

CMS Technical Report Series No. 22

**International Single Species Action Plan
for the Conservation of
the Black-faced Spoonbill
*(Platalea minor)***

Prepared by: S. Chan, W. H. Fang, K.S. Lee, Y. Yamada and Y. T. Yu.



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the Black-faced Spoonbill (*Platalea minor*)**

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Milestones in the production of this action plan:

Inclusion of the Black-faced Spoonbill in the CMS Appendix I by the CMS 7th Meeting of the Conference of the Parties, September 2002, Bonn, Germany

Endorsement of the draft ISSAP by the CMS 15th Meeting of the Scientific Council, December 2008, Rome, Italy

Adoption of the draft ISSAP by the CMS 9th Meeting of the Conference of the Parties, December 2008, Rome, Italy

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Foreword by the UNEP/CMS Secretariat

The Convention on the Conservation of Migratory Species of Wild Animals (CMS) aims to protect migratory species throughout their range and the habitats on which they depend.

Parties to CMS cooperate among them and with other stakeholders to meet the conservation needs of the species listed on its two Appendices through the implementation of an array of initiatives.

Endangered migratory species included in Appendix I, in addition to enjoying strict legal protection by Parties, can benefit from the development of Concerted Actions. These range from field research and conservation projects to the establishment of technical and institutional frameworks for action. International Single Species Action Plans (ISSAPs) are an important instrument to promote and coordinate activities that seek to restore the places where species live, mitigating obstacles to migration and controlling other factors that might endanger them.

The Black-faced Spoonbill (*Platalea minor*) was included in Appendix I of the Convention by the 7th Meeting of the CMS Conference of the Parties (COP) (Bonn, September 2002) and was designated for Concerted Actions under the Convention by that same meeting.

The present International Action Plan for the Black-faced Spoonbill is the main output of a broad programme of activities, co-ordinated by BirdLife International with financial support from CMS, which includes a series of workshops and meetings held in most range countries from 2005 to 2007. The ISSAP was finally adopted by the CMS Scientific Council and subsequently by the CMS COP9 in 2008.

This ISSAP had already proved to bring benefits both to the conservation of this species and to the enhancement of cooperation of relevant organisations. For instance, the East Asian – Australasian Flyway Partnership, a mechanism established for regional cooperation on migratory bird conservation, of which CMS is a member, welcomed the preparation and adoption of the action plan. Furthermore, during the development of this ISSAP, regional networks of ornithologists and conservationists have been developed amongst the range states of the Black-faced Spoonbill, and some of the actions suggested are currently being implemented.

The UNEP/CMS Secretariat is confident that the publication and dissemination of this document will contribute to increasing awareness on the status of the Black-faced Spoonbill, encouraging further research and monitoring in the field as well as the effective implementation of conservation activities

The UNEP/CMS Secretariat hopes that this plan will further improve regional cooperation and that the joint efforts of all stakeholders will eventually succeed in ensuring the long-term survival of this species.

Elizabeth Maruma Mrema
UNEP/CMS Executive Secretary

Foreword by BirdLife International

It is my pleasure to see this action plan finalised, in particular because it builds upon the experiences and success of the previous action plan for the conservation of the Black-faced Spoonbill.

We know it is all too easy for a conservation action plan for a threatened species to be kept on the bookshelf and to become gradually outdated, because of a lack of funds, lack of interest and lack of coordination from range countries and conservationists to implement the plan. The first Conservation Action Plan for Black-faced Spoonbill, which resulted from a discussion amongst BirdLife Partners at the World Conference in Rosenheim, Germany in 1994 and was compiled by the BirdLife Partner in Taiwan in 1995, was a delightful exception to these plans without actions. It started from calls for the conservation of the most important Black-faced Spoonbill wintering ground at Chiku in Tainan, which at that time appeared to have a rather bleak future, and ended up not only with this successfully and proudly protected by local communities, but also with a strong network of conservationists throughout the range of the species, from Korea to Vietnam, and from China to Japan. The annual census of wintering Black-faced Spoonbills has achieved wide coverage and provided good data showing that the species is genuinely

recovering. The promotion programmes have made the Black-faced Spoonbill one of the best known waterbirds in eastern Asia and have resulted in the discovery of new breeding sites in China and Russia. The coordination of colour banding and communication within the regional network has provided interesting and useful information on the migration of this species. Probably the most significant achievement in the implementation of the first action plan was to bring countries and regions with political conflicts together for the conservation of an endangered species.

The secret of the success was the enthusiasm of conservationists throughout the range of the Black-faced Spoonbill. Workshops to promote the implementation of the action plan and to discuss follow-up conservation measures were held in Beijing, Tokyo, Taipei, Seoul, Hong Kong and Macao. A close network has been developed involving stakeholders throughout the region.

Many of the targets of the first action plan have been achieved, but this species is still far from safe. Habitat destruction and degradation is still the biggest threat, and Black-faced Spoonbills appears to be becoming more concentrated on their wintering grounds. We know that the tidal flats where this and many other waterbird

species depend on for feeding and roosting are disappearing at an alarming rate throughout eastern Asia. Poaching and disturbance are likely to be new problems as the species's breeding range extends into new areas.

However, in comparison to ten years ago there are more dedicated people throughout the range of the Black-faced Spoonbill, and regional cooperation for migratory waterbirds has resulted in the emergence of strong partnerships and networks for waterbird conservation. I believe that this new international action plan for the Black-faced Spoonbill, together with the action plans for the Spoon-billed Sandpiper and the Chinese Crested Tern that BirdLife International has compiled for the Convention on Migratory Species, will serve as an important reference for the conservation networks in eastern Asia for many years to come.

Noritaka Ichida

Vice President

BirdLife International

Executive Summary

From a little known waterbird with a known population of a few hundred individuals in the early 1990s to one of the best known threatened waterbirds with a known population that had increased to more than 2,000 in the late 2000s, the Black-faced Spoonbill is surely a remarkable conservation success story. It is also a species to bring organisations and people from all North East Asian countries together to establish a strong regional conservation network.

Despite the gradual recovery of the Black-faced Spoonbill, it is still a globally Endangered species with vulnerable breeding colonies and deteriorating wintering sites. It is a species of coastal inter-tidal habitats, which are facing great threats from reclamation and pollution in eastern Asia. More than half of the global population of the Black-faced Spoonbill is found at only two small sites. The over-concentration of wintering birds and reliance on these sites should be changed, with the birds more evenly distributed over a much wider area.

More protected areas need to be established along the flyway of this species, and the sites should be carefully management to maintain a healthy inter-tidal ecosystem. There should be attempts to attract breeding pairs to safer sites as the DMZ (Demilitarized Zone of the Korean Peninsula) population is overcrowded and too concentrated.

Migratory study of the Black-faced Spoonbill should be continued and the Korean population should be a priority of study, particularly the southward migration.

A disease alarm and emergency support system should be established in range countries to avoid tragedies such as the botulism incident in Taiwan in late 2002. This system will also be helpful to protect other coastal birds and wildlife.

The coordination of information flow, and census and survey work should be strengthened internationally and locally. The species should be used as a symbol of cooperation within the range countries.

1. Introduction and acknowledgement

Probably no other bird species in Asia has such an interesting conservation history as that of the Black-faced Spoonbill¹. Prior to 1990 it was only known to ornithologists and keen birders as an uncommon and poorly-known species. For ordinary people it was just another white long-necked and long-legged bird not unlike an egret. It was therefore not surprising that local people felt amazed, some even furious, that conservationists took this species so seriously and proposed shelving a major industrial project at Chiku², Tainan in the early 1990s.

At the 21st BirdLife International World Conference held in Rosenheim, Germany, August 1994, the Asian partners of BirdLife International agreed on joint actions to conserve the Black-faced Spoonbill, which was evaluated as Critically Endangered with a known population of just a few hundred birds. As the result of that resolution, a workshop was organised in Taipei in January 1995 to draft an international species action plan for the Black-faced Spoonbill. The action plan was published in September of the same year. Follow-up workshops on the implementation of the Action Plan were organised in May 1996 (Beijing) and June 1997 (Tokyo). These meetings initiated international cooperation projects for the Black-faced Spoonbill in all parts of its range.

By the end of the 1990s, the Black-faced Spoonbill had become one of the best known conservation stories in eastern Asia. Revisiting Tainan ten years after the conservation movement began, one would be impressed by the change in local attitude to the conservation of this species: from threatening (and even shooting in a few cases) the birds to taking pride in living near the biggest wintering ground of the Black-faced Spoonbill in the world. The main gathering site of Black-faced Spoonbills, which was to be reclaimed for industry, is now protected and managed by three local organisations. Arguably it has become the best known bird and symbol of Tainan.

