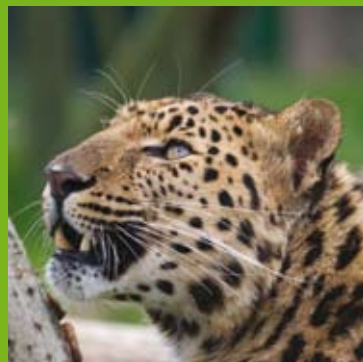




SAVING THE FLAGSHIP SPECIES

OF NORTH-EAST ASIA



Nature Conservation Strategy of NEASPEC

ESCAP is the regional development arm of the United Nations and serves as the main economic and social development centre for the United Nations in Asia and the Pacific. Its mandate is to foster cooperation between its 53 members and 9 associate members. ESCAP provides the strategic link between global and country-level programmes and issues. It supports the Governments of the region in consolidating regional positions and advocates regional approaches to meeting the region's unique socio-economic challenges in a globalizing world. The ESCAP office is located in Bangkok, Thailand. Please visit our website at www.unescap.org for further information.



The grey shaded area of the map represents the members and associate members of ESCAP

United Nations publication
Copyright© United Nations 2007
ST/ESCAP/2495

Photo credits:

Amur tiger: © Christina Bergey
Amur leopard: © Michael Winters
Snow leopard © Krzysztof Isbrandt
Black-faced spoonbill: © Anthony Mak
White-naped crane: © International Crane Foundation, Baraboo, Wisconsin
Hooded crane © Susanne Bund

The designations employed and the presentation of the material in this publication do not imply the expression of any opinion on the part of the United Nations concerning the legal status of any country, territory, city, or area or of its authorities, or concerning the delimitation of its frontier or boundaries.

Mention of firm names and commercial products does not imply the endorsement of the United Nations.

This publication may be reproduced in whole or in part for educational or non-profit purposes without special permission from the copyright holder, provided that the source is acknowledged. The ESCAP publications office would appreciate receiving a copy of any publication that uses this publication as source.

For further information about Nature Conservation in North-East Asia, please visit the NEASPEC website at: <http://www.neaspec.org>.

This paper is produced from 100% eucalyptus plantations without consuming the materials from natural forests and using the elemental chlorine-free bleaching process, and using vegetable-based inks and water based coating.

Saving the Flagship Species of North-East Asia:

Nature Conservation Strategy of NEASPEC



United Nations
ESCAP

ECONOMIC AND SOCIAL COMMISSION FOR ASIA AND THE PACIFIC

INTRODUCTION

During 2005-2007, experts and officials of NEASPEC member countries worked jointly on a nature conservation programme by identifying the flagship species of North-East Asia and developing a conservation strategy. NEASPEC member governments endorsed the nature conservation strategy by adopting the NEASPEC resolution on Nature Conservation Programme at the 12th Senior Officials Meeting in March 2007 in Beijing. The NEASPEC resolution represents not an end but another fresh start to continue joint efforts. The resolution and strategy serve as a stepping-stone for the NEASPEC member Governments, institutions and NGOs to explore further concrete actions. From its outset, NEASPEC sought the joint efforts of its member countries to protect biodiversity of the subregion. Only after establishment of the NEASPEC Core Fund in 2001 was it possible to translate the mandate into action. Furthermore, the development of the project on the appropriate framework of a nature conservation programme required a series of consultation during 2001-2004.

The project identified six target species, namely, amur tiger, amur leopard, snow leopard, hooded crane, white-naped crane and black-faced spoonbill. The target species do not necessarily inhabit the territories of all NEASPEC member countries. However, each animal is one of key species that constitute the subregion as a single ecological community, and thus combined may be regarded as the flagship species of North-East Asia. Their existence makes nature in politically divided territories borderless. Their ecological status in the web of nature has significant potential to bring multilateral actions for protecting not only the species but also wide habitats for many other species. Thus, addressing challenges in the life of the flagship species requires connecting policies and actions across national borders and ultimately contributes to saving nature.

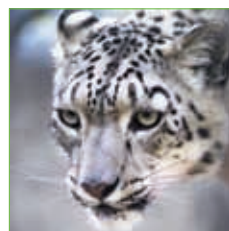
Subregional and regional efforts are a useful way to attain global goals such as the 2010 Global Biodiversity Target. The habitats of the flagship species show that one country's effort is not sufficient to secure safe places for the species. Securing their survival requires that all the lands connected by feline animals and migratory birds be hubs of effective coordinated actions among countries.

Geographical proximity among subregional members also creates a great springboard for meeting both global and national goals. Similar ecological conditions and the potential of complementary roles among countries potentially provide relatively comfortable ground for multilateral cooperation on nature conservation. ESCAP prepared this publication for this goal. This publication presents information on the processes and outcomes of the NEASPEC nature conservation project for major stakeholders, including governments, national institutions and NGOs, to help shape their own roles in further subregional actions.

ABBREVIATIONS AND ACRONYMS

CBD	Convention on Biological Diversity
CITES	Convention on International Trade in Endangered Species of Wild Flora and Fauna
CMS	Convention on Migratory Species
DB	Data base
DMZ	Demilitarized zone
ESCAP	United Nations Economic and Social Commission for Asia and the Pacific
GEF	Global Environment Facility
IUCN	World Conservation Union (formerly the International Union for the Conservation of Nature and Natural Resources)
JWRC	Japan Wildlife Research Centre
LOA	Letter of Agreement
NGO	non-governmental organization
NIER	National Institute of Environmental Research
NIES	Nanjing Institute of Environmental Science
NEASPEC	North-East Asian Subregional Programme for Environmental Cooperation
NEANCP	North East Asia Nature Conservation Programme
SEPA	State Environmental Protection Administration
SOM	Senior Officials Meeting
UNDP	United Nations Development Programme
UNEP	United Nations Environment Programme
WWF	World Wide Fund for Nature

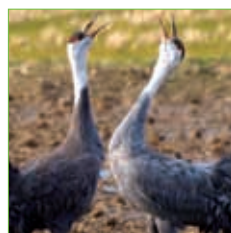
Contents



INTRODUCTION	ii
ABBREVIATIONS AND ACRONYMS	iii
1. OVERVIEW	1
2. THE FRAMEWORK FOR NATURE CONSERVATION STRATEGY IN NORTH-EAST ASIA	6
Meeting the 2010 Global Biodiversity Target	8
Overall goals of the NEASPEC conservation strategy	9
Overall approach	9
3. PRIORITY SPECIES AND RELATED CONSERVATION STRATEGIES	11
AMUR TIGER	11
Distribution and population	11
Physical features and habitats	11
Threats	13
Conservation strategy for the amur tiger	13
AMUR LEOPARD	17
Distribution and population	17
Physical features and habitats	18
Threats	18
Conservation strategy for the amur leopard	20
SNOW LEOPARD	23
Distribution and population	23

Tables

Table 1: Chronology of events and decisions on nature conservation	1
Table 2: Summary information for the selected six species	7
Table 3: Winter census of the black-faced spoonbill in late January 2005	29
Table 4: Distribution of white-naped crane by country	35
Table 5: Distribution of hooded crane by country	39



Physical features and habitats.....	23
Threats.....	24
Conservation strategy for the snow leopard.....	26
BLACK-FACED SPOONBILL.....	29
Distribution and population.....	29
Physical features and habitats.....	29
Threats.....	30
Conservation strategy for the black-faced spoonbill.....	32
WHITE-NAPED CRANE.....	35
Distribution and population.....	35
Physical features and habitats.....	35
Threats.....	36
HOODED CRANE.....	39
Distribution and population.....	39
Physical features and habitats.....	39
Conservation strategy for the white-naped crane and hooded crane.....	42
4. THE WAY FORWARD.....	45
Annex: Protected areas in the habitats of the target species.....	46
Endnotes.....	69

Figures

Figure 1: Distribution of tigers in the Russian Far-East.....	12
Figure 2: The amur tiger range in the borders of China and the Russian Federation.....	12
Figure 3: Distribution of amur leopard in Primorsky.....	17
Figure 4: Breeding and migration range of white-naped crane.....	36
Figure 5: Breeding and migration range of hooded crane.....	40

1. OVERVIEW

Since NEASPEC's inception in 1993, the development of a programme on nature conservation became one of the key priorities for subregional cooperation. However, the initiative did not gather enough momentum to commence early activities largely due to inadequate financial resources. It was not until establishment of the Core Fund in 2001 that interest in nature conservation activities revived and new efforts made to establish a specific programme on nature conservation.

The formulation of the NEASPEC Nature Conservation Project followed a history of decisions underpinning its importance to the North-East Asian countries (table 1). This project is considered a significant milestone in the development of NEASPEC because it is the first project that is fully funded by the member countries. As such, the initiative requires no less than the strong support of its member countries for the outcome to have meaningful contribution to the overall conservation and protection of unique species of wildlife in North-East Asia.

Table 1: Chronology of events and decisions on nature conservation

Meetings	Events and summary of decisions
Second SOM (28-29 November 1994, Beijing, China)	The Second SOM identified "ecosystem management" as one of three priority areas of subregional cooperation. Accordingly, from the Second to the Fourth SOM, the NEASPEC countries discussed a proposal on "the North-East Asian Biodiversity Management Programme" presented by UNDP as a Global Environmental Facility (GEF) project. However, funds for the project did not materialize.
Seventh SOM (27 July 2001, Beijing, China)	Having attained NEASPEC's own financial resources under the Core Fund, the Secretariat forwarded to the Meeting a paper on the "Identification of Project Ideas", including a brief proposal for "North East Asia Nature Conservation Programme (NEANCP)". The project proposal focused on establishing a Regional Network of North-East Asian Heritage Parks and Nature Reserves, with the objective of further enhancing environmental cooperation in the subregion and strengthening linkages between similar institutions in NEASPEC countries. The Meeting requested further exploration and consultation at expert group meetings. In particular, the Meeting agreed that the programme should initially focus on training and general information exchange based on consensus among the participating countries, and should avoid duplication of relevant regional programmes of other international organizations.
The Expert Group Meeting on Environmental Cooperation in North-East Asia (December 2001, Jeju Island, Republic of Korea).	Guided by the decision of the Seventh SOM, the discussions and guidance of the Meeting enabled the Secretariat to prepare "Proposals on Nature Conservation under NEASPEC". The Secretariat identified ongoing efforts in nature conservation at national and subregional levels in North-East Asia and proposed potential areas of cooperation, i.e., information and exchange mechanisms, North-East subregional network on protected areas, subregional agreement on protection of migratory animals, and a North-East Asian subregional nature conservation centre.





Meetings	Events and summary of decisions
Eighth SOM (20 June 2002, Ulaanbaatar, Mongolia)	The proposal was submitted to the Eighth SOM in June 2002. The Meeting recommended the establishment of a Working Group of National Focal Points on Nature Conservation. Its purpose would be to identify priority areas for development of projects in nature conservation, initiate exchange of information to grasp issues and problems, and to bring issues to the attention of governments for cooperative action. Due to the limited resources available, the Meeting also recommended that synergies should be developed with ongoing initiatives in the subregion in nature conservation without causing duplication.
The First Meeting of the Working Group of National Focal Points on Nature Conservation (21-22 July 2003, Bangkok, Thailand)	Following the recommendation of the Eighth SOM, the Working Group Meeting was convened. The Meeting identified a set of eight priority areas: the management of and cooperative research on nature reserves; the conservation and sustainable use of wetland biodiversity; ecological monitoring and conservation of marine ecosystems and coastal zones; conservation and management of forest ecosystems; the conservation and recovery of large mammals; the conservation and management of grassland ecosystems; the conservation, monitoring and cooperative research on important migratory species; and the prevention and control of alien invasive species.
Ninth SOM (2-4 March 2004, Moscow, the Russian Federation)	The Second Meeting of the Working Group of National Focal Points for Nature Conservation (2 March 2004, Moscow). The Second Working Group Meeting held in conjunction with the Ninth SOM concluded to focus on two priority areas: conservation and recovery of large mammals; and conservation, monitoring and cooperative research on important migratory species.
The Third Meeting of the Working Group of National Focal Points for Nature Conservation (30 September – 1 October 2004, Bangkok, Thailand)	To facilitate the process of identifying common needs and activities for cooperation in relation to the two priority areas decided at the Ninth SOM, the Secretariat initiated a survey of ongoing activities in NEASPEC and presented its findings at the Meeting. On the basis of the findings, the Working Group defined the approach of a new project as follows: • Strengthen the decision-making process on nature conservation in North-East Asia by establishing a Senior Nature Conservation Officials Forum; • Develop a subregional strategy for nature conservation and action plans for the conservation of threatened large mammals, mainly felines and threatened migratory birds, including pilot projects based on economic tools and participatory approaches by local communities; • Strengthen the scientific basis for problem identification by developing and implementing a harmonized system for collection, gathering, analysis and management of data on nature conservation, in particular in the areas of threatened large mammals, mainly felines and threatened migratory birds; and Strengthen information exchange and sharing of positive experiences by creating a subregional network among experts in threatened large mammals, mainly felines, and threatened migratory birds.
Tenth SOM (24-26 November 2004, Naha, Japan)	The finalized proposal "Nature Conservation Programme in North-East Asia" and its budget plan was submitted at the Tenth SOM in November 2004 and approved for commencement by early 2005.

Meetings	Events and summary of decisions
Project Inception Meeting (18-21 July 2005, Chuncheon, Republic of Korea and Kumkang Nature Reserve, Democratic Peoples' Republic of Korea)	To start the implementation of the project, the Project Inception Meeting was convened and attended by government officials and experts of feline animals and migratory birds from China, Japan, Mongolia, the Republic of Korea and the Russian Federation. The Meeting reviewed past and ongoing subregional nature conservation projects, and focused on how to arrange a project framework which would achieve concrete impact and visibility. The Meeting also finalized the selection of target species, the overall direction of the nature conservation strategy and action plan, the approach of database development and data collection, working modalities and collaboration with other organizations. The Meeting concluded the following: • Finalized the selection of six target species on the basis of their significance and commonality in subregional nature conservation. The target species consist of three species of feline animals (amur tiger, amur leopard and snow leopard) and three species of migratory birds (black-faced spoonbill, white-naped crane and hooded crane); • Agreed to formulate and undertake practical and action-oriented activities as pilot projects, while the project will focus on the creation of a subregional strategy and action plan; • Agreed to compile existing data sets in order to create a database, which will be a basis for subregional action; and • Agreed to promote active participation of stakeholders including NGOs, academic institutes, and local authorities in the implementation process in order to create more tangible and visible impacts with minimum resources.
Eleventh SOM (25-26 October 2005, Seoul, Republic of Korea)	The Meeting noted the submissions of the Project Inception Meeting held in Chuncheon, Republic of Korea and Kumkang Nature Reserve, in Democratic People's Republic of Korea. The Secretariat reported that it had followed up with the national focal points in designating national collaborating centres which would assume the role of providing the required national input to develop a database, a subregional conservation strategy and action plan for target species, undertaking relevant national activities and pilot projects if necessary. The nominated centres include Nanjing Institute of Environmental Sciences (NIES), SEPA in China, National Institute of Environmental Research (NIER) in the Republic of Korea, Japan Wildlife Research Centre (JWRC) in Japan, and Irbis Mongolia in Mongolia, the World Wide Fund for Nature (WWF) in the Russian Federation. The Japan Wildlife Research Centre, the partner institute for project implementation, has played a key role in analysing existing relevant conservation strategies and drafting the Subregional Conservation Strategy. Similarly, NIER assumed the responsibility for compiling data from other collaborating centres and developing a web-based database.



Meetings	Events and summary of decisions
Expert Group Meeting for Nature Conservation Programme in North-East Asia (19-21 December 2005, Nanjing, China)	The Secretariat in collaboration with the Nanjing Institute of Environmental Science organized an Expert Group Meeting attended by national experts as well as experts from key NGOs and networks working on the target species. The Meeting was organized with the objective to draft key components of the strategy, decide on the mechanism of a database, and identify pilot projects. Upon hearing presentations on relevant conservation strategies, existing global databases and proposals for pilot projects, the Expert Group Meeting concluded the following: • Decided to formulate a subregional conservation strategy to be built upon existing strategies and recommendations made by NGOs and international networks. The identification was also made with consideration of NEASPEC's conditions and approaches; • Agreed on the mechanism of a web-based database using the current NEASPEC website, which will be an open-access database for the public with all national languages of NEASPEC member countries, and a portal for additional information and resources related to the target species. The Meeting also reaffirmed to request NIER of Republic of Korea for the creation and operation of the database since the institute currently administrates the NEASPEC website; • Reviewed proposals of pilot projects, but failed to finalize the selection of projects. Considering the time frame of the project implementation, the Meeting delegated the Secretariat to finalize the process with additional information that would be submitted by national collaborating centres by mid January 2006; and • Agreed on the procedure of project implementation and particularly the roles of collaborating centres in preparing strategy and database, implementing pilot projects, and other relevant national activities. In order to assist in the understanding of the procedure, the Secretariat circulated and briefed a generic Letter of Agreement (LOA). Subsequently, the Secretariat received new or revised proposals for pilot projects, facilitated the exchange of views among national collaborating centres on the proposals and finalized the selection process in March 2006 by accepting the following proposals: • Managing Protected Areas and Multiple Use lands for Amur Tiger and Far-East Leopard Conservation; • Addressing Snow Leopard Trade Issues to Decrease Poaching; • Field Survey Training for Monitoring the Snow Leopard Population; • Training Workshop for Younger Researchers on Conservation of Threatened Birds. ESCAP and each national collaborating centre entered into a Letter of Agreement with each party involved in implementing activities including pilot projects, and consulted to fine-tune the implementation plan of the projects. As a result, the following pilot projects were undertaken: • International Workshop on Transboundary Amur Tiger Wild Population Restoration, 24-25 July 2006, Yanji, China.

Meetings	Events and summary of decisions
	•Field Survey Training for Monitoring of Snow Leopard Population, 11-17 October 2006, Gobi Gurvansaikhan National Park, Mongolia. •International Meeting on the Establishment of Trilateral Cooperation Network towards Reducing Poaching and Trade of Snow Leopard, 14-17 November, 2006, Ulaangom, Mongolia. •Training Workshop for Younger Researchers on Conservation of Cranes and Black-faced Spoonbill in North-East Asia, 19-25 November 2006, Izumi and Fukuoka, Japan.
Review Meeting of the Subregional Conservation Strategy (19-20 October 2006, Hustain National Park, Mongolia)	In keeping with the decision of the SOM, the Secretariat in collaboration with JWRC prepared a draft of the subregional conservation strategy and circulated the draft to the national collaborating centres for the first review. A Review Meeting was organized to finalize the draft strategy and ready the document for submission at the Twelfth SOM for its adoption. The Meeting also reviewed the progress of other project components, i.e. data base and pilot projects. At the Meeting, NIER introduced its plan for the compilation of national data on the target species and the creation of a database, and informed that the work would be undertaken by early 2007 in consultation with JWRC.
Twelfth SOM (22-23 March 2007, Beijing, China)	The SOM endorsed the NEASPEC Nature Conservation Strategy by adopting a Resolution on the Framework for Nature Conservation Programme in North-East Asia. (For text of the resolution, please refer to page 45).



