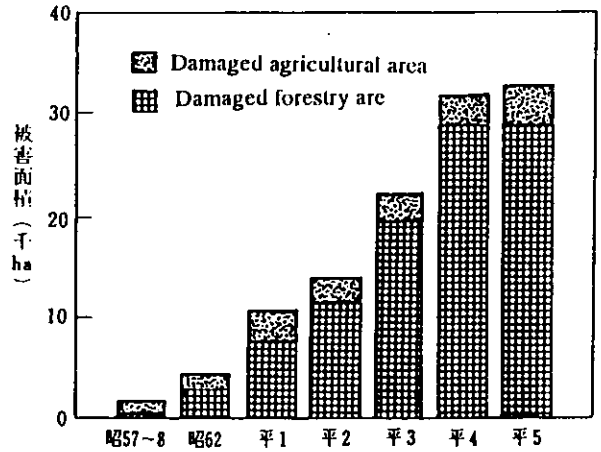
d) Coexistence with Wildlife

In conclusion, to examine the measures for coexistence of people and wild animals, it is important to understand the impact of wildlife populations on human existence as well as the animal population status, distribution, habitat condition and the ecology of the wildlife species. All these require a large amount of toil and long term monitoring if conservation efforts are to succeed

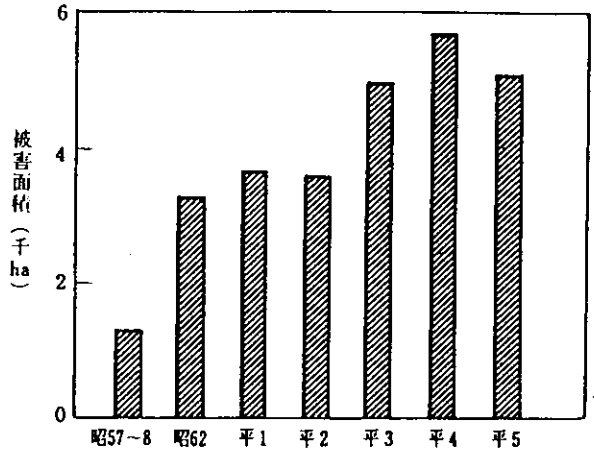
自然保護年鑑刊行会（1996）：野生鳥獣との共存のために今何が必要か？、自然と共に生きる時代を目指して 自然保護年鑑４、日生社

(5) Wildlife Conservation and Management in Japan 5-8) Damage by and Coexistence with Wild Animals

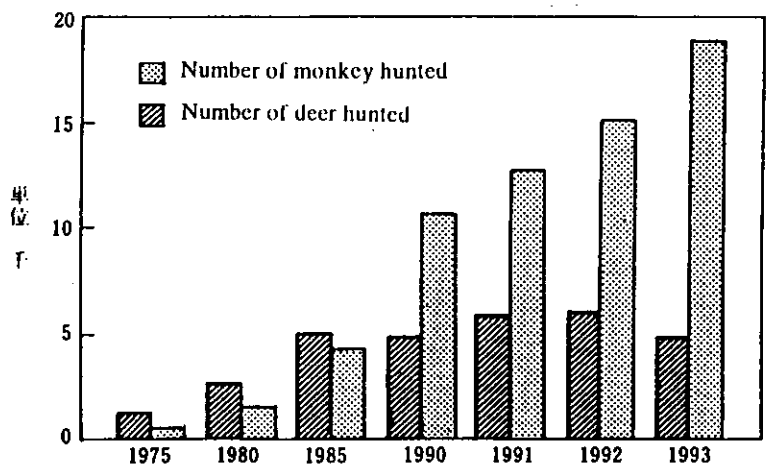
Agricultural and Forestry Damages by Deer



Agricultural Damages by Monkey



Pest (Problem Animal) Control of Deer and Monkey



自然保護年鑑刊行会（1996）：野生鳥獣との共存のために今何が必要か？、自然と共に生きる時代を目指して 自然保護年鑑４、日生社

(5) Wildlife Conservation and Management in Japan

5-9) Experiment by Local Government: Conservation and Management Plan for Yezo Deer in the Eastern Hokkaido

The Yezo deer, a subspecies of sika deer inhabiting Hokkaido, was once endangered by heavy snows and overhunting. Recently, thanks to conservation measures and favourable changes in their habitat, have not only increased in number but are expanding their range. As a result, damage to agriculture and forestry has also risen rapidly, and the amount of damage in 1996 totalled over JP¥ 5.0 billion, of which JP¥ 4.2 billion was in the Eastern Hokkaido alone. Damage to natural ecosystems has also been extensive, in the form of scraping the bark off trees.

To alleviate these impacts, in June 1997 Hokkaido established the Comprehensive Deer Management Project to promote comprehensive and proper measures for deer conservation and management, including prevention of the damage to agriculture and forestry. The project committee subsequently produced the Eastern Hokkaido Deer Management Plan to indicate the basic concepts and implementation measures for the management of the deer population.

a) Population Management - Basic Concept

Yezo deer are known to have a tendency to rapidly increase under a combination of protected status and a habitat in good condition, and yet suffer rapid losses when heavy snows or other phenomena strike. In order to establish a stable population to avoid the risk of toppling off the brink into extinction, a target number for the population has been established by means of a ’population index 7, a relative figure derived through population figures obtained from a range of studies. In this index, the population size in 1994 (est. 120,000) is set as a population index of 100, which is used as the standard. The index is then used to determine the numerical trend and to correspondingly adjust the numbers animals to be captured through a feedback system. Three levels of population index and four levels of management measures are set; one level of the measures is implemented in accordance with a level of the index adopted for a year.

b) The three Levels of Population Index

1) Critical threshold (5%)

Population index 5 (6,000 head): this level is more than 1,000 head, which is the IUCN standard for endangered species, and incorporates a calculation of the probability of heavy snows.

2) Outbreak threshold (50%)

Population index 50 (60,000 head): this is the level at which the number may increase

dramatically.

3) Optimum level (25%)

Population index 25 (30,000 head): this is the optimum level at which for managing the population. The number is lower than the level at which the population explodes out of hand (outbreak level), and yet high enough so as prevent the population from crashing below the minimum threshold in the event of sudden changes in the environment, such as climatic fluctuations

c) The Four Levels of Management Measures

1) Emergency culling

In the cases when the most recent population index is greater than the outbreak level, culling, with emphasis on females is actively carried out to maintain the index below the outbreak level. The period for applying this measure is limited to about three years to avoid over-culling.

2) Gradual population reduction

In cases when the previous year's snowfall is at normal level and the most recent population index is over the target level, intensive culling with emphasis on females is carried out.

3) Gradual population increase

In cases when the previous year's snowfall is at normal levels and the most recent population index is below the target level, low intensity culling with emphasis on males is carried out.

4) Hunting ban

In cases when the most recent population index is lower than the minimum tolerable level, a prohibition is placed on hunting and control measures are minimised to induce the number to rise. Years immediately following heavy snows, the need to ban hunting is examined taking into account the trend of the index up to the previous year. The population trend up to the preceding year are examined to determine the need or otherwise for imposing a ban on hunting.

d) Management of the Population

The current population index in the Eastern Hokkaido mostly exceeds the outbreak level and emergency measures are being taken for a three-year period three years to reduce the number to below the outbreak level. Once this is achieved, the target level will be maintained by adjusting the number to be culled, according to the index at the time.

e) Research and Monitoring

Research to determine the population index is indispensable for the successful

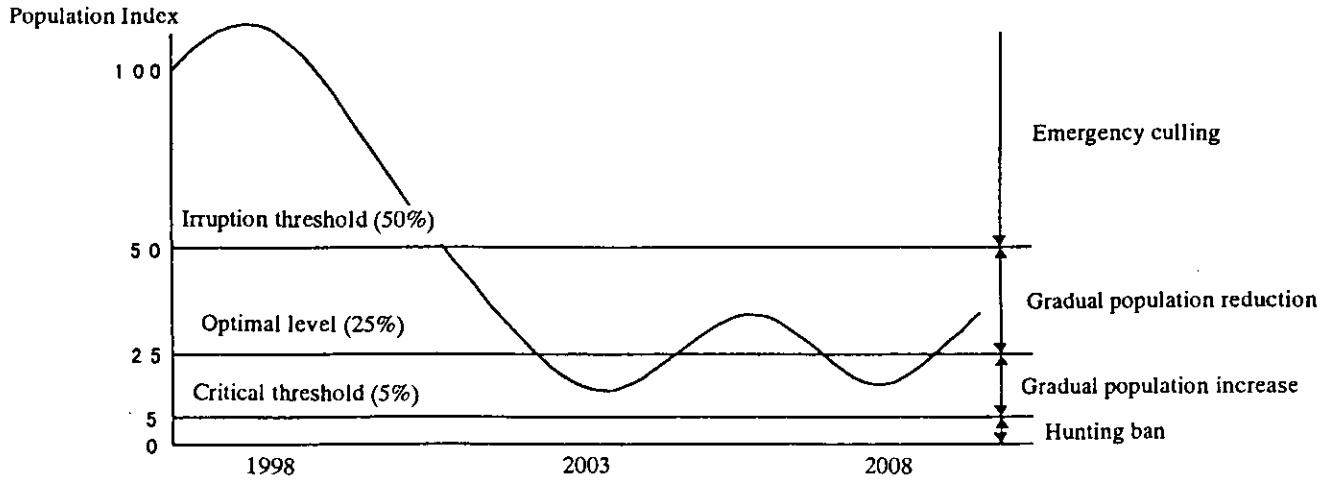
implementation of the management plan, and the impact on the population caused by hunting as well as the control measures themselves also needs to be monitored. Studies are also conducted so as to gain an understanding of the life history and habitat condition, the age composition, breeding condition, seasonal migration and habitat preferences.

f) Other

In 1997 and 1998, Steller's and white-tailed sea eagles, both endangered species, were discovered found dead by lead poisoning, after having fed on stray bullets bullet fragments left inside the remains of deer left behind by hunters. To prevent these incidents from reoccurring are to encourage hunters to bury the remains underground or bring them back to garbage stations since established in major hunting areas.

高橋 洋記（1998）：道東地区エゾシカ保護管理計画について、野生生物保護行政、野生生物保護行政研究会

(5) Wildlife Conservation and Management in Japan 5-9) Experiment by Local Government: Conservation and Management Plan for Yezo Deer in the Eastern Hokkaido



Schema of Population Management

Changes of Population Index

Population Index	1990	1991	1992	1993	1994	1995	1996	1997
Helicopter census				100			133	108
Right census			68	100	72	115	127	101
Number of hunted animal	68	71	91	100	112	144	141	
observation record	53	44	66	100	83	121	112	
Amount of crop damage	59	71	83	100	100	122	151	
Railway accident	46	71	64	100	109	106	178	

高橋 洋記（1998）：道東地区エゾシカ保護管理計画について、野生生物保護行政、野生生物保護行政研究会

(6) Environmental Education

6-1) Environmental and Conservation Education in Japan

a) Environmental and Conservation Education

The postwar high economic growth has led to a decline in richness and diversity nature in Japan. In urban areas particularly, nature has noticeably disappeared from the neighbourhood and what remains is degraded. For today's children, in contrast to their parents who experienced rich nature in their early years, there are fewer opportunities to fully commune with genuine nature as well as fewer places to commune with nature in the people's urban life environment. Children are also compelled to live their lives with less time for such recreation due to the pressure of a competitive education system that packs their days and hours with extracurricular activities and enrolment in preparatory colleges, etc.

Environmental education has been defined as 'to promote learning by the people to foster understanding and recognition of the relationship between human beings and the environment and to allow the taking action with responsibility'. This concept is basically different from traditional education in the form of subjects such as science and social studies, which merely aim at recognition of natural and social aspects. Conservation education is experiential education for nature as the basis of environmental education. The system of conservation education is formulated for the people, from infancy to the elderly, to develop a sense of aesthetics for natures well as gain knowledge of natural science and its techniques by intentional guidance through conservation activities, communing with nature and nature experiences that form the basis of human thought and action.

The recently popular approach to conservation education, relying solely audio-visual aids and to the exclusion of direct nature experiences, is unlikely to achieve much success. It is important to provide children, in accordance with their individual personality and expressed interests, with a variety of field opportunities to form their own connection with the beauty, novelty, fascination and joys of nature. This approach is especially important in the case of younger children, so as to stimulate their sensibilities foster their curiosity and provide a sound basis for the development of their imaginative powers. As a result of this, it is hoped that children will acquire the ability to grasp issues and solve problems, and in doing so develop an eagerness to work independently for the conservation of natural environment.

b) Conservation Education in Schools

In Japan conservation education has yet to become established as a specific subject or curriculum, but is nevertheless is given instruction through the existing subjects of science, social studies, ethical training and through special activities in accordance with the grade of the

pupils. It is hoped schools will develop education plans within the scope these subjects and adopt the range of ideas provided for the production of educational materials and teaching methods, based on the teaching guidelines notified by the Ministry of Education, Science and Culture in accordance with the actual situation of the region or school.

自然保護年鑑刊行会（1996）：自然保護教育・自然ふれあい活動、自然と共に生きる時代を目指して 自然保護年鑑４、日生社

(6) Environmental Education 6-1) Environmental and Conservation Education in Japan

History of Environmental Education (Chronological Table)

Year \ Event	Japan	Overseas
1931	Enactment of National Parks Law	
1950	Establishment of National Park Association of Japan (foundational juridical person)	
1951	Establishment of Nature Conservation Society of Japan	
1957	Enactment of Natural Parks Law	
1964	Primary and Middle School Teachers' Pollution Control Measures Study Association	
1967	Enactment of Basic Law for Environmental Pollution Control	
1969		Sweden; Revision of Elementary Education Teaching Guidelines (emphasis on environmental issues)
1970		U.S.; Enactment of Environmental education Law
1971	Partial revision of Primary and Middle School Education Guidelines (improvement in education on pollution in social studies) Establishment of the Environment Agency	
1972	Enactment of Nature Conservation Law	Stockholm; United Nations Conference on the Human Establishment of UNEP (United Nations Environment Plan)
1973	Decision by Cabinet on Basic Policy on Conservation on the National Environment	
1974	Establishment of Charter of Nature Conservation	
1975		Belgrade; International Environmental Education conference (Belgrade Charter)
1977	Establishment of Japan Environment Association (foundational juridical person) Promulgation of new Primary and Middle School Education Guidelines (emphasis on environmental issues)	Intergovernmental Conference of Environmental Education of Tbilisi
1978	Promulgation of new High School Education guidelines (emphasis on issues related with environment and human life)	
1982		10th special meeting of UNEP Directors Council (Nairobi Declaration)
1986	Decision by Environment Agency on Long-Term Environment Conservation Plan	
1987		Report of World Conference on Environment and Development (WCED)
1988	Report by Environmental Education Panel of Environment Agency (Seeking for better environment created by everybody)	
1989	Revision of School Education Guidelines (introduction of "living" as a subject)	
1990		U.S.: Enactment of National Environmental Education Act.
1992		Earth Summit (United Nations Conference on Environment and Development) (Rio de Janeiro) Adoption of Agenda 21, etc.
1993	Promulgation and enforcement of the Basic Environment Law (Promotion of environmental education and learning)	
1994	Establishment of the Basic Environment Plan (Participation of everybody)	
1997		Thessaloniki, International Conference Environment and Society, Educational and Pabulic Awarness for Sustainability (Thessaloniki Declaration)
1998	The Director of the Environment Agency requested the Environment Central Council to inquire "future measures to expedite environmental education and learning." Revision of " Course of Study" (to institute " Period for Integrated Study")	

Japan International Cooperation Agency (JICA) (1999) : Textbook for the Group Training Course,Nature Conservation and Natural Parks Management, FY99,"Environmental Education"

(6) Environmental Education

6-2) Various Efforts

6-2-1) Schools, Natural Parks, Natural Monuments, Junior Eco Club, etc,

a) Public Education and Awareness on the Convention on Biological diversity

Public education and awareness on the aims of the “Convention on Biological Diversity”, the importance of the conservation and sustainable use of biological diversity, and the need for each person to make efforts will be promoted by holding symposiums commemorating the “International Day for biological Diversity (December 29)” proposed by the United Nations to commemorate the day when the “Conservation on Biological Diversity” entered into force, and by information activities such as the compilation and distribution of PR materials.

b) Promotion in School Education etc.

Elementary, lower secondary and upper secondary schools have so far taught biological diversity (life and types of plants and animals, relation of living things, etc.) and the importance of its conservation mainly in science classes according to the level of the students.

In the present Course of Study, further enhancement of contents is being promoted, while in schools, efforts are being made to deepen the students’ understanding of the mechanisms of living things and diversity through observation and experiments on nearby plants and animals, and learning by experience within nature. Efforts will be made to ensure the improvement of these steps. Also, in higher education, the conservation and sustainable use of biological diversity have been addressed. Efforts will be made to ensure that considerations be given to the improvement of these steps.

c) Efforts in Social Education

In terms of social education, efforts are being made to deepen understanding and awareness of the conservation of biological diversity through learning by experience such as nature observation events, holding classes on the conservation of the natural environment, establishing social education facilities to commune with nature, and so forth. Future improvement of these endeavours is attempted. The utilisation of such facilities as zoos and museums will be considered.

d) Environment Day

Various events are launched jointly with local governments, non-governmental organisations, etc., centring around “Environment Day (June 5)”, established under the “Basic Environment Law”. At the same time, utilising various information media, PR activities are carried out on

environmental conservation, including the conservation of biological diversity.

e) Survey on Familiar Plants and Animals

The “Survey on Familiar Plants and Animals” implemented with the cooperation of volunteers as part of the “National Survey on the Natural Environment” not only helps an understanding of the distribution of plants and animals, but also promotes public education and awareness on biological diversity. It will thus be continued in the future.

f) Junior Eco-Club

To build a sustainable society capable of environment-friendly the “Junior Eco-Club Project” supports activities which enable children, the future leaders of the next generation, to learn about the local environment and global environment, with friends in the region. As part of its activities, the relation between nature and man is addressed.

g) Measures in Natural Parks

In natural parks, activities are widely undertaken to enhance public awareness on the importance of conservation of natural environment and biological diversity. Those activities include events organised by such facilities as visitor centres to encourage people to come into contact with nature and to learn the mechanisms of nature.

h) Facilities for Utilising Natural Monuments

Touch with natural monuments, which are key natural elements carefully preserved by each region, and deeper understanding of their origin, significance in the local community, etc. provide ideal materials for environmental education in lifelong studies and school education. Therefore, the development of facilities (Eco Museum project) for utilising natural monuments, which will also increase public education, and awareness of the natural environment and its protection will be promoted.

i) Focusing on the “Greenery Day (April 29) and “Greenery Week” (April 23-29), “greening” and fund-raising activities under the slogan of “Greenness”, and nature observation gatherings are held nationwide.

j) All Japan Junior Green Friends Federation

To cultivate a sense of love for nature in the young and to help them develop into healthy, bright members of society, the “All Japan Junior Green Friends Federation” was established. Its purpose is to teach the young, who will be the leaders of the next generation, the concept of

greening, and basic knowledge of forests and forestry by providing opportunities for them to come into contact with forests and wild birds. Disciplined group education will be provided in the suburbs. In addition to supporting the activities of the federation, plans will be drawn up to develop and use schools' forest that are sites for greening activities such as nature watching for children and students, and studies of forests and forestry.