It is probably not unreasonable to give much of the credit for such changes to the first action plan, and the efforts of organisations all over the species's range to implement the action plan. Their efforts have probably made this one of the most successful action plans for a threatened species in Asia, if not globally. When the first action plan was drafted, the future of the Black-faced Spoonbill and the key sites for its conservation were not secured and only a few hundred birds were known to exist. Now at least we feel confident that there has been a real increase in its population, and the conservation status of some important sites has been improved. However, it is still regarded as

1. The abbreviation 'BFS' is used in chapter IV and in some other parts of this action plan.

2. Also written as Qigu (Hanyu Pinyin system) or Cigu (Tongyong Pinyin system). Chiku has the biggest wintering population of Black-faced Spoonbills and was threatened by a proposal to construct an industrial plant at the species's roosting area.

Endangered and many sites are not protected or well-managed. There is still a lot to be done to ensure the long term survival of this species.

In 2002, the Black-faced Spoonbill was added to Appendix I of the Convention for Migratory Species (CMS), and the CMS has supported the preparation of this second Black-faced Spoonbill action plan. In October 2005 a workshop was organised at the Korea University (located in Tokyo, Japan) where Black-faced Spoonbill experts from several range countries were invited to form a drafting team. Further workshops were held in Hong Kong and Ganghwa (South Korea) in January and June 2006. The draft of this action plan has been widely circulated for comments and inputs from all range countries. The editors would like to express our gratitude to major contributors of information and ideas on North Korea and Vietnam: Professor Chong Jong-ryol of Korea University and Mr. Nguyen Duc Tu of the BirdLife International Indochina Programme. Dr. Yuri Shibaev and Mr. Sergey Surmach (Institute of Biology and Soil Science, Russia), Dr. Chen Shuihua (Zhejiang Natural History Museum), Dr. Ma Zhijun (Fudan University, Shanghai), Mr. Yang Jin (Fujian Bird Watching Society), Mr Choi Chang-yong (Migratory Birds Center, National Park Research Institute, South Korea) and Mr Kim Eun-mi (Jeju Wildlife Research Center) have provided valuable information and suggestions of actions for Russia, the eastern coast of China and the South Korea. The Japan Black-faced Spoonbill Network has provided opportunities to discuss

actions recommended for the conservation of Black-faced Spoonbill in Japan. We deeply appreciate the contribution of data and suggestions through written correspondences from the Agriculture, Fisheries and Conservation Department of Hong Kong SAR, Carlo Custodio, Yuri Darman, Kadoorie Farm and Botanic Garden Corporation (Hong Kong), Kim Jin-han, Mike Kilburn, Paul Leader, Wai-hung Lee, Leung Va, Mike Leven, Liang Wei, Liu Bofeng, Liu Yang, Colin Poole, Phil Round, Shan Kai, Elena Smirenski, Lew Young, Zeng Xiangwu and Zhang Guogang. At the workshops in Hong Kong in January 2006 and Macao in May 2007 suggestions on the actions needed for the conservation of the Black-faced Spoonbill were given by Chen Zhihong, Jimmy Choi, Silvia Choi, Tom Dahmar, Dong Jiangtian, Jonathan Eames, Guo Zhaoliang, Amanda Haig, Kim Incheal, Kim Kyung-won, Kuo Tung-hui, Lam Yui-fong, Katherine Leung, Li Qiuhua, Liu Liang-li, Park Sunyoung, Shel Severinghaus, Bena Smith, Samson So, Bob Thompson, Chiachi Wang, Wang Qishan, Ying Wang, Captain Wong and Victor Yu. The workshops in Tokyo, Hong Kong, Ganghwa and Macao for the drafting of the action plan were funded by the Convention of Migratory Species, the Croucher Foundation and Environmental Campaign Committee, Hong Kong Bird Watching Society, the Korea Federation for Environmental Movement and the Macao Ecological Society. Korea University gave logistical support to the workshop in Tokyo and assisted with the review process in North Korea.

The BirdLife network organisations (partners, affiliates and programme offices) were all enthusiastically involved in the drafting of the action plan in Japan (Wild Bird Society of Japan), Taiwan (Chinese Wild Bird Federation), Hong Kong (Hong Kong Bird Watching Society) and Indochina (BirdLife Indochina Programme). We would like to thank Carrie Ma for recording comments at the Hong Kong workshop in January 2006, Park Sunyoung for her constant efforts in organizing activities on Black-faced Spoonbill conservation, Mike Crosby for giving support at the BirdLife Secretariat in Cambridge, Richard Grimmett, Noritaka Ichida and Lucia Severinghaus for their guidance in drafting the action plan, Adrian Long, Nick Langley and Fion Cheung for proofreading the text of this action plan. Last but not least, Cornelis ('Kees') Swennen provided his wise and deep insight on Black-faced Spoonbill matters. The action plan could not have been completed without their support.

We would like to dedicate this action plan in the memory of the late Dr. Kim Soo-il, the pioneer of Black-faced Spoonbill study in South Korea. He kindly offered his help in the compilation of the action plan but unfortunately he passed away before the work started.

2. Status

2.1 International threatened status

The Black-faced Spoonbill was not included in the first International Red Data Book of Birds (King 1981). It was listed as a threatened species in *Birds to Watch: The ICBP³ World Checklist of Threatened Birds* (Collar and Andrew 1988) but no estimation of its population size was given. It was regarded as Critically Endangered in the revised edition, *Birds to Watch II* six years later (Collar, Crosby and Stattersfield 1994) as more information was available and threats were known to the species's wintering grounds⁴.

In the late 1990s, when its status was re-evaluated during the compilation of *Threatened Birds of Asia: the BirdLife International Red Data Book*, it was found that it could not meet the Critically Endangered criteria as the known population was higher than that of the early 1990s and threats to the wintering grounds seemed to be reduced. It was listed as Endangered (BirdLife International 2000; BirdLife International 2001) and the status has not changed subsequently.

2.2 Protection status

2.2.1 International

2.2.1.1 Convention of Migratory Species (CMS):

The Black-faced Spoonbill has been listed in Appendix I of the Convention of Migratory

Species since 2002. This means that the CMS recognises the species as being in danger of extinction and CMS Parties are required to strive towards strictly protecting these animals, conserving or restoring the places where they live, mitigating obstacles to migration and controlling other factors that might endanger them. Besides establishing obligations for each state that joins the Convention, the CMS promotes concerted action among the Range States of many of these species.

2.2.1.2 Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES):

The Black-faced Spoonbill is not listed on the CITES appendices.

2.2.1.3 The Convention on Wetlands of International Importance Especially as Waterfowl Habitat (Ramsar Convention):

As The Black-faced Spoonbill is a globally threatened species, several Ramsar Sites have been designed because of their importance to its survival⁵. These includes Xuan Thuy Natural Wetland Reserve (Vietnam, designated in 1989), Dongzhaigang (China, 1992), Mai Po Marshes and Inner Deep Bay (Hong Kong, 1995), Manko (Japan, 1999), Yancheng National Nature Reserve (China, 2002), Chongming Dongtan Nature Reserve (China,

3. International Council for Bird Preservation, the name of BirdLife International prior to 1994.

4. BirdLife International compiles the global Red List of birds for the IUCN so the two Red Lists are identical.

5. Dongzhaigang and Suncheon do not support more than 1% of the global population at the time of compilation of this action plan.

2002), Shankou Mangrove Nature Reserve (China, 2002) and Suncheon Bay (South Korea, 2006)

2.2.1.4 Bilateral cooperation between range countries:

The Black-faced Spoonbill is listed on the Appendix of the China-Japan Migratory Birds Agreement. Both countries have conducted projects for the conservation of this species.

2.2.2 Regional/national

2.2.2.1 Russia

The Black-faced Spoonbill is listed in the Red Data Book of Russia, and is therefore a bird that has a higher conservation status than non-threatened birds, which are also generally protected except species listed as game birds. It has been strictly protected by law in Primorsky Krai (where the breeding birds are found) since 2005.

The single Russian breeding site is protected within the Far Eastern Marine Nature Reserve.

2.2.2.2 China

Mainland

The Black-faced Spoonbill has been listed as a Nationally Protected Species (Second Class) since 1989.

Xingrentuo, the first breeding island found in China, is inside the Zhuanghe Shicheng Nature Reserve (Liaoning Province). The following important migratory staging grounds and

national or provincial nature reserves: Yellow River Delta (Shandong Province), Yancheng (Jiangsu Province), Chongming Dongtan, Jiuduansha (Shanghai Municipality), Min Jiang Estuary, Quanzhou Wan (Fujian Province), Gongping Dahu, Futian (Guangdong Province), Beilun Estuary, Shankou (Guangxi Zhuang Autonomous Region) and Dongzhaigang (Hainan Province).

Dongzhaigang was designated as Ramsar Sites in 1992 and Yancheng, Chongming Dongtan and Shankou were designated in 2002.

Taiwan

The Black-faced Spoonbill was listed as a Class I (highest priority) protected species on 23 December 1995.

Under the Wildlife Conservation Act, 300 hectares of the most important wintering habitat of Black-faced Spoonbill at Tainan was protected as "Tainan County Tsengwen Estuary⁶ north bank Black-faced Spoonbill Protection Area" on 1 November 2002.