2. THE FRAMEWORK FOR NATURE CONSERVATION STRATEGY IN NORTH-EAST ASIA

The Tenth SOM in 2004 approved a project entitled “A Framework for a Nature Conservation Programme in North-East Asia”. Its aim was to assist NEASPEC member countries in undertaking joint action on nature conservation in “the conservation and recovery of large mammals” and “the conservation, monitoring and cooperative research on important migratory species”. To ensure the attainment of this goal, the project was designed to: formulate a subregional conservation strategy and action plan as well as a web-based database; develop awareness raising materials on the selected target species; and devise a combined *in-situ* and *ex-situ* conservation method which would be a more feasible and effective mechanism for subregional action.

To provide focus on which species will be the subject of conservation during the Inception Meeting in July 2005, six target species, namely amur tiger, amur leopard, snow leopard, black-faced spoonbill, white-naped crane and hooded crane were selected (table 2). Subsequently, an Expert Group Meeting was convened in December 2005 primarily to discuss and identify the major components of conservation strategy for the six target species. Recognizing that a number of conservation strategies already exist, as undertaken by several NGOs and international networks, it was agreed that the NEASPEC Conservation Strategy should build upon these strategies and recommendations. To ensure that inputs from the NGOs and other networks are considered in the strategy elaboration process, the Review Meeting held in October 2006 sought their active participation along with that of the national collaborating centres. In particular, the draft of the NEASPEC Conservation Strategy referred to the following strategies formulated by the network of experts, international organizations or NGOs:

➤ For feline animals

- TumenNET Strategic Action Programme (2002).
- Conservation Action Plan for the Russian Far-East Ecoregion Complex: NGO Joint Action Plan (2003).
- Recovery of the Wild Amur Tiger Population in China: Progress and Prospect (2002).
- Conserving Tiger in the Wild - A WWF Framework and Strategy for Action 2002-2010.
- Recovery of the Amur Tiger Population in China: Progress and Prospect (2002).
- Snow Leopard Survival Strategy (2003).
- TRAFFIC Report: Fading Footprint – the Killing and Trade of Snow Leopards (2003).
- Strategy for Conservation of the Snow Leopard in the Russian Federation (2002).
- Mongolian Snow Leopard Conservation Plan (2000).

➤ For migratory birds

- Cranes: Status Survey and Conservation Action Plan (1996).
- Asia-Pacific Migratory Waterbird Conservation Strategy 2001-2005.
- Action Plan for the Black-faced Spoonbill (1995).
- Action Plan for the Conservation of Migratory Shorebirds in the East Asian-Australasian Flyway: 2001-2005.
- Action Plan Proposal for the Black-faced Spoonbill (*Platalea minor*) in Taiwan, Province of China (2004).

- Conservation Plan for the Black-faced Spoonbill (*Platalea minor*) in Hong Kong, China (WWF 2001).

Table 2: Summary information for the selected six species

	Species					
	Amur tiger	Amur leopard	Snow leopard	Black- faced spoonbill	White- naped crane	Hooded crane
Scientific name	<i>Panthera tigris altaica</i>	<i>Panthera pardus orientalis</i>	<i>Uncia uncia</i>	<i>Platalea minor</i>	<i>Grus vipio</i>	<i>Grus monacha</i>
IUCN Red List ^a	CR	CR	EN	EN	VU	VU
CITES listing ^b	Appendix I	Appendix I	Appendix I	Not included	Appendix I	Appendix I
Distribution	• Russian Federation (Primorsky province, South of Khabarovsk province) • China (Eastern Jilin province, Eastern Heilongjiang province)	• Russian Federation (South-western Primorsky province) • China (South-eastern Jilin province, South-eastern Heilongjiang province)	• Mongolia • Russian Federation • China, • Other countries	Breeding: • China • Democratic People's Republic of Korea • Republic of Korea Wintering: • China • Republic of Korea • Japan • Other countries	Breeding: • Mongolia • Russian Federation • China Wintering: • China • Democratic People's Republic of Korea • Republic of Korea • Japan	Breeding: • Russian Federation • China • Mongolia Wintering: • China, • Democratic People's Republic of Korea • Republic of Korea • Japan
In-situ population	ca. 500 (2006)	30-40 (2003)	4,500-7,350 subregion: 2,650-3,700 (2003)	ca.1,600~ (2006)	ca. 6,500 (2001)	ca. 9,150 (1999) 10,800 (2003) plus on Yantze River
Ex-situ population	517 (2005)	219 (2001)	557 (2003)+ about 1,400 in China	20 (2002)	238 (1997)	105 (2004)

Notes:

a Based on IUCN Red List of Threatened Species Categories: CR- critically endangered; EN – endangered; VU – vulnerable

b CITES Appendix classification are defined as follows: Appendix I list of species that are the most endangered among the CITES-listed animals and plants, threatened with extinction and CITES prohibits international trade in specimens of these species except for the purpose of the import is not for commercial use. Appendix II lists species that are not necessarily now threatened but that may become so unless trade is closely controlled. Appendix III is a list of species included at the request of a party that already regulates trade in the species and that needs cooperation of other countries to prevent unsustainable or illegal exploitation.

Sources: CITES accessed on 14 May 2007 at <<http://www.cites.org/>> and IUCN accessed on 14 May 2007 at <<http://www.iucn.org/>>.



In finalizing the NEASPEC Nature Conservation Strategy, one aspect was highlighted: the critical importance of building common understanding and networks among key national institutes and stakeholders involved in the conservation of target species in North-East Asia. The pilot projects following the Eleventh SOM acted as an important channel and opportunity for building collective knowledge on the species and also networks for further transboundary cooperation, particularly for the leopard and tiger species. The additional support of the Government of Japan in the conduct of training workshops and survey of the snow leopard and the migratory birds was invaluable in building the capacities of concerned actors involved in the conservation initiatives.

MEETING THE 2010 GLOBAL BIODIVERSITY TARGET

Member countries of NEASPEC are likewise committed to meeting the 2010 Global Biodiversity Target as part of their commitment to the Convention on Biological Diversity (CBD). In the context of CBD commitment, the following specific focal areas of the 2010 Target were considered in the formulation of the Framework for Nature Conservation Strategy in North-East Asia:

➡ Focal Area: Promote sustainable use

Goal 4. Promote sustainable use and consumption.

- **Target 4.1:** Biodiversity-based products derived from sources that are sustainably managed, and production areas managed consistent with the conservation of biodiversity.
- **Target 4.2:** Unsustainable consumption, of biological resources or that impacts upon biodiversity, reduced.
- **Target 4.3:** No species of wild flora or fauna endangered by international trade.

➡ Focal Area: Address threats to biodiversity

Goal 5. Pressures from habitat loss, land use change and degradation, and unsustainable water use, reduced.

- **Target 5.1:** Rate of loss and degradation of natural habitats decreased.

➡ Focal Area: Ensure provision of adequate resources

Goal 11. Parties have improved financial, human, scientific, technical and technological capacity to implement the Convention.

- **Target 11.1:** New and additional financial resources are transferred to developing country Parties, to allow for the effective implementation of their commitments under the Convention, in accordance with Article 20.
- **Target 11.2:** Technology is transferred to developing country Parties, to allow for the effective implementation of their commitments under the Convention, in accordance with its Article 20, paragraph 4.



OVERALL GOALS OF THE NEASPEC CONSERVATION STRATEGY

The overall goals of NEASPEC subregional conservation strategy for target species are:

1. To contribute to biodiversity conservation in North-East Asian subregion by ensuring the survival of target species.
2. To promote transboundary and intergovernmental cooperation for nature conservation among NEASPEC member countries.
3. To enhance coordinated mechanisms for the conservation of target species and their habitats.

OVERALL APPROACH

As an overall approach of the NEASPEC subregional conservation strategy for the target species, it shall:

1. Build on existing schemes to create synergies, promote partnership with existing activities and networks; and
2. Support the subregional implementation of international agreements such as Convention on Biodiversity (CBD) Convention on Migratory Species (CMS), Convention on International Trade in Endangered Species of Wild flora and Fauna (CITES) and other relevant international agreements relating to nature conservation.





3. PRIORITY SPECIES AND RELATED CONSERVATION STRATEGIES

AMUR TIGER

The amur tiger (*Panthera tigris altaica*) is a rare subspecies of tiger (*P. tigris*). Also known as the Siberian, Korean, Manchurian, or North China tiger, it is the largest of all animals in the feline family Felidae.¹ It is considered 'Endangered' by IUCN/Special Survival Commission cat specialist group.²

Distribution and population³

Amur tigers total less than 500 in the wild, among which approximately 330-450⁴ were found in Primorsky Province of Russian Far-East in 2003, and 12-16 were found in China between 1998 and 1999 (Jilin Province, 7-9; eastern Heilongjiang Province, 5-7).⁵ There are very few in Manchuria (north-eastern China). The Democratic People's Republic of Korea was estimated to have fewer than 10.⁶

Approximately 95 percent of the tigers in the Russian Far-East exist as a single, unfragmented population in the Sikhote-Alin-Wandashan Mountain Ecosystem in Primorski and Southern Khabarovski Krai. Tigers in the Wandashan Mountains of North-east Heilongjiang Province, China, are connected to the Sikhote-Alin meta-population via the Strel'nikov Range in the Russian Federation. Other smaller, fragmented subpopulations are found along the Tumen River: in South-west Primorski Krai, and in Pogranichnaya Raion, North-western Primorski Krai, the Russian Federation; Hunchun and Wangqing Counties of Jilin Province, Southern and Northern Laoyeling Region, and the Zhangguangcailing Region of Heilongjiang.

The Strel'nikov "ecological corridor" represents the single location where tigers from the large, Sikhote-Alin population can potentially move across international boundaries (figure 1 and figure 2).

The situation on the Korean Peninsula is less clear. Good ground survey is still in need to confirm the status of tigers in this area.

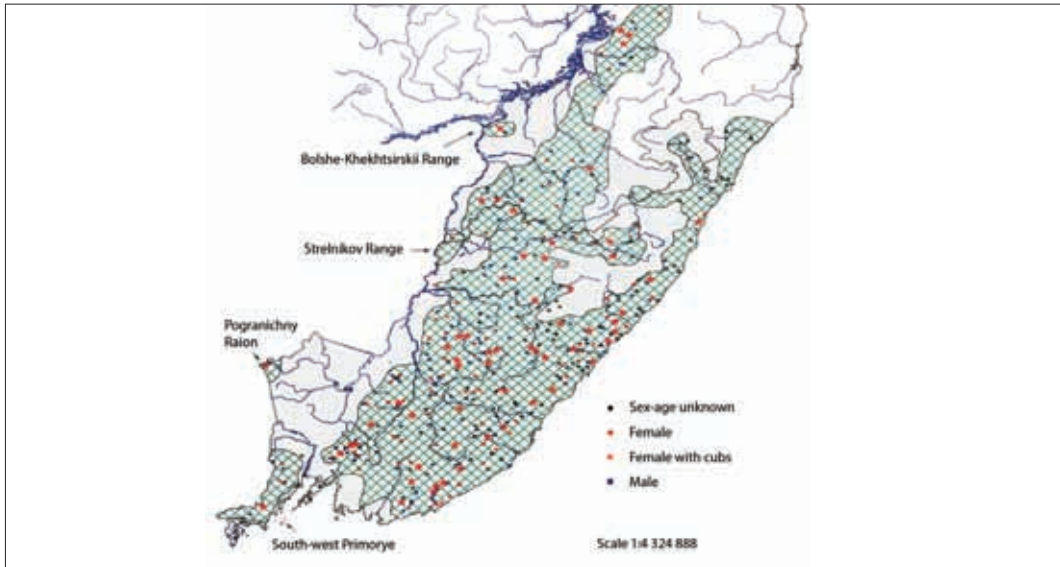
Physical features and habitats⁷

Weighing up to 350 kg, an amur tiger is differentiated from other tiger subspecies by its paler fur and dark brown stripes and diverse diet, 85 per cent of which is composed of ungulates such as red deer and wild boar. Therefore, protecting these and other prey animals from illegal hunting may be just as important to the tiger's survival as preventing direct killing of the big cats.

Caves and thick forests are their primary habitats. The habitat of the amur tiger (and leopard) is one of the most unique forests on earth. In the summer, the forests are dense and jungle-like in appearance, but in the winter, they are snow bound. Being the largest in the cat family, each adult tiger needs a huge area of land for its territory — up to 50 km by 50 km and able to move 80-90 km at night. It reaches its sexual maturity 4 years after birth and breeds once every 2 to 3 years. For each birth, 2 to 3 cubs can be produced. The cubs are weaned after about 45 days.



Figure 1: Distribution of tigers in the Russian Far-East



Source: Pikunov, Dmitrii and Dale Miquelle (2001) 'Conservation Amur Tigers and Far Eastern Leopards in the Tumen River Area North-east Asia', Wildlife Conservation Society, Vladivostok: Russian Far East Programme.

Figure 2: The amur tiger range in the borders of China and the Russian Federation



Source: UNDP, Korea National Commission for UNESCO (2004) Lower Tumen River Area Transboundary Biosphere Reserve Proposal.

Threats⁸

With the enlargement of human settlements, tiger population shrinkage is directly related to ever-expanding socio-economic needs of the humans.

1. Habitat loss and fragmentation

First and foremost, large areas of tiger habitat outside the protected areas system are increasingly vulnerable to indiscriminate logging and other imprudent uses. Unsustainable exploitation of forest outside the protected areas, such as increased logging and construction of roads has greatly reduced the hunting ground of tigers. Of late, forest fires have destroyed vast areas of forests in the Russian Far-East. Habitat deterioration in the middle and lower drainages of rivers has forced tigers to shift to the upper reaches of rivers and to adapt to more extreme conditions. Habitat loss and restriction would hamper the programme of reintroducing captive bred tigers, since lack of space to prowl and potential source of prey would exacerbate their chance of survival.

2. Poaching of tigers and their prey

Despite vigorous anti-poaching activities, illegal hunting and snaring of tigers persist due to the lucrative international market for tiger parts and products. In traditional Chinese medicine, tiger bone, made into pills, plasters, or other decoctions, remains in the modern traditional Chinese medicine for treating rheumatism. There also exists a commercial demand for non-medicinal parts of the tiger, most notably the skin, teeth and claws.

Large-scale hunting of red deer and wild boar by local hunters for game has also rendered tigers short of food, which indirectly affects their survival. In the best of the unprotected habitat, for each adult tiger or family of predators, there needs to be 250-300 ungulates as the absolute minimum allowable to assure normal living conditions for an adult tiger. Disruption of the normal food chain is the most important factor limiting the growth of tiger numbers in the Russian Far-East.

3. Inadequate law enforcement

While anti-poaching efforts are vigorous and apprehensions significant, the conviction rate of the offenders is reportedly very low. This is perhaps due to lack of any serious understanding of the implications of poaching and illegal wildlife trade within the judiciary.

Conservation strategy for the amur tiger

To overcome these threats, the following actions were identified as a NEASPEC priority for the conservation of amur tigers.



Objectives

- To increase prey species and enhance management of protected areas.
- To reduce poaching and illegal trade level.
- To strengthen state management, understandings and collaboration by local public.
- To enhance transboundary cooperation in protected areas management and trade control.

Priority actions for NEASPEC

1. Encourage and support two range countries to take appropriate actions to ensure healthy population of prey species, including:
 - a. Implement ban on hunting in key areas;
 - b. Development and implementation of a sustainable harvesting system in tiger habitats;
 - c. Development and implementation of the projects for restoring ungulate populations in tiger habitat, for example, removal of snares, assessment of effectiveness of several measures to increase ungulate numbers in model hunting estates, and dissemination of the experience.
2. Ensure law enforcement in each member country on both international and domestic trade of all tiger specimen, parts and derivatives, and encourage and support range countries to strengthen law enforcement, including:
 - a. Establishment of anti-poaching team and enforcement unit to counter the illegal killing and trade including monitoring of poaching;
 - b. Implement measures to ban transfer and trade of products with tiger ingredients and to prevent illegal possession and transportation of tiger specimen, parts and derivatives;
 - c. Reinforcement of operation of customs and border control on transboundary transfer of specimen, parts and derivatives in cooperation with customs offices of other countries;
 - d. Work closely with CITES secretariat and implement the resolution Conf. 12.5 in CITES on Conservation of and trade in tigers and other Appendix I Asian big cat species.
3. Encourage and support range countries to involve local public in planning and implementation of conservation work as well as local development to reflect their interest and needs, including:
 - a. Create sufficient compensation scheme (state insurance) for tiger kills of domestic animals;
 - b. Evaluate potential for supporting local community through sustainable use of natural resources in order to develop economic incentives for encouraging local people participation in conservation.
4. Encourage and support range countries to work together for conservation of the species, including:
 - a. Establish and operate national working group including government agencies, managers, researchers, NGOs and local public, where appropriate, in each range country, in order to evaluate and propose conservation measures;

- b. Facilitate regular dialogue with their international counterpart working groups to coordinate actions;
 - c. Launch Russian Federation-China transboundary reserves in Wandashan/Strel'nikov and Dalongling-Laoyeling/south-western Primorye;
 - d. Establish international and national corridors to secure safe movement of the species.
- 5. Encourage and support the Republic of Korea and the Democratic People's Republic of Korea to establish a joint working group to work on current status and conservation of the species.
 - 6. Promote awareness raising on conservation needs of the species in each Government as well as general public and international community by providing regularly updated information of conservation status and collaboration activities.
 - 7. Support range countries to work together in capacity-building on habitat management, population management, monitoring and research, law enforcement, environmental education and community development.
 - 8. Support the participation of NGOs in conservation activities.