Council of Ministers for Global Environmental Conservation, Government of Japan (1995): National Strategy of Japan on Biological Diversity.
(http://www.eic/or/jp/eanet/en/pol/nsj/index.html)

(6) Environmental Education 6-2) Various Measures

6-2-1) Schools, Natural Parks, Natural Monuments, Junior Eco Club, etc,

Do you think yu've grasped the idea of J.E.C. now? There are so many fun and creative ways we can live to protect and preserve our beautiful Earth.
Take the first Step! Once you join J.E.C. you're on your way to discovering these!
It's extremely easy to join up:

- On the next of this page you"ll find the J.E.C. REGISTRATION FORM.
- On it, fill-in your group name, leader's name, the names of all members, the name of your adult supporter, and your own name and address.
- Now, spend the form to the coordinator at your local J.E.C. office.

Members who have been participating already must remember to RENEW every April. Please don't forget!

Members outside of Japan: Please note that some details in this book will be different for you. Feel free to contact us if you have questions.

JUNIOR ECO-CLUB NATIONAL OFFICE
c/o Environment Agency of Japan Office
Cosmos Aoyama/5-53-67 Jingu-mae, Shibuya-ku, Tokyo 150 JAPAN

Junior Eco-club、 http//www.wnn.or.jp/wnn-jec/english/whats/join_e.html

(6) Environmental Education

6-2) Various Measures

6-2-2) Measures in National Forests

In national forests, experience and technologies for managing forests accumulated over many years, and firm organisations and facilities established all over the country are available. Public education and awareness activities which make use of these will further increase an understanding of the importance of the conservation and sustainable use of biological diversity in forests.

For instance, the following activities and projects will be conducted for national forests.

a) Information on forests and forestry are actively provided through opportunities like forest recreation, seminars and training programmes held by companies, etc., and various events held jointly within social education, school education, etc. Officials with enough knowledge and skills on forests and forestry will be sent to these events as forest instructors to help to provide those information.

b) “Forest Fairs” should be held to sell forest products, and to provide information on forests and forestry to those living in cities who have little contact with forests.

c) The “Coming-into-Contact with Forest Promotion Plan (Forest Clubs)” will target citizens to promote their understanding of forests, forestry, and nature through events such as clear-air bathing in forest, experiential forestry and classes to learn forests and forestry.

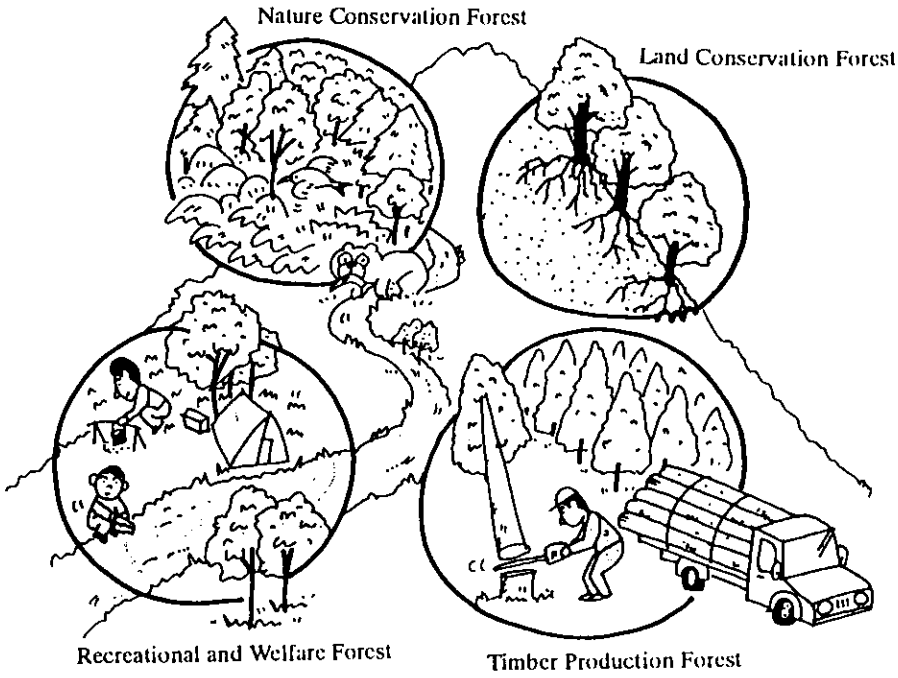
d) The “Human Green Plan” comprehensively will improve the fields for contacting nature for educating the young in national forests that are scenic and suitable for outdoor sports and promotes activities for popularising and enlightening people on forests and forestry based on those fields.

e) The “Forest School Improvement Work” will comprehensively improve education and training facilities, and forests for experiential forestry in national forests suitable for outdoor study activities in order to ensure extensive use of the fields for education of the young and lifelong learning.

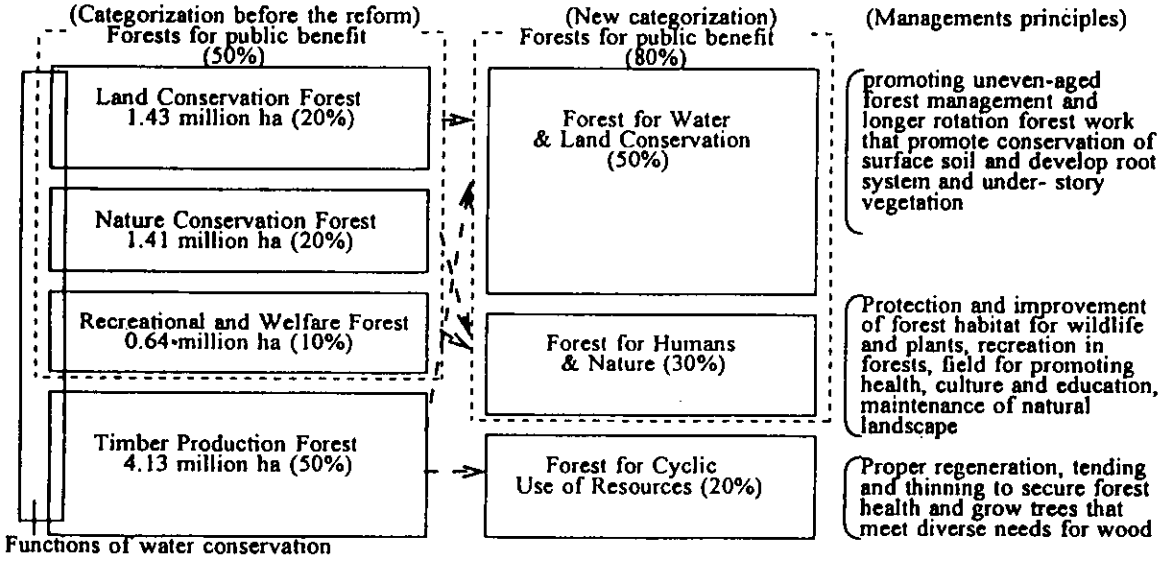
f) The “Management Programme for Buffer Zone of Forest Biosphere Reserves” aims to provide opportunities to learn functions of forests and how to experience them in primeval-like

forests in the conservation and utilisation zones (buffer zones) of Forest Biosphere Reserve by preparing educational facilities such as nature observation trails, resting huts, notice boards, etc., and actively promoting public education and awareness by distributing pamphlets and other teaching materials.

Council of Ministers for Global Environmental Conservation, Government of Japan (1995): National Strategy of Japan on Biological Diversity.
(http://www.eic/or/jp/eanet/en/pol/nsj/index.html)



New categorization of national forests by expected functions



林野庁監修（1993）：平成５年度 図説 林業白書、（財）日本林業協会

Forestry Agency(1999):Annual Report on Trends of Forestry, FY1998,(summary)

(7) NGO Programmes

7-1) NGOs for Natural Environment Conservation in Japan

7-1-1) Number of Groups and Scope of Programmes

a) Number of Groups

According to the NGO Directory 94, there were about 300 of NGO groups in Japan, of which 137 operate in developing countries by means of provision of funds and supplies and technical cooperation. The following year the Environmental NGOs Directory 95, listed 4,506 of environmental NGOs in Japan, of which 283 (6%) have overseas operations of which only 163 groups include nature conservation in their project activities.

b) Scope of Programmes

Programmes conducted by environmental NGOs in Japan vary in the nature and scope of the operations, which can be broadly categorised as follows:

- Regional: environmental issues in a specific region or location in Japan;
- National: environmental education, nature conservation, recycling, etc. on a nation-wide scale ;
- International: environmental cooperation with developing countries, etc.

In terms of the actual nature of their programmes of activities, the same NGOs can be categories as follows:

- Practical: actual field implementation for tree planting, recycling, wildlife conservation, etc.;
- Public awareness/ advocacy: environmental education, policy advice, etc.;
- Academic : research and studies for environment conservation, in developing countries, etc.;
- NGO Support: funding assistance, information networks, etc. for other NGOs.

c) Japanese NGOs

According to the Environment NGOs Guidebook 95, Japanese NGOs are characterised in descending order of scale, as follows:

- Types of programmes: Public awareness/consultation > Academic > Practical type > Supporting type;
- Number of full-time staff: international > national > regional;
- Annual budget: International = National > Regional;
- Requiring specialist staff: International > National > Regional;
- Demands from the government: funding assistance requested in categories.

It is assumed that NGOs that act or will act internationally face difficulty in lack of funds and qualified specialist staff. While organisations working in nature conservation in a specific region or country, on a piecemeal basis, however there are no NGOs with the size or capacity to undertake a range of nature conservation on a truly international level, such as exist in other Western countries.

（財）自然環境研究センター（1996）：環境事業団委託 開発途上地域環境保全活動方策（自然環境保全活動）に関する調査報告書」、自然環境研究センター
ＮＧＯ活動推進センター（1988）：ＮＧＯダイレクトリー　－国際開発協力に携わる民間公益団体、（財）日本シルバーボランティアズ
ＮＧＯ活動推進センター（ＪＡＮＩＣ）（1996）：ＮＧＯダイレクトリー‘96、ＮＧＯ活動推進センター
（財）日本環境協会 編（1998）：平成 10 年版 環境ＮＧＯ総覧、日本環境協会

(7) NGO Programmes 7-1) NGOs for Natural Environment Conservation in Japan

7-1-1) Number of Groups and Scope of Programmes

a) Subject of Business

Subject	Number of organisations	Ratio(%)
Environment Conservation	1,592	37.7
Environment conservation is not main subject but one of component	2,621	62.2

b) Type of Business (multiple response)

Type	Number of organisations	Ratio(%)
Practice (Project implementation on the ground)	3,044	72.0
Awareness building	3,074	72.7
Study and research	1,936	45.8
Assistance to other organisation	1,223	28.9
Advocacy	915	21.6
Others	200	4.7

c) Field of activity (multiple response)

Field	Number of organisations	Ratio(%)
Forest conservation,Greening	748	17.7
Nature conservation	1,902	45.0
Air quality conservation	399	9.4
Water quality conservation	1,558	36.9
Combating desertification	65	1.5
Wastes and recycle	2,128	50.3
Consumer education	1,580	37.4
Environment education	1,831	43.3
regional environment management	1,029	24.3
Others	282	6.7

d) Target Area (multiple response)

Area	Number of organisations	Ratio(%)
Within a municipality	3,965	93.8
Cross municipalities	815	19.3
within a prefecture	837	19.8
Cross prefectures	325	7.7
National level	489	11.6
Others	53	1.3
International	497	11.7
Asian region	209	4.9
Africa region	65	1.5
Others	223	5.3

(財) 日本環境協会 編 (1998) : 平成 10 年版 環境ＮＧＯ総覧、日本環境協会

(7) NGO Programmes

7-1) NGOs for Natural Environment Conservation in Japan

7-1-2) Organisations and Systems

a) Organisations

In 1998, survey was undertaken by the Japan Environment Corporation (JEC) of major NGOs working in nature conservation, that were, or were considering operating outside of Japan through means of financial assistance from the JEC-initiated Japan Fund for Global Environment. In all valid responses were received from 19 organisations, four juridical foundations, one corporate body and 14 voluntary associations.

The survey revealed that the annual budget for each of the voluntary associations were all below JP¥ 50 million (including some below JP¥ one million) while those for the juridical foundations and the corporate body are all over JP¥ 50 million (including some over JP¥ 500 million). The survey also revealed that most of the voluntary associations either did not employ full-time staff or employed very few, while the juridical foundations and the corporate body consistently employed staff on a full-time basis; more than 30 members in some cases. Worthy of note is the revelation that even organisations with budgets below JP¥ 20 million employed only two to three members of full-time staff. All this suggests that voluntarism and the extremely low wages for staff are barely capable of sustaining NGO s.

For ten of the above organisations, the largest source of revenue was subsidies, while membership fees was the major source for four of them, and donations or business transactions for two others. Although 16 of the above 19 organisations have membership on an individual or group basis, the membership of 11 of these organisations is only 500 or less, while the largest membership was only 48,000. It is obvious this figure is much smaller than can be found for large NGOs in Western countries, and highlights the comparatively small base of support for NGO and their programmes in Japan.

b) Present Status of Overseas Projects

According to the above questionnaire survey, there were 54 cases instances of overseas projects undertaken by 19 organisations. 48 of these were in Asia/Oceania, 14 in Latin America, two in Europe and one in Africa. Funding is often in the form of several donor agencies supporting the one project, and 85% of the donor support in number came from Japanese funding organisations. This is due to some extent to the fact that it is possible to procure funds domestically but also may imply that many organisations are simply not acquainted with the means for procuring funds from overseas.

Most of the overseas projects are implemented in cooperation with local organisations or

with international NGOs in those countries. As far as the funding burden is concerned, the survey revealed that in nine cases the projects were fully supported by the Japanese side, while 80 to 90% of the support was provided in three cases and 70 to 79% in a further three. This indicates that the Japanese side usually procures the funds in most of the projects. Major obstacles to implementation of the programmes were indicated as: poor communications, funding, different system of doing things, cultural differences, and organisational difficulties.

It is considered that, besides nature conservation in a narrow sense, there are many programmes relating to nature conservation in such categories as forest conservation, environmental education and range management. According to Environment NGOs Guidebook 98, there are the following categories in the projects conducted in the field by environmental NGOs:

- Forest conservation and afforestation: tree planting, sustainable forest management, extension programmes such as improved charcoal production and cooking stoves, etc.;
- Nature conservation: wildlife and habitat conservation, biodiversity studies, nature observation, etc.;
- Air conservation: protection of the ozone layer, countermeasures for global warming, control of air pollution, improved efficiency of energy use, etc.;
- Water conservation: coastal marine conservation, control of water pollution, etc.;
- Prevention of desertification: tree planting, prevention of droughts, etc.;
- Recycling and waste: reduction of waste, cleanup, etc.;
- Consumption and lifestyle: low burden on environment, green consumers, etc.;
- Environmental education: public awareness of environmental issues;
- Range management: water/soil conservation, sustainable development in agriculture, environment-friendly towns/cities, etc.;
- Other.

In December 1998, the Specific Non-profit Action Promotion Law was put into force to support programmes by non-profit organisations (NPOs), and we can expect that these and other developments will bring changes to both the nature and scope of NGOs and their programmes

（財）自然環境研究センター（1996）：環境事業団委託 開発途上地域環境保全活動方策（自然環境保全活動）に関する調査報告書」、自然環境研究センター

(7) NGO Programmes 7-1) NGOs for Natural Environment Conservation in Japan

7-1-2) Organisations and Systems

a) Schale of Budget

Budget schale(¥)	Number of organisations	Ratio
less than 1 million	2,252	53.3%
more than 1 m, less than 5 m	698	16.5%
more than 5 m, less than 10 m	142	3.4%
more than 10 m, less than 50 m	211	5.0%
more than 50 m, less than 100 m	74	1.8%
more than 100 m, less than 500 m	90	2.1%
more than 500 m, less than 1 billion	25	0.6%
more than 1 billion	53	1.3%

b) Staff Size

Staff size	Number of organisations	Ratio
1person −10 persons	1,667	39.4%
11 - 50	1,025	24.2%
51 - 100	78	1.8%
101 - 200	37	0.9%
201 - 300	9	0.2%
301 - 400	4	0.1%
401 - 500	2	0.1%
501 - 1,000	5	0.1%
more than 1,000 persons	3	0.1%

c) Member ship

Number of members	Number of organisations	Ratio
1person - 10 persons	163	3.9
11 - 50	1,212	28.7
51 - 100	656	15.5
101 - 500	1,042	24.7
501 - 1,000	242	5.7
1,001 - 5,000	250	5.9
5,001 - 10,000	46	1.1
10,001 - 20,000	28	0.7
20,001 - 30,000	8	0.2
30,001 - 40,000	9	0.2
40,000 - 50,000	5	0.1
more than 50,001persons	22	0.5

(財) 日本環境協会 編 (1998) : 平成 10 年版 環境ＮＧＯ総覧、日本環境協会

(7) NGO Programmes

7-2) Programmes for Supporting NGOs in Japan

7-2-1) Government Organisations

a) System of Subsidies for NGO Programmes

This system was started in 1989 by the Economic Cooperation Bureau of the Ministry of Foreign Affairs, and had contributed around JP¥ 1.6 billion for 341 cases by 1995. The system supports a maximum of 50% of the total cost of a NGO project in the range from JP¥ 1 to 10 million. The system aims to support and foster economically weak NGOs and their wide range of programmes, such as farming/fishing community development, developing human resources, health care, medical care, local industries, life environment, conservation of the environment and supplies transportation by private aid.

b) Grant Assistance for Grass-roots Projects

This small-scale grant assistance subsidises the cost of social development projects undertaken in 64 developing countries and one region at the grass-roots level. The reasons for introduction of the system are as follows:

- Necessity to precisely correspond to the diversified needs in developing countries;
- Good diplomatic effect by similar systems implemented by other major aid countries;
- Recommendation of introduction of the system by the ODA Administrative Inspection.