On 28 December 2009, Taijiang National Park (39,310 hectares) was established in Tainan. Protected area at the Tsengwen Estuary was included in this newly established national park.

Hong Kong

The Black-faced Spoonbill is protected by the Wild Animals Protection Ordinance, Chapter 170, Laws of Hong Kong.

The core wintering habitats of the Black-faced

6. Also written as Zengwen Estuary (Hanyu Pinyin System) or Zeng-Wun Estuary (Tongyong Pinyin System).

Spoonbill are located within the Mai Po – Inner Deep Bay Ramsar Site (designated in 1995). Mai Po Nature Reserve is managed by the World Wide Fund For Nature Hong Kong and the overall conservation management of the Ramsar Site is overseen by the Agriculture, Fisheries and Conservation Department (AFCD).

Macao

The Black-faced Spoonbill is a protected species under the General Regulations for Common Area enacted in 2005 to replace the former rules.

In 2001, the Government of the Macao Special Administrative Region declared two nature reserves that support the species, a 15 hectare wetland site between Taipa and Coloane and a 40 hectare inter-tidal wetland that extends from the coastal wetland south of the Lotus Flower Bridge to the wetland north of Taipa.

2.2.2.3 Korea

North Korea

All species of bird (except some game species) are protected by law in North Korea, including the Black-faced Spoonbill.

Four islands (Daegamdo, Sonchon Rabdo, Unmudo and Dokdo) that support important breeding populations of Black-faced Spoonbills have been designated as protected areas and Natural Monuments.

South Korea

The Black-faced Spoonbill was designated as Natural Monument Number 205 on 30 May

1968 by the Cultural Heritage Administration. It is also listed as an endangered species (First level) by the Ministry of Environment.

The islets of Chilsando were designated as National Monument Number 389 in 1997 after the presence of breeding Black-faced Spoonbills was confirmed that summer. In 2000, the breeding grounds at Bido and the feeding areas at Ganghwa mudflat (total area 37,068 ha) were designated as National Monument Number 419.

The Ramsar Sites Suncheon Bay (designated in 2006) and Muan Tidal Falt (designated in 2008), were noted for their importance to the Black-faced Spoonbill.

2.2.2.4 Japan

The Black-faced Spoonbill is protected under the Wildlife Protection and Hunting Law (1919, last amended in 2005) as are most non-game species.

It is also listed as category IA (critically endangered) on the Red List of Japan. This means that its conservation importance is recognized and it can be used a reference species in environmental impact assessment for development projects.

Important wintering sites are protected by Natural Parks Law (1957, last amended in 2006), Wildlife Protection and Hunting Law and Law for the Protection of Cultural Properties (1950, last amended in 2006). Manko in Okinawa Prefecture and Wajiro Tidal Flat (Higata) in Fukuoka Prefecture have been designated as protected areas and the designation of Ariake-kai (Fukuoka and Saga

prefectures) as a protected area is under consideration.

Manko was designated as a Ramsar Site in 1999.

2.2.2.5 Vietnam

The Black-faced Spoonbill is listed as an IB species, meaning that it is strictly protected from exploitation and trading, by Decision No. 48-2002/ND-CP dated 22 April 2002. It is also ranked in the Red Data Book of Vietnam as Endangered.

Two protected areas have been designated for Black-faced Spoonbill: Xuan Thuy National Park and Tien Hai Nature Reserve.

Xuan Thuy was designated as a Ramsar Site in 1989.

2.2.2.6 Philippines

The Black-faced Spoonbill is protected in the Philippines because birds listed on the IUCN Red List are automatically regarded as protected in the Philippines.

2.2.2.7 Cambodia

The Black-faced Spoonbill is not listed as a protected species in Cambodia.

2.2.2.8 Thailand

All birds (including the Black-faced Spoonbill) are protected by law in Thailand (with the exception of 60 species). Hunting of birds other than the 60 species is forbidden.

3. Threat analysis

3.1 Habitat loss

This is the greatest threat to the Black-faced Spoonbill throughout its range as tidal flat reclamation is severe along the coasts of the Yellow Sea, the East China Sea and the South China Sea.

In its breeding grounds in northern China and Korea, human disturbance and the reduction in the area of inter-tidal habitat are probably the reasons why Black-faced Spoonbill breeding sites are all on small islands, particularly along the western coast of the DMZ of Korea. The construction of a proposed highway connecting North and South Korea will threaten the tidal flats of Ganghwa Island and Yu-do, the island with the largest known breeding population.

Reclamation is widespread in its staging and wintering grounds. Most of the tidal flats in Japan have been reclaimed, and the remaining wetlands in Kyushu and Okinawa, where most of the Japanese wintering population occurs, are fragmented. In Korea and Mainland China, large-scale reclamation of tidal flats occurs for agriculture, aquaculture, industrial and urban development projects. The Chinese staging grounds at Yancheng, Chongming Island, Wenzhou Bay and the Min Jiang Estuary are all under heavy development pressure. In Taiwan, there have been several recent proposals to construct an international airport in Tainan and a local university campus near Chiku, which, if approved, would reduce the feeding grounds of the largest wintering population in the world.

The wintering ground in Macao, which holds about 2% of the global population, may cease to exist within a few years if the present trend of construction of casinos continues. The development of a marine resort has been proposed at Seongsanpo in Jeju Island, the largest Korean wintering ground. In Vietnam, the tidal flats used by wintering Black-faced Spoonbills are threatened by mangrove afforestation.

3.2 Habitat degradation and pollution

Eastern Asia has the highest human population density and fastest economic development in the world. As a consequence, the remaining wetland sites throughout the range of the Black-faced Spoonbill are under pressure: tidal flats are fragmented by reclamation for agricultural and urban development, which generate domestic sewage, and agricultural and industrial waste that pollutes the remaining wetland sites. The core area of the second biggest wintering ground of this species, Inner Deep Bay in Hong Kong/Shenzhen is probably safe from major developments, but pollutants from nearby settlements and industrial estates reduces food availability for the Black-faced Spoonbill. Habitat degradation and pollution is also a threat at many Chinese sites as a result of the economical and industrial boom. However, pollution is not regarded as a serious threat in South Korea and Japan.

Inter-tidal wetlands are not stable systems, as sedimentation leads to changes in the coastline and wetlands. If there is no room available for the extension of the present tidal flats, many sites used by Black-faced Spoonbills may become less suitable in the future. Currently the sedimentation rate of Inner Deep Bay in Hong Kong/Shenzhen is high, meaning that favourable habitat may disappear as the tidal flat becomes dry land, with the process of sedimentation being hastened by natural mangrove encroachment.

3.3 Exploitation

Hunting is not a direct threat to the Black-faced Spoonbill in Japan, South Korea, Taiwan, Macao and Hong Kong. However, hunting and collection of seabird eggs are known to be serious problems in Russia, Mainland China and Vietnam. Although these activities are mostly not targeted specifically at Black-faced Spoonbill, they may still cause loss and casualty: one individual was shot in Russia in 1995, one found in a market in Guangzhou, China in 2000 (released by a conservationist) and two birds were captured and killed at Yinggehai, Hainan Island in 2001 and 2002. There is an unconfirmed report that some Black-faced Spoonbills had been collected in Shandong and sold to a zoo in China, and there are probably more unknown and unreported cases of casualties in China and Vietnam.

3.4 Disturbance

Fishing and shellfish collection in Mainland China and Vietnam causes serious disturbance because these activities are not well managed at key Black-faced Spoonbill sites. In Hong Kong, Taiwan, Japan and South Korea the degree of disturbance is moderate. However, in areas where birdwatching and photography has become popular hobbies, disturbance from these leisure activities can be a potential problem to this species. Breeding sites are particularly vulnerable to disturbance by photographers.

3.5 Others

Disease outbreak is a major threat to this congregatory waterbird species. Avian Botulism, although not an infectious disease, claimed the lives of 73 birds at Tainan in 2002 and a few birds in Hong Kong in recent years.

Wind farm turbines at sites along the migration routes could be a problem if they are not appropriately positioned.

Summary of level of threats to the Black-faced Spoonbill over its range:

Legend:

Countries and territories

RU = Russia

JP = Japan

KR = South Korea

nCN = Mainland China north of the Yangtze

sCN = Mainland China south of the Yangtze including Hainan

HK = Hong Kong

MO = Macao

TW = Taiwan

VN = Vietnam

(Threats in North Korea, Cambodia, Thailand and the Philippines have not been assessed.)

Level of threat:

N = Negligible

? = No information

L = Low

M = Moderate

H = High

	RU	JP	KR	nCN	sCN	HK	MO	TW	VN
Habitat loss	N	M	H	H	H	M	H	M	H
Habitat degradation	N	M	M	M	H	H	H	M	M
Pollution	N	L	L	M	H	H	H	M	M
Exploitation	H	L	L	H	H	L	L	L	H
Disturbance	?	H	M	H	H	M	H	M	H
Disease outbreak	L	M	H	M	H	M	H	H	H

More on threats to the Black-faced Spoonbill are posted the BirdLife International Red Data Book of Threatened Birds of Asia website:

www.globalconservation.info/rudy/detailbird.php?id=279

4. Conservation actions recommended

The following organisations have been involved in the drafting of this action plan and/or could play a major role in implementation its conservation recommendations.