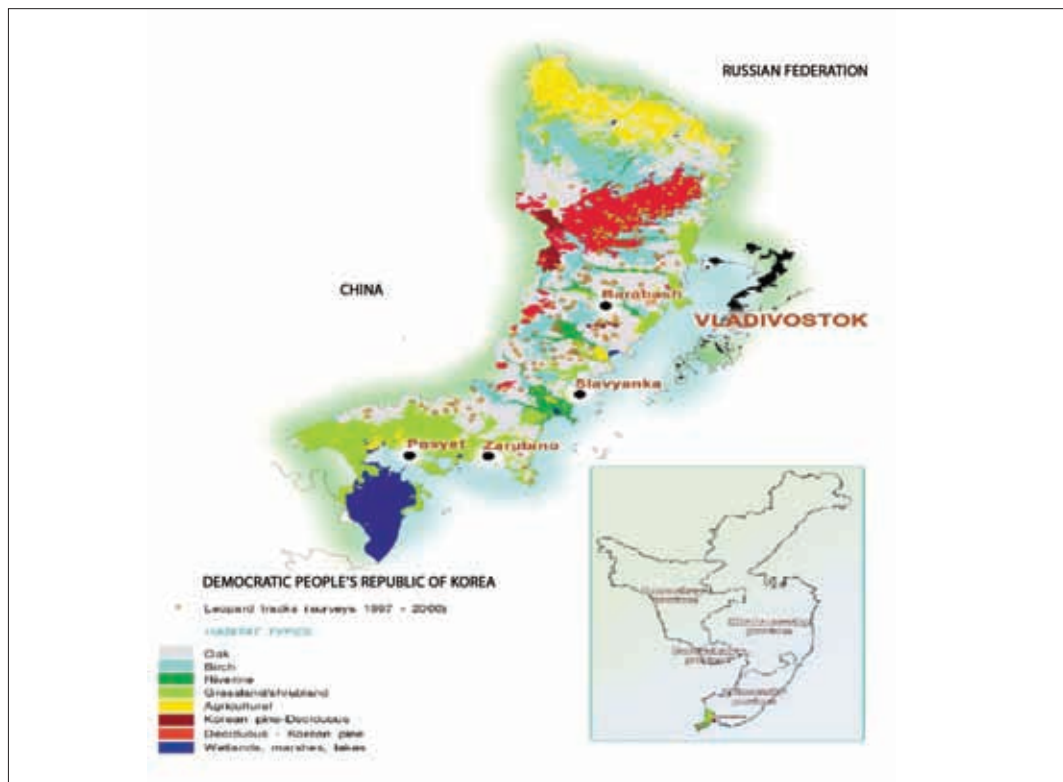
AMUR LEOPARD

The amur leopard (*Panthera pardus orientalis*), also named Manchurian leopard, Korean leopard, Far-Eastern leopard and Siberian leopard, is categorized as a rare, critically endangered subspecies of leopard by IUCN and the Russian Federation.

Distribution and population

Field survey data estimates that there are 30-40 leopards⁹ (100 in captivity in North-East Asia, among which only 10 are pure-bred) alive in the wild, making the amur leopard one of the world's most endangered cat taxa. All of them are now in Sikhote-Alin mountains of the Russian Far-East—the China-Russian Federation border (the Amur River valley, less than 30¹⁰) and China-Democratic People's Republic of Korea (the Ussuri River valley) border (about 10-12¹¹). The amur leopard survives in China's only remaining habitat, the Jilin Hunchun Nature Reserve, as a result of migration from the Russian Federation side. But they are on the verge of extinction. There are approximately 200 amur leopards in captivity around the world, mostly in zoos in North America and throughout Europe.¹²

Figure 3: Distribution of amur leopard in Primorsky



Source: WWF (2003). Conservation Action Plan for the Russian Far East Eco-region Complex: Part 1 Biodiversity and Social-Economic Assessment p.39.

Physical features and habitats¹³

As the largest of all leopards in the world, the amur leopard roams the mountainous dense coniferous and broadleaf forests of Khasan Pad Strictly Protected Area and the Barsovy Refuge and Borisovskoye Plateau Refuge and the borderland of the Jilin Hunchun Nature Reserve. They prefer the middle and upper reaches of river basins where rocks and cliffs provide safe dens and where snow cover in winter time does not exceed 10-15 cm. The leopard's current range comprises approximately 10,000 to 15,000 km². Of this, about 4,000 km² are located in South-west Primorsky Province.

Of the eight subspecies, amur leopard shows the strongest and most divergence in coat pattern. The coat is typically pale-cream (especially in winter) and exhibits widely spaced rosettes with thick, unbroken rings and darkened centres. The length of the coat varies between 2.5 cm in summer and 7.5 cm in winter. Male amur leopards weigh between 32-48 kg, with exceptionally large males up to 60-75 kg. Females are smaller than the males weighing between 25-43 kg. Of all the leopard subspecies, amur leopard has the longest legs, presumably to make walking in snow much easier.

The amur leopard normally hunts at night, using the silent stalk and ambush technique like that of the tiger. The main prey species of the amur leopard are roe and sika deer along with hares and badgers. They are so agile as to jump vertically up to 10 feet and double this length horizontally. Pound for pound they are 10 times as strong as humans, successfully carrying prey 3 times their own weight into the branches. This protects their food from other predators.

Whilst it has been found in other regions that leopards do not do well where they share territory with tigers, this has not proven to be the case in the Russian Federation. Studies have indicated that an increased tiger population in Southwest Primorye area has not adversely affected the leopard population.

Sexual maturity typically occurs at 2.5 - 3 years. In the wild the breeding season for amur leopards normally occurs in January and February. After a gestation period of around 12 weeks cubs are born in litters of 1-4 cubs, with an average litter size of just over 2. The cubs will stay with their mother for up to two years before becoming fully independent. Females first breed at an age of 3-4 years. In the wild, leopards live for between 10-15 years but may live to 20 years in captivity. An alarming fact is that the survival of leopard cubs fell from 1.9 cubs per female in 1973, to 1.7 in 1984, and to 1.0 in 1991.

Threats¹³

Among all threats, anthropogenic are the most severe ones, which find expression in the following aspects:

1. Habitat loss

Forests are regularly damaged by seasonal fires. These are not a natural event, but are started by farmers who burn their fields during autumn and winter to increase fertility. Controlled burn offs frequently overrun into the forest itself. After repeated fires, some areas revert to green meadows. Forest re-growth is destroyed entirely.

These meadows are no good for leopards or tigers, and the animals retreat further into the forest depths. Subsequent burns remove more forest growth and over a period of years large amounts may be permanently lost. Also lost are prey species such as roe deer, sika deer, musk deer, wild boar, badger and hare.

2. Prey depletion

The amur leopard is particularly vulnerable in the areas, where farmers raise captive deer for human consumption and to produce antlers for the Asian medicine market. Deer are the natural predatory preference for leopards, and in absence of wild prey, leopards venture into the deer farms in search of food. Owners of these farms are quick to protect their investment by eliminating leopards attacking their stock. Presently, the amur leopard's most immediate threat comes from such retaliatory or preventive killing.

Depletion of prey is also caused by over-hunting and poaching by local villagers as well as "weekend" hunters from the close-by cities of Vladivostok and Ussurisk.

3. Poaching

Chinese poachers illegally cross the Russian border in the leopard range and hunt down the beautiful creature largely for its pelts and bones. Extremely low punishment in the Russian Federation for hunting violations and trade in leopard skins as a result of inadequate Russian laws worsen the poaching behaviors.

4. Genetic impoverishment

The alarmingly low number of population leads to inbreeding depression, which would pose serious threat to the genetic integrity of the species including low fertility. Father-daughter and sibling matings have been observed and it is possible that this may lead to genetic problems including reduced fertility. Such matings do of course occur naturally to a certain extent in large cat populations, but in a very small population there is no possibility of subsequent outbreeding.

5. Lack of awareness

The inadequate awareness of local villagers in the leopard range contributes to direct persecution of leopards. Few people, even in Primorye, are aware of the existence of amur leopards, which results in a lack of local and international support for its conservation.

6. Other factors

Natural "catastrophes" such as fire or disease could cause chance variation in birth and death rates and ratios (e.g. all cubs born for two years might be male). Increasing economic activities in the lower Tumen River area is leading to increased human density and development of infrastructure in the region, which indirectly affects the leopard population. Illegal logging, as well as mining, in south-western Primorsky Province and border region have degraded forest ecosystem on which the leopard relies to survive.



Conservation strategy for the amur leopard

To overcome these threats, the following actions were identified as NEASPEC priority for the conservation of amur leopards.

Objectives

For the conservation of the amur leopard, the objectives of the strategy are to:

- Raise awareness of urgent conservation needs of the species.
- Enhance the protection of protected areas and increase prey species.
- Promote understanding and collaboration by the local public.
- Improve transboundary cooperation in protected areas management and trade management.
- Enhance ex-situ conservation scheme with a goal of reintroduction into the wild.

Priority actions for NEASPEC

1. Encourage and support three range countries to take appropriate actions to ensure healthy population of prey species, including:
 - a. Forest rehabilitation and firefighting;
 - b. Establishment of new hunting norms including a system of preferential licensing for hunters involved in conservation and local people.
2. Ensure law enforcement in each member country on both international and domestic trade of all leopard specimens, parts and derivatives, and encourage and support range countries to strengthen law enforcement, including:
 - a. Establishment of anti-poaching team and enforcement unit to counter the illegal killing and trade including monitoring of poaching and snare removal programme;
 - b. Reinforcement of operation of customs and border control on transboundary transfer of specimen, parts and derivatives in cooperation with customs offices of other countries;
 - c. Working closely with CITES secretariat and implement the resolution Conf. 12.5 in CITES on Conservation of and trade in tigers and other Appendix I Asian big cat species.
3. Encourage and support range countries to involve local public in planning and implementation of conservation work as well as local development to reflect their interest and needs, including:
 - a. Promotion of sustainable compensation programme;
 - b. Incorporation of deer farming activity into leopard conservation;
 - c. Development of strategy for sustainable resource use in the region (non-timber forest products);
 - d. Integration of conservation into local development plan, including the needs of local community;
 - e. Promotion of eco-tourism using leopard as symbol and ensure tangible benefits.



4. Encourage and support range countries to work together for conservation of the species, including:
 - a. Promoting the involvement of the Democratic People's Republic of Korea in tri-lateral joint monitoring and patrol programmes;
 - b. Establishing and operating national working group including government agencies, managers, researchers, NGOs and local public, where appropriate, in each range country, in order to evaluate and propose conservation measures;
 - c. Facilitating regular dialogue with their international counterpart working groups as well as international ex-situ conservation community to coordinate actions;
 - d. Launching Russian Federation-China transboundary reserve at Dalongling – Laoyeling/south-western Primorye.
5. Promote awareness raising on conservation needs of the species in each Government as well as general public and international community, including:
 - a. Providing updated information of conservation status including ex-situ population or collaboration activities and publicize on NEASPEC website;
 - b. Holding special events on this species in collaboration with NGOs which are currently leading the campaign for conservation of the species (like Russian programme "Save each of the last").
6. Support range countries to work together in capacity-building on habitat management, population management, monitoring and research, law enforcement, environmental education and community development, including:
 - a. Holding workshop on captive management and breeding targeting re-introduction;
 - b. Conducting study on rehabilitation;
 - c. Establishment of genome resource bank;
 - d. Initiation of re-introduction programme in former range in Sikhote-Alin Mountains.
7. Support the participation of NGOs in conservation activities.





SNOW LEOPARD

The snow leopard (*Uncia uncia*) is a typical plateau animal, preferring alpine wildness around 5,000 m altitude in summer and down to 3,500 m in winter. It symbolizes the majestic, mysterious, and rigorous world of the Central Asian Mountains. It was considered as 'threatened to extinction' on the Threatened Category by IUCN (2000); 'Very rare' by Mongolia (1997); 'Threatened to extinction at the edge of the range' by the Russian Federation (2001) (The First category).

Distribution and population¹⁴

It was estimated that all together 4,500 to 7,500 snow leopard remain in the wild. In 2003, the estimates were that 500 to 1,000 lived in Mongolia; 50 to 150 in the Russian Federation; and 2,000 to 2,500 in China. About 2,000 snow leopards are in captivity.¹⁵

In the Russian Federation, distribution of the snow leopard is limited basically to the Southern Siberian Mountains, including Altai, western and eastern Sayan, Mountains in Tyva, and the Tunkin and Kitoy Mountain ranges. In China, it is found in the Himalayas, Kunlun Mountains, Hengduan Mountains, Qilian Mountains, Tianshan Mountains and Altay Mountains. In Mongolia, highest densities are thought to be in the South Gobi, Central Trans-Altai Gobi and the Northern Altai Mountains: Kharkhiraa and Turgan Mountains.¹⁶

Physical features and habitats¹⁷

Being at the top of the food chain, the snow leopard can be seen as a flagship species for the conservation of all animal species of Central Asian highlands. Snow leopards have the camouflage of exquisite smoky-gray fur tinged with yellow and patterned with dark grey, open rosettes on the flanks and spots on the head and neck, similar to jaguars. Their tails are striped and proportionately longer than those of similar species. Being opportunistic feeders, they can ambush prey three times their size, including domestic livestock. They can jump as far as 50 feet, helpful for ambushing prey and traversing through mountains. Their diet mainly consists of ungulates (ibex and mountain sheep) and a wide range of other species.¹⁸

Snow leopards are generally solitary mountain rangers (up to 5.8 km straight-line distance per day) and well adapted to harsh, cold climates of its range. Terrain broken by cliffs, rocky outcrops and gullies is preferred over open smooth slopes and forests, though forests are sometimes their hunting ground and corridor for habitat traversing. Typical highland steppes and alpine tundra with no forest form another type of their habitat. Despite their name, snow leopards avoid deep snow, as it threatens their survival. High mobility of certain sex and age groups of snow leopard allows for quick re-colonization of suitable habitats, thus preventing fragmentation of the population and inbreeding in local groups, hence genetic soundness.

Mating usually occurs between late January and mid-March, a time of intensified social marking. These social markings include scrapes, feces, scent sprays and claw rakings, which are deposited along travel routes used by snow leopards. Snow leopards are active during the day and the most active at dawn and dusk in the places which are hardly accessible to human beings, but become nocturnal in more populous places. 2-3 three years after their birth, the snow leopards are sexually mature. One to five cubs are born after the females' gestation period of 93 to 110 days, generally in



June or July. Cubs are independent of their mother at 18-22 months of age. Average life span of snow leopards is 20 years in the wild and longer in captivity.¹⁹

Threats²⁰

1. Poaching

Snow leopards are victims of illegal hunting and trading of their pelts, bones and body parts. The behaviors of ranging in the open landscape and using comparatively permanent trails render them ready targets for poachers armed with rifles. Their pelage, an expensive and prestigious trophy for hunters, and their occasional livestock depredation account for the rising rate of poaching.

2. Inadequate prey

Livestock pasturing in the highlands is part of traditional land use that directly affects the snow leopard, as livestock compete with snow leopards' natural prey (ungulates) for forage and grazing space, leading to declining number of prey and rangeland overgrazing and deterioration. The declining quality of habitat directly triggers leopards' predation on poorly-guarded livestock. To retaliate, herders kill snow leopards to protect their livestock. Also cub survival rates are low where there is little prey or where people remove cubs from their natal dens.

Legal hunting and illegal poaching of snow leopards' prey species for income and food have reduced the amount of food available to snow leopards.²¹ In many snow leopard range-states trophy hunting for wild sheep and goats is a lucrative business, bringing in substantial income to government, hunting organizations and both private and state hunting reserves. These can play an important role in community based conservation, if they are sustainable and provide economic incentives to local communities to protect wildlife and habitat. However, in some cases these hunts are not well managed and harvest levels result in medium-term social instability and/or long-term genetic problems. A conflict of interest can exist when the management agency receives a large portion of its income from foreign trophy hunting. Wild ungulate stocks are in decline in many areas, reducing carrying capacity for snow leopards and other carnivores. Declines in other snow leopard prey species such as marmots are attributable to an unsustainable harvest for fur markets, and pika are targets of widespread vermin poisoning programmes.

A poorly understood situation is known to exist in some parts of snow leopard range where ungulate numbers are in decline and the apparent cause is transmissible disease.

3. Loss of habitat

The high alpine tundra habitats that snow leopards make best use of are quite fragile in ecosystem. Snow leopards' heavy reliance on such marginal habitats renders them particularly vulnerable to habitat degradation.

With the economic development in the Russian Federation, Mongolia and China, large scale resource extraction, urbanization, industrial development, road construction, potential oil pipeline running across Ukok Plateau between China and the Russian Federation are encroaching snow leopards range and causing range structure alteration, population fragmentation and endangerment.

Human numbers are increasing rapidly within the North-East Asian subregion. More people live in poverty and may turn to more marginal habitats to seek out a living. This will place more and more people in direct competition with wildlife for limited resources. Snow leopards, their prey, and their habitat will suffer.

4. Lack of public awareness and inadequate policy and law enforcement capacity

At both local and national levels there has been limited effort to establish conservation policies for snow leopards or their prey. Those that do exist may be ill-advised and inappropriate. Action plans are lacking for the species in most range states. Top-down action plans tend to be the norm and very hard to implement.

What laws and policies do exist for snow leopards, their prey and their habitat are often poorly enforced. This can be due to lack of awareness by enforcement staff, lack of resources to carry out enforcement, no priority or political will on the issue, unclear responsibilities between different government agencies, and corruption at several levels.

Government agencies and protected area administrations across the range often lack the capacity to carry-out even modest protective measures for snow leopards and their habitat. In many important snow leopard reserves, rangers and staff are poorly paid and lack even the most basic of equipment. This condition exists at nearly all levels of government and in some states is the main constraint of protected areas, which should form the backbone of wild snow leopard populations.

For individuals who live in poverty, the snow leopard may represent a source of cash through trade and in some cases they may be unaware of laws restricting that. From a broader perspective, the reasons for conserving a large predator which impacts their lives by taking livestock have not been adequately conveyed to most local people.

While lack of awareness is acute at the local level, it can also be a serious problem among policy makers who barely understand conservation principals.

5. Fencing that disrupts natural migration

In several range countries, particularly the States of the former Soviet Union, borders have been extensively fenced for national security reasons. These fences impede or prohibit natural movements and migrations of wild ungulates. This impedes dispersal, breeding aggregation, etc. Importantly, areas with declining populations can be cut off from potential source populations of immigration, thus disrupting meta-population dynamics over a broad range.

6. Lack of international coordination

Because much of the snow leopard habitat occurs in the mountainous regions that constitute the borders of central Asian countries, transboundary cooperation and protected areas are crucial to conserving the species in facilitating field survey for its accurate population; conservation of cross-border traversing corridor; checking traffic of snow leopard pelts and parts, protected area network and conservation capacity-building; and knowledge and experience sharing.



Inaccessible and difficult terrain, along with the secretive nature of the snow leopard helps account for the fact that large parts of its range have yet to be surveyed, or have been surveyed only on rare occasions. Such of the snow leopard's distribution is located along contentious international borders, adding to the difficulty of reliably establishing the species' current status and distribution. In addition, many surveys were conducted over a decade ago, so that the existing database may be seriously outdated. It is often difficult to validate the reliability of published information, especially in the rapidly changing world we have seen over the past decade or so. There is often considerable variation in the reported size of a protected area and snow leopard population among different sources.