The Japanese Embassy in each country holds jurisdiction over the grant assistance. The system mainly supports NGOs (62% of the groups granted assistance), local public bodies and research/medical institutes. The amount of the budgets is rapidly increasing and the amount granted per case is JP¥ 5 million in average and JP¥ 20 million in maximum. It is possible for applications to be approved within a few weeks or months.

c) Postal Savings for International Voluntary Aid

This system was started in 1990 by the Ministry of Posts and Telecommunications to encourage international cooperation through participation of the people. In this system, 20% of the interest on the postal savings is regarded as donations and distributed to NGOs. Between 1991 and 1994, about JP¥ 8.4 billion was granted to 673 groups operating 914 projects. The system includes part of the personnel expenditure in the subsidy and to cover projects planned for a few years. Many projects are related to improve social welfare for people (women, children, farmers, slummer, refugees, etc.) in developing countries mainly in Asia. There are a few projects for environment-related programmes in the form of nature conservation

d) NGO support programme for international construction cooperation

There is a programme supports international cooperation by NGOs in the field of construction through an indirect way subsidising the cost to train and dispatch experts: it does not support NGO projects directly. For application to the programme, it is required to receive request, recommendation or approval from the public bodies, local communities or NGOs in the recipient countries.

e) NGO promotion programme for agriculture and forestry cooperation

There is a programme supports NGOs that cooperate in the field of agriculture and forestry by dispatch of experts, staff training, symposium, publication, etc. The amount of the subsidy in each expenditure item is limited. For application to the programme, it is required to receive request or recommendation from the public bodies in the recipient countries.

f) Promotion programme for activities of forestry NGOs

There is a programme undertaken by Japan International Forestry Promotion and Cooperation Center. The programme supports NGOs that work on afforestation in tropical regions or developing countries. The programme subsidises the costs of attending international conferences, surveys for project finding and counterpart training and also supports technical training, information services and network creation.

g) Japan Fund for Global Environment

Based on the results of the Earth Summit in 1992, this fund was established within the Japan Environment Corporation in 1993 to support NGO activities for global environmental conservation. National budgets and donations from the private sector contribute to this fund which provides assistance to project costs, human resources and information services. The fund is benefits a large number environmental NGOs, supporting a wide range of projects with a wide range of expenditure. The NGO projects supported are divided into the following three types:

- Projects in developing countries by Japanese NGOs;
- Projects in developing countries by local NGOs;
- Projects in Japan by Japanese NGOs.

（財）国際協力推進協会（1995）：わが国ＮＧＯに対する支援体制調査、国際協力推進協会

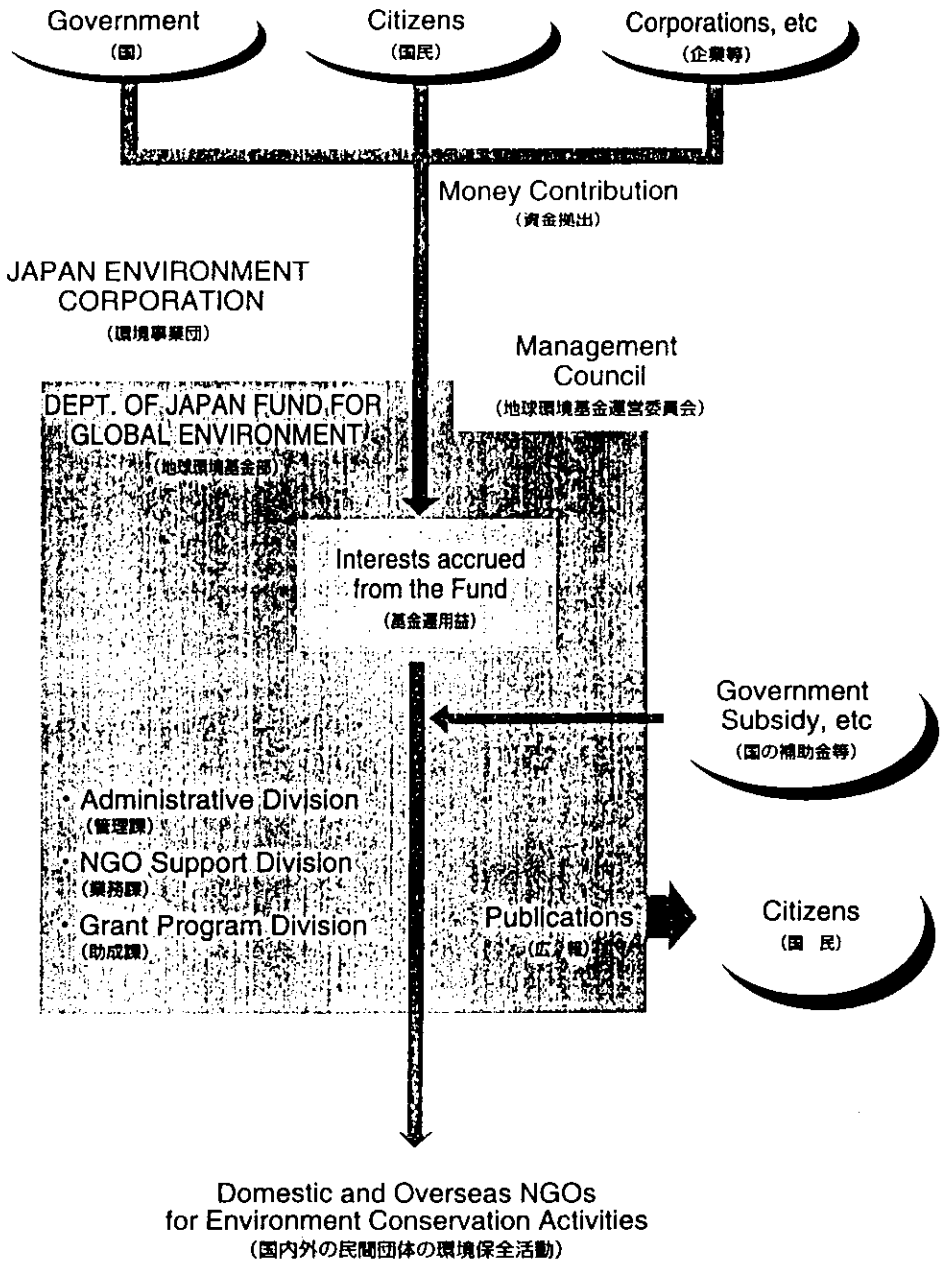
（財）自然環境研究センター（1996）：環境事業団委託 開発途上地域環境保全活動方策（自然環境保全活動）に関する調査報告書」、自然環境研究センター

環境事業団（1998）：平成 11 年度地球環境基金助成金募集案内、環境事業団

(7) NGO Programmes 7-2) Programmes for Supporting NGOs in Japan

7-2-1) Government Organisations

Mechanism of the Japan Fund for Global Environment (Japan Environment Corporation)



Japan Environment Corporation (1999): Japan Fund for Global Environment (brochure)

(7) NGO Programmes

7-2) Programmes for Supporting NGOs in Japan

7-2-2) Private Funds and Foundations

a) The development of Environment Aid Foundations

In the late 1960s, people began to become aware of environmental issues such as pollution, conservation of the natural and historical environment. With the creation of the Basic Law for Environmental Pollution Control in 1970, in 1971the Japanese government established the Environment Agency to tackle environmental issues at national level. Research programmes on these environmental issues became active and new organisations, institutes and university departments were established, such as the National Institute for Environmental Pollution (1974).

Three private foundations were established in 1974 to provide for support for environmental studies: The Tokyu Foundation for Better Environment, the Nissan Science Foundation and the Toyota Foundation. Following this, more began to spring up, such as the Foundation of River and Watershed Environment Management (1975), the Nippon Life Insurance Foundation (1979) and the Fuji Film Green Fund (1983). Of particular significance is the fact that that these foundations started to provide assistance to NGOs.

In the 1980s, the environment foundations extended their scope internationally towards nature conservation in developing countries and the conservation of natural ecosystems on a global scale. These included the Defence of Green Earth Foundation (1983), the Foundation for Earth Environment (1987), the Nagao Natural Environment Foundation (1989), the Aeon Group Environment Foundation (1991) and the Sumitomo Foundation (1991).

b) Categories of Assistance

Private funds and foundations that assist research and NGO activities in the field of nature conservation in overseas countries are divided into four main categories based on kind of assistance they provide. The categories are: for academic studies, for NGO programmes in Japan, for overseas NGOs and for local Japanese NGOs.

1. Organisations mainly assisting academic studies

Asahi Glass Foundation, Sumitomo Foundation, Foundation for Earth Environment, Toyota Foundation, Nissan Science Foundation, Nippon Life Insurance Foundation, etc.

2) Organisations mainly assisting NGO programmes in Japan

Aeon Group Environment Foundation, Global Citizens Foundation, Niwano Peace Foundation, Mitsubishi Bank International Foundation, Hino Green Fund, etc.

3 Organisations assisting overseas NGOs

Asian Community Trust, Keidanren Nature Conservation Fund, Pro Natura Foundation

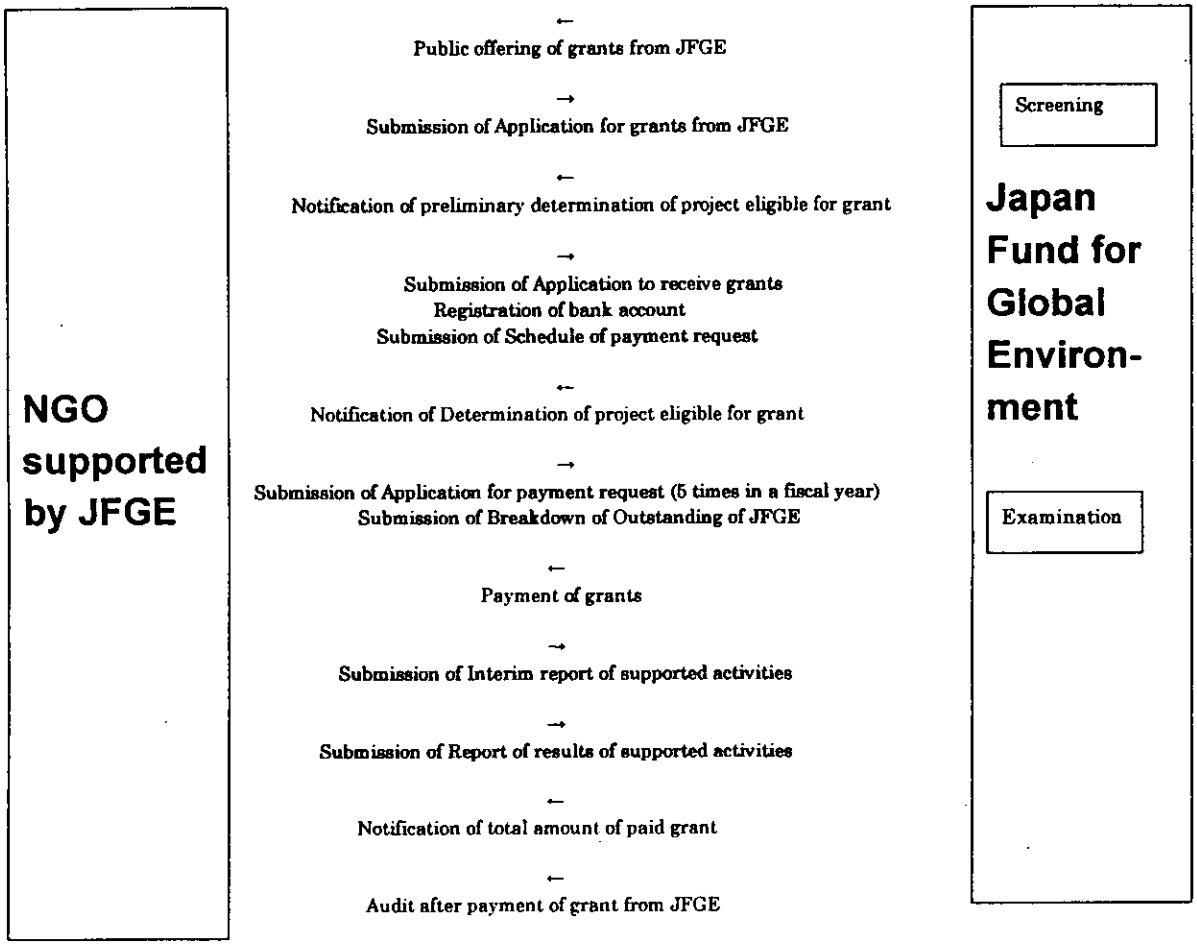
(Japan), Nagao Natural Environment Foundation, Defence of Green Earth Foundation, etc.

4 Organisations assisting Japanese NGOs.

Ayus Buddhism International Cooperation Network, Rissho Kosei-kai Fund for Peace, etc.

（財）自然環境研究センター（1996）：環境事業団委託 開発途上地域環境保全活動方策（自然環境保全活動）に関する調査報告書」、自然環境研究センター

Flow of the procedures for grants from JFGE



Department of Japan Fund for Global Environment, Japan Environment Corporation (1998):Information on Japan Fund for Global Environment for Fiscal Year 1998 (April 1998 to March 1999)

(7) NGO Programmes

7-3) Overseas NGO Projects for Nature Conservation by NGO Supporting Programme

The following are some typical examples of environmental education projects by overseas NGOs that were assisted by Japan Fund for Global Environment, Japan Environment Corporation, in 1998.

a) Natural Environmental Education for Children in Farming/Fishing communities in Bangladesh (Bangladesh Poush)

Bangladesh is one of the poorest countries in the world; there are many children who are unable to go to school. To develop basic education programmes and materials and to implement natural environmental education, Bangladesh Poush started the private school education programme in 1992 for children unable to attend public school in the remote areas.

By this project from 1995 to 1997, a range of activities were conducted such as production of a series of education materials, supplying of writing materials, training instructors and undertaking nature walks and workshops. This localised project received considerable attention and had an effect on public schools, which then incorporated much of the project output into the curriculum

b) Environmental Education for Improving Air Environment in Kathmandu (Leaders-Nepal)

Kathmandu, the capital city of Nepal, has since 1990 been one of the world's worst areas for air pollution, and until recently the actual status of the air pollution was not scientifically understood. The Ministry of Population and Environment and Kathmandu City then came to recognise the need to study the air and climate, and Leaders-Nepal initiated a project to promote improved measures and public awareness of air pollution.

This project achieved the training of instructors, purchase of research equipment and a monitoring survey of the air pollution implemented at 13 points in the city assisted by a large number volunteers. Regular reports and lectures on the results of the survey were used in classes of primary and secondary schools, educating the students on simple measurement techniques for air pollution. This project subsequently encouraged the government and the city to establish measures for the environmental standards.

c) Awareness campaign for Forest Conservation and Improvement of Villagers' Life in the Western Nepal (Macchapuchhre Development Organisation)

For forest conservation, it is important to ensure that projects aim to provide practical benefits to the local communities as well as the conservation of nature. With this in mind, the

Macchapuchhre Development Organisation carried out basic studies on the socioeconomics, wildlife and vegetation at 36 villages in the Western Nepal where the cutting of tress for the daily needs of the local people was accelerating the deforestation of the area. The main objectives of the studies were: i) training of extension staff for forest conservation and life improvement; ii) preparation of nurseries; iii) development and use of alternative energy sources; iv) awareness programmes; and v) establishment of a long-term plan. The study concluded that there was a need for alternative energy sources and awareness of the need for forest conservation among local people gradually rose.

d) Environmental Education Programme in Marine Natural Parks in Kenya (Wildlife Clubs of Kenya)

Wildlife Clubs of Kenya has been working on youth-oriented environmental education to conserve marine ecosystems and resources along the Kenyan Coast, of unique value on a world scale. One of the problems in the programme was the lack of opportunity for school children to actually visit and observe these ecosystems because of lack of the funds available to them.

After receiving funding assistance, this Wildlife Clubs of Kenya developed an environmental education programme as follows: i) production of education materials based on the results of environmental studies; ii) purchase of a boat equipped with out-board engine and employing coxswains; and iii) implementing experiential programmes with lectures, nature observations and meetings. As the result, school children came to appreciate the seriousness of deterioration of the ecosystem and the need for pollution control and conservation efforts.

