

## (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.”

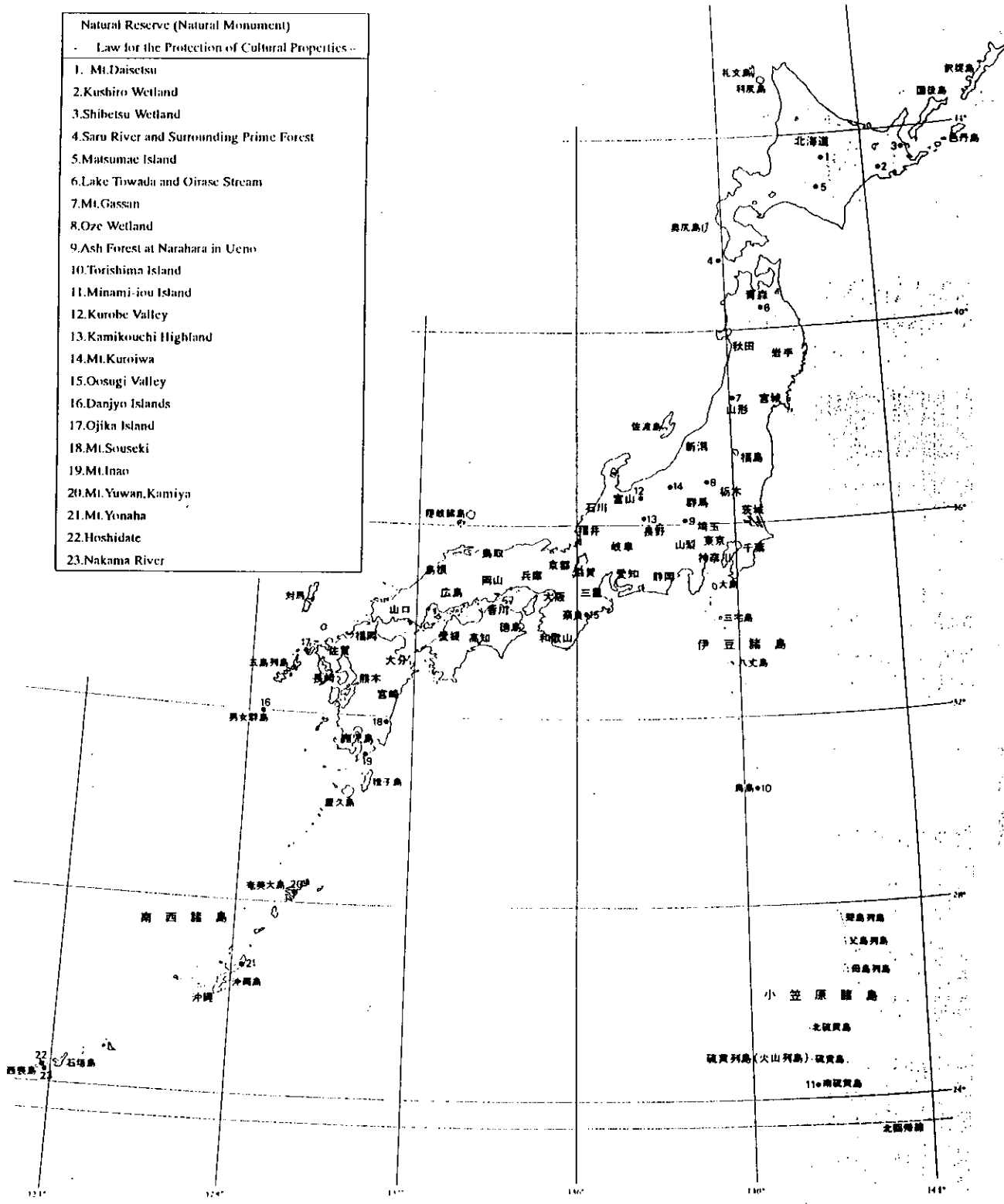
The protection and breeding of wild animals and plants which require special protection should be implemented by appropriate protection and management measures in Nature Conservation Forests and Protected Forests. The “Programme for Protection and Management of Rare Species of Wild Fauna and Flora” should 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:

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

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

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:

cross analysis within Green Census data, or;

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.

##### 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.

##### 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

##### 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
- 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
- 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

(5) Wildlife Conservation and Management in Japan 5-5) Research and Monitoring  
5-5-2) Research for Identification and Review of Endangered Species

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 (CR)	Endangered (EN)	Vulnerable (VU)			
V e r t e b r a t e	Mammals	4	0	11	31	16	16	9	47
	Birds	13	1	17	42	48	16	15	90
	Reptiles	0	0	2	7	11	9	1	18
	Amphibians	0	0	1	5	9	5	0	14
	Brackish & Freshwater Fishes	3	0	29	58	18	12	5	76
	Vascular Plants	17	12	471	881	518	108	365	1,399
P l a n t s	Bryophytes	0	0		110	70	4	54	180
	Algae	5	2		34	6	24	0	40
	Lichenes	3	0		22	23	17	17	45
	Fungi	28	1		51	11	0	0	62

(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 decoys 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

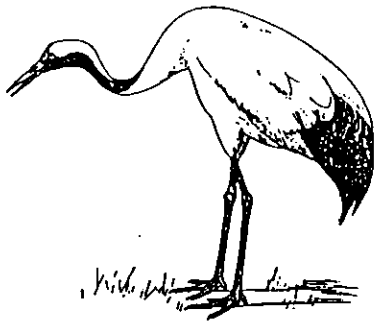
Blakiston's fish owl *Ketupa blakistoni*



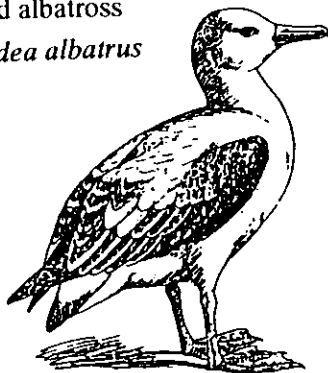
Golden eagle *Aquila chrysaetos*



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 <i>Nipponia nippon</i> )	Sado, Niigata
Iriomote Wildlife Center (Iriomote cat <i>Muyailurus iriomotensis</i> )	Iriomote island, Okinawa
Tsushima Wildlife Center (Tsushima cat <i>Felis euphilura</i> )	Kamiagata, Nagasaki
Haboro Wildlife Center / under construction (Guillemot <i>Uria aalge</i> )	Haboro, Hokkaido
Yambaru Wildlife Center / under construction (Okinawa rail <i>Rallus okinawae</i> , Pryer's woodpecker <i>Sapheopipo noguchii</i> )	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