There are very few good examples of effective transboundary cooperation for the species or its habitat. Trade is another threat that is directly linked to transboundary cooperation. To reduce illegal trade in snow leopard products and live animals, effective transboundary enforcement of national and international trade regulations and information exchange is critical, but lacking.

Transboundary cooperation helps spread advanced technological methods in mapping out updated habitat distribution patterns and in collecting snow leopard sightings data and therefore facilitating field survey. The improved methods²² also help trace the migration and dispersal tracks of snow leopard individuals to determine their meta-population system for designing conservation strategies.

Conservation strategy for the snow leopard

To overcome these threats, the following actions were identified as NEASPEC priority for the conservation of snow leopards.

Objectives

- To promote transboundary cooperation in control of poaching and illegal trade, monitoring and research and protected areas management.
- To promote international cooperation in capacity-building on population and habitat management, monitoring and research, law enforcement, environmental education and community development.
- To enhance conservation of the species in collaboration with the existing snow leopard network and other organization.

Priority actions for NEASPEC

1. Encourage and support range countries to take appropriate actions for law enforcement to prevent poaching and any other illegal actions, including:
 - a. Establishment of subregional cooperation network toward reducing poaching and trade level of snow leopard;
 - b. Development of regular trilateral meeting;
 - c. Production of annual/biannual reports to review national infrastructure, roles, and their responsibilities of relevant governmental agencies;

- d. Encouragement of the government and other related agencies to improve funding mechanism for prevention of poaching;
 - e. Working closely with CITES secretariat and implement the resolution Conf. 12.5 in CITES on Conservation of and trade in tigers and other Appendix I Asian big cat species.
- 2. Ensure the law enforcement in each member country on both international and internal trade of snow leopard specimen, parts and derivatives.
- 3. Encourage and support three range countries to establish information exchange mechanism to improve international cooperative actions, including:
 - a. Promotion of exchange of locally best practices or for best available knowledge into national and international level;
 - b. Holding workshops to coordinate “subregional strategy and action plan” and enhance collaborating actions among range countries;
 - c. Establishment and operation of national working groups including government agencies, managers, researchers, NGOs and local public, where appropriate, in each range country, in order to evaluate and propose conservation measures;
 - d. Facilitation of regular dialogue to share information and exchange experiences and to coordinate actions among all range countries.
- 4. Encourage and support three range countries to involve local public in planning and implementation of conservation work as well as local development to reflect their interest and needs and to address human-wildlife conflict, including:
 - a. Dissemination of information on improved animal husbandry to reduce livestock loss;
 - b. Maintenance of the sustainable level of wild ungulates population;
 - c. Development of compensation mechanisms;
 - d. Promotion of participation of local community in conservation and planning.
- 5. Support range countries to monitor population, distribution and habitat status of the snow leopard, including:
 - a. Encouragement of range countries to adopt common methodologies of monitoring, and database framework by training programmes to strengthen professional skills involving local officers;
 - b. Promotion of the field survey training for monitoring of snow leopard.
- 6. Promote awareness raising on conservation needs of the species in each Government as well as general public and international community by providing regularly updated information of conservation status and collaboration activities.
- 7. Support the participation of NGOs in conservation activities.





BLACK-FACED SPOONBILL

The black-faced spoonbill (*Platalea minor*), a large migratory waterbird, has the most restricted distribution of all spoonbills, and it is the only one currently regarded as endangered.

Distribution and population²³

Currently it is estimated that 1,500 remain in East Asia (table 3). The only known breeding grounds of the black-faced spoonbill are on islands around the eastern and northern coasts of the Yellow Sea, along the western coast of the Korean Peninsula and in North-East China. Birds have also been reported in summer in the Russian Far-East and inland in North-East China, but so far breeding has not been proven in these areas. It winters in East Asia, almost exclusively in coastal areas, and the three major wintering grounds are the Tsengwen estuary on Taiwan Province of China; Deep Bay in Hong Kong, China; and the Red River Delta in Viet Nam. Smaller numbers winter on Kyushu and Okinawa in Japan, on Jeju island in the Republic of Korea, and at Yancheng and on Hainan in mainland China, and it has also been recorded in winter in Macao, China; Thailand and Cambodia; and possibly in the Philippines and Brunei Darussalam.

Table 3: Winter census of the black-faced spoonbill in late January 2005²⁴

Distribution	Number	
Taiwan Province of China (mostly in Tainan):	757	birds
Pearl River Estuary (Hong Kong, China; Macao, China; Shenzhen):	350	birds
Hainan:	77	birds
Other sites of coastal Southeast China (Fujian, Guangdong, Shanghai):	110	birds
Red River Delta:	56	birds
Kyushu and Okinawa:	103	birds
Jeju:	21	birds
Inner Gulf of Thailand:	1	bird
Total	1,475	birds

The black-faced spoonbill is a relatively small wading bird with, as its name would suggest, an elongated spoon-shaped bill. The plumage is white in colour, and the face and bill are black. During the breeding season, mature adults develop longer crest feathers at the back of the neck, and these and the breast area become a golden yellow. Adults have red eyes and yellow patches on their cheeks, males have longer bills than females; the bills of immature birds are a pinkish-grey rather than black.

Physical features and habitats

The black-faced spoonbill is a white wading bird with a distinctively shaped beak - looking like a spoon. The facial skin is bare and black in colour - hence its name. It is about 76 cm long and weighs about 1 kg. During the breeding season, adult birds also develop yellow ornamental feathers on the head and breast, and yellow patches of skin under the eyes.

In September, migrant black-faced spoonbills begin to congregate in reclaimed land in Taiwan, Province of China to pass the winter. They rest together in groups during the day and begin to search



for food at dusk. In winter, they occur along the coast from Japan, Taiwan Province of China, Mai Po and Inner Deep Bay Ramsar Site, Hong Kong, China all the way to northern Viet Nam. In late March or early April, the birds leave to return to their breeding areas. So far, the only known breeding area is on rocky islands off the west coast of the Korean Peninsula where about 30 pairs nest.

The black-faced spoonbill inhabits shallow water like seashores, estuaries in coastal areas and areas near fish farms. They feed mainly on small fish and shrimp by striding quickly along, sweeping their partly open, spoon-shaped bill from side to side through the water, and feeling for aquatic animals to seize. Often, a bird will scoop up some food, toss it into the air, and catch it in its mouth. A clutch usually contains three eggs, which take both parents to incubate. Chicks hatch one at a time rather than all together. The newly hatched need to be fed for a few weeks longer after the family leaves the nest. The species breeds on rocky islands off the coast and travel to the mainland to feed. When the breeding pairs have small chicks, the parents feed in freshwater areas, primarily in rice paddies near coast.

Threats²⁵

1. Habitat loss

Reclamation and deterioration of tidal estuaries and mudflats, especially at important foraging, brooding, roosting, stopover and wintering places, is the primary threat facing all black-faced spoonbill in all distributed areas. The primary threats in each of the countries that are known to be part of their migratory patterns are as follows:

Japan: The construction of an artificial island at the eastern end of Hakata bay destroyed a large area of tidal mudflats and caused water quality at the Wajiro tidal flat to deteriorate. The extensive tidal flat of Ariake bay at Isahaya has been dammed and dried up since 1997.

Democratic People's Republic of Korea: The threats to the breeding and foraging sites used by this species are unknown. The nesting sites in the DMZ, probably the most important breeding grounds for this species in the world, are afforded protection by the current security situation on the Korean Peninsula, but could be opened up for development and increased disturbance should the situation change in the future.

Republic of Korea: Ongoing and planned large-scale reclamation projects on the western coast could destroy large areas of black-faced spoonbill habitat: for example, the construction of Incheon International Airport in the mid-1990s led to the reclamation of areas of wetland on Sammok and Yongjong islands, where small number of black-faced spoonbills used to occur. There have been no records on Sammok since 1996, and numbers on Yongjong have declined to fewer than five since 1995.

Mainland China: Habitat destruction is probably the biggest threat to this species in southern China, where mangroves and tidal flats are being reclaimed for city development and aquaculture. Coastal wetlands are also being converted to fish- and shrimp-ponds in northern China. It has been estimated that c.21,900 km² of tidal wetland (c.50 per cent of the total area of coastal wetlands) and 13,000 km² of lakes have been reclaimed in mainland China since 1949. In Jiangsu, economic development on the coast has driven the red-crowned cranes (*Grus japonensis*) to concentrate in the core area of Yancheng Nature Reserve, and the black-faced spoonbills at Yancheng probably face similar pressures.

The situation with the migration stop-over sites in Zhejiang and Fujian provinces is unknown, but they are very close to large and growing cities, where economic development and pressure on coastal wetlands is probably severe. In Guangdong, development in the Shenzhen Special Economic Zone has greatly reduced the area of Futian Nature Reserve in Deep Bay, as fishponds have been reclaimed and the nature reserve has been reduced to a narrow strip of mangroves along the northern coast of the bay. In Guangxi, construction of fishponds and port facilities is destroying the species' wintering habitats. On Hainan, large areas of mangroves and tidal flats have been converted into shrimp-ponds at Sanjiang, the site where the species roosts in Dongzhaigang, and much of coastal wetland has been converted into coconut and other plantations.

Hong Kong, China: The area of fishponds around Deep Bay has been greatly reduced in the last 30 years due to the development of housing estates and container storage.

Taiwan Province of China: The main wintering ground at the Tsengwen estuary faces pressure from industrial development. The reclaimed land at Chi-ku has been proposed for development as an industrial estate, and although this plan is now shelved, another industrial estate (Bin-nan) is planned north of Chi-ku that could destroy many of the feeding sites used by the spoonbills. A proposed highway on the west coast of Taiwan Province of China would destroy coastal habitats of this species, especially in Tainan and Hsinchu. As it is, wetlands along the west coast and in Ilan county already face a number of development pressures.

2. Pollution

Given its reliance on intertidal habitats on the coast, with much of its wintering population concentrated at a handful of key sites, the black-faced spoonbill is potentially highly sensitive to the effects of pollution. Mainland China, most of its wintering and migratory sites in China are on the southern and eastern coasts of China, where economic development and urbanization is the fastest and pollution from industry, domestic sewage and agrochemicals is generally severe. Pesticides and fertilizers are used extensively in the paddies, and run-off will drain into the wetland area, which poses healthy problems to the birds' survival.

3. Hunting and egg collection

Hunting is a serious threat to the black-faced spoonbill. Birds' eggs are collected for food. In Mainland, local people even set fire to the previous year's withered grass in order to find the nests and eggs more easily. Black-faced spoonbill can be mistaken for herons and egrets by fish-farmers as pests to be shot. Out of economic interest, such birds can be trapped (using mist-nets) and sold. Bird shooting is a serious problem even inside the core protected area of Nature Reserve. On other occasions, local people kill the birds, simply because their presence was preventing the reclamation of the mudflats as a development area.

4. Disturbance

Disturbance from photographers is a potential threat to this species at the breeding colonies, and is already believed to have adversely affected incubating and breeding success at some colonies and caused failure of broods. Disturbance caused by tourism is another main threat to black-faced spoonbills.



5. Food inadequacy

Some human inhabitants of the coastal zone actively exploit populations of mollusks and crabs in the intertidal zones and this causes disturbance to foraging waterbirds. If *Tellina* (a bivalve) is important in the diet of Eurasian spoonbill, a certain degree of conflict is to be expected with the human population of the area, as this mollusk is increasingly collected to provide food for domestic ducks and crabs.

6. Other factors

A natural enemy, such as the herring gull, can be the main predator of spoonbill's eggs at the breeding site in one Democratic People's Republic of Korea, thus endangering the brood. Other anthropogenic botulism (chemical leakage or discharge into the water body) is also a fatal factor for birds in migration. Primitive poultry husbandry methods and practice in rural places facilitate contacts between domestic birds and wild birds, which puts the latter at the risk of contracting transmittable diseases from the former.

Conservation strategy for the black-faced spoonbill

To overcome these threats, the following actions were identified as NEASPEC priority for the conservation of black-faced spoonbills.

Objectives

- To enhance coordination of conservation activities in collaboration with the existing conservation network for the black-faced spoonbill.
- To raise awareness of governments and the general public regarding the conservation needs of the species.
- To protect and rehabilitate breeding and wintering sites.
- To establish subregional cooperation programme in research, habitat management and monitoring.

Priority actions for NEASPEC

1. Encourage range countries to recognize the black-faced spoonbill as a conservation priority species and strengthen the management of its habitats, including:
 - a. Upgrading the conservation status including establishment of more protected areas within the current breeding and wintering sites in range countries;
 - b. Encouragement of local government and bureaus (agriculture, land, water) to take into account the impacts of economic policies and activities on the species and their habitats in and outside protected areas;
 - c. Prevention of habitat loss and fragmentation caused by land use such as land reclamation at breeding and wintering sites especially in protected areas;

- d. Encouragement of the use of organic farming practices.
- 2. Encourage and support range countries to develop an formal conservation network for the black-faced spoonbill with the help of existing network and coordinate activities, including:
 - a. Development of subregional and national information network to facilitate communication and dissemination of information on black-faced spoonbill conservation;
 - b. Promotion of a partnership between governments, academics and NGOs on the conservation of black-faced spoonbill;
 - c. Initiation of joint programme of conservation within the DMZ between the Democratic People's Republic of Korea and the Republic of Korea;
 - d. Selection of the model sites of management and/or monitoring in each country and promote the exchange of information within the network.
- 3. Develop an action plan for collaborative monitoring and research in breeding or wintering sites, and implement the plan, including:
 - a. Planning for subregional joint monitoring and research to collect data and maintain a database on population, trends, casualties etc.;
 - b. Continuing and coordinating the monitoring of population and the banding and marking programme;
 - c. Conducting habitat assessment and gap analysis to identify sites of high conservation priority;
 - d. Conducting research and monitoring on the breeding and wintering ecology, especially at the breeding sites of the Democratic People's Republic of Korea, potential breeding sites at international borders, and the potential wintering sites on south-east coast of China;
 - e. Study of the migration pathway between the breeding and wintering countries using satellite tracking;
 - f. Promotion of precautionary measures and monitoring system on risk such as disease outbreak and poisoning.
- 4. Promote awareness raising on conservation needs of the species in each Government as well as general public and international community, including:
 - a. Provision of regularly updated data mentioned above and information of conservation status and collaboration activities by each country;
 - b. Publication of awareness raising material such as report, newsletter and/or documentary films;
 - c. Encouragement of management authorities of the breeding and wintering sites to jointly produce education material.
- 5. Support range countries to work together in capacity-building on habitat management, population management, monitoring and research, law enforcement, environmental education and community development, including:
 - a. Training researchers on field survey techniques and analysis of data on black-faced spoonbill in North-East Asia;
 - b. Holding international workshops on Conservation of the black-faced spoonbill.





WHITE-NAPED CRANE

The white-naped crane (*Grus vipio*), is a species listed as vulnerable because it is undergoing a rapid and continuing population decline, largely as a result of the loss of wetlands to agriculture and economic development.

Distribution and population

Table 4: Distribution of white-naped crane by country²⁶

Country	Presence
China	B, M, W
Japan	W
Mongolia	B
Democratic People's Republic of Korea	M, W
Russian Federation	B
Republic of Korea	M, W

Note:

B: denotes present during breeding season

M: denotes present during migration

W: denotes presence during winter season

White-naped cranes breed in north-eastern Mongolia, north-eastern China, and adjacent areas of the south-eastern Russian Federation. Birds in the western portion of the breeding range migrate south through China (3,000-4,000), resting at areas on the Yellow River Delta, and wintering at wetlands in the middle Yangtze River Valley. The population now is estimated to be at around 5,500 to 6,500. Approximately 2,000 birds in the eastern portion of the breeding range migrate south through the Korean Peninsula. Several hundred remain on wintering grounds in the Demilitarized Zone (DMZ) between the Democratic People's Republic of Korea and the Republic of Korea (300). The remainder continues on to the Japanese island of Kyushu where they rely heavily upon an artificial feeding station located outside the city of Izumi (2,200).²⁷

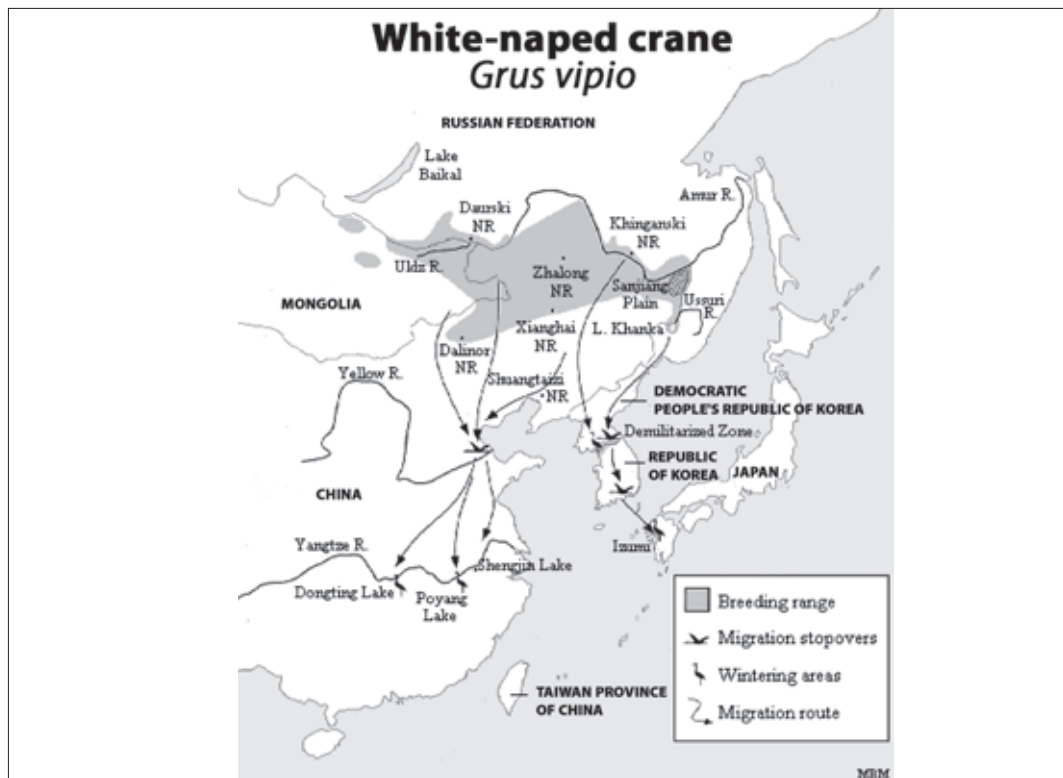
Physical features and habitats²⁸

White-naped cranes are the only crane species with pinkish legs and a dark gray and white striped neck. The white hind neck and nape, surrounded by an extensively reddish face patch, also serve to identify this species. Adult plumage is dark gray and wings and wing coverts are silvery gray. Males and females are virtually indistinguishable, although in breeding pairs males tend to be slightly larger in size than females. Juvenile's heads and necks are covered with cinnamon brown feathers while the tail and flight feather are blackish gray. The birds are about 130 cm (4 ft) tall and weigh about 5.6 kg (12 lbs.)