環境事業団地球環境基金（1998）：海外ＮＧＯの環境教育事例、（財）地球環境戦略研究機関・環境事業団「環境教育海外支援ワークショップ」発表資料

(7) NGO Programmes 7-3) Overseas NGO Projects for Nature Conservation by NGO Supporting Programmes (Part 1)

ENVIRONMENTAL PROTECTION ACTIVITIES IN DEVELOPING COUNTRIES BY JAPAN-BASED NGOs in 1998

	No.	NAME OF ORGANIZATION	AMOUNT OF GRANT(¥)	TITLE OF PROJECT
A	1	Pacific Asia Resource Center	5,200,000	Research on Abandoned Shrimp Ponds in Thailand
A	2	Asia Arsenic Network	7,200,000	Research and the Improvement of Environment in The Arsenic-affected Area of Inner Mongolian A.R. China
A	3	Asian People's Exchange	3,100,000	Asian NGOs' Conference on Appropriate Technology for Wastewater Treatment
A	4	Save Africa Project	6,100,000	Construction of the African Center for Environmental Sciences and Technologies
A	5	Society of Environmental protection of Isikawa	1,800,000	Collaborative Test Research for the Propagation of Appropriate Joint Treatment Wastewater Purifiers in Jiangsu Province, China
A	6	AMR, Amenity Meeting Room	3,100,000	Environmental Activities for Improving West Lake, XIHU, Amenity Workshop in Participating with Local Inhabitants, Hangzhou, Zhejiang, China, 1998
A	7	OISCA JAPAN	7,800,000	Reforestation Project for Southern Part of Sri Lanka
A	8	Japan Industrial Conference for Ozone Layer Protection	2,700,000	Cooperation with China in Ozone Layer Protection
A	9	The Association for Overseas Technical Scholarship (AOTS)	3,600,000	The Seminar in Iran on Air Pollution and Environmental Protection
A	10	Association of Cooperation for Self-Support in Rural West Africa	5,400,000	Tree Planting for Conservation of Environment.
A	11	Environmental information Center	3,800,000	Staff Training Program of JAPAN-CHINA Environmental Cooperation Project
A	12	[KEEP] Kiyosato Educational Experiment Project	4,500,000	Development and implementation of E. E. programs in the Philippines through an Environmental Education audio-visual program
A	13	Kiko Network	7,200,000	Activities of COP3 Follow-up and Towards COP4
A	14	Society for Research of Golden Eagle	3,100,000	The Symposium on Raptors of South East Asia
A	15	Japan Kenaf Association	4,000,000	Forest Conservation in Vietnam —To Preserve the Global Environment by Promotion of the Large -Scale Cultivation of an Annual Plant "Kenaf"—
A	16	Japan International Marine Science and Technology Federation (JIMSTEF)	2,800,000	Marine Afforestation Work for Improve the Environments of the Coastal Zone in Vietnam
A	17	International Center for Environmental Technology Transfer (ICETT)	3,800,000	Environmental Management towards Philippines 2000
A	18	International KUDZU GREEN SANNAN (IKGS)	4,500,000	Kudzu Green Project in PINATUBO, PHILIPPINES
A	19	International Lake Environment Committee Foundation (ILEC)	1,200,000	Teacher Training Workshop on Environmental Education in South-East Asian Countries
A	20	Wetlands International Japan	3,100,000	Conservation of Mangrove Forests in Micronesia
A	21	Japanese Center for International Studies in Ecology (JISE)	5,400,000	Eco-environmental Survey and Reforestation Experiment in the East of China
A	22	International Good Neighborhood Association (IGNA)	4,500,000	The Project on Enlightenment and Training of Talent Person Supporting the Environmental and Ecosystem Conservation of China
A	23	Japan International Forestry Promotion and Cooperation Center	3,800,000	Afforestation in the Union of Myanmar Through Establishing a Community Forest
A	24	The Party for Greening of Desert	3,800,000	Desert Greening at And Region and Improvement of Environment for Agricultural Production in the Republic of Djibouti

環境事業団（1999）：平成 11 年度地球環境金助成案件の決定、地球環境基金便り、No-13、より

(7) NGO Programmes 7-3) Overseas NGO Projects for Nature Conservation by NGO Supporting Programmes (Part 2)

	No.	NAME OF ORGANIZATION	AMOUNT OF GRANT(¥)	TITLE OF PROJECT
A	25	SOMNEED (Society for Operation Minimum Needs)	1,800,000	Decentralized Energy Opinion: Mini Hydro Power Project
A	26	Japan Acid Rain Monitoring Network (JARN)	4,500,000	Cooperation on Life Environmental Assessment in Developing Countries
A	27	Committee for the conservation and care of the chimpanzees, Japan (CCCC-Japan)	2,700,000	Use of Videos for the Conservation of Wild Chimpanzees at Bossou, Guinea
A	28	Japan Wildlife Research Center (JWRC)	4,500,000	Implementing Environmental Education in Rural Areas of the Philippines
A	29	Tools For Self-Reliance, Japan	3,800,000	Decentralized Energy Options Project (Sri Lanka)
A	30	Japan Coal Energy Center	3,800,000	Workshop on the Promotion of Environmental Technology for Coal Production in the Asia-Pacific Region
A	31	Supporting Society of center for Nepal Environmental and Educational Development	3,800,000	Construction of Environmental Garden in Swayambhu Katmandu, Nepal
A	32	The Japan Action Commission of Environmental Pollution Victims	3,800,000	A Project of Exchanges and Studies on the Pollution Experience by Inviting Victims from Developing Counties
A	33	Japan Domestic Fuel Dealers Association	4,000,000	Schedule of Technology Transfer Mission on Charcoal and Wood Utilization to Lao
A	34	Japan Post Society	4,900,000	Research of Greening Desertified Land in the Upper Reaches of the Yellow River
A	35	Soutousyu Volunteer Association	6,300,000	Basic Study on the Environment of Cambodia (A Summary Translated from the Japanese Report)
A	36	Solar Net	4,900,000	NGO Project on Diffusion of Technology for the Small Scale Solar Electric System and Environmental Education
A	37	Japan National Committee for Pacific Economic Cooperation Triple-T Task Force	3,100,000	Conservation of Natural Resources ad Revitalization of Local Economy Through Eco-tourism in Fiji
A	38	Global Environment Centre Foundation	2,500,000	Implementation of Case Study to transfer Environmentally Sound Technologies (Thailand)
A	39	Institute of Earth Science and Technology	3,100,000	Study for Reducing Damage from Acid Rain in Guiyang Region, China (Including the Field Surveys of Acid Rain)
A	40	Global Industrial and Social Progress Research Institute	3,400,000	Workshop and Related Studies for Dissemination of Plastic Waste Recycling in China
A	41	Friend of The Earth-Japan	2,800,000	Support to Sustainable Economic Development of an Indigenous People's Community and Protection of Its Surrounding Forests in Primorskiy Krai of Russian Federation
A	42	Global Voluntary Service (GVS)	4,900,000	Improving Cooperation in Environmental Activities Through Networks of Environmental NGO's in the Philippines
A	43	"EGAJ "Earth Greenery Activities Japan	5,400,000	Kenya Victoria Lake Environment Pollution Monitoring
A	44	Assistance Committee On The Environmental Protection Of China	3,800,000	Educate for Ordinary Environmental Monitoring Engineer and Hold Workshop for Them in China
A	45	Geo-Environmental Protection Center (GEPC)	3,100,000	2nd International Workshop on Geo-Environmental Restoration
A	46	Japanese Organizing Committee for Japan-China Co-operative Symposium on Environmental Education	2,200,000	The Third Japan-China Co-operative Symposium on Environmental Education/Beijing Convention
A	47	Children's Rainforest Japan <The Earth Club>	1,000,000	Making Teaching Materials of Low Land Rainforest in Thailand for Young Generation of Japan
A	48	Japan-Brazil Network	3,800,000	Promotion of Environmental Education for Conservation of Atlantic Forest in Brazil
A	49	Japan NGO Network on Indonesia (JANNI)	3,100,000	Workshop for People's Participatory Environmental Conservation Activities

環境事業団（1999）：平成 11 年度地球環境金助成案件の決定、地球環境基金便り、No-13、より

(7) NGO Programmes 7-3) Overseas NGO Projects for Nature Conservation by NGO Supporting Programmes (Part 3)

	No.	NAME OF ORGANIZATION	AMOUNT OF GRANT(¥)	TITLE OF PROJECT
A	50	Japan International Volunteer Center	7,200,000	Project for Research and Development of Environmentally Sound Natural Agricultural Method
A	51	Japan Environmental Council	2,700,000	Continued Production of the NGO Version of "The State of the Environment in Asia" and Formation of a Network in Asia
A	52	Japanese Forum of Environmental Journalists	900,000	4th Environmental Study Tour for Asian Journalists
A	53	Japanese Association for Wild Geese Protection	7,200,000	Inventory of Goose Habitat of International Importance in East Asia
A	54	Soundscape Association of Japan	2,700,000	Campaign for Reducing Urban Noise Pollution and Environmental education for Citizens in Thailand
A	55	Commission of Agricultural Development for Arid Lands, The Japanese Association for Arid Land Studies	3,800,000	Realization of Urban Waste-based Compost for Desert Greenization in Egypt
A	56	The Japanese Alpine Club	3,400,000	Afforestation Project of Rhododendron in Nepal
A	57	Foundation Japan Industry Development Youth Association	4,500,000	Enhancing Forestry by Planting Young Trees in Chinese Kubuchi Desert and Preservation Farm Lands and Meadows in The Neighborhood
A	58	Japan Offspring Fund	3,800,000	The Enlightening Act to Widely Diffuse the Influence of the Endocrine Disruptive Chemicals in South East Asia
A	59	Ecosystem Conservation Society-Japan	4,000,000	Researches of Fauna Distribution and Social Environments Causing Wildlife Decline, and Dissemination of the Necessity of Wildlife Conservation
A	60	Japan Bio-village Association	5,800,000	A Model Project for Prevention of Desertification in Horqin Sandy Land, Inner Mongolia, China
A	61	The Hunger Project-Japan	5,400,000	Volta Afforestation Project in Ghana
A	62	Japan-Brazil Central Association	3,400,000	Field Works on The Sustainable Land-Uses in The Semi-Arid and The Humid Tropics in Brazil, and Demonstration on The Results
A	63	Japan-Malaysia Association	4,000,000	Program for Improving Regional Life Environment (Malaysia)
A	64	Wild Society of Japan	5,400,000	Research and Conservation for Threatened Black-Faced Spoonbill
A	65	The Japanese Society of Irrigation, Drainage and Reclamation Engineering	4,000,000	Monitoring of Land Use/Land Cover Change in Asian Countries and Measures for Escaping from Poverty Through Agricultural Land Conservation
A	66	BirdLife International Asia Council	3,800,000	Conservation of the Great Bustard and Establishment of an International Network of Protection Areas
A	67	Biwa Union of Scientists	2,200,000	Long-term observation of Rising Water Level in Lake Huvsgul, Mongol
A	68	Action for Mangrove Reforestation (ACTMANG)	4,900,000	Establishment of Mangrove Eco-Park Model in Can Gio District, Ho Chi Minh City, Vietnam
A	69	Research Association for Global Mangrove (REAGMAN)	7,200,000	The Green Carpet Project in Nakhon Si Thammarat
A	70	Global Environmental Action	6,300,000	Promotion of Prevention of Global Warming in Asia
A	71	Green Earth Network	3,100,000	Investigation into Influence of Global Warming on Huangtu Plateau in Shanxi, China
A	72	The Defense of Green Earth Foundation	4,000,000	Supporting Community Woodlot Activities and Promotion of Their Network in Tanzania
A	73	Mikono International	4,500,000	Mikono Afforestation Project in Tana-River District, Coast Province, Kenya
A	74	Ramsar Center Japan	5,400,000	Public Awareness on the Ramsar Convention and Its Wise Use Concept Among as Asia and Japan

環境事業団（1999）：平成11年度地球環境金助成案件の決定、地球環境基金便り、No-13、より

(7) NGO Programmes

7-4) Activities of International NGOs

International NGOs first emerged in developed countries after the Second World War and rapidly expanded in the 1980s, in accordance the Stockholm Conference of 1972. International NGOs can be divided into three groups in terms of the activities: NGOs for research and think-tank functions, NGOs for international nature conservation and NGOs that have extended their programmes to overseas countries.

a) NGOs for Research and Think-tank Functions

1) World Conservation Union (IUCN): Gland, Switzerland

The IUCN is composed of governments, governmental agencies, international institutions and NGOs and works toward nature and wildlife conservation in cooperation with FAO, UNEP, UNESCO and USAID. In 1980,the IUCN in cooperation with the WWF produced the World Conservation Strategy and the Global Biodiversity Strategy in collaboration with WRI and UNEP in 1992. Since 1993, the IUCN has been developing biodiversity conservation programmes and supporting policy planning as well as the establishment of research institutes necessary for the implementation of the Convention on Biological Diversity. The IUCN also implements the Species Survival Programme with the Species Survival Commission (SSC) and publishes Red Data Books and Lists for threatened species of wildlife. In addition the IUCN provides support for preparation of the national database, makes the world list of National Parks and Nature Reserves and implements projects for sustainable use of wildlife and conservation of forests and wetlands.

2) Birdlife International : UK

The Birdlife International was created as the International Council for Bird Preservation (ICBP). To promote conservation of wild birds internationally, Birdlife International produces Red Data Books for birds and implements biodiversity projects and migratory bird programmes.

3) World Resources Institute (WRI): Washington D.C., USA

WRI was established as a private research and policy study institute in 1982. Receiving financial support from foundations, governments, governmental institutions, private companies and individuals, the WRI implements policy studies in six areas: i) climate, energy and pollution; ii) forests and diversity; iii) economy; iv) technology; v) resources and environment information; and vi) systems. In cooperation with UNEP, UNDP and NGOs, WRI collects and analyses a wide range of scientific data on the environment and development throughout the world and publishes the results in the report World Resources biennially. The WRI plays an important role for policy making at the international level; for example, planning the

Convention on Biological Diversity, producing the Global Biodiversity Strategy and advising USAID in collaboration with the WWF and TNC.

b) NGOs for International Nature Conservation

1) World Wide Fund for Nature (WWF): Gland, Switzerland

The WWF was first established as World Wildlife Fund in 1961 and is the largest nature conservation NGO in the world, comprising national committees and the official collaboratory associations in 28 countries. WWF has raised funds for wildlife conservation, particularly for endangered species, throughout the world and has managed around ten thousand projects, ranging from basic research to special conservation activities in 130 countries, with financial support. The WWF, in cooperation with USAID, implements debt-for-nature swap projects as well as projects for natural resources management in Latin America and Africa as well as trust funds for environment conservation in Latin America, Asia and East Europe. It also supports the activities of TRAFFIC, which monitors international trade on threatened species listed on the appendixes of CITES and works To ensure proper enforcement of the Articles of the Convention by the Parties

c) NGOs extending their programmes Abroad

1) Conservation International (CI): Washington D.C., USA

CI is a nature conservation NGO working mainly in Latin America and is known for carrying out the first debt-for-nature swap with Bolivia in 1987. CI programmes are as follows:

- Rapid assessment programme: a biodiversity assessment method for large, undocumented areas;
- Biosphere Reserve programme: integration of ecosystem conservation, scientific research and economic development in local communities;
- Geological information system: Planning conservation strategies through a spatial database comprising such layers of information as topography, catchment areas, protected areas and biodiversity;
- Designation of biodiversity hotspots: assigning of conservation priorities by identifying and designating the most threatened locations in tropical forests and other ecosystems.

2) The Nature Conservancy (TNC): Washington D.C., USA

TNC is a nature conservation NGO established in 1951 and has 58 branches throughout the United States. TNC acquires land through donations, contracts, exchange and outright purchasing, and now administers by means of management plans some 1,300 Nature Reserves. TNC works on the selection of important and representative areas for biodiversity around the world and designation of endangered species of wildlife and their habitats in the areas where

they are found. TNC also works on debt-for-nature swap projects, nature management partnerships and, projects for natural resources management in Latin America.

（財）自然環境研究センター（1996）：国際協力事業団委託 開発途上地域環境保全活動方策（自然環境保全活動）に関する調査報告書」

(7) NGO Programmes 7-4) Activities of International NGOs

ENVIRONMENTAL PROTECTION ACTIVITIES IN DEVELOPING COUNTRIES BY RECEPANT COUNTRY BASED NGOs in 1998				
	No	NAME OF ORGANIZATION	AMOUNT OF GRANT(¥)	TITLE OF PROJECT
B	1	Earth Council	9,000,000	Capacity Building of Council for Sustainable Development (CSD) in Developing Countries
B	2	Philippine Institute for Alternative Future	4,500,000	Climate Change and Forests Water Resources Issued for National Councils of Sustainable Development in Asia Pacific
B	3	Indian Environment Society	2,700,000	Awareness and Education Among School Children about Nature Resources A Project on Keoladeo Ghana National Park, Bharatpur
B	4	Foundation for Sustainable Development	3,600,000	Workshop on Promotion of Regional Cooperation for Sustainable Development in East and Southeast Asia
B	5	Wetlands international Asia-Pacific	4,000,000	East India /Chilka Lake Project
B	6	The Woods Hole Research Center	3,600,000	Effective Implementation of the Climate Change Convention: Human Resource Development Through Collaborative Case Studies from Asia
B	7	Climate Action Network Latin America	1,300,000	Latin American NGOs Activities for COP4
B	8	KIRANG Love Green Development Cooperative Inc.	2,500,000	KIRANG Reforestation Program
B	9	Green Forum Philippines	2,700,000	Education and Networking Campaign on Climate Change in the Academies in the Philippines
B	10	CARE India	3,600,000	Environmental Education for Water Quality Management in Tigri and Navgeevan areas in India
B	11	Sao Pauro Natural History Research Center	2,700,000	Protection of Medial Plants Resource in Eastern Littoral Mountain Surroundings of Brazil Phase II
B	12	Institute for Restoration of Natural Environment	2,700,000	Conservation of the Endangered Tropical Freshwater Wetlands of Kanyakumari area in Southern India, through environmental Education
B	13	Thailand Environment Institute	3,600,000	Urban Forestry Organization (UFO) Project
B	14	Team Today and Tomorrow(TT&T)	5,800,000	Environmental Rehabilitation and Rural Development Project in Kellela, South Wello Zone, Ethiopia
B	15	Pesticide Action Network Asia and the Pacific	7,200,000	The Asia-Pacific People's Assembly: issue Forum on the Environment and Sustainable Development/Issue Forum on Food Security
B	16	Birdlife International	8,500,000	International Conference for Environmental NGOs Tokyo, October 1998 for the Preparation of XXII BirdLife World Conference
B	17	Atmosphere Action Network in East Asia (AANEA)	3,600,000	Atmospheric Action Network in East Asia Against Air Pollution Problems and Climatic Change
B	18	Philippine Business for Social Progress (PBSP)	2,200,000	Cathalogan Integrated Coastal and Upland Resource Management Project
B	19	The Brazilian Agro-forestry Network (REBRAF)	4,000,000	The Propagation and Living Support Project to Local People Through Agro-forestry for Conservation of Mata-Atlantica Natural Forest in Brazil
B	20	Macchapuchhre Development Organization	4,500,000	Environmental Conservation for Sustainable Development in Kaski District in Western Nepal
B	21	Mahale Wildlife Conservation Society	1,800,000	Action of Education and Public Relations for the Conservation of the National Environments of the Mahale Area, Tanzania
B	22	Muraviovuka Park for Sustainable Land Use	3,600,000	international Workshop on the Crane Conservation in North East Asia
B	23	Foundation Futuro Latinoamericano (FFLA)	5,400,000	Conflict Management Programme: Capacity Building in Conflict Management for Sustainable Development
B	24	LEADER-Nepal	2,700,000	The Study of Air-Pollution and Educational Programs in Kathmandu and Other

環境事業団（1999）：平成 11 年度地球環境金助成案件の決定、地球環境基金便り、No-13、環境事業団

(8) International Cooperation

8-1) Overview of Japan's Assistance to Developing Countries

8-1-1) History, Categories and Responsible Organisations

a) History of Japan's Assistance

Japan's Official Development Assistance (ODA) began in 1954 when it joined the Colombo Plan, an organisation set up in 1950 to assist Asian countries in their socio-economic development.