Government agencies:

AFCD	Agriculture, Fisheries and Conservation Department, Hong Kong SAR, China.	KFEM	Korean Federation of Environmental Movement
		RBCU	Russian Bird Conservation Union
MOEJ	Ministry of the Environment, Japan	WBSJ	Wild Bird Society of Japan
MOEK	Ministry of Environment, South Korea	WWFHK	World Wide Fund for Nature Hong Kong
MONRE	Ministry of Natural Resources and Natural Environment, Vietnam	XMBWS	Xiamen Bird Watching Society
SFA	State Forestry Administration, China	ZJBWS	Zhejiang Bird Watching Society

International NGOs:

BLA BirdLife International Asia Division

National/local NGOs:

CWBF Chinese Wild Bird Federation
FJBWS Fujian Bird Watching Society
HKBWS Hong Kong Bird Watching Society
JBFSN Japan Black-faced Spoonbill Network

Research institutions:

AEC (HK) Asia Ecological Consultants Ltd (Hong Kong)
COS China Ornithological Society
KFBG Kadoorie Farm and Botanic Garden Corporation
KNIER National Institute of Environmental Research, South Korea
NBBC National Bird Banding Center, China
YIO Yamashina Institute for Ornithology, Japan

4.1 International objectives

4.1.1 Improving legal protection status of the Black-faced Spoonbill

Despite their official protected status in almost all range countries and territories, Black-faced Spoonbills have occasionally been reported to be hunted or accidentally killed. There are reports that zoos and parks have collected Black-faced Spoonbills from the wild population in recent years.

Exploitation is still a threat to this species, especially to breeding populations outside restricted areas. Therefore range countries and

territories must enforce laws to prevent possible trade, particularly by zoos and collectors. The protected status of Black-faced Spoonbills should also be enhanced through bilateral or multilateral agreements on migratory bird conservation.

Programme	Activity	Responsible organisation	Implementation progress	Further specific actions to undertake	Time-scale	Priority
Agreements on conservation and joint projects between range states	Range countries should formalise agreements for the conservation of BFS following the CMS agreement model	All range countries: Russia, North Korea, South Korea, Japan, China, Vietnam, the Philippines, Cambodia and Thailand	Philippines: serving as the link between CMS and the range countries because it is the only BFS range state that has ratified the CMS	All other countries: consider ratifying CMS or participating in CMS actions as a non-member	Long (2010-2020)	High
Prevent international and domestic trade	Stop poaching and trade of eggs, chicks or adult birds for zoos, museum and private collections	All range countries especially countries with breeding populations: Russia, North Korea, South Korea and China	Review relevant national laws to ensure that trade in BFS, including in body parts and eggs, are strictly controlled or prohibited	Register and regularly monitor zoo populations and museum collections	Imminent and ongoing	High

4.1.2 Preventing habitat loss of the Black-faced Spoonbill

This should be the most important objective for Black-faced Spoonbill conservation. Since 1995 there have been many achievements in research and public awareness, but apart from the protection of the major wintering ground in Taiwan, the status of most sites remains the same, and some have even deteriorated or been destroyed. Coastal

wetlands in South Korea, Japan and China are still under high development pressure. Within the past 15 years, two of the largest tidal areas in Japan and Korea, Isahaya and Semunguem respectively, have been reclaimed.

Programme	Activity	Responsible organisations	Implementation progress	Further specific actions to undertake	Time-scale	Priority
Establishing protected areas	The important sites specified in the national recommendations below and listed in the Appendix should all be either legally designated as protected areas, or protected through appropriate land-use planning and management at the sites	Relevant government agencies in all range countries and territories. Research institutions and NGOs	Government agencies: consider legal procedures on establishment of protected areas. Research institutions and NGOs: assisting in information collection and recommendation of the important sites	Government agencies: drafting management plans and staffing the protected areas to ensure good management practice at these sites Other organisations: assisting regular exchange of information and experience with other BFS sites	Imminent and ongoing	High
Establishing additional breeding sites	After studying the habitat requirements of breeding BFS, try to create suitable habitat at sites with good legal protection and low human disturbance (western Japan would be ideal) to attract nesting BFS	Government and conservation agencies of Russia, North Korea, South Korea, China and Japan	Research organisations: summarize the data on favourable breeding habitats for BFS and identify potential sites in the region Government: fund and support feasibility studies in the establishment of new breeding sites	All: conduct pilot projects on how to attract BFS to breed at new sites	Long (2010-2020)	High

Programme	Activity	Responsible organisations	Implementation progress	Further specific actions to undertake	Time-scale	Priority
Recommendation of compatible land use at important sites	Drafting land use guidelines for important sites Organizing workshops to discuss drafting appropriate land use plans for the buffer zones of protected areas or important sites that cannot be officially listed as protected areas	Relevant government agencies in all range countries and territories Research institutions and NGOs	Government agencies: supporting the organisation of the workshops Research institutions and NGOs: fundraising and organizing the workshops	Guidelines distributed to all local stakeholders. Promotion of activities to gain their support in implementation	Short (2010-2015)	High
Management plans for important sites	Drafting management plans for important sites that have not got an existing plan, including through meetings of all stakeholders to discuss appropriate measures for the conservation management of BFS and its habitats	Relevant government agencies in all range countries and territories Research institutions and NGOs	Government agencies: supporting and financing the workshops to develop the plans and subsequent implementation of the management measures BLA and partners and other conservation organisations: providing technical support in drafting the plans	Government agencies: implementation of the management plans at the sites BLA partners and other conservation group: technical support for implementation and provision of information on best practice	Short (2010-2015)	High
Site monitoring	Drafting plans for regular monitoring and assessment of environmental factors at all important sites. National or local workshops should be held to draft the monitoring plans	Relevant government agencies in all range countries and territories Research institutions and NGOs	Government agencies: supporting and financing the workshops to draft the plans and subsequent implementation of the monitoring Research institutions and NGOs: providing technical support and training in drafting the plans	All: development of a database to manage the monitoring data, and a protocol on how they could be used for the conservation and management of the sites	Short (2010-2015)	High
	Monitor critical environmental factors at important sites (water quality, food availability, development pressure, etc.)	Site managers and local conservation organisations, BLA	Site managers and researchers: deciding which environmental factors needed to be monitored at the site. Interpretation of the data collected Site managers and local organisations: regularly collect data on these factors BLA: technical support and international linkage	Monitoring reports should be regularly studied to develop management recommendations	Long (2010-2020)	High

4.1.3 Improving knowledge of the migration and distribution of the Black-faced Spoonbill

Since the late 1990s, satellite tracking of Black-faced Spoonbills from Hong Kong, Taiwan and Okinawa and colour-banding of birds in Japan, South Korea, North Korea, Taiwan and Hong Kong have provide valuable information on the migration routes and movements of this endangered species. However, not much is known about the

southward migration, and another important gap in knowledge is the location of immature birds in summer. It is therefore recommended that studies should be continued to identify further key sites for this species, which should all be protected and/or well managed.

Programme	Activity	Responsible organisation	Implementation progress	Further specific actions to undertake	Time-scale	Priority
Satellite tracking	Satellite tracking of birds from the breeding grounds in South Korea to discover autumn migration route	MOEK. Bird banding and research institutions in South Korea and neighbouring countries	MOEK: approval and legal support Korean bird banding institution: facilitating the programme Other bird banding institutions (such as YIO): technical support Research institutions and NGOs: information management and dissemination	Research and conservation groups involved in the programme: establish contacts with people at any new wintering sites that are identified. Submit proposals to national governments to designate new protected areas	Short (2010-2015)	High
	Track Black-faced Spoonbills for a one-year cycle	Relevant government agencies in all range countries and territories Research institutions and NGOs	National Governments: approval and legal support Experienced institutions (such as YIO and WBSJ): technical advice and support National bird banding schemes and research organisations: facilitating the programme and technical support International NGOs such as BLA: information management and dissemination	Research and conservation groups involved in the programme: establish contacts with people at any new wintering sites that are identified. Submit proposals to national governments to designate new protected areas	Short (2010-2015)	Moderate