Breeding habitat includes shallow wetlands and wet meadows in broad river valleys, along lake edges, and in lowland steppes or mixed forest-steppe areas. White-naped cranes nest, roost, and feed in shallow wetlands and along wetland edges, foraging in adjacent grasslands or farmlands. During migration and on their wintering grounds, they use rice paddies, mudflats, other wetlands and agricultural fields. White-naped cranes are excellent diggers. The white-naped crane is often found in the company of other crane species that also occur within their range, including red-crowned, hooded, demoiselle, and Eurasian cranes.

All cranes are omnivorous. White-naped cranes feed on insects, small vertebrates, seeds, roots and tubers, wetland plants, and waste grains. At the artificial feeding station at Izumi in Japan, white-naped cranes thrive upon rice and other cereal grains. In the Han River estuary (Korea) and at Poyang Lake (China) they excavate the tubers of several species of sedges.

Figure 4: Breeding and migration range of white-naped crane



Source: International Crane Foundation²⁹

Threats³⁰

1. Habitat loss and degradation

Destruction of wetlands due to agricultural expansion in the north-eastern China breeding range (especially in the Amur River basin, the Sanjiang Plain, and other parts of China) poses the most significant threat. In some areas of China and Mongolia, white-naped cranes benefit from the

presence of upland agricultural lands nearby. Because of its breeding habitat requirements, however, the species occurs in areas that are especially prone to large-scale agricultural conversion. Extensive wetland reserves for shallow waters have been established in northern China to protect the sympatric red-crowned crane. By contrast, wetland edges and adjacent grasslands, which white-naped cranes prefer, are rapidly being drained and converted to cropland. This results not only in direct loss of habitat, but increased incidence of human disturbance of breeding birds. Meanwhile, smaller (and thus usually unprotected) wetlands in the breeding range remain subject to heavy development pressure.

The species faces other habitat problems in its breeding range. A series of dams have been proposed in the Amur River basin. If constructed, they would have a critical impact on the breeding grounds through flooding and increased agricultural development of natural areas.

At Zhalong Nature Reserve in China, economic activities (including reservoir construction, reed cutting, and overfishing) have altered the composition of habitat types in the reserve while reducing the output of marsh resources used by local communities. Hydrological changes due to drainage activities beyond the reserve boundaries have affected wetlands within protected areas, especially in the Chinese reserves.

2. Agricultural and industrial pollution

In the Amur basin, grass fires, livestock grazing, and indiscriminate use of pesticides may also affect breeding success. Agricultural and industrial pollution present a serious threat at several breeding areas, including Muraviovka Nature Park, the Zhuravlini and Amurski Game Refuges, and Dauriski and Lake Khanka Nature Reserves.

3. Other factors

Stopover points and other migratory habitats are also at risk, especially in the Korean Peninsula. In the south, many agricultural fields can no longer support cranes due to the intensification of farming practices. Lack of suitable resting areas has forced small flocks to wander among scattered remnants of habitat, rendering them vulnerable to poaching. Human disturbance of cranes is also a factor.

Pressures on the Korean DMZ are the most significant long-term threat to the wintering and migrating cranes. Should military conflict occur on the Korean Peninsula, the impact on crane habitats would be devastating. Conversely, should political unification of the Korean Peninsula occur, development pressures on the remaining habitats would quickly increase, especially in and along the current DMZ. The Han River and its estuary would likely be reopened to navigation and the bordering wetlands diked and converted to cropfields. The Choelwon Basin and Panmunjom Valley are likely candidates for industrial development zones. Preparations for such industrial expansion (e.g. surveying of road and railroad routes) are already proceeding in anticipation of reunification. These threats are compounded by a lack of conservation education and training opportunities and by practical difficulties in studying cranes in military-secured areas.

White-naped cranes face additional threats on their wintering grounds. The wintering populations of white-naped and hooded cranes at Izumi in Japan are highly concentrated, increasing the risk of a disease outbreak. In China, the dam on the Yangtze River at Three Gorges would alter the hydrological processes at Boyang and Dongting Lakes. Loss of these China wintering areas would threaten about 60 per cent of the total species population. Poor interagency communication, a lack of clear authority, and a shortage of qualified and motivated personnel hinder effective management of the reserves at Poyang Lake and elsewhere in China.





HOODED CRANE

The hooded crane (*Grus monacha*) is a small, dark crane, categorized as ‘vulnerable’ by IUCN.

Distribution and population

The estimated population of the species is approximately 9,200. The breeding grounds of this species are in south-eastern Siberia, Russian Federation, and northern China. More than 80 per cent of hooded cranes spend the winter at Izumi Feeding Station on the Japanese island of Kyushu. Small numbers are found at Yashiro in southern Japan (8,000 for wintering), in the Republic of Korea (100 for wintering) and the Democratic People’s Republic of Korea (100 for wintering), and at several sites along the middle Yangtze River in China (1,000 for breeding and wintering)³¹ (table 5).

hooded cranes nest and feed in isolated sphagnum bogs scattered through the taiga in the south-eastern Russian Federation, and in China, in forested wetlands in mountain valleys. Non-breeding birds are found in shallow open wetlands, natural grasslands, and agricultural fields in southern Siberia and north-eastern Mongolia. During migration, hooded cranes often associate with Eurasian and white-naped cranes.

Table 5: Distribution of hooded crane by country³²

Country	Presence
China	B, M, W
Japan	M, W
Mongolia	N, B, W
Democratic People’s Republic of Korea	M
Russian Federation	B, M
Republic of Korea	M, W

Note:

B: denotes present during breeding season

M: denotes present during migration

NB: denotes present during breeding season as non-breeder

W: denotes presence during winter season

Physical features and habitats³³

Adult crowns are un-feathered, red, and covered with black hair-like bristles. The head and neck are snow white, which extends down the neck. The body plumage is otherwise slaty gray. The primaries, secondaries, tail, and tail coverts are black. Juvenile crown are covered with black and white feathers during the first year, and exhibit some brownish or grayish wash on their body feathers. Eye colour is hazel yellow to orange brown, legs and toes are nearly black. Males and females are virtually indistinguishable, although males tend to be slightly larger in size.

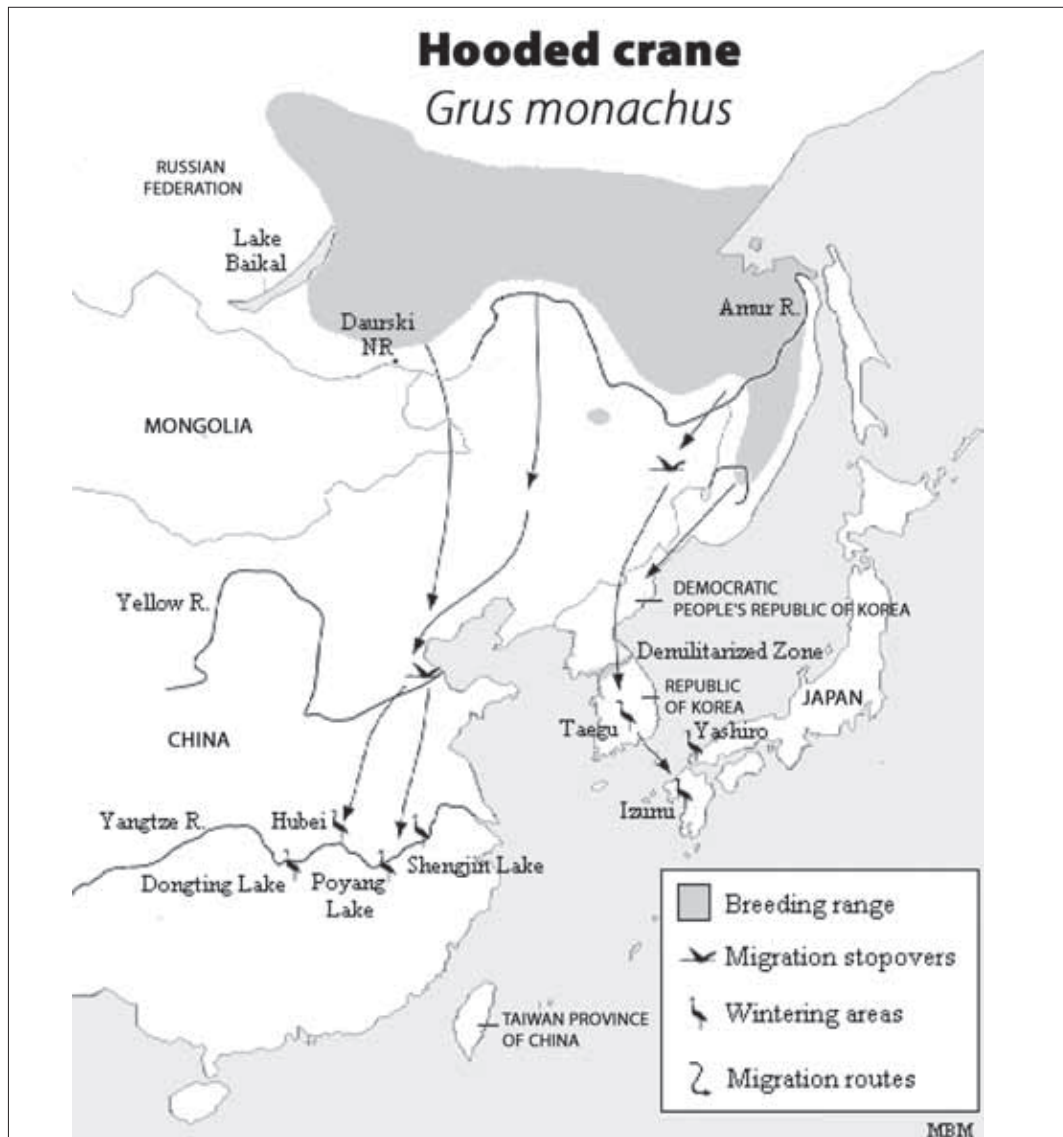
Like other cranes, unison calling, display of feather and dancing are important means in courtship and pair bond enhancement for hooded cranes. They nest in isolated, widely scattered bogs in the taiga and in other forested wetlands. Mossy areas are preferred with widely scattered larch trees. Nests are constructed of damp moss, peat, sedge stalks and leaves, and branches of larch and birch. Females



usually lay two eggs and incubation (by both sexes) lasts 27-30 days. The male takes the primary role in defending the nest against possible danger. Chicks fledge (first flight) at approximately 75 days.

All cranes are omnivorous. hooded cranes diet includes aquatic plants, berries, insects, frogs, salamanders, roots, rhizomes, seeds, grass, and small animals. At artificial feeding stations in the Republic of Korea and Japan, hooded cranes eat rice, wheat, and other cereal grains.

Figure 5: Breeding and migration range of hooded crane



Source: International Crane Foundation (2006) op.cit.

Threats³⁴

Because of the hooded crane's particular habitat characteristics, it is relatively secure compared to the other endangered cranes of East Asia. The wooded bogs and marshes where it breeds have been largely unaffected by human activity due to their remoteness and inaccessibility. They are less desirable for agriculture than open marshes, and the logging that takes place in and near these areas is generally conducted during the winter, when the cranes are absent. In addition, the main wintering grounds of the species are in Japan, where human population and development pressures, though intense, are less acute than in China's Yangtze River basin (the Three Gorges Dam, in particular, would have less impact on the hooded crane than on East Asia's other cranes).

Despite these advantages, the hooded crane faces varying but critical threats according to the countries which is along their breeding and migration paths:

Russian Federation: Bogs and other wetlands where hooded cranes breed are being lost to drainage, while logging pressures on the surrounding taiga forests are intensifying. Intentionally set fires can sometimes spread into hooded crane habitat. There are also potential conflicts with farmers at several stopover points within the Russian Federation.

China: hooded cranes have been hunted, poisoned, and disturbed on their wintering grounds by farmers and fishermen. Wintering habitats are threatened by reclamation of wetlands for agriculture, changes in hydrology (including those resulting from construction of the Three Gorges Dam), and other impacts associated with China's increasing human population. As natural wetland habitats continue to be lost, hooded cranes must increasingly turn to rice paddies and crop fields, and the potential for crane-farmer conflicts increases (this may also hold for the wintering populations in the Republic of Korea and Japan).

Republic of Korea: Natural winter habitat has long since been altered by development. Harvested and fallow fields now serve as important hooded crane feeding and resting sites. These sites are now being rapidly developed, mainly through highway construction and widespread—and, since the mid-1980s, accelerating—construction of plastic greenhouses.

Japan: As in the Korean Peninsula, winter habitat has largely been altered by agricultural development. Wintering hooded cranes are now highly concentrated at the Izumi feeding station. The risk of a disease outbreak in these areas, combined with the disappearance of possible alternative sites in the Korean Peninsula, poses a major potential threat to the main portion of the population. At the same time, the status of the existing wintering grounds in Japan (especially the roosting areas) is unstable, despite attempts to provide more permanent protection through conservation easements, land leases, and land purchases. Winter greenhouses are now being built in some of the feeding areas, making them unsuitable for the cranes. Human disturbance has contributed to the decline of the Yashiro population. Several dozen birds are also injured or killed annually as a result of collisions with utility lines in the Izumi area.



Conservation strategy for the white-naped crane and hooded crane

To overcome these threats, the following actions were identified as NEASPEC priority for the conservation of the white-naped crane and hooded crane.

Objectives

- To enhance conservation of the species in collaboration with the existing North-East Asian Crane Site Network.
- To raise the awareness of governments and the general public regarding the conservation needs of the species.
- To protect and rehabilitate breeding and wintering sites.
- To establish subregional cooperation programme in research, habitat management and monitoring, and diversification of wintering site.

Priority actions for NEASPEC

1. Encourage member countries to develop an official conservation network for white-naped crane and hooded crane in collaboration with the existing site network and coordinating activities, including:
 - a. Establishment of a subregional monitoring scheme and encourage member countries to exchange information;
 - b. Encouragement of member countries to establish a database and information exchange centre or focal point in each country to collect data on biology and ecology of the species;
 - c. Provision of regularly updated above-mentioned data and information of conservation status including ex-situ population or collaboration activities by each country and publicize on NEASPEC website;
 - d. Selection of the target sites in each country as good management models and/or detailed monitoring programme and promote the model to all important sites.
2. Encourage member countries to involve local public in planning and implementation of conservation work as well as local development to reflect their interest and needs and increase habitat so that over-concentration will be avoided, including:
 - a. Development of economic incentives (programme) to local community in major wintering sites;
 - b. Collaboration with other conservation groups and farmers on the management of rice paddy for other waterfowls;
 - c. Encouragement of the use of organic farming practices;

- d. Promotion of reintroduction and captive breeding project of white-naped crane at the Gumi and Nagdong River, Republic of Korea with international cooperation.
3. Encourage member countries to strengthen management and improve habitat, including:
- a. Promotion of joint protection of the DMZ area by the Democratic People's Republic of Korea and the Republic of Korea through workshops, promotion material, survey etc. and promote the importance of joint protection;
 - b. Improvement of water/irrigation management to prevent disturbance caused by human and livestock in breeding grounds (Russian Federation/Mongolia/China);
 - c. Development of economic incentives (programme) to local community in breeding and staging sites;
 - d. Education of local people to prevent Steppe fire in Russian Federation/Mongolia/China;
 - e. Allocation of appropriate activities to relevant organizations (government agency, international/national NGOs);
 - f. Encouragement of local government and bureaus (agriculture, land, water) to take into account the impacts of economic policies and activities on the species and their habitats in and outside protected areas;
 - g. Establishment of more transboundary protected areas.
4. Encourage member countries to conduct joint survey or monitoring with neighbouring countries, including:
- a. Conducting joint survey in border areas such as the DMZ and adjacent areas of China, Mongolia, Russian Federation and the Democratic People's Republic of Korea;
 - b. Conducting joint monitoring of winter population;
 - c. Conducting migration monitoring by satellite tracking with international cooperation;
 - d. Conducting joint analysis of genetic diversity and ecotoxicological data;
 - e. Promotion of precaution measures and monitoring system on risk such as disease outbreak and poisoning.
5. Encourage member countries to conduct joint research on habitat assessment, including:
- a. Establishment of monitoring stations for changing patterns of breeding sites particularly in the eastern part of Mongolia;
 - b. Conducting joint assessment of breeding wetlands: conduct desk study of potential wetland habitat in the subregion using satellite images, then conduct field survey and analyse problems, if there is any;
 - c. Conducting joint assessment of habitat condition at important sites and gap analysis to identify sites of high conservation priority;
 - d. Conducting assessment of socio-economical issues including human impact.

6. Support member countries to work together in capacity-building on habitat management, population management, monitoring and research, law enforcement, environmental education and community development:
 - a. Training researchers on field survey techniques of cranes in North-East Asia;
 - b. Supporting activities of Daurian International Protected Area and Khanka/Xinkaihu international nature reserve.
7. Promote awareness raising on conservation needs of the species in each Government as well as general public and international community, including:
 - a. Publishing awareness raising material such as report, newsletter and/or documentary films;
 - b. Establishment of Crane Conservation Centre for the education of the residents, students and officers in the region.
8. Improve and strengthen management of habitats and species:
 - a. Improvement and strengthening management of existing protected areas and encourage the adoption of good land use methods;
 - b. Prevention of land reclamation to reduce or prevent fragmentation and isolation of crane habitats.



4. THE WAY FORWARD

The 12th SOM adopted the following resolution that presents political commitments of the NEASPEC member countries to subregional actions on nature conservation. The resolution together with the conservation strategy set a clear direction of bilateral and multilateral actions in support of the conservation strategy in North-East Asia.