Whilst receiving aid itself in the 1950's from the World Bank for the reconstruction of its own economy, Japan began the process of delivering aid to developing countries. Since that time, Japan's ODA commitment has increased and expanded yearly. With this expansion, there has also been gradual move to include countries outside Asia-countries in Eastern and Central Europe being the most recent additions.

Today, Japan stands as the top donor in the world in terms of net ODA disbursement and in 1992, it was the major donor in 25 countries.

b) What is ODA ?

Economic cooperation is carried out from a humanitarian perspective with a view to working towards the solution of poverty, starvation and other circumstances which threaten the lives of people in developing countries, and also on the basis of an awareness of the importance of interdependence, i.e. the realisation that economic and social development and security of developing countries are essential for global peace and prosperity.

Economic cooperation is not restricted to official development assistance provided by the governments of developed countries. It may be provided between developing countries themselves, by international organisations, by private companies or by non-governmental organisations (NGO) and other voluntary bodies. It is thus implemented by a wide variety of organisations and its form and content differ accordingly.

Official development assistance (ODA) falls within the category of economic cooperation and denotes the funds and technology supplied by national governments to developing countries.

In 1964 the Development Assistance Committee (DAC), which forms a part of the Organisation for Economic Cooperation and Development (OECD), issued a set of recommendations concerning the conditions under which aid should be provided. It defined economic cooperation as "the flow of funds to developing countries" and classified it into three sectors, namely ODA, other official flows (OOF), and private flows (PF).

The DAC defines ODA as aid fulfilling the tree conditions given below. These conditions

have in recent years been supplemented by a fourth, namely the provision of aid by NGOs.

1) The aid should be supplied to developing countries or to international organisations by governments or the implementing organs of governments;

2) The main purpose of the aid should be to contribute to economic development and welfare improvements in developing countries;

3) The grant element of any financial cooperation should be at least 25 percent.

*Grant element: Index of the softness of the terms of aid. The softer the terms of the loan (interest, repayment period, grace period), the larger the grant element. A grant is 100 percent.

c) Categories and Responsible Organisations

Japan's ODA has three main categories:

1) Bilateral Grant (Grant Aid and Technical Cooperation),

2) Bilateral Loans (Loan Assistance, generally known as "Yen Loans") and,

3) Contributions and subscriptions to multilateral donor organisations.

The major portion of bilateral grants is undertaken by the Japan International Cooperation Agency (JICA), while the Overseas Economic Cooperation Fund (OECF) is in charge of bilateral loans.

* In October 1999, the new Japan Bank for International Cooperation (JBIC) will be established by the merger of OECF and the Export-Import Bank of Japan (JEXIM). This economic cooperation agency will be on a par with the World Bank Group in its outstanding balance loans and investment finance.

Japan International Cooperation Agency (1996): An Introduction to JICA

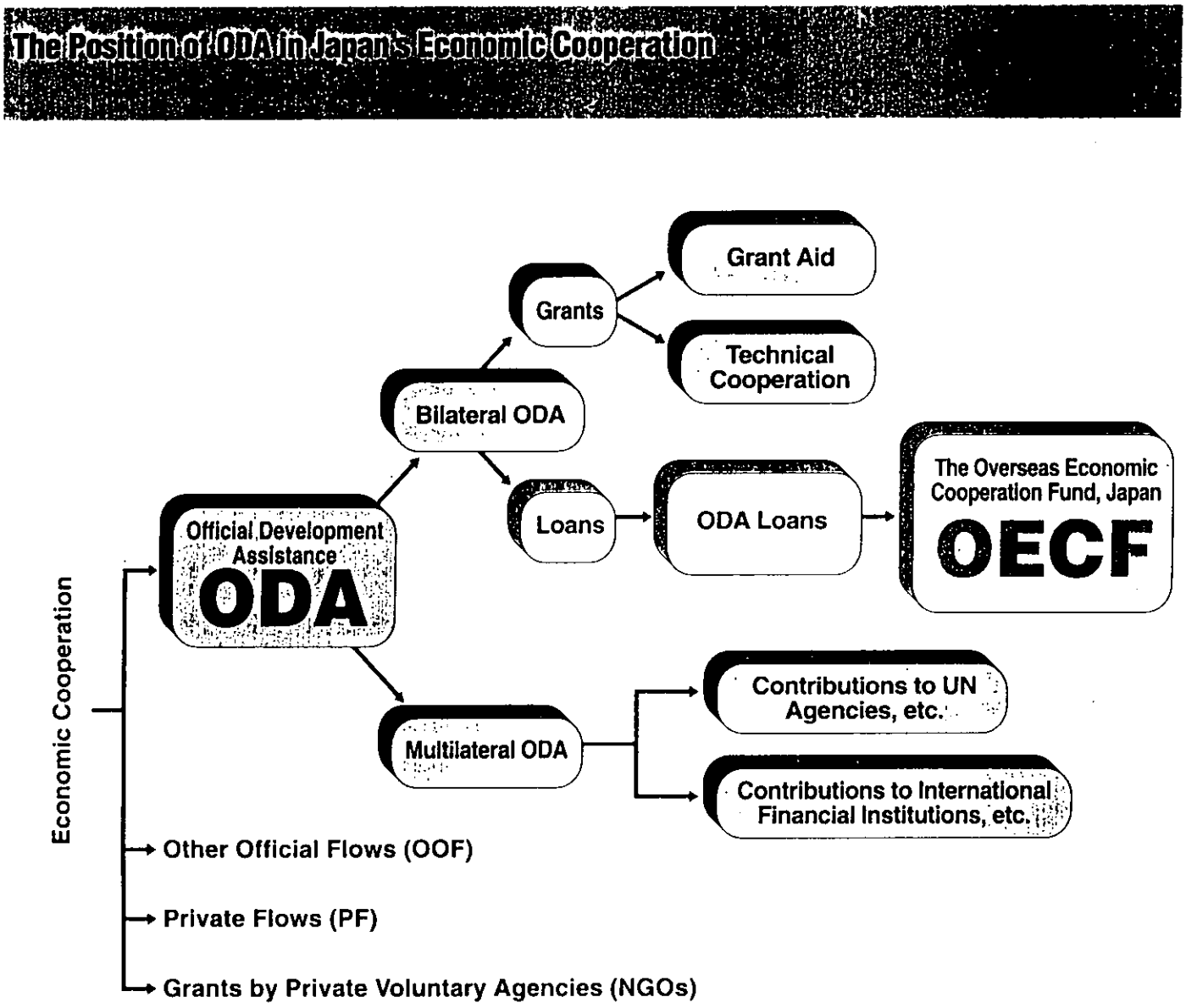
Japan International Cooperation Agency (1998): Japan International Cooperation Agency Annual Report 1998

Shinozawa K. (1998): From OECF to the Japan Bank for International Cooperation (JBIC), OECF Japan News Letter (Aug. Sep. 1999), Overseas Economic Cooperation Fund

(8) International Cooperation 8-1) Overview of Japan's Assistance to Developing Countries

8-1-1) History, Categories and Responsible Organisations

The Position of ODA in Japan's Economic Cooperation



The Overseas Economic Cooperation Fund, Japan (1997): ODA Loan Today

(8) International Cooperation

8-1) Overview of Japan's Assistance to Developing Countries

8-1-2) Budget and Achievement

a) The ODA Budget and the System of Implementation

The Japanese ODA budget (general account) has hitherto been allocated to and controlled by nineteen government ministries and agencies, namely the Prime Minister's Office, the National Police Agency, the General Affairs Agency, the Economic Planning Agency, the Science and Technology Agency, the Environment Agency, the National Land Agency, the Ministry of Justice, the Ministry of Foreign Affairs, the Ministry of Finance, the Ministry of Education, Science and Culture, the Ministry of Health and Welfare, the Ministry of Agriculture, Forestry and Fisheries, the Ministry of Transport, the Ministry of Post and Telecommunications, the Ministry of Labour, the Ministry of Construction, and the Ministry of Home Affairs. However, in FY 1998, a comprehensive realignment was made over and above areas of jurisdiction in order to maximise the effects of ODA. Rearrangement of the ODA budget under the control of the Prime Minister's Office and the Ministry of Home Affairs resulted in allocation of the budget to seventeen ministries.

The general account ODA budget for FY 1998 amounted to 1,047.3 billion yen for the government as a whole. Of this figure, the Ministry of Foreign Affairs was responsible for 556.8 billion yen, of which the portion allocated to JICA amounted to 176.2 billion yen, or 31.6 percent of the Ministry of Foreign Affairs budget.

The bilateral technical cooperation budget for FY 1998 was 350.7 billion yen, of which JICA was responsible for 50.2 percent.

b) Japan's ODA: achievements and tasks

The total value of ODA provided by the 21 DAC member states in 1997 amounted to 47.58 billion dollars, down by 14.2 percent from the previous year. The total amount of ODA provided by Japan was 9.358 billion dollars. This figure represents 19.7 percent of the total DAC figure and makes Japan the main donor within DAC. There was, nevertheless, a decrease of 0.9 percent from the previous year's figure of 9.43923 billion dollars. But the extensive fall in the amount of aid provided by other leading countries meant that Japan continued to maintain the position it has held since 1991 as the leading donor country.

On the other hand, in terms of the proportion of GNP devoted to ODA, the Japanese figure is only 0.22 percent, placing Japan nineteenth among the 21 DAC nations.

The grant element and the grant ratio are considered to be among the main indices of the quality of aid. The figures for Japan remain low among the DAC nations as a whole and

improvements are required.

Japan International Cooperation Agency (1998): Japan International Cooperation Agency Annual Report 1998

(8) International Cooperation 8-1) Overview of Japan's Assistance to Developing Countries 8-1-2) Budget and Achievement

Japan's ODA in 1997

Japan's ODA in 1997

Type of aid \ Aid given			In dollars ($m)		In yen (100m yen)		Constituent ratios (%)	
			Amount	Change from previous year (%)	Amount	Change from previous year (%)	ODA total	Bilateral
ODA	Bilateral ODA	Grants	Grant aid	2,017.98	-15.8	2,441.75	-6.3	21.4	30.5
			(excluding Central and Eastern Europe and graduate nations)	2,014.81	-12.8	2,437.92	-3.1	21.5	30.8
			Technical cooperation	3,021.03	-5.0	3,655.45	5.6	32.0	45.7
			(excluding Central and Eastern Europe and graduate nations)	2,969.78	-5.0	3,593.43	5.6	31.7	45.3
			Total	5,039.01	-9.6	6,097.20	0.5	53.4	76.2
			(excluding Central and Eastern Europe and graduate nations)	4,984.58	-8.3	6,031.34	1.9	53.3	76.1
		Government loans, etc.		1,573.58	-43.4	1,904.03	-37.1	16.7	23.8
		(excluding Central and Eastern Europe and graduate nations)		1,567.59	-43.4	1,896.78	-37.1	16.8	23.9
		Bilateral total		6,612.59	-20.9	8,001.23	-12.0	70.1	100.0
		(excluding Central and Eastern Europe and graduate nations)		6,552.17	-20.2	7,928.12	-11.2	70.0	100.0
	Subscriptions and contributions to international organizations			2,822.67	125.5	3,415.43	150.7	29.9	
	(excluding contributions to EBRD)			2,805.88	127.7	3,395.11	153.2	30.0	
	Total	(including Central and Eastern Europe, graduate nations and EBRD)		9,435.26	-1.8	11,416.66	9.2	100.0	
		(excluding Central and Eastern Europe and graduate nations)		9,358.04	-0.9	11,323.23	10.2	100.0	
GNP (provisional)			(1 billion dollars, 1 billion yen)	4,245.78		513,739.00			
% of GNP		(including Central and Eastern Europe, graduate nations and EBRD)		0.22	-8.6	0.22	1.7		
		(excluding Central and Eastern Europe and graduate nations)		0.22		0.22			

* DAC exchange rate for 1997: 1 dollar = 121.00 yen (weakening 12.18 yen from 1996)
* Due to rounding off of figures, subtotals for each category may not tally with the total.
* EBRD: European Bank for Reconstruction and Development. Assists the countries of the former Soviet Union and Central and Eastern Europe to effect the transfer to a market economy.
* Aid graduate countries (1996): Bahamas, Brunei, Kuwait, Qatar, Singapore, United Arab Emirates.

Japan International Cooperation Agency (1998): Japan International Cooperation Agency Annual Report 1998

(8) International Cooperation

8-2) ODA Schemes

8-2-1) Grant Aid

a) General Overview

Grant aid is the provision of funds without obliging the developing country recipients to repay them.

This type of aid is principally give to developing countries with relatively low per capita incomes. A specific country's eligibility for grant aid is determined after conducting needed surveys and taking its economic and social development situation, its development requirements, its bilateral relations with Japan, and the nature of the aid request into consideration. The standards of eligibility for interest-free loans from the International Development Association (IDA) are also among the criteria used when deciding a country's eligibility; in FY 1998, countries whose per capita GNP in 1995 was $1,505 or less were considered eligible for grant aid. (The cut-off point for eligible for grant aid for cultural activities, however, is a per capita GNP of $5,295 according to World Bank statistics.)

The sectors covered by grant aid are basically areas of low profitability, where loans would be difficult to obtain, and address such basic human needs (BHN) as medicinal and health care, hygiene and sanitation, water supply, primary and secondary education, environmental protection, rural and agricultural development, etc., as well as human resource development.

b) General Grant Aid

1) Grant aid for general projects

Grant aid for general projects is grant aid in a wide variety of sectors. The relevant sectors are classified broadly as medical care and health, education and research, agriculture, improvement of living standards and the environment, and telecommunications and transportation. However, even in areas where primarily ODA loan assistance has been applicable, such as the construction of roads, bridges, ports, telecommunications, and other economic infrastructure, Japan is taking into account the deterioration of economic infrastructure in developing countries, especially in the LLDCs, in an effort to adjust the application of grant aid according to individual countries' circumstances, and as a result, the sectors to which general grant aid is applicable are diversifying.

2) Grant aid for debt relief

3) Non-project grant aid for structural adjustment support

4) Grant assistance for grassroots projects

Grant assistance for grassroots projects is a scheme of assistance in response to requests from

developing countries' local public bodies, research and medical institutions, and NGOs and similar groups active in developing countries. It was difficult to deal with such small scale projects via grant aid arranged between central governments as it was done formerly. Grant assistance for Grassroots Projects is administered swiftly and appropriately by Japanese embassies and consulate-generals, whose staff are well acquainted with the economic and social conditions in each developing country, which allows Japan to respond better to the diversity of needs in developing countries.

c) Grant Aid for Fisheries

d) Emergency Grant Aid

e) Grant Aid for Cultural Activities

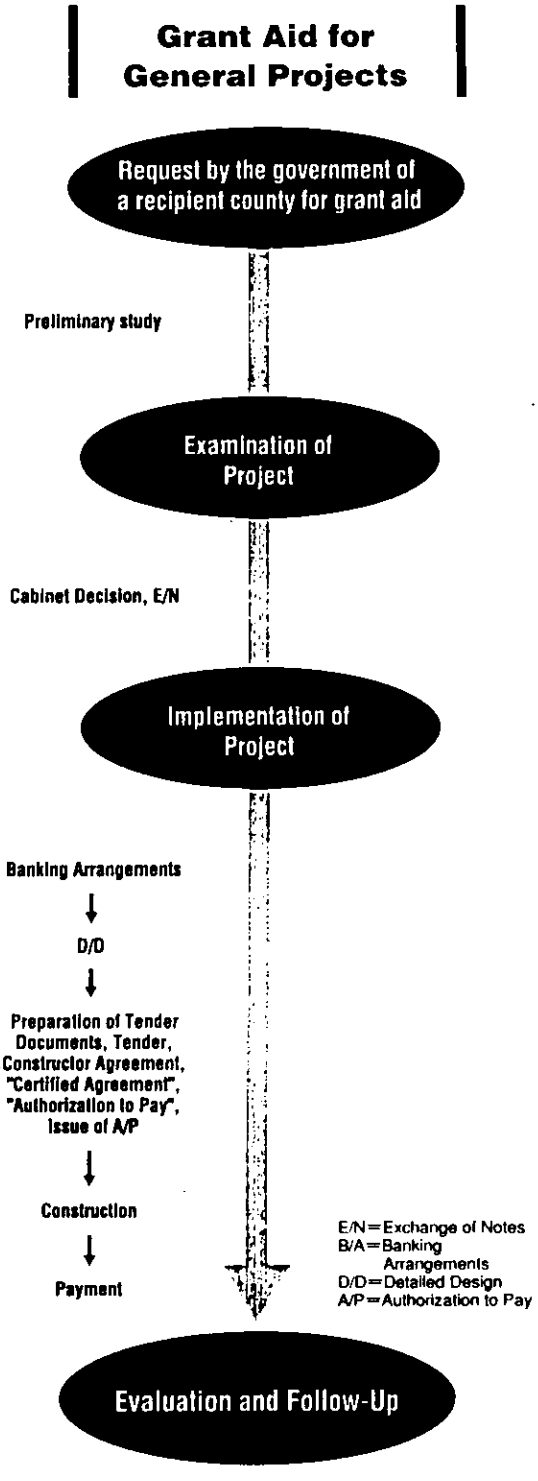
Grant aid for cultural activities began in FY 1975 as part of Japan's international cooperation efforts in the field of cultural exchanges. In addition to concern for a society's economic development, concern has also grown over the maintenance and fostering of developing countries' and regions' unique cultures. Developing countries are making efforts to achieve balanced national development from a broader point of view, including cultural aspects; Japanese grant aid for cultural activities assists these efforts. Specifically, this aid provides funds needed to preserve and make good use of cultural assets and relics, to hold public exhibitions and performances related to cultural affairs, and to buy equipment and supplies to foster education and research in developing countries and regions. The maximum grant is set at ¥50 million per project.

f) Food Aid

g) Aid for Increased Food Production

Ministry of Foreign Affairs (1998): Japan's ODA 1998, Association for Promotion of International Cooperation

(8) International Cooperation 8-2) ODA Schemes 8-2-1) Grant Aid



Japan International Cooperation Agency :Japan's Grant Aid & ICA –As a Leading Contributor to the World-

(8) International Cooperation

8-2) ODA Schemes

8-2-2) Technical Cooperation

a) General Overviews

Technical cooperation is aid whose aim is to develop the human resources that lay the foundations of developing countries' efforts to build their nations. The object is, by transmitting Japan's technology and knowledge to "counterparts"-people who will play leading roles in their respective fields in recipient countries-to spread that technology widely in those developing countries and contribute to their economic and social development. Presently, technical cooperation extends over a wide variety of fields, from BHN, such as providing access to medical care and drinking water to high-level cooperation in transferring computer technology and in drafting legislation and establishing state institutions.