Programme	Activity	Responsible organisation	Implementation progress	Further specific actions to undertake	Time-scale	Priority
Satellite tracking	Satellite tracking of birds from Mai Po marshes (Hong Kong) in early winter to study any movements further along the south China coast and to Vietnam	AFCD, WWFHK, HKBWS, AEC (HK), NBBC, YIO, BLA, WBSJ	AFCD: approval and legal support, facilitating the programme WWFHK : facilitating the programme HKBWS, AEC, NBBC, YIO, WBSJ: technical support BLA: information management and dissemination	NBBC, COS, birdwatching societies in China, BLA and partners : establish contacts with people at any new wintering sites that are identified in China and Vietnam	Short (2010-2015)	Moderate
Summer survey for sites with immature birds in China	Distribution of promotional materials at potential summer sites of immature birds (most likely in eastern and northern China)	SFA, NBBC, COS, birdwatching societies in China, HKBWS, KFEM, BLA	SFA: guidance of the project NBBC, COS, birdwatching societies, HKBWS: coordination of the distribution of information. Promotion of the project KFEM, BLA and partners: technical and information support	Research and conservation groups involved in the programme: compilation of information and maintenance of regular contact with potential sites. Preparation of follow-up surveys	Short (2010-2015)	High
	Site surveys when information received	SFA, NBBC, COS, birdwatching societies in China	SFA: guidance of the project NBBC, COS, HKBWS: coordination of site surveys with local forestry bureaus and birdwatching societies	Research and conservation groups involved in the programme: recommendations for the protection and management of sites	Short (2010-2015)	High
Continue colour banding of pulli (nestlings) at breeding grounds	Dissemination of colour-banding protocols as printed materials and on website	All bird banding schemes and research institutions	National banding schemes: notify all banding institutions and banders to follow the colour-banding protocol HKBWS: construction of a website for information dissemination	National banding schemes, research institutions, BLA and partners: develop a system to collect and manage reports of sightings of colour-banded birds	Short (2010-2015) and ongoing	High
	Colour-banding of BFS pulli	YIO, NBBC, KNIER and Russian bird banding scheme	YIO: design and coordination of colour banding protocol. Technical advice NBBC, KNIER and Russian banding scheme: evaluate the risks associated with banding pulli, banding of the pulli and dissemination of information	YIO, NBBC, KNIER, Russian banding scheme and regional banding schemes: discuss problems and improvements to banding techniques. Produce guidelines for banders	Short (2010-2015) and ongoing	Moderate

Programme	Activity	Responsible organisation	Implementation progress	Further specific actions to undertake	Time-scale	Priority
Study changes in historic distribution	Compare historical records of sightings and nesting with current distribution and status	Ecosystem (HK)		Publish the findings in an international refereed journal	Short (2010-2015)	Moderate

4.1.4 Biological studies

Some studies of the ecology of the Black-faced Spoonbill have been conducted since the 1990s, but more information is needed to improve understanding of their life cycle and to improve the management of

their habitats. Studies of age structure are important to reveal the population dynamics of the Black-faced Spoonbill.

Programme	Activity	Responsible organisation	Implementation progress	Further specific actions to undertake	Time-scale	Priority
Age structure study	Detailed study on the changes of morphology with age in captive birds	Tama Zoo, Korea University, BLA and partners (especially WBSJ)	Tama Zoo and Korea University: regular measurement and documentation of birds born in captivity WBSJ: analysis of data and coordination of information	BLA and partners: publication of leaflet/manual on how to age birds in the field	Short (2010-2015)	High
	Investigate the ratio of adult and immature birds in the populations at all important wintering sites to improve understanding of the breeding success and population trends of BFS	All institutions and organisations involved in BFS study and census	BLA and partners: producing reference materials on how to age BFS, provide training to local birdwatching organisations All research and conservation organisations: conducting the studies at important sites	HKBWS (Coordinator of International Census): regular dissemination of data	Short (2010-2015)	High

Programme	Activity	Responsible organisation	Implementation progress	Further specific actions to undertake	Time-scale	Priority
Study on the sexing of birds by morphology	Measurement of captive birds of known sex	Tama Zoo, Korea University. Research institutions in range countries and territories	Tama Zoo and Korea University: measurement of captive birds and documentation of data Research institutions and conservation NGOs: analysis of data and management of information. Summarise data collected from birds that died of botulism in Taiwan in 2002	Conservation NGOs: publication of leaflet/manual on how to sex birds in the field	Short (2010-2015)	Moderate
Study salt tolerance of newborn BFS chicks in captivity	Study whether newborn BFS in captivity can take salty food to improve understanding of the foraging requirement of their parents	Tama Zoo, WBSJ	Tama Zoo: experimental feeding of salt water fish to chicks of different ages WBSJ: analysis of results and dissemination of information	WBSJ: dissemination of information on the salt tolerance of BFS chicks to researchers in the breeding grounds KNIER, NBBC, Russian conservation groups, Nature Conservation centre in DPRK: if freshwater food is required for chick rearing, identify the foraging grounds used by breeding BFS in Russia, Korea and China	Short (2010-2015)	Moderate
DNA analysis	Analysis of fallen feathers, captive birds and trapped birds	Kyushu University, Korea University, other research institutions, BLA and partners	Kyushu University: analysis of DNA Others: collection of fallen feathers	BLA and CWBF: cooperation with Taiwanese institutes that conducted similar research on the BFS that died of botulism	Short (2010-2015)	Low
Intraspecific relationship with other birds	Study whether gulls are beneficial as "watchdogs" or harmful as predators at the breeding grounds	Relevant government agencies in all range countries and territories Research institutions and NGOs	Government agencies: legal support and assistance in fund-raising Research institutions and NGOs: field studies and analysis of data	Research institutions and NGOs: dissemination of results, investigate the implications regarding management at the breeding grounds	Long (2010-2020)	High

Programme	Activity	Responsible organisation	Implementation progress	Further specific actions to undertake	Time-scale	Priority
Intraspecific relationship with other birds	Study the intraspecific relationships of BFS with other birds in the wintering grounds	Research organisations at wintering grounds, NGOs	Research institutions: design methodology for data collection NGOs: training of surveyors (mainly local birdwatchers) for simple information collection Research institutions: design and conduct the study. Analysis of data	NGOs: produce printed materials on intraspecific studies to promote the collection of information	Long (2010-2020)	Low
Study the carrying capacity of BFS at their key sites	Study the spatial and food requirements of BFS at important breeding, migration and wintering sites to determine the carrying capacity of these sites and factors that limit the BFS populations	All range states and research institutions	Government bodies: financial and legal support National research institutions: conduct site studies and environmental assessments	All: use the results to identify limiting factors and improve site management	Short (2010-2015)	High

4.1.5 Reduce the risk of epidemic diseases affecting the Black-faced Spoonbill populations

The outbreak of botulism in Tainan in late 2002 illustrated the risk posed by diseases and that measures need to be put in place to prepare for future outbreaks. A well-coordinated emergency response system is

highly recommended. This can cover other waterbird species, particularly those species that are vulnerable because they occur in large concentrations (e.g. cranes).

Programme	Activity	Responsible organisation	Implementation progress	Further specific actions to undertake	Time-scale	Priority
Establishing a disease alarming coordination system	Establish an efficient system within the range of BFS to ensure rapid action and coordination in case of disease outbreak	All range states and research institutes	All: consider the development of an international information centre to provide coordination and information exchange Regional coordination centres should be established at important sites for BFS.	All: consider how to strengthen links with other BFS sites	Imminent and ongoing	High

Programme	Activity	Responsible organisation	Implementation progress	Further specific actions to undertake	Time-scale	Priority
Establishing a disease alarming coordination system	Contingency planning for epidemics such as avian influenza	All range states and research institutes	All countries: draft contingency plans and identify focal points in each country/district	All: consider how to strengthen links with other BFS site	Short (2010-2015)	High
Collecting pathological and biological samples	Establish a standardised sampling procedure	All range states, research institutes and animal rescue centres (such as KFBC in Hong Kong)	All: consider the development of a protocol to standardise methodologies (such as those used in blood sampling)	All: information gathering, exchange and regular communication	Short (2010-2015)	Moderate
Training in the rescue of BFS	Training on how to handle sick/injured birds and provide follow-up care	All range states, research institutes and animal rescue centres (such as KFBC in Hong Kong and rescue centres in Taiwan which have experience in dealing with botulism outbreaks)	All: consider the organisation of a training course on bird rescue for important wintering sites		Short (2010-2015)	High
	Drafting of a manual on bird rescue methods	As above	All: organise a workshop to draft the manual	All: provide funding to translate the manual into national languages, and for publication and distribution	Short (2010-2015)	High

4.1.6 Strengthen international network and coordination

The existing network should be expanded and strengthened. The experience of implementing the last action plan (Severinghaus *et al.* 1995) showed that the network can take the lead in implementation of the proposed actions.