Resolution of NEASPEC on the Framework for Nature Conservation Programme in North-East Asia

Adopted by the 12th SOM of NEASPEC on 23 March 2007

NEASPEC,

Recalling the Framework on NEASPEC adopted at the 3rd SOM in 1996, defining the goal of the framework as a means to promote subregional environmental cooperation and sustainable development efforts,

Recalling the Vision Statement adopted at the 6th SOM in 2000, recommending the NEASPEC countries to promote common policy dialogue on approaches and views, and coordinated actions on subregional environmental issues,

Recalling also the decisions of the 8th, 9th and 10th Senior Officials Meetings, concluding the need to develop a framework for nature conservation in North-East Asia and endorsing the project on the subject,

Recognizing the national commitment of the NEASPEC countries to the conservation of biodiversity at national, regional and global levels as the parties of global biodiversity conventions, namely Convention on Biological Diversity (CBD), RAMSAR Convention on Wetlands, and Convention on International Trade in Endangered Species of Wild Flora and Fauna (CITES) in particular,

Recognizing the NEASPEC countries' supports and responsibilities for the implementation of 2010 Biodiversity Target of the CBD and the significant importance of joint subregional responses to the accomplishment of the Target,

Noting with satisfaction of the outcome of the project, "Framework for Nature Conservation Programme in North-East Asia",

1. *Endorses* the draft strategy, which was developed through collective efforts of national collaborating centres and experts, as the Nature Conservation Strategy in North-East Asia;
2. *Calls upon* the NEASPEC member countries, through the existing Senior Officials Meetings and the network of national collaborating centres, to work towards the implementation of proposed subregional and national actions in the Strategy;
3. *Invites* the NEASPEC member countries to initiate subregional actions and to take into account the agreed Strategy to facilitate the formulation of national policies and increase public awareness on nature conservation;

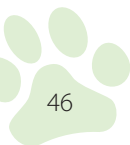


4. *Requests* ESCAP to consult with national collaborating centres and national experts to develop further joint actions based on the Strategy and facilitate the implementation of agreed actions;
5. *Also invites* the United Nations bodies including UNDP, UNEP, UNESCO, and the CBD, international organizations including the ADB, international NGOs such as WWF and WCS, and national NGOs to support the Strategy as a practical mechanism for nature conservation in North-East Asia.

ANNEX: PROTECTED AREAS IN THE HABITATS OF THE TARGET SPECIES

CHINA*

Name of Protected Area and Location	Nature Protected Area Category and Status	Type of and Purpose of Protected Area	Inhabiting Target Species	Year Established	Area
Jilin Hunchun Nature Reserve Hunchun Municipality, Yanbian Korean Autonomous Prefecture, Jilin Province.	National level nature reserve	Wildlife nature reserve. The reserve is located on the border of China, the Russian Federation and the Democratic People's Republic of Korea and the purpose is to protect the habitat for the wildlife, especially the north-east tiger, amur leopard which are only distributed in China, the Russian Federation and the Democratic People's Republic of Korea and also to provide good conditions for the migratory birds. Purpose: Protection of habitat for the north-east tiger, amur leopard, and migratory birds.	Amur tiger: 9-10 individuals.	Jan 1, 2001	108,700 ha
Heilongjiang Mudanfang Nature Reserve Mudanjiang City, Heilongjiang Province.	National level nature reserve.	Forest nature reserve. The reserve is located in the boreal and temperate zone and the forest type includes mixture of conifer and broadleaf forests. It's rich in the composition of tree species and diverse in distribution of wildlife. Purpose: To protect the ecosystem of the original forests.	Amur tiger	May 5, 1981	19,648 ha



Name of Protected Area and Location	Nature Protected Area Category and Status	Type of and Purpose of Protected Area	Inhabiting Target Species	Year Established	Area
Jilin Changbai Mount. Nature Reserve Antu County, Jinlin Province.	National level nature reserve.	Wild Plant nature reserve. Biosphere Reserve (UNESCO) Due to the geological movement and climatic influence, there are ecological environment including high mountains, valleys and grassland which has 1,900 m elevation variation, and there is a lake formed by volcanic eruptions on the top of the mountain, which is the source of Songhua River. Forest type includes conifers forest, mixture of conifers and broadleaf forest, and alpine tundra. Purpose: To protect variety of species composition of wild plant and the forest ecosystem and maintain the habitat for various wildlife.	Amur tiger	April 1, 1960	196,465 ha
Heilongjiang Qixinglizi Nature Reserve Huanan County, Heilongjiang Province.	Provincial level nature reserve.	Wildlife nature reserve. Purpose: Protection of amur tiger and red deer, red-crowned crane.	Amur tiger	Jan 1, 1990	23,000 ha
Heilongjiang Liufenghu Nature Reserve Muling City, Heilongjiang Province.	Provincial level nature reserve.	Inland water nature reserve. The reserve is located in the upper reaches of the Muling River and consists of 6 lakes surrounded by several mountains. It has various kind of tree species and wildlife. Purpose: Protection of inland waters ecosystem and provide the habitat for wildlife.	Amur tiger	April 1, 1992	6,190 ha
Sichuan Fengtongzhai Nature Reserve Baoping County, Sichuan Province.	National level nature reserve.	Wildlife nature reserve. The world's first giant panda was discovered in Baoping in 1869. Currently, more than 140 giant pandas live in the Fengtongzhai Nature Reserve, accounting for more than 10 per cent of the national total number. It is rich in wildlife resources and here are 380 animal species and 395 kinds of plants. Various forms of landscape and ecosystem provide good	Snow leopard	Jan 1, 1975	39,039 ha

Name of Protected Area and Location	Nature Protected Area Category and Status	Type of and Purpose of Protected Area	Inhabiting Target Species	Year Established	Area
		condition for the giant panda and other rare animals. Purpose: Protection of giant panda and forest ecosystems.			
Yunnan Baimaxueshan Nature Reserve Deqin County, Yunnan Province.	National level nature reserve.	Forest nature reserve. The Nature reserve lies in Deqin County, a very remote area of Yunnan Province close to the border of the Tibetan Autonomous Region. Here, permanently snow-capped peaks raise high above the plateau, more than 6,740 m above sea level, forming the watershed for three great Asian rivers; the Yangtze, Mekong, and Salween. Biodiversity within the reserve is enormous. 922 species of seed plants provide habitat for over 100 wildlife species. These included the Yunnan snub-nosed monkey, the snow leopard, the clouded leopard, and the Assam macaque, all of which are class 1 protected animal in China. Purpose: Protection of the habitat for the rare animals (i.e. Yunnan snub-nosed monkey) and the forest ecosystem.	Snow leopard	Jan 1, 1983	281,640 ha
Mount Qomolangma Nature Reserve Rikaze, Dingri and Jiron, Tibet Autonomous Region.	National level nature reserve.	Forest nature reserve. The Qomolangma Nature Reserve is in Tingri County, Xigaze area in Tibet. The reserve embraces vast plateaus and majestic glaciers. The southern foot of the Qomolangma Peak below 3,000 m is a world apart. In its primeval forests are 20 species of azalea. Qomolangma fir, deciduous pine, birch, arrow bamboo, cloud fir, Nepalese sandalwood, lily magnolia, Radix notogenseng and Rhlzoma picrorhizae not only offer a rare and beautiful sight, but are also valued for medicinal applications the middle section of the valley abounds with Qomolangma fir that can have a diameter of four to five meters. Ancient cypresses	Snow leopard	April 5, 1988	3,381,000 ha

Name of Protected Area and Location	Nature Protected Area Category and Status	Type of and Purpose of Protected Area	Inhabiting Target Species	Year Established	Area
		grow in plots in Sagufang. In spring, azaleas blossom and the birds sing in the forests to create a mystical, magical mosaic of nature. Purpose: Protection of alpine forest ecosystem.			
Gansu Qilianshan Nature Reserve Jiuquan and Zhangye prefecture, Gansu Province.	National level nature reserve.	Forest nature reserve. The reserve is located in the north-west part of Gansu and close to the Qinghai Province. It has very high elevation range from 3,000 to 5,000 m and is diverse in landscape and is an important water source for millions of people as well as the industrial and agricultural production in the west Yellow River Corridor area. Purpose: Protection of forest ecosystem, wildlife and the habitat.	Snow leopard	Jan 1, 1987	2,653,023 ha
Inner Mongolia Wulashan Nature Reserve Wulateqianqu, Inner Mongolia Autonomous Regions.	Provincial level nature reserve.	Forest nature reserve. The reserve has many kinds of special physiognomy and is rich in wildlife and plant species. Purpose: Protection of forests.	Snow leopard	Jan 1, 2003	116,902 ha
Heilongjiang Zhalong Nature Reserve Qiqihaer City, Heilongjiang Province.	National level nature reserve.	Wildlife nature reserve. It is located in the lower reaches of the Wuyuer River and is a famous reserve for protecting rare birds. It's situated 30 km away southeast of Qiqihar, the total area is 210,000 ha. There are many marshes, rivers and lakes. Reeds and grasses grow tall, so it's a paradise for waterfowl. There are 296 species of birds here according to investigation. There are 15 species of cranes in the world. There are 9 species in China, but in this reserve we can see 6 species (red crowned, white-naped, demoiselle common, siberian and hooded cranes).	White-naped crane	Jan 18, 1979	210,000 ha

Name of Protected Area and Location	Nature Protected Area Category and Status	Type of and Purpose of Protected Area	Inhabiting Target Species	Year Established	Area
		Purpose: Protection of rare birds (<i>Grus japonensis</i>) and wetlands ecosystem in temperate zone.			
Jilin Xianghai Nature Reserve Tongyu County, Jilin Province.	National level nature reserve.	Inland waters nature reserve. The reserve is located in the Songliao Plain and has special physiognomy and various wildlife resources. Purpose: The primary aim is to protect the wetland ecosystem in the reserve and to provide good habitat for the rare birds.	White-naped crane Hooded crane	March 9, 1981	105,467 ha
Hebei Beidaihe Birds Nature Reserve Qinhuangdao City, Hebei Province.	County level nature reserve.	Wildlife nature reserve. The reserve is situated on the path of the migratory birds from south to the north and is facing the Bohai Sea. It has high vegetation cover and provide good habitat for the migratory birds. Purpose: Protection of the habitat and wetland ecosystem for the migratory birds.	White-naped crane	July 1, 1990	6,415 ha
Jiangsu Yancheng Nature Reserve Dafeng, Binhai, Dongtai, and Sheyang counties, Jiangsu Province.	National level nature reserve.	Wildlife nature reserve. Biosphere Reserve (UNESCO) The reserve is between the estuary at Xinyang and Doulong Harbor and the zone abounds in water and grass resources and has ample aquatic animals and plants. It has a nice shoal scene and comfortable natural environment. It is the biggest habitat for migratory red-crested cranes. Less than 2,000 red -crested cranes exist in the world today. But each year, 1,000 of these come to the reserve in winter, in the winter and spring, red -crested cranes hover in the air while others play or dance in the reed fields. The reserve also welcomes white cranes, white-naped cranes, white storks, black storks, wild goose and ducks, about 100,000 birds of some 260 types.	White-naped crane	Jan 1, 1984	453,000 ha

Name of Protected Area and Location	Nature Protected Area Category and Status	Type of and Purpose of Protected Area	Inhabiting Target Species	Year Established	Area
		Purpose: Protection of rare birds, its habitat and wetlands ecosystem.			
Inner Mongolia Huihe Nature Reserve Ewenke, Inner Mongolia Autonomous Region	National level nature reserve.	Inland waters nature reserve. The reserve is diverse in the physiognomy including mountain, foothill, valley and wetland, and the landscape is mixture of forest and grass land. It is rich in the mixture of forest grassland and wetland ecosystem. Purpose: Protection of various ecosystem especially wetland ecosystem and to provide habitat for migratory birds.	White-naped crane Hooded crane	Dec. 1, 1997	346,848 ha
Heilongjiang Xingkaihu Nature Reserve Mishan City, Heilongjiang Province.	National level nature reserve.	Inland water nature reserve. Biosphere reserve (UNESCO) The reserve is one of the three biggest wetlands in the world and it is connected with the wetland on the border with the Russian Federation and the wetland ecosystem in the reserve is under good protection. It is situated on the path of the migration of seasonal birds in East Asia and is the important habitat for rare birds. Purpose: Protection of wild animals and plants, wetlands ecosystem and the habitat for rare birds.	Hooded crane	Jan 1, 1985	222,488 ha



Name of Protected Area and Location	Nature Protected Area Category and Status	Type of and Purpose of Protected Area	Inhabiting Target Species	Year Established	Area
Hebei Nandagang Wetland Nature Reserve Cangzhou City, Hebei Province.	Provincial level nature reserve.	Inland waters nature reserve. It lies between Tianjin Dagang District and Huanghua City, Hebei Province, neighboring with Bohai on the east. The highest point is 5.4 m above sea level and the lowest point 2.9 m. Nandagang Wetland nature reserve has been known for its wetland in the gulf area of Bohai since ancient time. According to studies, this place used to be covered with a rich variety of vegetation and had gone through times of alternation of land and sea 150 thousand years ago. Nandagang Wetland was formed from natural shallow lakes. Historically, it has been the production base of natural fishes and reeds. Nandagang Wetland nature reserve is a very precious gene bank of species in China. Rain and floodwater are stored here perennially and makes it an ecosystem of natural swamp wetland with reeds, Suaeda salsa and other plants that grow in water and marshes as the main vegetation. Purpose: Protection of wetlands ecosystem and birds.	Hooded crane Black-faced spoonbill	May 1, 1995	13,380 ha
Shanghai Jiuduansha Wetland Nature Reserve Shanghai City.	National level nature reserve.	Inland water nature reserve. It is located between the south and north troughs of Sand Bars in the Yangtze River estuary. It is composed of four shoals (i.e. South Jiangyasha, Upper Jiuduansha, Middle Jiuduansha and Lower Jiuduansha). Purpose: Protection of estuary landscape and birds.	Black-faced spoonbill	March 1, 2000	42,020 ha

Name of Protected Area and Location	Nature Protected Area Category and Status	Type of and Purpose of Protected Area	Inhabiting Target Species	Year Established	Area
Jiangxi Poyangnu Migratory Bird Nature Reserve Yongxiu County, Jiangxi Province.	National level nature reserve.	Wildlife nature reserve (Inland Wetland) The Reserve was one of the six wetlands designated for the List of Wetlands of International Importance. The Poyang lake is the largest lake in China, in the floodplain of the five inflowing rivers, and also receives backflow from the Chang Jiang (Yangtse River) at the height of the flood. It is still in a near-natural state, and the difference between low water levels in winter and high water levels at the height of the summer flood is a staggering eleven meters. Since the early 1980s, Poyanghu has become famous as the wintering ground of a number of world-endangered bird species; in particular 98 per cent of the world population, totaling only about 3,000 individuals, of the Siberian Crane <i>Grus leucogeranus</i> winters at Poyang; other rare and endangered species occurring in numbers include the oriental white stork <i>ciconia boyciana</i>, the swan goose and white-naped crane. Purpose: Protection of rare birds and their wetlands.	Hooded crane Black-faced spoonbill	Jan 1, 1983	22,400 ha
Guangxi Shankou Mangrove Nature Reserve Hepu County, Guangxi Autonomous Region, China	National level nature reserve.	Marine and coastal nature reserve. The Shankou mangrove ecosystem nature reserve is located on the eastern Guangxi coast in the subtropics region and the northern boundary of the East Asia biogeographical region. The Reserve bears high temperature and plenty of rain and it is in the subtropical climate. Its thick silt and salinized soil make the region the most representative and best preserved natural mangrove preservation zone in China.	Black-faced spoonbill	Sep 30, 1990	8,000 ha



Name of Protected Area and Location	Nature Protected Area Category and Status	Type of and Purpose of Protected Area	Inhabiting Target Species	Year Established	Area
		In the existing 8,000 ha mangrove woodland there are many rare species. Purpose: Protection of mangrove ecosystems.			
Guangdong Neilingding-futian Nature Reserve Shenzhen City.	National level nature reserve.	Marine and coastal nature reserve. It is constituted by two areas: Neilingding Island and Futian Mangrove. Neilingding Island is located in the eastern side of the Pearl River Estuary and Jianfeng Mountain is the highest place on the Neilingding Island, with an altitude of 340.9 m. Plants on the Neilingding Island are in high diversity, consisting of about 619 species of vascular plants. Wild animals on the island are widely distributed. Among them, macaques are over 1,000 in number, which are Class- National protected animal. Common otter, Chinese pangolin and black-eared kite etc. can also be found on the island. Futian Mangrove together with Mai Po Mangrove of Hong Kong constitutes the Shenzhen Deep Bay Mangrove wetland. Viviparous reproduction, Salt secretion and Specialized root systems etc. are ecological characteristics of mangrove. Mangrove plants flourish along a 9 km coastlines from Xinzhou Estuary in the east to the Costal Ecological Park in the west. And the total area is 368 ha. There are 194 bird species in Futian Mangrove, including 23 national key protection species. Every year more than 100,000 migratory birds of various species fly to Futian for resting and feeding. Futian mangrove plays a significant role in protecting birds of eastern Hemisphere. Purpose: To protect the mangrove ecosystem and rare birds.	Black-faced spoonbill	April 9, 1984	815 ha

* This table was prepared by Nanjing Institute of Environmental Sciences of China, the national collaborating center for the nature conservation project.