Technical cooperation is based on agreements between the Japanese and recipient governments and is carried out by the Japan International Cooperation Agency (JICA). Other technical cooperation programmes carried out with public funding include exchange programmes for foreign students from developing countries operated at state expense, surveys and studies carried out by Japanese ministries and agencies and their extensions in cooperation with governmental organisations of developing countries, and training programmes operated by local governments as well as government-subsidised technical cooperation implemented by non-governmental organisations (NGOs).

Technical cooperation is given to countries that are ineligible for grant aid or ODA loan assistance either because they have relatively high income levels or because their heavy indebtedness makes them ineligible for loans.

b) Programmes for Accepting Trainees

Accepting trainees from developing countries is one of the most basic types of technical cooperation.

Promising trainees destined to play important roles in developing countries' nation-building efforts are invited to Japan or to certain other developing countries for training. This training gives them specialised knowledge and technology in a wide variety of fields, ranging from public administration to agriculture, forestry, fisheries, mining, manufacturing, energy, health and medical care, transportation, and telecommunications. In recent years, training has also covered such areas as the transition to a market economy and the establishment of juridical institutions.

Third-country training programmes are carried out tin relatively developed developing

countries where the technology that was transferred via Japanese technical cooperation has taken root and where, through Japanese financial assistance and further technical cooperation, recipients can pass on what they have learned to trainees from neighbouring countries. This arrangement has the advantage that training can be more closely tailored to realities in developing countries and those different levels of familiarity with technology, language barriers, and customs can be taken better into account.

In-country training programmes began in FY 1993; they help people from developing countries who received training in Japanese technical cooperation programmes to transmit their technology and knowledge to a wider circle of officials and engineers from their own country.

c) Youth Invitation Programme (Friendship Programme for the 21st Century)

In 1984, the Youth Invitation Programme began with an aim of inviting developing countries' junior leaders in their country's nation-building efforts to visit Japan for one month, during which they receive training in their speciality and homestay in different parts of Japan; through these broad-based contacts with Japanese connected with the programme, these young people deepen their understanding of Japan and forge friendships with the Japanese people. Participants, both men and women, range in age from 18 to 35; they are picked by recommendation of their government, and belong to different professional categories, including public officials, educators, farmers, urban workers, and other groups.

d) Expert Dispatch Programme

Japan's programme for sending individuals with expertise to developing countries where they carry out technical cooperation in a variety of fields, mainly as technical advisers in government organisations, is another type of the most basic types of technical cooperation, together with the tainee acceptance programme.

Experts provide guidance in an extremely wide range of fields from technical advice on agriculture, mining and manufacturing, transportation, electricity and communications to advice on improving legal systems and anti-pollution measures especially in recent years with the emergence of more market economies.

e) Independent Equipment Supply Project

The independent equipment supply project is implemented within the framework of technical cooperation. Through it, Japan supplies equipment needed by Japanese experts, JOCV team members, and Senior Overseas Volunteers in the process of technology transfer in their country of assignment, or equipment needed by non-Japanese trainees to disseminate the technology they acquired during their training in Japan following their return to their own country. Its

purpose is to heighten the effect of technical cooperation through the combination of people and material.

f) Japan Overseas Cooperation Volunteers (JOCV)

The Japan Overseas Cooperation Volunteers (JOCV) assignment programme recruits young people, between the ages of 20 and 39, and trains and sends them to developing countries to live with local people and transfer their technology through aid at the grassroots level. These activities are carried out based on specific agreements between the governments of Japan and the recipient country regarding the assignments of overseas cooperation volunteers. The work of these volunteers differs characteristically from other forms of technical cooperation in that it is voluntary and that the participants are recruited from among the general public.

In FY 1990 Japan launched the senior Volunteer Programme. These volunteers, whose ages range from 40 to 69, are recruited widely in Japan from those willing to participate and cooperate voluntarily in development projects in developing countries.

g) Project-type Technical Cooperation

Technical cooperation that is implemented on a planned bases over a period of several years (usually five) and as a combination in one project of the three basic types of technical cooperation – namely trainees, dispatch of experts, and provision of equipment and machinery – is called project-type technical cooperation. In recent years, there have been many cases of linkage of this type of with grant aid, in which Japanese grant aid is used to fund the construction of facilities that are then used as the base for carrying out project-type technical cooperation. Project-type technical cooperation is presently being carried out in cooperation projects directed at social development (e.g., road and transportation, telecommunications, education), health and medical care, population control and family planning, agriculture, forestry, and fisheries, and industrial development.

h) Development Studies

Development studies often gather information for official development planning centring on the building of roads, ports, electric power systems, telecommunications, sewerage and water supply, agricultural development, and other economic and social infrastructure. At other times, development studies compile the basic data needed as the basis for such planning; the resulting reports are submitted to developing countries' governments, which also use them in social and economic development. Development study reports provide important guidelines in the drafting of development policy by developing country governments, which also use them effectively as sources of basic data in requests for financial and technical assistance to

implement development plans.

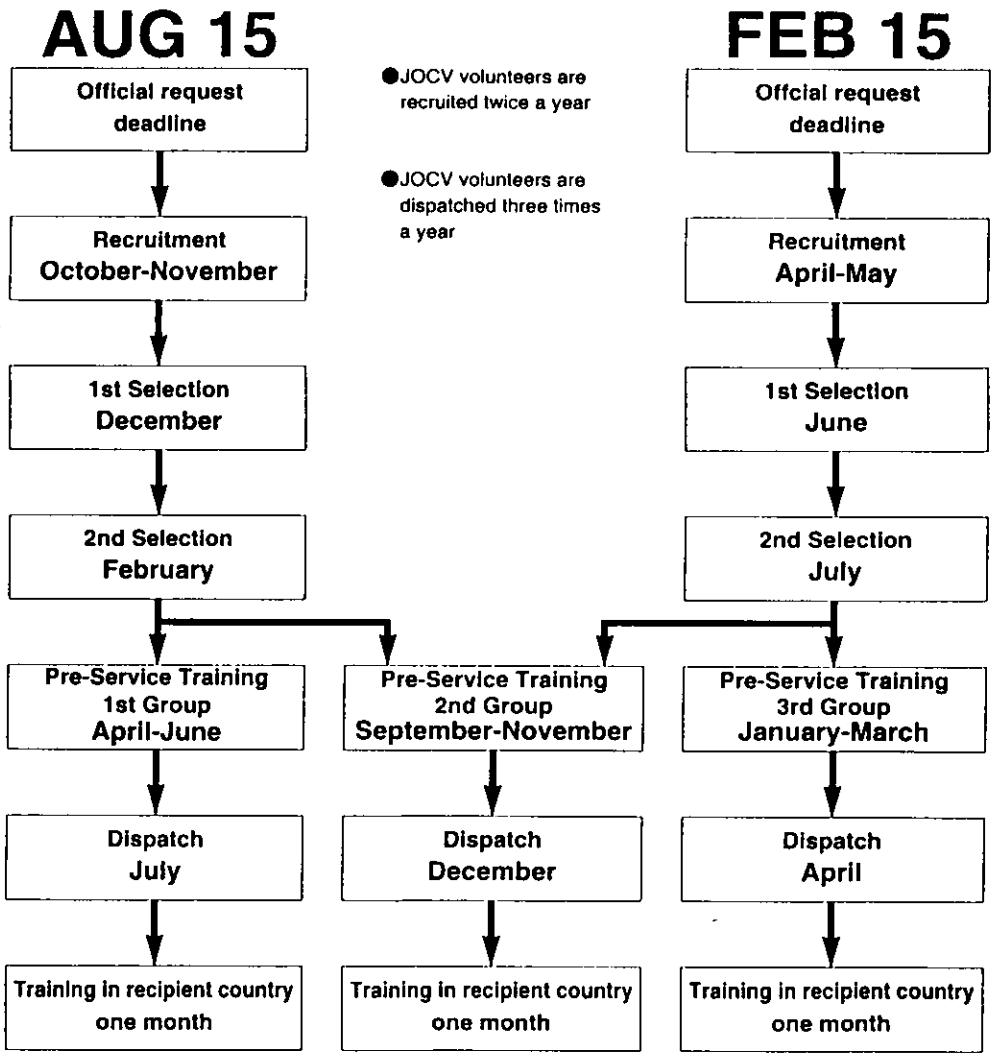
In recent years, a new type of development study has been carried out whose purpose is to offer policy recommendations and other institutional assistance for medium- and long-term economic development planning, promotion of the transition to market economics, and human resource development. The actual performance of these studies is assigned to teams composed of engineers from consulting companies sent by JICA.

Ministry of Foreign Affairs (1998): Japan’s ODA 1998, Association for Promotion of International Cooperation

(8) International Cooperation 8-2) ODA Schemes 8-2-2) Technical Cooperation

Japan Overseas Cooperation Volunteers

Procedures from request for volunteers to their assignment



Japan International Cooperation Agency (1999): Japan Overseas Cooperation Volunteers

(8) International Cooperation

8-2) ODA Schemes

8-2-3) ODA Loans, Aid through Multilateral Organisations

a) ODA Loans

ODA loans (yen loans) lend funds for development at low interest for long periods to developing countries.

In providing these loans, Japan takes into consideration that stages of development in developing countries vary widely, from the poorest LLDCs to "semi-developed" countries that are midway between developing and developed country status. Depending on a developing country's economic circumstances and creditworthiness, the loan conditions (interest rates, term) are changed to suit the country's ability to repay the loan and its economic conditions.

Though economic infrastructure is the main sector in which yen loans are used, yen loans are increasingly used to help to improve sewerage and water systems, health and medical care, education, and other social infrastructure.

1) Annual recipients

So-called annual recipients are countries that receive yen loans regularly (usually once a year). In their case, Japan and the recipient government have periodic consultations to deepen policy dialogue and mutual understanding; these meetings also have the advantage that they help to build up know-how concerning yen loans procedures. From FY1996, with the addition of Peru to the roster, Japan entertains relations with 14 annual recipients.

2) Countries with debts that have been rescheduled, and least among less developed countries (LLDCs)

The provision of loans is premised on the borrower's obligation to repay the principal and interest; loan applications from countries whose existing debts have been rescheduled and from LLDCs must therefore be scrutinised very cautiously. However, in cases where a country strongly desires to receive a new long-term yen loans on concessional terms because it would stimulate its economy and might increase its ability to repay its debts, the country's latent economic potential, its repayment ability, its relations with Japan, as well as the necessity and the amount of the loans are all taken into consideration.

3) Upper-middle income countries

Japan responds to loan requests from upper-middle income countries – that is, developing countries with comparatively high incomes (the FY1998 criterion is a per capita GNP of $3,116 in 1996) – by taking the nature of the project funded and other factors into consideration when examining the suitability of providing them concessional yen loans. Especially in the case of environmental projects, which have low potential profitability and therefore little commercial

attractiveness despite the importance of environmental action, Japan takes a positive attitude toward yen loans to these types of developing, semi-developed countries.

b) Aid through Multilateral Organisations

Aid provided by multilateral organisations has certain advantages over bilateral assistance including the mobilisation of international networks enabling different parties to take best advantage of their specialised knowledge and experience and the facilitation of aid coordination spanning multiple countries and geographical regions. Specific aid methods – besides the sending of experts to international organisations and other methods classified as technical cooperation – characteristic of aid channelling include paying a share of costs (as membership dues), making contributions, and making investments.

Cost-sharing is a form of financial cooperation involving the obligation to pay for membership in the organisation and normally is decided by the charter of the United Nations organisation, which is decided at the time of its foundation. The actual method of dues calculation normally involves deciding the organisation's total budget for each fiscal year and dividing the total by each member's share. When a member country recognises the benefits of the project activities of the international organisation concerned and decides it should be supported, and appropriate amount is contributed which takes into account the scale of future project activities.

Yet another arrangement, where bilateral aid donor countries and multilateral international organisations cooperate in aid implementation and seek to improve aid efficiency by drawing on each other's information, know-how, staff, and funds in complementary ways, is called multilateral-bilateral aid cooperation.

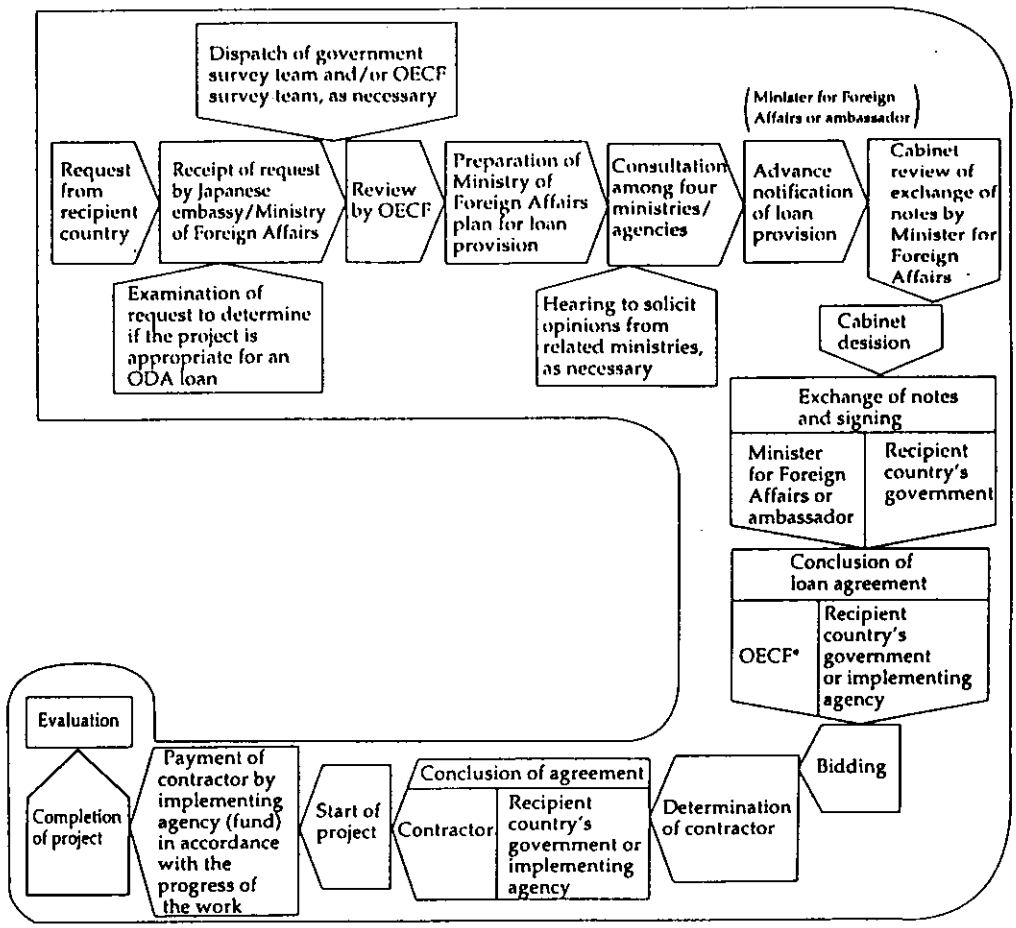
Ministry of Foreign Affairs (1998): Japan's ODA 1998, Association for Promotion of International Cooperation

(8) International Cooperation 8-2) ODA Schemes

8-2-3) ODA Loan, Aid through Multilateral Organisation

ODA Project Loan Mechanism

ODA Project Loan Mechanism



*OECF: Overseas Economic Cooperation Fund

Ministry of Foreign Affairs (1998): Japan's ODA 1998, Association for Promotion of International Cooperation

(8) International Cooperation

8-3) ODA in Environment Conservation

a) Efforts in Environmental Conservation

During his address to the UN General Assembly Special Session on the Environment and Development in June 1997, then-Prime Minister Hashimoto announced the Japanese Government's "Initiatives for Sustainable Development toward the 21 St Century (ISD)", a comprehensive package of ODA-led undertakings in Japan's international environmental cooperation. The ISD plan comprises action programmes spanning five areas of environmental significance: (**i**) countermeasures against air pollution, water pollution, and industrial waste, (**ii**) global warming, (**iii**) water issues, (**iv**) conservation of the natural environment, and (**v**) an improved public environmental awareness. Also, in September 1998, Japan signed the Convention to Combat Desertification, and has been striving to build on its international contributions in environmental dimension.