Programme	Activity	Responsible organisation	Implementation progress	Further specific actions to undertake	Time-scale	Priority
Establishment of an international network and coordination system	International coordinator nominated and funds secured	All range countries and relevant organisations	At the workshop in Hong Kong in January 2006 it was agreed in principle that an international coordinator should be based at HKBWS. The details remain to be discussed, and financial and other support is still needed	Clearly define the role of the coordinator and the supporting system (the Flyway partnership Working Group will be an option. See below)	Short (2010-2015)	High
	Strengthen the existing international network, and consolidate the network at key sites and organisations	JBFSN, BLA and partners, Korea University, KFEM	Local networks and organisations: improving communication at local and national level WBSJ, CWBF, HKBWS, BL in Indochina, KFEM, Korea University, etc: coordinate international and local activities BLA: currently supports international communication. When the international coordinator is confirmed, support the work of the coordinator.	One coordinator in each country/territory Improve communication and establish a coordination system with organisations in Russia, Mainland China and North Korea Should also establish contacts in Cambodia, Thailand and the Philippines	Short (2010-2015)	High
	Regular international meetings	All range countries and relevant organisations	All: fundraising and organisation of meetings	Meetings should have clear objectives and targets to be achieved. Avoid duplication of meetings	Ongoing	Moderate
	Coordinator and working group identified.	All governments and NGOs	An international meeting should be held to discuss the formation of the network. The network should take an active role in the Flyway Partnership in eastern Asia	Consider how Taiwan BFS conservationists and groups could contribute to the network	Long (2010-2020)	High

Programme	Activity	Responsible organisation	Implementation progress	Further specific actions to undertake	Time-scale	Priority
Establish an international BFS website	Focus on information sharing, site management and conservation issues	Research and conservation NGOs in all range countries and territories	All: discuss and decide where to host the website and how to coordinate information exchange Provide information and website management. Obtain financial support locally for national and local websites	Establish the international website in the national languages of BFS range states and nominate national web managers Ensure efficient information exchange between countries. Announcements and the results of the BFS census and conservation activities to be posted on website	Imminent and ongoing	High
Establish international mailing list	Information to be distributed will focus on migration, reporting of banded birds, census results and urgent issues such as disease alerts	Relevant government agencies in all range countries and territories Research institutions and NGOs	All: nomination of an international coordinator to disseminate important messages (could be the international coordinator mentioned above or a different person or organisation). The information sent should be translated and sent to recipients in each country/territory		Imminent and ongoing	High
Participation in the Eastern Asia Australasian Flyway (EAAF) Partnership network	Participate in the EAAF Partnership and develop a BFS species working group to promote activities and projects under this Partnership	MEN Russia, SFA, MOEK, MOEJ, MONRE, BLA and partners	Government agencies: support the establishment of a BFS Working Group in the Flyway Partnership BLA and partners: assist in the establishment of the Working Group and assist in cooperation with local conservation NGOs at important BFS sites	Working group established for BFS. The existing network should play an important role in the working group and provide technical advice	Short (2010-2015)	High

Programme	Activity	Responsible organisation	Implementation progress	Further specific actions to undertake	Time-scale	Priority
Establish site-to-site relationships	Develop and strengthen relationships between different BFS sites	Government agencies, site management bodies, international and local NGOs	Twining of important sites to promote exchange of management experience		Ongoing	Moderate
Joint census of BFS	Annual winter census	HKBWS, all national networks etc	HKBWS: coordination of census and reporting, fundraising Others: participation in census	Meetings to review census methods and data to be held once every few years	Ongoing	High
	Annual breeding census	Russia, North Korea, South Korea, NBBC	All: identification of an international coordinator. Exchange of information		Long (2010-2020)	High
Regular meetings of site managers and specialists	Meetings to update risk assessments and management recommendations	All governments and organisations	Regular international meetings with different focus and targets. Invite new members to join the conservation network		Long (2010-2020)	Moderate
Coordination of reports on colour-banded birds	Coordination of re-sighting reports	All national and local bird banding schemes, research institutions and conservation NGOs	National banding schemes: compilation of records Research institutions and NGOs: dissemination of information	All: Consider the role of a regional coordination centre in the dissemination of colour-banding information (at present HKBWS and WBSJ are playing this role)	Imminent and ongoing	High

4.1.7 Strengthen local coordination

As the greatest threat to the Black-faced Spoonbill is habitat degradation and disturbance, cooperation must be sought with local communities at key sites. Tainan has provided an excellent example of

how local communities can be engaged in conservation, and the experiment at the Red River Delta in Vietnam will provide a very good reference regarding community work in other countries.

Programme	Activity	Responsible organisation	Implementation progress	Further specific actions to undertake	Time-scale	Priority
Establish BFS task force in each range state and region	Organizing national or local meetings to discuss the formation of local task forces	All range countries and relevant organisations	All: meetings to discuss the members and roles of the task forces. Task forces should have representation from government economic policy and planning agencies	All: link the task forces to form an important part of the national network that supports the international network proposed in 6	Imminent and ongoing	High
Form Local Conservation Groups at key sites for BFS	Using the experience of the Red River Delta Local Conservation Group (and probably Tainan) to form similar local groups at some important sites	Site managers BLA, conservation NGOs in range states	BLA: organizing meeting to introduce the concept and experience of Local Conservation Groups Other organisations: consider formation of Local Conservation Groups at some of the most important sites for BFS	All: develop plans and activities for the Local Conservation Groups. Exchange of experience and information. Assist Local Conservation Groups to produce annual reports	Long (2010-2020)	High
Involvement of local people in discussions on site management	Organise regular meetings with local communities at important sites to explain the conservation management measures or provide education activities	Local government, conservation NGOs in range states and territories.	All: organizing meetings and activities. This is best done by the Local Conservation Group if one has been established at the site		Long (2010-2020)	Moderate

4.1.8 Establishment of database

Databases or libraries on the Black-faced Spoonbill and the key sites for its conservation should be established and shared amongst all countries.

Programme	Activity	Responsible organisation	Implementation progress	Further specific actions to undertake	Time-scale	Priority
Establish one or more BFS databases or libraries	Identify the information that should be collected, including biometric data, DNA, parasite samples, etc. Ensure that standardised data are collected when a bird is examined in the hand	Research institutes or conservation NGOs		Establishment of database and dissemination of information	Ongoing	Moderate

4.1.9 Capacity building

It is important to empowering researchers, site managers and all stakeholders by providing training in techniques related to the conservation of the Black-faced Spoonbill and management of important sites.

Programme	Activity	Responsible organisation	Implementation progress	Further specific actions to undertake	Time-scale	Priority
Compile technical manuals	Compile a technical manual on habitat creation and management, available in all languages in the flyway	Research institutions and conservation NGOs	All: identify funds for the compilation of manual. Nomination of editorial team to draft and translate the manual	All: distribution of the manual and organisation of training courses for management staff at important sites	Short (2010-2015)	High

Programme	Activity	Responsible organisation	Implementation progress	Further specific actions to undertake	Time-scale	Priority
Compile technical manuals	Compile a manual on best practice for ecotourism in different languages	Research institutions and conservation NGOs	All: identify funds for the compilation of manual. Nomination of editorial team to draft and translate the manual BLA: provide information about the ecotourism charter compiled by BLA partners	All: distribution of the manual and organisation of training courses for management staff and agencies involved in ecotourism at important sites	Short (2010-2015)	High
Training courses	Training courses in site management offered to management staff at important sites	Government agencies, international and national conservation NGOs	Government agencies: provision of financial and legal support Conservation NGOs: facilitation of training courses	All: monitor the effectiveness of the training course	Long (2010-2020)	High
	Training courses in education offered to management staff at important sites	Government agencies, international and national conservation NGOs	Government agencies: provision of financial and legal support Conservation NGOs: facilitation of training courses	All: monitor the effectiveness of the training course	Long (2010-2020)	High
	Training courses in site monitoring and basic research offered to management staff at important sites	Government agencies, international and national conservation NGOs.	Government agencies: provision of financial and legal support Conservation NGOs: facilitation of training courses.	All: Monitor the effectiveness of the training course	Long (2010-2020)	High

4.2 Regional/National objectives

Russia

Programme	Activity	Responsible organisation	Implementation progress	Further specific actions to undertake	Time scale	Priority
Protection of the breeding site	Enforce strict protection at the recently discovered breeding site	Government agencies, research institutions, international and national conservation NGOs	Government agencies: establish warden post and regular patrolling at the site, especially during the breeding season to prevent poaching and disturbance	International and national NGOs: fundraising and assisting management of the protected area. Researchers: provide scientific data for inclusion in the conservation plan for the site. National NGOs: strengthen international linkages and promote exchange of information and experience amongst range states.	Imminent and ongoing	Very high
Education programme in Russia	Promote a high sense of awareness in Russia (especially Primorsky Kray) about the importance of BFS	Government agencies, international and national conservation NGOs	Government agencies: give legal and financial support to the initiative NGOs: produce education materials and media coverage about BFS conservation	Conservation NGOs: develop a long-term education programme for BFS of Russia	Long (2010-2020)	High
Develop an international cooperation project	Exchange management experience and scientific data with Japan, North Korea, South Korea and China	Government agencies, research institutions, international and national conservation NGOs	Government agencies: formalise cooperation agreements NGOs: assist in the coordination of Flyway issues Research institutions: conduct joint projects with counterparts in China, North Korea, South Korea and Japan	All: develop joint projects for the conservation of the breeding site in Russia	Long (2010-2020)	High