DEMOCRATIC PEOPLE'S REPUBLIC OF KOREA*

Name of Protected Area and Location	Nature Protected Area Category and Status	Type of and Purpose of Protected Area	Inhabiting Target Species	Year Established	Area
Mt. Paektu Biosphere Reserves <i>Samjiyon County in Ryanggang Province.</i>	IUCN category I: Strict Reserves for reserve's core area and category VI: Reserves for resources management for buffer zone. Designated as natural reserve.	Mt. Paektu was formed by volcanic eruptions and lava. It is divided into a vast lava area at its foot, masses of flagship peaks and the lakeside basin. Mt. Paektu covers vast area of waters, including the Lake of Chon upstream region of the Amnok river. Tumen river also originate in the crater lake of Mt. Paektu. Purpose: To protect variety of species composition of mammalian and sufficient resource amount, taking a variety of ecological environment including high mountains and ranges over 2,000 m, valleys and forest grassland.	Amur tiger	1959	132,000 ha (Core area: 24,000 ha, Buffer zone: 36,000 ha, Transition area: 72,000 ha).
Kumsok Animal Reserve <i>Tongsin County, Jagang Province.</i>	IUCN category IV: Habitat/Species Reserve. Kumsok Animal Reserve is the important area in the animal distribution.	Mixed forest of pine can be found on the mountain slopes and deep valley of 1,000 m high above sea level. On the foot of mountain shrubs and grasses are growing. Upstream of Chongchon River starts from the deep valley of Kaphon Pass. Purpose: To protect and manage the protected species. To improve their habitat. To increase the useful animal resource.	Amur leopard	1976	13,507 ha
Mt. Oga Natural Reserves <i>Between Hwaphyong County, Jagang Province and Kim Hyong Jik County, Ryanggang Province.</i>	IUCN category I: Strict Reserves. Designated as natural reserve and some areas have been designated as sea-birds reserves.	Mt. Oga is rich and diverse in the composition and distribution of plant and animal species, and the primeval forest. Purpose: To preserve the ecological system. To provide good conditions of habitation to seasonal birds.	Amur tiger Amur leopard	1959	6,000 ha





Name of Protected Area and Location	Nature Protected Area Category and Status	Type of and Purpose of Protected Area	Inhabiting Target Species	Year Established	Area
Mt. Kuwol Biosphere Reserve <i>Unryul County, Anak County, Samchon County, Unchon County, South Hwanghae Province.</i>	IUCN category I: Strict Reserves for reserve's core area and category VI: Reserves for resources management for buffer zone. The wetland, which includes the coastal Unryul Migratory Birds Reserve, plays an important conservation role as habitats for shore birds and critical areas for many migratory bird species.	Mt. Kuwol Biosphere Reserve consists of a 954 meter-high mountain, adjacent coastal wetlands, lagoons and river estuaries, and agricultural areas. Purpose: To protect the old typical forest ecosystem. To prohibit the human activity in the core area, only sightseeing and visit to the Woljong Temple are allowed.	Black-faced spoonbill	In 1976, the center of Mt. Kuwol area (4,700 ha) was designated as Mt. Kuwol Natural Reserve. In 2004, the broad area centering Mt. Kuwol (52,715 ha) was nominated as a second International Biosphere Reserve.	52,715 ha. (Core area: 1,245 ha Buffer zone: 2,940 ha Transition area: 48,530 ha).
Mundok Migratory Bird (Wetland) Reserve <i>Mundok County, South Pyonggan Province.</i>	IUCN category IV: Habitat/Species Reserve. Designated as Migratory Bird Wetland Reserve. Important migration stop-over ground for red-crowned cranes (about 150), hooded cranes (about 1,500) and white-napped cranes (about 230)	The tideland of downstream coast, large and small brook, reed and paddy fields are the main wintering or transit area of many migratory birds. This area is characterized in a fog sets by the hot current of Korean West Sea (Yellow Sea) from the Pacific and the chilly seawater of the Baltic Bay areas. Purpose: To protect the migratory birds. To prevent the negative impacts to the habitat environment To prohibit the hunting of migratory bird with net gun and agricultural chemicals.	White-naped crane Hooded crane	1995	9,000 ha (Core area: 6,000 ha Buffer zone: 3,000 ha).
Ryongyon White-naped Crane Reserve <i>Thaethan County, Ongjin County, and Ryongyon County of South Hwanghae Province and tidelands in Taedong Bay.</i>	IUCN category III: Natural Monuments and category IV: Habitat/Species Reserve. Designated as Migratory Bird Wetland Reserve and Natural Monument no. 412.	Paddy field, wetland in Kokjong River, Wonchon River, and Ryongyon River. Tidelands in Taedong Bay. It locates in the middle of west sea area (Yellow Sea), warm and calm weather with little snow. Purpose: To protect and provide good habitat to the migratory birds.	White-naped crane Hooded crane Black-faced spoonbill	In 1995, area of 1,000 ha was designated as Ryongyon Migratory Bird Reserve. In 1996, Ryongyon Crane habitat was designated as Natural Monument.	1,000 ha (Area of Ryongyon Field is 12,000 ha).

Name of Protected Area and Location	Nature Protected Area Category and Status	Type of and Purpose of Protected Area	Inhabiting Target Species	Year Established	Area
Sindo Migratory Bird (Wetland) Reserve <i>Sindo County, North Pyongan Province.</i>	IUCN category IV: Habitat/Species Reserve. Designated as Migratory Bird Wetland Reserve.	This reserve is lying in the north-west corner of the Democratic People's Republic of Korea, Sindo borders the People's Republic of China to the north and west, and faces the Yellow Sea to the south; to the east, and it looks across a narrow expanse of sea at Ryongchon. Most of the county consists of Pidansom, an island in the estuary of the Yalu River (or Amnok River). Much of the county's land has been reclaimed through draining and filling. The wind blows strongly in westward or northwestward and a fog sets often. Purpose: To prohibit the destruction of habitat and hunting of birds. To protect the endangered and rare species.	White-naped crane Hooded crane	1995	2,500 ha
Rason Migratory Bird (Wetland) Reserve <i>Rason City, North Hamgyong Province.</i>	IUCN category IV: Habitat/Species Reserve. Designated as Migratory Bird Wetland Reserve.	Water area, mudflat and wetland around Lake Man, Lake Tongbon and Lake Sobon. Soil is mainly alluvial and swamp. The wind often blows in northwestward in winter and in southeastward in summer. In middle of December to end of March, the water area begins to frozen and thaw in early April. It is good habitat for migratory birds. Purpose: To protect the natural environment and the migratory birds. To prohibit the destruction of habitat and environment such as reed cutting and bird hunting during migrating period.	White-naped crane	1995	3,200 ha <i>(Total area of Lake Man and Lake Pon is 5,880 ha).</i>

Name of Protected Area and Location	Nature Protected Area Category and Status	Type of and Purpose of Protected Area	Inhabiting Target Species	Year Established	Area
Kumya Migratory Bird (Wetland) Reserve <i>Kumya County, South Hamgyong Province.</i>	IUCN category IV: Habitat/Species Reserve. Designated as Migratory Bird Wetland Reserve. Important migration stop-over ground for red-crowned cranes (about 100), white-napped cranes (about 600) and a few hooded cranes also use this area as stop-over.	This reserve is at the reaches of Ryonghung River and Tokji River, Songjon Bay. Kumya River and the downstream of Tokji River is a low rate of salt field, mud field, water stopping paddy field and reservoir. The slope slow along the upstream becomes the fresh water area. Purpose: To provide the safe feeding and resting condition to the rare species of bird. To prohibit and control hunting and human activity in the feeding area.	White-naped crane	1995	2,000 ha
Island Taegam and Island Sogam Sea Bird Breeding Protected Area <i>Kwagsan County, Jongju City, North Pyongan Province.</i>	IUCN category III: Natural Monuments and category IV: Habitat/Species Reserve. Designated as Sea Bird Breeding Protected Area and Natural Monument no. 77.	Small offshore island. Tideland appeared at low tide around Island Taegam and Island Sogam. West and south is cliff and the rest are slopes. Purpose: To preserve the natural environment of this reserve as it is the breeding area.	Black-faced spoonbill	In 1976, this area was designated as Sea Bird Breeding Protected Area. In 1986, it was designated as Natural Monument.	Island Taegam 11.5 ha Island Sogam 6.1 ha
Island Tok Sea Bird Breeding Reserve <i>Onchon County, South Pyongan Province.</i>	IUCN category III: Natural Monuments and category IV: Habitat/Species Reserve. Designated as Sea Bird Breeding Reserve and Natural Monument no. 37. It is the main breeding area of black-faced spoonbill.	Rocky and small offshore island with large sea beach appears around island at low tide. Tok Island stretches from north-east to south-west with the light house on the top of island. The east and south-east of island are of slopes and high and vertical rocky cliffs in south-west, west and north. The top and eastern slopes are covered with dark brown soil and the cliffs are of granite. Purpose: To preserve the natural environment of this reserve as it is the breeding area. To control the entrance of people and to prohibit the human activity on the island.	Black-faced spoonbill	In 1959, this area was designated as Sea Bird Breeding Reserve. In 1980, it was designated as Natural Monument.	18 ha

Name of Protected Area and Location	Nature Protected Area Category and Status	Type of and Purpose of Protected Area	Inhabiting Target Species	Year Established	Area
Kwangpo Migratory Bird (Wetland) Reserve <i>Jongpyong County, South Hamgyong Province.</i>	IUCN category III: Natural Monuments and category IV: Habitat/Species Reserve. Designated as Natural Monument no. 268.	Sea site lake at lower reaches of sand from small streams. The upper part of reservoir is fresh water and the lower part is semi-fresh water lake. Purpose: To protect the natural environment and the migratory birds.	White-naped crane	1980	4,500 ha
Unryul Migratory Bird (Wetland) Reserve <i>Unryul County, South Hwanghae Province.</i>	IUCN category Ib: Wilderness area and category IV: Habitat/Species Reserve. Designated as Migratory Bird Reserve, which is part of the Mt. Kuwol Biosphere Reserve.	This is the artificial lake bordering on Kumsan-Ri, Cholsan-Ri, and Wolsa-Ri. They are artificial landscapes (terrestrial) and wetlands (inland). Purpose: To protect the natural environment and the migratory birds.	Black-faced spoonbill	1995	800 ha (Area of Unryul Kumsanpo is 1,400 ha).
September 18 Reservoir Migratory Bird Reserve <i>Chongdan County and Yonan County of South Hwanghae Province.</i>	IUCN category IV: Habitat/Species Reserve. Designated as Migratory Bird Wetland Reserve.	Habitats of migratory birds with its diverse ecological environment of water sea, wetland, island, tideland, reed field and paddy field are the main breeding, wintering and transit areas. Purpose: To preserve the natural environment of this reserve as it is the breeding area of black-faced spoonbill and other rare species. To prohibit bird hunting in the breeding and wintering period.	White-naped crane Hooded crane Black-faced spoonbill	1995	3,600 ha
Ongjin Migratory Bird (Wetland) Reserve <i>Ongjin County, South Hwanghae Province.</i>	IUCN category III: Natural Monuments and category IV: Habitat/Species Reserve. Designated as Migratory Bird Wetland Reserve. White-napped crane in this area was designated as Natural Monument no. 133.	Coastline, wetland and artificial landscapes. Conservation issues: Conservation of ecological environment in this area is very important. Aquaculture/fisheries are as the threat to this site.	White-naped crane Black-faced spoonbill.	1995	1,000 ha (Area of Ongjin Bay is 3,500 ha).

Name of Protected Area and Location	Nature Protected Area Category and Status	Type of and Purpose of Protected Area	Inhabiting Target Species	Year Established	Area
Chongdan Migratory Bird (Wetland) Reserve <i>Chongdan County, South Hwanghae Province and small islands.</i>	IUCN category IV: Habitat/Species Reserve. Designated as Migratory Bird (Wetland) Reserve.	Sea bays straits, intertidal mudflats, freshwater lakes and associated marshes. Purpose: To develop the management plan for migratory reserve and strengthen the education on nature conservation for the peoples and protect the birds and their habitat environment.	Black-faced spoonbill	1995	1,000 ha <i>(Area of Chongdan Field is 2,500 ha).</i>
Orangchon Migratory Bird (Wetland) Reserve <i>Orang County, North Hamgyong Province.</i>	IUCN category IV: Habitat/Species Reserve. Designated as Migratory Bird (Wetland) Reserve.	Sea beaches, estuaries and slow flowing. There are eruptive rock hills formed by volcano at the lower reach of Orangchon. At lower reaches, the water slope is slow and this forms alluvium. Conservation issues: Human activities including sand exploitation influences on the birds' actions.	White-naped crane	1995	1,500 ha <i>(Area of Orangchon River Estuary is 2,500 ha).</i>
Anbyon Natural Monument <i>Anbyon County, Kangwon Province.</i>	IUCN category III: Natural Monuments. Designated as Natural Monument no. 421.	It consists of sand, pebbles, and clay layer. About 50-100 m high hills around the field. Purpose: To protect the natural environment and the migratory birds.	White-naped crane	1982	10,000 ha
Non-protected area but important habitats.					
Kangryong Field <i>Kangryong County, South Hwanghae Province.</i>	IUCN category III: Natural Monuments. Designated as Natural Monument no. 130.	Flooded arable land and irrigation land. Seaweeds and larva are cultivated at sea. Conservation issues: Aquaculture and fisheries are as the threats.	White-naped crane Black-faced spoonbill	1980	1,200 ha
Onchon Field <i>Onchon County and Jangsan County, South Pyongan Province.</i>	IUCN category III: Natural Monuments. Designated as Natural Monument no. 36.	Intertidal mudflats and salt pans. This is the alluvial field formed by tideland in west sea area and the hill field on the east side of Mt. Osok range. Feeding area of black-faced spoonbill. Conservation issues: Agriculture intensification, aquaculture/ fisheries and human disturbance are threats.	White-naped crane Hooded crane Black-faced spoonbill	1980	50,000 ha

Name of Protected Area and Location	Nature Protected Area Category and Status	Type of and Purpose of Protected Area	Inhabiting Target Species	Year Established	Area
Chongchon River Estuary <i>Unjon County and Kwagsan County in North Pyonggan; and Mundok County in South Pyonggan Province.</i>	IUCN category IV: Habitat/Species Reserve. In 1995, the area of 3,000 ha was designated as Mundok Migratory Bird (Wetland) Reserve.	This is the tideland field, intertidal mudflats, rivers stream – slow flowing (lower perennial), and rich paddies. This is the main transit area of migratory birds. Purpose: To protect the natural environment and the migratory birds.	White-naped crane Hooded crane Black-faced spoonbill	Mundok Migratory Bird (Wetland) Reserve was established in 1995.	3,600 ha (Area of 3,000 ha of Chongchon River Estuary was designated as Mundok Migratory Bird (Wetland) Reserve).
Amnok River Estuary <i>Sindo County, North Pyonggan Province and Yomji County, Sinuiju Province.</i>	IUCN category IV: Habitat/Species Reserve. In 1995, the area of 1,000 ha in this estuary was designated as Sindo Migratory Bird (Wetland) Reserve.	Wetland and small offshore island. Conservation issues: Human disturbance and industrial and urban development are listed as threats.	White-naped crane Black-faced spoonbill	Sindo Migratory Bird (Wetland) Reserve was established in 1995.	9,500 ha (Area of 1,000 ha of Amnok River Estuary was designated as Sindo Migratory Bird (Wetland) Reserve).
Taedong River Estuary (West Sea Barrage) <i>Nampo City of South Pyonggan Province, Onchon County, and Unryul County of South Hwanghae Province.</i>	The work of designating this area as protected area is now underway. This area is the breeding area and the main habitats of migratory birds.	Sea bays straits, small offshore islands, mudflats, salt pans, slow flowing (lower perennial), Oxbow lakes, marshes and water storage reservoirs. Taedong river started from Mt. Rangrim range and flow through north Pyongan Province, and borders Hwanghae province, Nampo city at lower reaches and flow into the Korean west sea (Yellow Sea). The estuaries of Taedong river becomes large lake after the West Sea Barrage was built. Tideland can be seen outside of barrage. Conservation issues: Agriculture intensification and aquaculture/ fisheries are as threats.	White-naped crane Hooded crane Black-faced spoonbill	---	9,000 ha (Area of 2,000 ha of Taedong River Estuary was designated as a protected area).
Panmun Field <i>Panmun County, Kaesong City.</i>	Not protected.	The paddy field is alluvium soil. There are 50-100 m of field and hills in this area. It is situated in the middle of west coast and southern part of Kaesong city and the Korean west sea (Yellow Sea) extended to west. Conservation issues: Some human disturbance is threat.	White-naped crane Hooded crane	---	8,000 ha



Name of Protected Area and Location	Nature Protected Area Category and Status	Type of and Purpose of Protected Area	Inhabiting Target Species	Year Established	Area
Batoggisem, Dansem and Zamori islands <i>Pyonggan Province.</i>	Not protected.	Coastline.	Black-faced spoonbill	---	50 ha
Oksem, Dongsolbatsem, Sesolbatsem and Namsolbatsen islands <i>Pyonggan Province.</i>	Not protected.	Wetland.	Black-faced spoonbill	---	50 ha

* This table was prepared by the secretariat based on the information from three reports, i.e. "Red Data Book of DPRK" and "Wetland and Its Conservation in the Democratic People's Republic of Korea" published by MAB National Committee of the Democratic People's Republic of Korea in 2002, respectively, and "Natural Protected Areas in the the Democratic People's Republic of Korea" published by the MAB National Committee of the Democratic People's Republic of Korea in 2005.

JAPAN*

Name of Protected Area and Location	Nature Protected Area Category and Status	Type of and Purpose of Protected Area	Target Species: Population and Habitat Information	Year Established	Area
Izumi-Takaono National Wildlife Protection Area/ Special Natural Monument Area <i>Kagoshima Prefecture, Kyushu</i>	IUCN Category IV and III	A large area of rice paddies, bean fields and grassland with scattered farms on reclaimed land in the estuaries of three rivers, the Takaono, Noda and Eguchi. Izumi City lies to the east, and there are hill ranges to the south. The reclaimed area is divided into an eastern and a western section by the Noda River. The eastern section at Arasaki is intensively cultivated and has several ponds surrounded by small reed-beds. A road runs along the coast to the north and along the Noda River. There are intertidal mudflats and brackish marshes in the estuaries. The wetland is included within a Prefecture Special Wildlife. Protection Area of 842 ha, created for the period November 1984 to October 1987 to protect the wintering habitat of Grus	White-napped crane: ca. 2,500 Hooded crane: ca.8,000 (Winter) Black-faced spoonbill	Nov 1, 1987 SNMA:1955 (NMA:1921)	842 ha (SNMA: 245 ha)

Name of Protected Area and Location	Nature Protected Area Category and Status	Type of and Purpose of Protected Area	Target Species: Population and Habitat Information	Year Established	Area
		monacha and G. vipio. The area is also included within a Special Natural Monument of 245 ha. Approximately 50 ha of rice paddies are leased each winter by the Agency of Cultural Affairs to provide a secure roosting area for the cranes. Artificial feeding stations were established in 1962/63 with the support of Izumi City and Takaono and Noda Towns, and in recent years over 50,000 kg of food, mainly wheat, has been distributed each winter. It has been estimated that this represents more than half of the total consumption of the cranes (Ohsako, 1987). Some compensation has been paid to farmers for crop damage, and some soil restoration work has been carried out. Purpose: To protect habitats of cranes.			
Yashiro Special Natural Monument Area <i>Shunan City, Yamaguchi Prefecture, Honshu</i>	IUCN Category III	An area of terraced paddy fields crisscrossed by streams in a network of long narrow valleys in the Yashiro Basin, in wooded hills near the Seto Naikai Straits at the western tip of Honshu. A small Wildlife Protection Area has been established at Kumage town, areas of rice paddy have been purchased and are used as artificial feeding places, an observation tower has been constructed, and roosting areas have been purchased and are managed for the cranes. The hooded cranes themselves have been designated as a Natural Monument. Purpose: To protect habitats of hooded crane.	Hooded crane: ca.20-30 (Winter)	Feb 2, 1955 (NMA:1921)	500 ha



Name of Protected Area and Location	Nature Protected Area Category and Status	Type of and Purpose of Protected Area	Target Species: Population and Habitat Information	Year Established	Area
The Estuary of the Zuibaiji River and Hakata Bay <i>West of Fukuoka City Fukuoka Prefecture, Kyushu</i>	IUCN Category IV	The estuarine system of the Zuibaiji River at the west side of Hakata Bay, with extensive mudflats in a tidal lagoon near the narrow river mouth. The estuary is surrounded by concrete banks, but there are some brackish marshes upstream along the river. The land adjacent to the estuary is a mainly rice paddy with several small ponds, and there are residential areas near the river mouth. The maximum tidal rise and fall is two metres. The estuary is included in a Prefecture Wildlife Protection Area of 26,708 ha, which was established in November 1986 as a waterfowl reserve and will be in force until November 1996. Purpose: To protect habitats of water birds.	Black-faced spoonbill Hooded crane	November 1986	26,708 ha
Wajiro-higata National Wildlife Protection Area <i>Fukuoka Prefecture, Kyushu</i>	IUCN Category IV	It is located at the deepest part of Hakata Bay and is developing at the mouth of the Tounoharu River. The bed materials are almost sandy soil. Purpose: To protect habitats of water birds.	Black-faced spoonbill: ca.15-50 (Winter)	Nov 1, 2003	254 ha
Manko National Wildlife Protection Area/ Ramsar Site <i>Okinawa Prefecture, Ryukyu Islands</i>	IUCN Category IV	An area of estuarine intertidal mudflats, about 1 km upstream from the coast, at the confluence of two rivers which flow through an urban area. The mudflat is surrounded by a concrete bank with a road on top, except in the south where a public garden adjoins the mudflat and some vegetation remains along the river bank. The maximum tidal variation is 2 m, and only a narrow river channel remains at low tide. The wetland was included in a National Wildlife Protection Area of 250 ha established for a ten year period from November 1987 to October 1997. Purpose: To protect habitats of shorebirds.	Black-faced spoonbill: ca.10 (Winter) Hooded crane White-naped crane	Nov 1, 1977	250 ha

Non-protected area but important habitats.