At the 1992 UN Conference on Environment and Development (the UNCED, commonly known as the Earth Summit), Japan pledged to disburse between 900 billion and 1 trillion yen in environmental ODA over the ensuing five years. In reality, though, by the end of 1996 it had already disbursed 1.44 trillion yen (approx. $13.3 billion) – more than 40 percent over the pledged amount. (An additional 243 billion yen was disbursed in FY 1997.)

b) JICA's Environmental Conservation Projects

While the definition for "Environmental Aid" varies among the bilateral and multilateral aid organisations, the following are regarded as environmental aid projects by JICA: pollution control, improving living environment (water supplies, sewage and waste management), forest conservation / afforestation, conservation of the natural environment and biodiversity, disaster prevention, capacity development and improvement for solving environmental problems, energy conservation, protection of natural resources (agriculture, fishery and soil), and countermeasures against desertification.

1) Pollution control

Since Japan has considerable experience and accumulated knowledge regarding pollution control, JICA transfers these technologies to developing countries and Eastern Europe through dispatching experts, accepting trainees, establishing plans (air pollution control and mining pollution control), and providing equipment for monitoring pollution.

2) Living environment

Developing countries share common problems with living environment, due to a lack of urban infrastructures such as water supply facilities, sewage system and waste treatment

facilities. In particular, clean water supplies and sewage facilities are needed to reduce the infectious diseases which are troubling many developing countries. JICA is hoping to reduce the burden of women's water fetching in rural areas (one of the considerations for "Women in Development") by assisting in the development of ground water resources. JICA is trying to respond to the many requests for this particular type of assistance. Thus a large portion of our environmental assistance is in this area.

3) Forest conservation and afforestation

JICA's cooperation in forest conservation and afforestation extends to Africa, Central and South American countries based on more than 10 years experience gained in Southeast Asia. Most of these activities support the formation of forest conservation and afforestation plans as well as for the development of silvicultural technologies and human resources. Also, in order to prevent further desertification, JICA dispatches experts and members of the Japan Overseas Cooperation Volunteers (roughly equivalent to the Peace Corps in the US) to promote the planting of nurseries for dry resistant plants and to carry out forestry extension programmes. Recently JICA has been carrying out a social forestry project in Kenya in order to enhance the involvement of local people in afforestation and in the establishment of a nursery system. This is also aimed at strengthening the social welfare of the local people.

4) Conservation of the natural environment and biodiversity

JICA makes efforts to cooperate in this field through expert dispatch programmes, training programmes, and project type technical cooperation programmes. Specifically, JICA sends experts to assist in wildlife protection, nature conservation, and in the management of national parks and reserves. Also a project to develop a plant gene centre is being carried out as a project type technical cooperation programme. At present, Japan and the United States are implementing a joint biodiversity project in Indonesia.

5) Capacity development in Environment

Many developing countries have difficulty in dealing with environmental problems due to their limited capacity (organisations, system, human resources, training, research, monitoring, etc.). Aiming to improve these conditions, JICA is now promoting comprehensive projects such as environmental training and research centres in Thailand, China and Indonesia.

Ministry of Foreign Affairs (1998): Japan's ODA 1998, Association for Promotion of International Cooperation

Japan International Cooperation Agency (1999): The Environment and JICA, International Cooperation to Deal with Global Environmental Problems

(8) International Cooperation 8-3) ODA in Environment Conservation

Disbursements of Japanese Aid in the Environmental Field

1. Disbursements by aid type

(Unit: 100 million yen)

FY	Grant aid	Loan assistance	Technical cooperation	Multilateral assistance	Total
1993	377.1 (29.6)	1,562.5 (15.3)	214.1 (16.3)	162.0 (4.4)	2,280 (12.8)
1994	414.3 (33.6)	1,054.9 (12.4)	218.7 (15.9)	253.3 (6.5)	1,941 (14.1)
1995	428.2 (33.5)	1,708.2 (15.3)	222.9 (15.8)	400.3 (10.2)	2,760 (19.9)
1996	360.7 (27.8)	3,864.7 (29.7)	253.4 (16.9)	153.8 (11.3)	4,632 (27.0)
1997	360.7 (27.8)	1,623.4 (15.3)	300.7 (19.2)	158.1 (4.6)	2,443 (14.5)

Note:

1. Parenthetical figures other than those in the "Total" column represent the share (%) of each type of aid in that particular year. In the "Grant aid" column, the percentage of general grant aid extended that year is referred to (and does not include grant aid for debt relief, non-project grant aid for structural adjustments, or grant aid for grassroots projects). In the "Loan assistance" column, percentages of the total (excluding loan assistance for debt relief) in project and non-project loan assistance (e.g., commodity loan assistance and structural adjustments lending) are represented.
2. The parenthetical figures in the "Total" column represent the share of total ODA committed that year.
3. Amounts for grant aid and loan assistance were calculated on a commitment (Exchange of Notes) basis; technical cooperation, on a JICA disbursements basis; and multilateral assistance, on a budget basis for contributions to multilateral institutions.

2. Bilateral technical cooperation

(1) (Actual JICA disbursements, including aid to Eastern Europe)

FY	Project-type technical cooperation			No. of development surveys	No. of independent supply projects
	No. of projects	Trainees accepted	Experts dispatched		
1993	47	135	452	85	13
1994	48	143	457	79	18
1995	58	176	585	90	10
1996	74	160	545	98	10
1997	80	156	562	115	31

Note:

1. Project and personnel totals include figures for new as well as ongoing programs. Instances of project-type technical cooperation include post-project follow-up cooperation.
2. Project-type technical cooperation is a type of technical cooperation which bundles expert assignments, trainee programs in Japan, and the provision of equipment.

(2) (Actual JICA disbursements, including aid to Eastern Europe)

FY	Trainees accepted		Experts dispatched		JOCV	
	No. of trainees	Share (%)	No. of experts	Share (%)	No. of experts	Share (%)
1993	990	11.5	296	15.7	112	3.8
1994	1,192	12.7	325	10.9	116	10.3
1995	1,418	14.3	355	17.2	92	2.7
1996	1,559	14.5	284	9.4	116	11.7
1997	1,572	13.8	309	17.0	85	2.4

Note:

1. The annual personnel totals represent newly accepted trainees as well as new and continuing assignments for experts and JOCVs.
2. The percentages represent the share of all personnel in that category that year.

3. Bilateral disbursements by environmental sector

(Including aid to Eastern Europe; unit: 100 billion yen)

FY	Living environment	Forest preservation	Antipollution measures	Disaster prevention	Other sectors
1993	1,374 (60.3)	169 (7.4)	391 (17.2)	136 (6.0)	48 (2.0)
1994	1,128 (66.9)	87 (5.2)	362 (21.5)	58 (3.4)	52 (3.1)
1995	1,296 (54.9)	252 (10.7)	183 (7.7)	453 (19.2)	176 (7.5)
1996	2,803 (62.6)	372 (8.3)	609 (13.6)	429 (9.6)	266 (5.9)
1997	993 (43.3)	223 (9.8)	345 (15.1)	384 (16.8)	341 (14.9)

Note:

1. Figures are totals for loan assistance, grant aid, and technical cooperation. Multilateral assistance is not included.
2. Percentages in parentheses represent the share of total ODA in the environmental field that year.
3. "Other sectors" include nature conservation, environmental administration, and seawater contamination.

Ministry of Foreign Affairs (1998): Japan's ODA 1998, Association for Promotion of International Cooperation

(8) International Cooperation

8-4) Conservation of Biological Diversity

8-4-1) Effective Use of ODA

a) Basic Concepts

Most of the developing countries possess natural environment with ample biological diversity, much of which plays an important role for the conservation of the global biological diversity. In the developing countries, subsistence of many people depends on biological diversity or biological resources for grounds for their life. Regrettably, for financial, technical, and socio-economic reasons, a number of these countries are unable to fully ensure the conservation and sustainable use of biological diversity by themselves.

The promotion of conservation and sustainable use of biological diversity in these developing countries is essential to the conservation of biological diversity at the global level. Developed countries including Japan thus actively support developing countries in various ways such as planning, drafting an executing programmes on the conservation and sustainable use of biological diversity, and development of human resources and facilities. In addition, these developed countries are also responsible for contributing to the world-wide conservation of biological diversity through the promotion of conservation and sustainable use of biological diversity in developing countries by utilising developing countries' knowledge and experience and cooperating with them.

Japan also needs to fully recognise that there are a lot of useful things to learn from traditional technologies and knowledge of these developing countries for the promotion of conservation and sustainable use of biological diversity in Japan.

Considering the following points, Japan will actively contribute to the conservation and sustainable use of biological diversity in developing countries, on the basis of above-mentioned fundamental recognition.

b) Effective Use of ODA

Japan is striving to enhance and reinforce Official Development Assistance I n each environmental field on the basis of the philosophy and principles of the "Japan's Official Development Assistance Charter" and presentations made at the United Nations Conference on Environment and Development. Various forms of support are given in fields related to biological diversity through Official Development Assistance. In the future, effective cooperation will be promoted by taking into consideration the following points.

1) Promotion of policy dialogues

Close policy dialogues will be promoted so that basic awareness of the conservation of biological diversity will be shared with developing countries, and appropriate priority will be given to the conservation of biological diversity in developing countries, and active measures will be promoted.

2) Transfer of technology and skills

Japan's technology and know-how will be transferred to developing countries to enhance information and facilities, etc. required in these countries for the development of systems and organisations to conserve biological diversity, and to support the capacity-building of these countries in such fields as training of personnel, management of basic information on biological diversity, and research on the sustainable use of biological diversity. Model projects for the conservation of biological diversity, etc. will also be carried out jointly with the developing countries by introducing methods compatible with the economic and social systems, and development plans of the developing countries.

3) Support for the activities of private sectors

The detailed activities of private sectors have played and effective role in the conservation of biological diversity, therefore the activities of private sectors in developing countries will be supported.

4) Collaboration with international organisations and support organisations of other developed countries

To support developing countries in their efforts to conserve biological diversify effectively, the know-how and techniques of international organisations and other developed countries should be utilised, and appropriate cooperation should take place between UN organisations, international financial organisations, and other support organisations.

Especially for the Global Environment Facility (GEF) designated as the interim institutional structure operating the financial mechanism of the "Convention on Biological Diversity ", since the pilot phase Japan has participated and contributed actively. In the negotiations of the replenishment of GEF 1 (July 1994 to June 1997), Japan displayed initiative in vies of the seriousness of global environmental problems. Japan's contribution to GEF 1 is about 45.7 billion yen (about 20% of the total), the second largest donor country after the U.S. Japan believes that the GEF should be designated as the institutional structure operating the permanent financial mechanism of the convention.

5) Improvement of domestic infrastructures

To provide assistance in the fields of biological diversity smoothly, it is vital to secure the personnel required. And to widely make use of human resources including experts from private sector and local bodes should be developed. Various systems such as personnel training programmes will also be enhanced.

In addition, information on the conservation and sustainable use of biological diversity, and technology and experience accumulated in Japan will be collected and arranged to establish the infrastructure for smoothly transferring the sound technologies according to the conditions and needs of the developing countries.

6) Considerations for biological diversity when providing Official Development Assistance

To ensure that appropriate considerations are given to biological diversity in providing official development assistance, appropriate and effective environmental consideration will be given by accurately following the Guidelines for Environmental Considerations in each organisation, and reinforcing the infrastructure for environmental consideration such as personnel development through collaboration with international organisations.

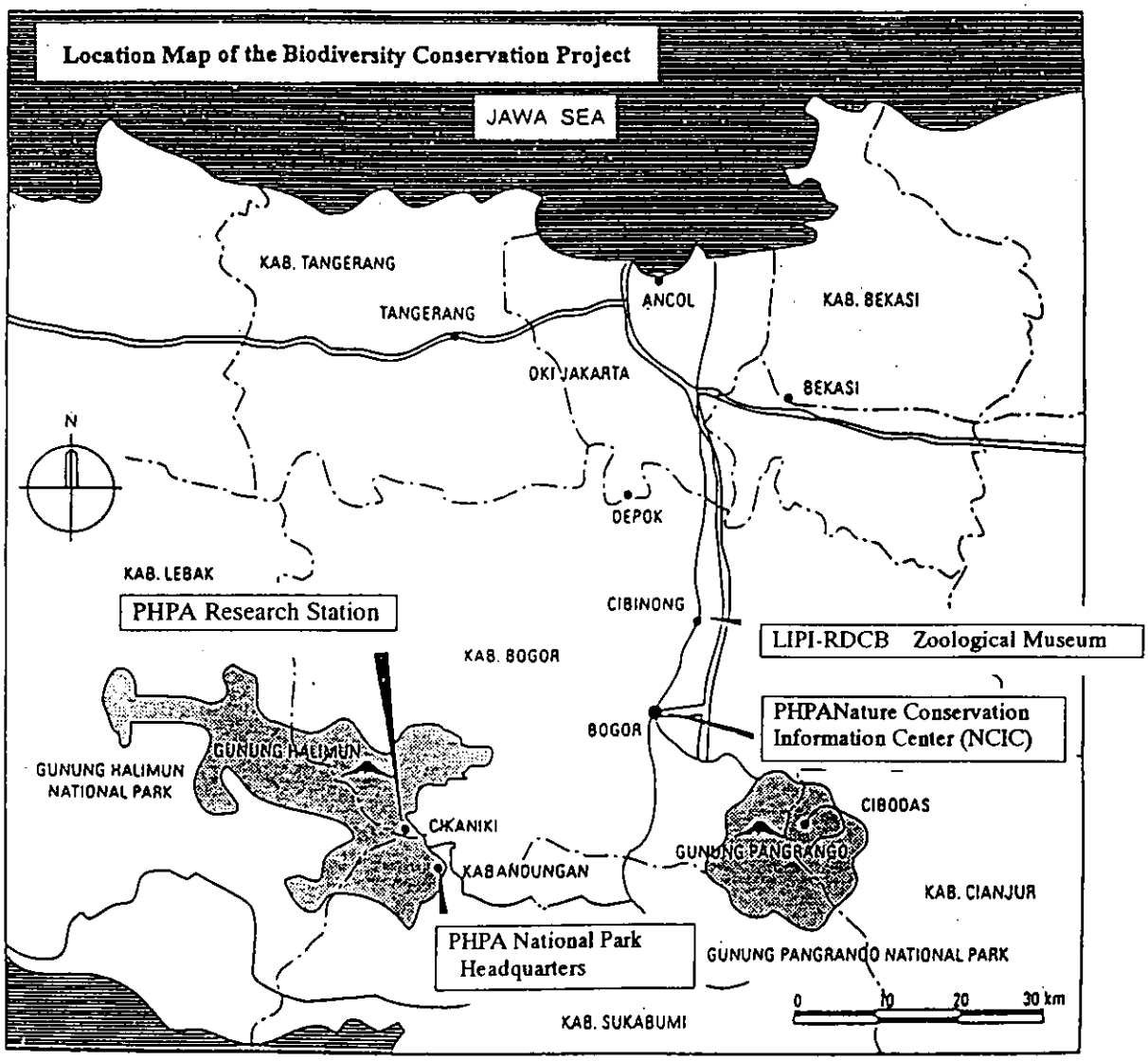
Furthermore, such assistance will be evaluated after its completion in addition to the review on the situation of assistance projects that are in progress. Efforts will also be make for appropriate environmental consideration to be given with regard to collaboration with other public funds and overseas activities of private companies.

Council of Ministers for Global Environmental Conservation, Government of Japan (1995): National Strategy of Japan on Biological Diversity.
(http://www.eic/or/jp/eanet/en/pol/nsj/index.html)

(8) International Cooperation 8-4) Conservation of Biological Diversity

8-4-1) Effective Use of ODA

Biodiversity Conservatio Project in Indonesia



Takahashi S. (1997): Review and Prospects of the Biodiversity Conservation Project, Research and Conservation of Biodiversity in Indonesia, Volume I , General Review of the Project, The Research and Development Center for Biology-The Indonesian Institute of Science, Japan International Cooperation Agency, Forest Protection and Nature Conservation-Ministry of Forestry

(8) International Cooperation

8-4) Conservation of Biological Diversity

8-4-2) Cooperation in Individual Fields

a) Wildlife Protection and Protected Area Management

In wildlife protection, cooperation has been implemented for the collection and preparation of fundamental information such as distribution and living conditions of wildlife, promotion of public awareness and education, and drawing up of plans for protection and management. Such cooperation will be enhanced. Cooperation will be expanded especially in the Asian region due to its relation closely interdependent with Japan in terms of the distribution and habitats of species such as common migratory birds. In other regions, cooperation will focus on the conservation of ecosystems, species, populations in areas important to the conservation of biological diversity.

One example of a general project on the conservation of biological diversity is a project which supports the management of protected areas and development and management of information, launched in Indonesia under trilateral cooperation among Japan, the U.S., and Indonesia.

b) Forestry

To contribute to the promotion of sustainable management of tropical forests, active support is given to the International Tropical Timber Organisation (ITTO) such as in the form of financial assistance. In addition, seminars on natural forest management, conservation of biological diversity, etc. are held jointly with ITTO to study technical and institutional aspects.

In addition, to establish the sustainable management of tropical forests, surveys are being conducted on forestry operation methods focusing on successive stage of vegetation changes, forest management methods for the conservation of wildlife habitats, and methods for establishing forest management plans taking into account the living the living condition of the local residents, etc.

Biological cooperation on conservation of biological diversity includes project-type technical cooperation such as the “Tropical Rain Forest Research Project (Phase Ⅲ) “ in Indonesia and the “Brazilian Amazon Forest Research Project”, and development surveys such as the “Development Survey on Sustainable Multiple-Use Resource Management in the Nkhotakota Game Reserve” in Malawi.

In the future, the following will be carried out:

ⅰ. Promote the systematisation of natural forest management techniques, through conducting fundamental research on the ecosystems of natural forests, develop systems for appropriately

applying these techniques at the actual sites, and expand and reinforce the technical and financial cooperation required for securing and training experts in forest/forestry sector who will serve as the key to these operations.

ii. Promote technical and financial cooperation on the management of forests with typical ecosystems and scenic areas and those providing habitats for endangered species.