Programme	Activity	Responsible organisation	Implementation progress	Further specific actions to undertake	Time scale	Priority
Study and monitoring of the Russian breeding population	Study the biological needs of the breeding birds in Russia	Government agencies, research institutions, international and national conservation NGOs	Cooperate with countries that have experience in the study of breeding BFS (most importantly South Korea, also China and North Korea) to design a study programme. The study programme should be funded by the government or international conservation NGOs	The results of the study should be applied to the management of the protected area	Short (2010-2015)	High
	Monitoring of the breeding population	Government agencies, research institutions, international and national conservation NGOs	Regularly monitor the number of BFS and changes in critical environmental factors		Imminent and ongoing	High

China

Mainland China

Programme	Activity	Responsible organisation	Implementation progress	Further specific actions to undertake	Time-scale	Priority
Species and site protection	The national conservation status of the Black-faced Spoonbill should be raised to the First Category	SFA	List BFS in the First Category when the national protection list is next revised		Short (2010-2015)	High
	Strengthen protection of the breeding grounds	SFA and Forest Department of Liaoning	Existing breeding sites should be strictly protected. Poaching, egg-collecting and disturbance of breeding birds should be strictly forbidden		Short (2010-2015)	High

Programme	Activity	Responsible organisation	Implementation progress	Further specific actions to undertake	Time-scale	Priority
Species and site protection	Establish a protected area on the Zhanghe coast which is used for feeding and roosting by the breeding population	SFA and Forest Department of Liaoning	Conduct survey to investigate the area that needs to be included inside the protected area. Discuss with local stakeholders and pass the legislation	Work with local stakeholders on the drafting of a management plan and define the role of each party involved in the management and conservation activities at the site	Short (2010-2015)	High
	Establishment of a conservation station at the Min Jiang Estuary, Fujian	Forest Department of Fujian Province (FJFD), FJBWS	Application for the establishment of conservation station, fundraising, construction, enrolment of volunteers	Fundraising to sustain the conservation station.	Short (2010-2015)	High
	Upgrade the protected areas at Houshui Wan, Hainan and Gongping Dahu, Guangdong to national nature reserves	SFA and Forest Departments in Guangdong and Hainan	Define the boundaries of the protected areas and discuss with local stakeholders the upgrading of the nature reserves to national level		Short (2010-2015)	High
	Produce a manual on site management at important BFS sites	SFA, international and national conservation NGOs	Translation and editing of the international manual (see under 9. Capacity building)	Government and conservation NGOs: hold training course for site managers	Short (2010-2015)	High
Education and promotion	Produce printed material to promote BFS conservation and raise public awareness of the species, particularly to help locate unknown sites of BFS	Relevant government agencies, research institutions and NGOs	Produce posters, postcards, leaflets, education packs, etc. on BFS, mainly targeted at schools		Short (2010-2015)	High
	Translate relevant material on BFS into Chinese	Relevant government agencies, research institutions and NGOs			Long (2010-2020)	Moderate
	Organizing events to promote BFS and its key sites	Local Forestry Departments and local NGOs	Organise exhibitions and seminars on BFS at appropriate time of the year (depending on whether BFS is breeding, migrating or wintering)	Local government and NGOs: could organise regional or national meetings and open symposia on the conservation of BFS to be held in conjunction with the exhibition	Short (2010-2015)	Moderate

Programme	Activity	Responsible organisation	Implementation progress	Further specific actions to undertake	Time-scale	Priority
Education and promotion	Organizing promotion activities on BFS at the Min Jiang Estuary	Forestry Department in Fujian, FJBWS, other conservation organisations	Conservation organisations: provide funding and technical assistance Forestry Department in Fujian, FJBWS: coordinating the activity, assisting participants. Encourage land-use practices that are compatible with BFS conservation	All: invite all local stakeholders to participate in land-use planning at the Min Jiang Estuary	Short (2010-2015)	High
Detailed survey of Black-faced Spoonbills	Organizing researchers and birdwatchers to survey potential migratory stop-over and wintering sites (especially estuarine wetlands) to identify important sites to BFS	Relevant government agencies, research institutions and NGOs	Government agencies: financing and provision of legal support International conservation NGOs: financing and international coordination Research institutions: coordination of surveys Local forestry bureaus, NBBC: training courses for participants, site survey, and data analysis FJBWS, XMBWS: supporting the above activities in Fujian Province ZJBWS : supporting the above activities in Zhejiang Province	All: discussion about publishing reports on the status of BFS in China, fund-raising for follow-up conservation activities SFA: consider the designation of important sites as protected areas Birdwatching societies, local forestry bureaus: monitoring of important sites	Short (2010-2015)	High
	Surveys to locate the main BFS staging sites when positive information has been received. The most likely staging sites are in northern Jiangsu Province and North-east China	Relevant government agencies, research institutions and NGOs	Government agencies: financing and provision of legal support International conservation NGOs: financing and international coordination NBBC, COS, HKBWS: coordination of surveys Birdwatching societies, local forestry bureaus and NBBC: training courses for participants, site survey, and data analysis	All: discussion about publishing reports on the status of BFS in China, fundraising for follow-up conservation activities Government agencies: consider the designation of important sites as protected areas Local forestry departments, conservation NGOs: monitoring of important sites	Short (2010-2015)	Hign

Programme	Activity	Responsible organisation	Implementation progress	Further specific actions to undertake	Time-scale	Priority
Research on the BFS	Investigate the basic biology and feeding ecology of BFS at the breeding grounds in China	Relevant government agencies, research institutions	Government agencies China: funding and legal support Research institutions (such as NBBC): facilitating the study with local forestry bureaus and academic institutions	Research institutions: recommendation about the site management measures required to provide optimal feeding habitat for BFS International NGOs: coordination, discussion and dissemination of the results	Short (2010-2015)	High
	Satellite tracking of BFSs at the breeding grounds in China to discover autumn migration routes	SFA, NBBC, YIO, WBSJ, KIER, BLA	SFA: approval and legal support NBBC : facilitating the programme YIO, WBSJ, KIER: technical support BLA and partners: information management and dissemination	NBBC, BLA and partners: establish communication with people at newly identified wintering sites. Proposals to national governments to designate protected areas	Long (2010-2020)	Moderate
	Investigate the basic biology and feeding ecology of BFS at the wintering grounds in Mainland China	Relevant government agencies, research institutions	Government agencies in China: funding and legal support Research institutions (such as NBBC): facilitating the study with local forestry bureaus and academic institutions	Research institutions: recommendation about the site management measures required to provide optimal feeding habitat for BFS International NGOs: coordination, discussion and dissemination of the results	Short (2010-2015)	High
Monitoring of sites	Monitor environmental changes at BFS sites in Fujian (and other important sites in China)	Fujian Bird Watching Society (FJBWS) Fujian Wildlife Monitoring Center (FJWMC), Fujian Forestry Survey and Planning Institute (FJFSPI)	Fundraising, contact relevant research organisations, site survey	Report results of the monitoring, symposium on the results of the monitoring, continue raising funds for the study, analysis of the impact of major pollutants on BFSs	Long (2010-2020)	High

Programme	Activity	Responsible organisation	Implementation progress	Further specific actions to undertake	Time-scale	Priority
Monitoring of sites	Maintain vigilance regarding significant environmental changes at BFS sites in Fujian, particularly the Min Jiang estuary	FJBWS, relevant media in Fujian Province	FJBWS: formation of a special working group on BFSs, reporting news on BFS and its habitats using electronic newsletters	Continue to collect information on environmental changes	Long (2010-2020)	Moderate
	Monitoring programme at BFS sites	Forestry Department of Fujian Province (FJFD), FJBWS	Collecting samples and laboratory analysis	Report on how changes in the aquatic environment would affect the survival of BFSs	Long (2010-2020)	High
Involving local communities in BFS conservation	Introducing the concept of IBA Local Conservation Groups to sites in China	BLA, HKBWS	BLA: organise workshops and provide the example of the IBA Local Conservation Groups in Vietnam HKBWS: facilitating workshops in China	Follow up with all levels of government and other organisations to develop a plan to involve local communities in BFS conservation	Short (2010-2015)	High
	Encourage the continuation of traditional uses of wetlands at coastal south-east China	Relevant government agencies, research institutions and conservation NGOs	Government: support the initiative Research institutions and conservation NGOs: study the feasibility of maintaining traditional uses of wetland habitats and resources, including in areas designated as cultural protected areas for education and ecotourism purposes		Long (2010-2020)	High
	Establishing a good cooperative relationship between local governments and birdwatching societies	Local birdwatching societies, especially in Jiangsu, Shanghai, Zhejiang, Fujian, Guangdong, Guangxi and Hainan	Provide relevant information and materials, exchange information, organizing site study tours	Invite relevant government departments to protect Black-faced Spoonbills	Short (2010-2015)	High
	Organizing regular surveys of Black-faced Spoonbills, establish guidelines for volunteers, arrange meetings to exchange information and ideas	Local birdwatching societies, especially in Jiangsu, Shanghai, Zhejiang, Fujian, Guangdong, Guangxi and Hainan	Fundraising, training of volunteers, formalise guidelines for conservation volunteers	Formation of a volunteer club for the conservation of BFS	Ongoing	High