Name of Protected Area and Location	Nature Protected Area Category and Status	Type of and Purpose of Protected Area	Target Species: Population and Habitat Information	Year Established	Area
Ajisu Reclamation Area <i>Yamaguchi City, Yamaguchi Prefecture.</i>	Non-protected area.	An area of marshy grassland between two small estuaries, and the intertidal mudflats of the estuaries and the adjacent coast. In 1964, the marshes between the two estuaries were reclaimed for agricultural purposes, but the land has never been cultivated because the drainage scheme resulted in a shortage of water.	Hooded crane.		286 ha
Ariake Bay <i>South of Nagasaki, Fukuoka, Kumamoto Prefecture, Kyushu</i>	Non-protected area.	A large shallow sea bay with many estuaries and the largest area of intertidal mudflats in Japan. The mudflats extend in fingers for up to 7 km out from the estuaries of the many rivers entering the bay. The total area of mudflats continues to decrease as more and more land is retained within concrete banks and reclaimed for agriculture. There are still some patches of natural salt marsh on the shore of the bay, but now also many residential areas, particularly near the estuaries. The average depth of water in the bay is 20 m (maximum of 130 m), and the maximum tidal variation is 5-7 m.	Black-faced spoonbill		180,000 ha (maximum of 30,800 ha of tidal mudflats)

* This table was prepared by the Japan Wildlife Research Center, the national collaborating center for the nature conservation project.

MONGOLIA*

Name of Protected Area and Location	Nature Protected Area Category and Status	Type of and Purpose of Protected Area	Target Species: Population and Habitat Information	Year Established	Area
Great Gobi Strictly Protected Areas, part A and B	Strictly Protected Areas, State level	Gobi and desert ecosystem, conservation of Great Gobi ecosystem and endangered wildlife such as Wild camel, Gobi bear.	Snow leopard	1975	5,311,730 ha
Khokh Serkhiin Nuruu Strictly Protected Area	Strictly Protected Areas, State level	Conservation of high Altai mountain ecosystem and endangered wildlife such as wild sheep (argali sheep), snow leopard, ibex, snow cock.	Snow leopard	1977	65,920 ha





Name of Protected Area and Location	Nature Protected Area Category and Status	Type of and Purpose of Protected Area	Target Species: Population and Habitat Information	Year Established	Area
Khasagt Khaikhan Strictly Protected Area	Strictly Protected Areas, State level	Conservation of high mountain ecosystem and endangered wildlife such as snow leopard, ibex, red deer and snow cock.	Snow leopard	1957 / 1978	41,651 ha
Otgontenger National Park	Strictly Protected Areas, State level	Sacred mountain of Mongolia. President of Mongolia honors the mountain every 5 years. Conservation of high mountain ecosystem, flora and endangered wildlife such as snow leopard, ibex and snow cock.	Snow leopard	1992	95,510 ha
Uvs Lake Basin Strictly protected Areas	Strictly Protected Areas, State level	Conservation of high mountain, mountain steppe, wetland, steppe ecosystems, flora and endangered wildlife such as snow leopard, ibex, argali sheep, red deer, musk deer and rare birds like snow cock and water birds.	Snow leopard	1993	712,545 ha
Horidol Daridag Strictly Protected Area	Strictly Protected Areas, State level	Conservation of high mountain, mountain steppe, wetland, steppe ecosystems, flora and endangered wildlife such as snow leopard, ibex, argali sheep, red deer, musk deer and rare birds like snow cock and water.	Snow leopard	1992	188,634 ha
Altai tavan bogd national park	National park, State level	Conservation of high mountain ecosystems, flora and endangered wildlife such as snow leopard, ibex, argali sheep	Snow leopard	1996	636,161 ha
Khangain nuruu national park	National park, State level	Conservation of mountain forest ecosystem	Snow leopard	1996	888,455 ha
Khar us nuur national park	National park, State level	Conservation of Khar us lake, and Jargalant mountain	Snow leopard	1997	850,272 ha
Tsambagarav	National park, State level	Conservation of high mountain ecosystem	Snow leopard	2000	111,462 ha
Siilhemiin nuruu	National park, State level	Conservation of mountain steppe	Snow leopard	2000	142,778 ha
Myangan ugalzat	National park, State level	Conservation of high mountain ecosystem	Snow leopard	2002	60,000 ha
Munkhkhalkhan uul	National park, State level	Conservation of high mountain ecosystem	Snow leopard	2006	300,000 ha
Burkhan buudai	National park, State level	Conservation of high mountain ecosystem	Snow leopard	1996	52,110 ha
Nomrog	Strictly Protected area, state level	Conservation of grassland	White-napped crane Hooded crane	1992	311,205 ha
Dornod Mongol	Strictly Protected area, state level	Conservation of grassland and wetland	White-napped crane Hooded crane	1992	570,374 ha

Name of Protected Area and Location	Nature Protected Area Category and Status	Type of and Purpose of Protected Area	Target Species: Population and Habitat Information	Year Established	Area
Onon-Balj	National park, State level	Conservation of river ecosystem	White-napped crane Hooded crane	2000	402,100 ha

* This table was prepared by Irbis Mongolia, the national collaborating center for the nature conservation project.

* This table was prepared by the secretariat based on the information from the report on "Lower Tumen River Area Transboundary Biosphere Reserve Proposal" published by Korean National Commission for UNESCO in 2004.

REPUBLIC OF KOREA*

Name of Protected Area and Location	Nature Protected Area Category and Status	Type of and Purpose of Protected Area	Target Species: Population and Habitat Information	Year Established	Area
Cherwon Chunongri Immigrant Birds Habitat <i>Cherwon County, Kangwon Province</i>	Korean National Monument No. 245	Cherwon basin is located in the middle of the Korean Peninsula and lies along the DMZ (Demilitarized Zone). It is an important area as a stop-over site and wintering ground for cranes and eagles. Purpose: •To preserve bio-diversity of habitat. •To provide good conditions for seasonal birds.	Hooded crane Korean Natural Monument No. 228 (1970) White-naped crane	1993 (Korean Cultural Heritage Administration)	40 ha
White-naped Crane Habitat of Han River Estuary <i>The estuary opens to the Yellow Sea, Kyungki Province</i>	Korean National Monument No. 250	Han river estuary provides rich habitats for birds and animals, including reservoirs, water ways, tidal-flats, and salt-marshes. More than 20,000 water birds regularly visit this area. Purpose: •To protect marine ecosystem of western coast and tidal-flats.	White-naped crane Korean Natural Monument No. 203 (1970) Black-faced spoonbill	1975 (Korean Cultural Heritage Administration)	2,374 ha
Kangwha Tidal-flats and its Habitat of Black faced Spoonhill <i>Kangwha County, Incheon City</i>	Korean National Monument No. 419	Tidal-flats, salt-marsh and rice-paddy in Kangwha island serve stop-over sites for shorebirds like black-faced spoonbill. Purpose: •To improve their habitat.	Black faced spoonbill Classified as Endangered on the IUCN Red List Natural Monument No. 205 (1968)	2000 (Korean Cultural Heritage Administration)	370,660 ha

*This table was prepared by the secretariat.



RUSSIAN FEDERATION (PRIMORSKY KRAI)*

Name of Protected Area and Location	Nature Protected Area Category and Status	Type of and Purpose of Protected Area	Target Species: Population and Habitat Information	Year Established	Area
Far East State Marine Reserve (FESMR) <i>Offshore from Khasan District, Primorsky Territory, in a cluster of four separate zones (Peter the Great Bay)</i>	Federal Reserve (Strictly Protected) – zapovednik	Marine ecosystem Protection of Migratory/sea bird colonies and habitat	White-naped crane	1978	64,360 ha of which 63,000 ha is marine area, and 1.36 ha is land near Posyet in Khasan District Core area 37,500 ha
Kedrovaya Pad Barabash	Federal Reserve (Strictly Protected) – Zapovednik.	Primary forest ecosystem Protection of habitat for the amur leopard and siberian tiger	Amur leopard Amur tiger	1916	18,044 ha, all core area. The proposed Biosphere Reserve also has a buffer zone of 5,538 ha, and a transition zone of 15,000 ha
Barsovy Federal Refuge (zakaznik) <i>Barabash-Slavyanka & along Chinese border, Khasan District</i>	Federal Wildlife Refuge (zakaznik)	Secondary Forest Ecosystem Protection of habitat of amur leopard and siberian tiger	Amur leopard Amur tiger	1979	106,000 ha
Borisovskoe Plateau Refuge (zakaznik) <i>North of Barabash, in Nadezdinskii/ Khasan Districts</i>	Provincial Wildlife Refuge (zakaznik)	Secondary Forest Ecosystem Protection of habitat of amur leopard and siberian tiger	Amur leopard Amur tiger	1996	63,430 ha
Khansanskii Nature Park, Khasan Wetlands <i>on border of Tumen River (The Democratic People's Republic of Korea, FESMR, & China border (Jingxin)</i>	Nature Park, Provincial (Territory) level	Primary Wetland Protection of habitat of migratory birds	White-naped crane	1998	8,790 ha

ENDNOTES

1. Tigers, jaguars, lions and leopards are the four large felid species, which are also carnivore and efficient predators. Information retrieved from <<http://www.lairweb.org.nz/tiger/amur.html>> on 7 September 2006.
2. IUCN Special Survival Commission (2006) accessed on 6 August 2006 at <<http://www.iucn.org/themes/ssc/sgs/sgs.htm>>.
3. Zhang, Endi, Dale Miquelle et al. (2002). "Recovery of the Wild Amur Tiger Population in China: Progress and Prospect: National Workshops on Progress of Wild Amur Tiger Population Recovery Action", Harbin, P.R. China and Hunchun, P.R. China. Beijing: China Forestry Publishing House.
4. According to IUCN Cat Specialist Group, 1999.
5. Japan Wildlife Conservation Center (2005): "Review of Existing Conservation Strategies for the Target Species", Expert Group Meeting for Framework for a Nature Conservation Programme in North-East Asia, Nanjing China.
6. *Ibid.*
7. WWF (2006): Species Fact Sheet: Tigers and information accessed on 7 September 2006 at <<http://www.lairweb.org.nz/tiger/amur.html>>.
8. WWF (2002): Conserving Tigers in the Wild A WWF Framework and Strategy for Action 2002-2010, Species Programme. Appendix One. Info of this section was also gathered from Miquelle, Dale (2002) 'Overview of Treats to the Amur Tiger' in Recovery of the Wild Amur Tiger Population in China: Progress and Prospect: National Workshops on Progress of Wild Amur Tiger Population Recovery Action, Harbin, P.R. China and Hunchun, P.R. China. (eds.) Zhang, Endi et al. Beijing: China Forestry Publishing House. pp.154-5.
9. Presentation from Expert Meeting of NEASPEC NCP Nanjing. Overview of the Existing Conservation Action Plan.
10. Estimate from 2000-2001.
11. Estimate from 1998-1999. The reference and the one above is from Japan Wildlife Conservation Center (2005): Review of Existing Conservation Strategies for the Target Species, Expert Group Meeting for Framework for a Nature Conservation Programme in North-East Asia.
12. G.V.Kolonin et. al, (1999) Strategy for Conservation of the Far Eastern Leopard in Russia WWF and USAID, pp.7-8.
13. G.V.Kolonin et. al, (1999) Strategy for Conservation of the Far Eastern Leopard in Russia WWF and USAID, pp.12-3 and Pikunov, Dmitrii & Dale Miquelle (2001) 'Conservation Amur Tigers and Far Eastern Leopards in the Tumen River Area Northeast Asia', Wildlife Conservation Society, Vladivostok: Russian Far East Programme.
14. WWF (2002): Strategy for Conservation of the Snow Leopard in the Russian Federation. Moscow: Russian Academy of Sciences. pp.5-18.
15. Japan Wildlife Conservation Center (2005). *op.cit.*
16. WWF (2002). *op.cit*
17. Theile, S. (2003). "Fading Footsteps: the Killing and Trade of Snow Leopards". TRAFFIC International., Cambridge UK.
18. Red deer, roe deer, musk deer and reindeer marmots, hares, picas and partridges.



19. Info retrieved from <<http://www.agarman.dial.pipex.com/snowlep.htm>> on 7 August 2006.
20. McCarthy, Thomas M. & Guillaume Chapron (eds.) Snow Leopard Survival Strategy, International Snow Leopard Trust and Snow Leopard Network, retrieved from <http://www.snowleopardnetwork.org/docs/slss_full.pdf#search=%22snow%20leopard%20survival%20strategy%22> on 4 August 2006, pp.16, 22-3.
21. Ibex, red deer, marmots and partridges are intensively hunted within Russian Federation.
22. Referring to improved digital imagery to refine existing model and map, Snow Leopard Information System (SLIMS) protocol, photo-trap camera surveys, satellite- collar, genetic identification means, population change monitoring methods, etc.
23. Yu, Yat-tung & Chi-chun Wong (2006) The International Black-faced Spoonbill Census: Hong Kong Bird Watching Society and Birdlife International Asian Division.
24. Simba Chan (2005). "Conservation Status of Black-faced Spoonbill Platalea Minor, Asia Division of BirdLife International, Nanjing Expert Meeting on NEASPEC Nature Conservation Presentation.
25. Birdlife International (2001)Threatened Birds of Asia: The Birdlife International Red Databook. Reference for the content of this section also goes to Simba Chan: (2005) Conservation Status of Black-faced Spoonbill Platalea Minor,Asia Division of BirdLife International, Nanjing Expert Meeting on NEASPEC Nature Conservation Presentation.
26. NPWRC (2006) accessed 4 August 2006 at <<http://www.npwrc.usgs.gov/resource/birds/cranes/grusvipi.htm>>.
27. Japan Wildlife Conservation Center (2005). *op.cit*.
28. NPWRC (2006).*op.cit*.
29. International Crane Foundation (2006) accessed on 8 August 2006 Information from <http://www.savingcranes.org/species/white_naped.cfm>.
30. NPWRC (2006).*op.cit*
31. Japan Wildlife Conservation Center (2005). *op.cit*
32. NPWRC (2006). Accessed on 6 August 2006 from <<http://www.npwrc.usgs.gov/resource/birds/cranes/grusmona.htm>>.
33. *Ibid*
34. NPWRC (2006). *op.cit* . The presentation entitled 'Overview of Existing Conservation Action Plans' Expert Group Meeting of NEASPEC NCP 19-21 December 2005, Nanjing was also referred to.

كيفية الحصول على منشورات الأمم المتحدة

يمكن الحصول على منشورات الأمم المتحدة من المكتبات ودور التوزيع في جميع أنحاء العالم. استعلم منها عن المكتبة التي تتاح لها
أو اكتب إلى : الأمم المتحدة، قسم البيع في نيويورك أو في جنيف.

如何向联合国出版机构

联合国出版物在世界各地书店和经销处均有发售。请向书店询问或写信到纽约或日内瓦的联合国销售处。

HOW TO OBTAIN UNITED NATIONS PUBLICATIONS

United Nations publications may be obtained from bookstores and distributors throughout the world. Consult your bookstore or write to: United Nations, Sales Section, New York or Geneva.

COMMENT SE PROCURER LES PUBLICATIONS DES NATIONS UNIES

Les publications des Nations Unies sont en vente dans les librairies et les agences dépositaires du monde entier. Informez-vous auprès de votre libraire ou adressez-vous à : Nations Unies, Section des ventes, New York ou Genève.

КАК ПОЛУЧИТЬ ИЗДАНИЯ ОРГАНИЗАЦИИ ОБЪЕДИНЕННЫХ НАЦИЙ

Издания Организации Объединенных Наций можно купить в книжных магазинах и агентствах во всех районах мира. Найдите справки об изданиях в вашем книжном магазине или пишите по адресу: Организация Объединенных Наций, Секция по продаже изданий, Нью-Йорк или Женева.

COMO CONSEGUIR PUBLICACIONES DE LAS NACIONES UNIDAS

Las publicaciones de las Naciones Unidas están en venta en librerías y casas distribuidoras en todas partes del mundo. Consulte a su librero o diríjase a: Naciones Unidas, Sección de Ventas, Nueva York o Ginebra.

Printed in Bangkok

August 2007

United Nations publication

Sales No. E.07.II.F.25

Copyright©United Nations 2007

ISBN: 978-92-1-120520-6

ST/ESCAP/2495





United Nations
E S C A P

United Nations
Economic and Social Commission for Asia and the Pacific
Environment and Sustainable Development Division

United Nations Building
Rajadamnern Nok Avenue
Bangkok 10200 Thailand
Tel: (662) 288-1234; Fax: (662) 288-1025
E-mail: escap-esdd-evs@un.org
E-mail: escap-publicationsoffice@un.org
Website: <<http://www.unescap.org/esd>>