Council of Ministers for Global Environmental Conservation, Government of Japan (1995): National Strategy of Japan on Biological Diversity.
(http://www.eic/or/jp/eanet/en/pol/nsj/index.html)

Performance of Forestry Cooperation, Project-type Technical Cooperation

Forestry

Country	Project	Duration
Indonesia	Tropical Rain Forest Research Project in Indonesia	1995. 1. 1 ~ 1999.12.31
Indonesia	The Forest Fire Prevention Management Project in the Republic of Indonesia	1996. 4.15 ~ 2001. 4.14
Indonesia	The Forest Tree Improvement Project in the Republic of Indonesia	1997.12. 1 ~ 2002.11.30
Thailand	The Reforestation and Extension Project in the Northeast of Thailand in Thailand	1992. 4. 1 ~ 1998. 9.30
Thailand	The Research Project for Higher Utilization of Forestry and Agricultural Plant Materials in Thailand	1996. 8. 1 ~ 2001. 7.31
Thailand	After-Care Program for the Research and Training in Re-Afforestation Project in Thailand	1997.11.14 ~ 1999.11.13
Laos	The Forest Conservation and Afforestation in Lao People's Democratic Republic	1998. 7.16 ~ 2003. 7.15
Viet Nam	Afforestation Technology Development Project on Acid Sulfate Soil in the Mekong Delta	1997. 3.20 ~ 2000. 3.19
China	Forestry Development Project in Fujian Province of China	1991. 7. 1 ~ 1998. 6.30
China	Forest Protection Research Project in Ningxia Hui Autonomous Region	1994. 4. 1 ~ 1999. 3.31
China	Hubei Province Forest Tree Improvement Project	1996. 1.15 ~ 2001. 1.14
Nepal	Community Development and Forest / Watershed Conservation Project in Nepal	1994. 7.16 ~ 1999. 7.15
Papua New Guinea	Forest Research Project Phase2 in Papua New Guinea	1995. 4. 1 ~ 2000. 3.31
Panama	Forest Conservation Technical Development Project in the Republic in of Panama	1994. 4. 1 ~ 1999. 3.31
Bolivia	The Afforestation and Erosion Control Project in the Valley of Tarija in Bolivia	1998.10. 1 ~ 2003. 9.30
Brazil	Brazilian Amazon Forest Research Project	1995. 6. 1 ~ 1998. 9.30
Brazil	Brazilian Amazon Forest Research Project	1998.10. 1 ~ 2003. 9.30
Chile	The Erosion Control and Afforestation Project in Watersheds of Semi-Arid Aria in Chile	1993. 3. 1 ~ 1999. 2.28
Paraguay	The Forest Extension Project in the Eastern Region of Paraguay	1996. 4.24 ~ 2001. 4.23
Uruguay	Forest Products Testing Project	1998.10. 1 ~ 2003. 9.30
Kenya	The Social Forestry Extension Model Development Project for Semi-arid Areas in Kenya	1997.11.26 ~ 2002.11.25
Tanzania	The Kilimanjaro Village Forestry Project in Tanzania	1993. 1.15 ~ 2000. 1.14

Japan International Cooperation Agency (1998):Performance of Agriculture, Forestry and Fisheries Development Cooperation, Agriculture, Forestry and Fisheries Development Cooperation

(8) International Cooperation

8-5) Cooperation for Nature Conservation by Environment Agency, JICA and Other Organisations

8-5-1) Overview, Project Type Technical Cooperation

a) International Assistance by the Environment Agency

The Environment Agency assists developing countries of Asia-Pacific and others in Global Environmental Issues and consolidation of their administrative basis towards the implementation of Agenda 21. Main areas of assistance in nature conservation are as follows.

- Wetland Conservation in Asian Region
- Publication of Red Data Book for Birds of Asian Region
- Conservation Measures of World Natural Heritage in Asia
- Conservation of Coral Reefs
- Investigation of Biodiversity in Asia

b) International Assistance through technical cooperation of JICA

The Environment Agency also supports developing countries in their nature conservation efforts through international technical cooperation of Japan International Cooperation Agency (JICA). There are several types of the technical cooperation, for example, 1) Acceptance of Trainees for capacity building, 2) Dispatch of Experts for technology transfer, 3) Project-type Technical Cooperation combining various means of cooperation.

1) Acceptance of Trainees

Four Group Training Courses, "Nature Conservation and Natural Parks Management (for 30 days)", "Conservation of Wetland Ecosystem and Biological Diversity (for 30 days)", "Conservation and Sustainable Management of Coral Reefs (for 40 days)" and “Biodiversity Information System (for 60 days)” are implemented every year.

2) Dispatch of Experts

For technology transfer, Long-term or Short-term Experts in Nature Conservation, for instance, National Park Management, Wildlife Management, Natural Environment Survey are dispatched to developing countries in Asia, Africa and Latin America and so on.

3) Project-type Technical Cooperation:

There are several cases that Project-type Technical Cooperation, which combines the dispatching of experts, acceptance of trainees and other means, is carried out. For example, the cooperation for wildlife conservation in Yacyreta, Paraguay was implemented FY 1991 to 1994. And the project of conservation for biodiversity in Indonesia (Biodiversity Conservation Project in Indonesia) has been done since FY 1995.

C)　Project Type Technical Cooperation

1) Compensatory Measures for Submerged Area by Dam Construction

By the construction of Yacyreta Dam on the Parana River along the border between Paraguay and Argentine, an area of 160,000 ha was submerged, where were many rare wild animals living, such as Howler monkey and Marsh deer.　To conserve these animals, it was planned to secure compensatory protected areas with the similar habitat, to rescue and transfer the animals, and to minimise impact on the biodiversity.　Since there was lack of the researchers and techniques necessary for implementing the plan in Paraguay, technical cooperation was done by JICA between 1991 and 1995 in the fields of selection and research on the compensatory areas, rescue planning and research on the animals by radio-tracking.

2) Construction of Biodiversity Information Centre (BIC-LIPI)

Indonesia, consisting of many islands in the tropical zone, is one of the richest countries as for biodiversity in the world.　Biodiversity Conservation Project in Indonesia was started as a cooperative project by Indonesia, USA and Japan from July 1995.　JICA initiated project type technical cooperation with the Indonesian Institute of Science (LIPI) and the Directorate General of Forest Protection and Nature Conservation (PHPA), as well as provided grant aid. The main actives are taxonomic/ecological surveys, establishment of a management plan for Gunung Halimun National Park as a model area and establishment of database for the biodiversity/geographic information.　The management facilities (HQes) and field research station in Gunung Halimun National Park, Research and Development Center for Biology and Nature Conservation Information Center were constructed by grant aid cooperation.　The project proceeded from phase 1 to phase 2 and continues until June 2003.

Nature Conservation Bureau, The Environment Agency(1995･1999) : Nature Conservation in Japan

加藤 宏保(1994)：ヤシレタ野生動物保護研究協力事業－動物編－(国際協力事業団 派遣専門家総合報告書)

国際協力事業団(1994)：インドネシア国生物多様性保全計画基礎調査団報告書

－(財)国立公園協会(1998)：多様性保全技術を指導・移転協力する、生物多様性保全技術モデル調査報告書より－

(8) International Cooperation 8-5) Cooperation for Nature Conservation by Environment Agency, JICA and Other Organisations 8-5-1)Overview, Project Type Technical Cooperation

1999 Wildlife Conservation and Management (African Countries)

	Date		AM	PM	Location	Overnight Stay
1	10/26	T	Arrive in Japan			TIC
2	/27	W	Briefing Orientation	Program Orientation	TIC	
3	/28	R	General Orientation			
4	/29	F				
5	/30	S	Bus Tour			
6	/31	S	Day Off			
7	11/ 1	M	Curriculum Guidance	Overview of Nature Conservation in Japan	EA	
8	/ 2	T	Transport to Minakami	Guidance, Reconnaissance	SuigennoMori	Minakami Prince Hotel
9	/ 3	W	Field Data Collection			
10	/ 4	R		Country Report Presentations (Evening)		
11	/ 5	F				
12	/ 6	S				
13	/ 7	S				
14	/ 8	M		Transport to Tokyo		TIC
15	/ 9	T	Self-Review		TIC	
16	/10	W	Country Report Discussion			
17	/11	R	Personal Computer Training		TIC (PC)	
18	/12	F				
19	/13	S	Day Off			
20	/14	S				
21	/15	M	Personal Computer Training		TIC (PC)	
22	/16	T	Wildlife Research Methodology		JWRC	
23	/17	W	Transport to Isumi	Overview of Isumi	Isumi Environment and Culture Village	Mobara
24	/18	R	Field Data Collection			
25	/19	F				
26	/20	S		Transport to Tokyo		TIC
27	/21	S	Day Off			
28	/22	M	Analysis of Collected Data		TIC (PC)	
29	/23	T	Day Off			
30	/24	W	Analysis of Collected Data		TIC (PC)	
31	/25	R				
32	/26	F	Designation and Planning of Natural Parks	Wildlife Conservation and Management System in Japan	TIC	
33	/27	S	Transport to Kofu			Kofu
34	/28	S	Approaches to Wildlife Management		Masuho	Fujiyoshida
35	/29	M	National Surveys on Natural Environment, Biodiversity Center, National Park Management (Mt. Fuji Region)		Fujiyoshida	
36	/30	T	Tour Around Mt. Fuji	Transport to Hiroshima	Fuji-Hakone-Izu NP	Hiroshima
37	12/ 1	W	Asa Zoological Park		Asa ZP	
38	/ 2	R	Transport to Aso			Aso
39	/ 3	F	National Park Management (Aso Region)		Aso	
40	/ 4	S	Tour Around Aso Region			
41	/ 5	S	Transport to Tokyo			TIC
42	/ 6	M	Self-Review			
43	/ 7	T	Environmental Impact Assessment	Ecotourism/Park Volunteers	TIC	
44	/ 8	W	Research Case Study: Indonesia	Research Methodology (Amphibians, Reptiles, Insects)		
45	/ 9	R	National Parks of the Europe and North America	System of Protected Areas in Japan		
46	/10	F	Japan's International Cooperation in Nature Conservation	National Parks of Asia and Far East	Edogawa University	
47	/11	S	Day Off			
48	/12	S				
49	/13	M	Principles of Wildlife Management		TIC	
50	/14	T	Research Case Study: Zambia	Preparation of Action Plans		
51	/15	W	Action Plan Presentations			
52	/16	R	Action Plan Discussion			
53	/17	F	Evaluation, Closing Ceremony, Farewell Party			
54	/18	S	Day Off			
55	/19	S	Depart from Japan			

Schedule for 1999 JICA Area Focused Training Course, Wildlife Conservation and Management (African Countries)

(8) International Cooperation

8-5) Cooperation for Nature Conservation by Environment Agency, JICA and Other Organisations

8-5-2) Kafue National Park Management Plan Project (JICA Team Dispatch): Zambia

a) Background of Cooperation

National Parks and wildlife in Zambia are some of the most important national assets. The Wildlife Policy says that sustainable use of the natural resources is promoted by conserving the natural ecosystems and biodiversity. Since a management plan for a park is indispensable to provide conservation of the area, making the management plans was started in 1992.

Kafue National Park is the biggest and oldest park in Zambia, having variety of wildlife and ecosystems and an important water catchment area. However, mainly because of aggravation of the national economy, the park has been facing serious management problems since 1980's; which caused decrease of the animal populations and deterioration of the ecosystems.

The Japanese Government has supported National Parks and Wildlife Service (NPWS) through Japan Overseas Cooperation Volunteers since 1982 and dispatch of a long-term expert; there are a rich store of knowledge for the park and a good relationship with NPWS. Following the request by the Zambian Government, the Ministry of Tourism and Japan International Cooperation Agency made an agreement on "Kafue National Park Management Plan Project" in January 1996.

b) Outlines of Project

This project is technical cooperation by team dispatch for three years to transfer technical skills for park planning and ecological surveys through making a management plan for Kafue National Park. The overall goal for the project is to improve conservation of the ecosystems, biodiversity and water catchment area in the park with sustainable use of the resources.

Although the scale of the project was small, the effect of the project was fairly maximised by combination of: dispatch of three long-term and ten short-term experts; provision of local working costs; procurement of equipment; and training programmes in Japan. The office in charge for the project was Wildlife Research Division of NPWS and six members of the staff were appointed to the counterparts.

c) Principle and Activities of Project

The basic principle of the project was to encourage the counterparts to conduct surveys in the field, to collect, analyse and evaluate the information, to understand the problems, to find the solutions and to make the management plan finally. Advanced research techniques and park

planning in the Japanese style was incorporated through the technical transfer. It was kept in mind to communicate well between the counterparts and the experts as colleagues through the meetings and field inspections/surveys.

The principle and activities of the project are summarised as follows:

- Linking with field: residence of one expert and four counterparts in the park;
- Draft plans: the counterparts with the principal role in writing the draft plans;
- Project Management Committee: the core planning team to discuss the project management and park planning;
- Workshops: involvement of the stakeholders in the planning process;
- Ecological surveys: collection of data on the natural resources for the park planning: e.g. large mammals and vegetation;
- Geographic Information System (GIS): drawing the vegetation map and other basic maps;
- Park planning: zoning of the park and realistic planning based on the existing conditions.

b) Outputs of Project

The main products of the project are as follows:

- Kafue National Park Management Plan: Interim Plan and General Plan;
- Survey reports for natural resources, park management, park facilities, etc;
- Vegetation map and other basic maps for the park.

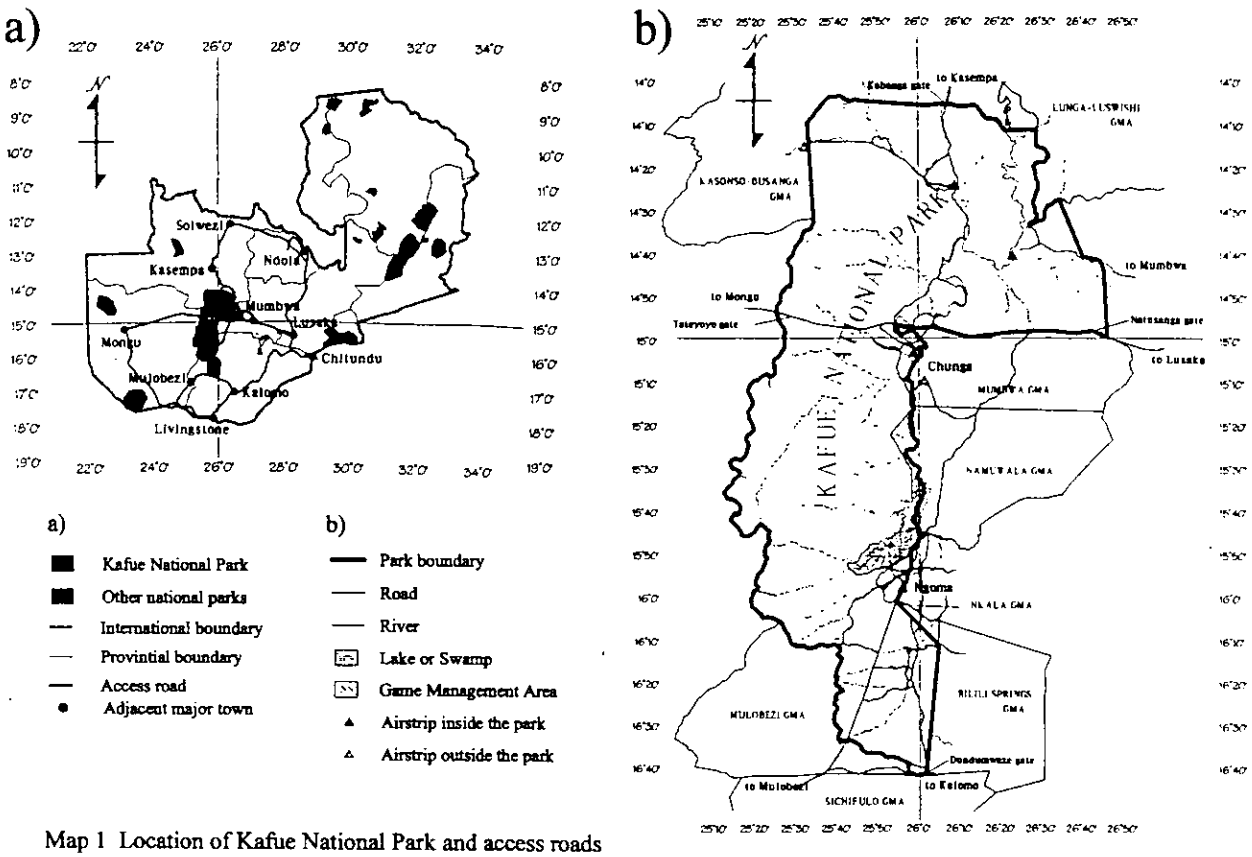
Generally, it can be said that the objective of technical transfer was achieved since the counterparts acquired the knowledge and techniques necessary for park planning and ecological surveys. The counterparts recognised the park purpose/significance, resources, problems and potential and felt an ownership sense for the management plan. Information on the park, particularly natural resources, collected and complied was valuable as basic data necessary for the wildlife conservation and park management. In addition, the park management, especially anti-poaching, was improved by the procurement of field equipment.

Because of the main objective of this project was technical transfer, the approach to make a management plan by this project is a quite different from others: a management plan is made in a short period by outsourcing to consultancies. Even in the case that NPWS outsources park planning in the future, it is expected that the outputs obtained by the project will be still useful since the staff must have the knowledge and techniques to guide, supervise and coordinate the consultancies.

Nitta K. (1999): Kafue National Park Management Plan Project / Research Case Study: Zambia, Material for “Wildlife Conservation and Management (African Countries)”, Area Focused Training Course, Japan International Cooperation Agency (JICA).

(8) International Cooperation 8-5) Cooperation for Nature Conservation by Environment Agency, JICA and Other Organisations

8-5-2) Kafue National Park Management Plan Project (JICA Team Dispatch): Zambia



Map 1 Location of Kafue National Park and access roads

National Parks and Wildlife Service, Japan International Cooperation Agency (1999): Kafue National Park General Management Plan

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