Programme	Activity	Responsible organisation	Implementation progress	Further specific actions to undertake	Time-scale	Priority
Capacity building	Training course provided to nature reserve officers and relevant conservation organisations	SFA, international NGOs	Training in managing education programmes, including interpretation at sites, monitoring and site management		Ongoing	High
	Training of voluntary rangers at BFS sites at the Min Jiang Estuary	Fujian Forestry Department, Fujian Bird Watching Society	Fundraising, enrolment of volunteers, training of voluntary rangers	Coordination and information exchange with voluntary rangers	Short (2010-2015)	Moderate
Exchange of information	Organizing international activities during the migratory season of BFSs	FJBWS, Fujian Wildlife Monitoring Center, Fujian Institute on Forestry Survey and Planning, forestry bureaus at important sites	Fundraising, organizing activities, reporting results	Establishment of the platform for a global monitoring network	Long (2010-2020)	High
	Publication of a reference book to summarise experiences in monitoring BFSs	FJBWS	Fundraising, compilation and publication of reference book	Promote the conservation of BFSs	Long (2010-2020)	Moderate
Regional cooperation in China	Development of closer links between research and conservation organisations in Mainland China and their counterparts in Taiwan, Hong Kong and Macao	Relevant government agencies and research institutions			Long (2010-2020)	High
	Cooperation between Hong Kong and Shenzhen to control illegal fishing in Deep Bay/Shenzhen Wan tidal flat	Relevant government agencies (especially in Guangdong province and Shenzhen Special Economic Zone)			Ongoing	High
	Cooperation and coordination between Macao and Zhuhai to maintain important sites for wintering BFS	Relevant government agencies (especially in Guangdong Province and Zhuhai City)			Imminent and ongoing	High

Taiwan (China)

Programme	Activity	Responsible organisation	Implementation progress	Further specific actions to undertake	Time-scale	Priority
Management of BFS protected areas	Establish executive committee at each protected area	Government agencies at different levels, local conservation groups	Government agencies: provide funding and coordination Local conservation groups: provide local assistance, training of volunteers to provide the required manpower		Short (2010-2015)	High
	Establish ranger systems at protected areas (paid staff, part-time, or volunteer-based Local Conservation Group)	Local government agencies, International and local NGOs	Government agencies: evaluate the most appropriate system for each site and provide authorization for civil society organisations. International NGOs: provide training Local NGOs: provide local assistance		Short (2010-2015)	High
	Monitoring the quality of BFS habitat	Local government agencies	Local government: Routinely monitor changes in habitats		Ongoing	Moderate
Emergency warning and response mechanism	Establish an emergency warning and response system	Government agencies at different levels, Local conservation groups	Government agencies: Provide funding and coordination Local Conservation Groups: Provide local assistance, training of volunteers to provide the required manpower		Long (2010-2020)	High
Training programme	Organise training programmes for local volunteers	Government agencies at different levels, international and local conservation groups	Government agencies: evaluate the most appropriate system for each site and provide authorization for civil society organisations International NGOs: provide training Local NGOs: provide local assistance		Long (2010-2020)	High

Hong Kong (China)

Programme	Activity	Responsible organisation	Implementation progress	Further specific actions to undertake	Time-scale	Priority
Study of BFS's feeding behaviour	Investigate the basic biology and feeding ecology of BFS in Hong Kong	AFCD, universities, and local conservation NGOs (such as WWFHK)	AFCD: identify funding sources WWF, Universities: facilitate the study	Universities: develop the programme for a PhD study	Short (2010-2015)	Moderate
Fish-pond management	Purchase and manage fish-ponds or promote the use of environmentally friendly management methods which provide additional feeding grounds for BFS					

Macao (China)

Programme	Activity	Responsible organisation	Implementation progress	Further specific actions to undertake	Time-scale	Priority
Study BFS in Macao	Study the habitat requirements of the wintering population in Macao	Macao Government and NGOs	Design a study programme with the assistance of BFS experts from Mainland China, Taiwan or Hong Kong		Short (2010-2015)	High
	Study food sources and availability to the wintering population in Macao	Macao Government and NGOs	Design a study programme with the assistance of BFS experts from Mainland China, Taiwan or Hong Kong	The abundance of the known food species should be regularly monitored	Short (2010-2015)	High
	Develop a programme to monitor BFS numbers and water quality at the wintering site	Macao Government and NGOs	Design a study programme with the assistance of BFS experts from Mainland China, Taiwan or Hong Kong		Long (2010-2020)	High
Protection of the wintering site in Macao	Designate as protected areas	Macao Government	Designation of protected areas based on scientific data The two protected areas designated by the Macao Government do not have a clear legal status as they are not gazetted. Their status should be publicly announced and gazetted, with relevant rules and regulations regarding their ownership and management. Access to these areas should be restricted in winter when BFS is present	Seek clarification of the boundary between Macao and Zhuhai along the channel which borders one of the protected areas Clarify the land use plans (existing and potential) for the land lots adjacent to the protected areas	Short (2010-2015)	High

Programme	Activity	Responsible organisation	Implementation progress	Further specific actions to undertake	Time-scale	Priority
Protection of the wintering site in Macao	Environmental Impact Assessment at the sites important to BFS in Macao	Macao Government, international and local conservation NGOs	Macao should draft an EIA law. The BFS sites should be the first to have a thorough EIA study as they support 5% of the global population of this threatened species	The results of the EIA should be made accessible to the general public	Short (2010-2015)	High
	Draft a management plan for the protected areas	Macao Government, international and local conservation NGOs	Government: provide legal and financial support International and local NGOs: provide technical support in drafting the management plan	A management plan (covering a short period of one or two years) should be drafted as soon as possible based on the available information, covering urgent management issues that government agencies or other organisations need to implement. Guidelines for the evaluation of implementation should also be included in this management plan. A consultation committee should be established to draft a longer-term management plan, including people and organisations with good knowledge of the species and experience in site management (e.g. at sites in Hong Kong and/or Shenzhen). Regarding habitat management, it is essential that sufficient open shallow water areas are maintained to provide feeding and loafing ('roosting') habitat. Excessive growth of mangroves in the protected areas should be removed.	Short (2010-2015)	High

Programme	Activity	Responsible organisation	Implementation progress	Further specific actions to undertake	Time-scale	Priority
Protection of the wintering site in Macao	Education programme to promote awareness of BFS in Macao	Macao Government and local NGOs	Government and NGOs: organizing education and promotion activities	Study experiences in promoting awareness on BFS in nearby areas such as Hong Kong, Shenzhen and Taiwan Develop an environmental education package using BFS as a flagship for coastal habitats in Macao	Long (2010-2020)	High
	Study the possibility of listing the BFS site in Macao as a Ramsar Site	SFA, Macao Government and local NGOs	Government: work with Ramsar Administrative Authority in China to designate the site as a Ramsar Site NGOs: support the promotion of and education regarding the Ramsar Convention in Macao		Short (2010-2015)	High
Cooperation between Macao and Zhuhai	Prevent disturbance from water transportation	Macao and Zhuhai Governments	Government: seek cooperation with Zhuhai to prohibit the use of water-motorcycles in the channel during winter when BFS is present		Short (2010-2015)	High
	Joint studies of BFS	Macao and Zhuhai Governments, local NGOs	Joint study with Zhuhai to identify sites in Zhuhai which are regularly visited by BFS from Macao	The protection and management of the sites found in Zhuhai should be addressed	Long (2010-2020)	High

South Korea

Programme	Activity	Responsible organisation	Implementation progress	Further specific actions to undertake	Time-scale	Priority
Conservation of important sites	Conservation of Ganghwa tidal flats, an important roosting and feeding area for fledged young	Government agencies, research institutions, international and national conservation NGOs	Government agencies: legal and financial support to the initiative Research institutions: conduct studies and recommend a conservation area and land-use in the buffer zone NGOs: promotion of the project. Organise seminars and meetings with local communities	All: develop a conservation plan for the entire Ganghwa tidal flat, both for conservation and sustainable use	Short (2010-2015)	High
	Conservation of the wintering site at Jeju	Government agencies, research institutions, international and national conservation NGOs	Government agencies: legal and financial support to the initiative Research institutions: conduct studies and recommend a conservation area and land-use in the buffer zone NGOs: promotion of the project. Organise seminars and meetings with local communities	All: develop a conservation plan for the wintering grounds on Jeju, both for conservation and sustainable use	Long (2010-2020)	Moderate
Research	Study BFS's feeding behaviour: investigate the basic biology and feeding ecology of the BFS in South Korea	MOE Korea, KNIER	MOE Korea: funding and legal support KNIER: facilitating the study	KNIER: recommendations on site management measures to provide optimal feeding habitat for BFS	Short (2010-2015)	High
	Continue colour banding of BFS	MOE Korea, KNIER			Ongoing	Moderate
Networking in South Korea	Formation of a national network	Government agencies, research institutions, national conservation NGOs	Discussion on how to coordinate a national network in Korea	Discussion on how to link this national network to regional initiatives such as the EAAF Partnership	Short (2010-2015)	High
	Annual symposium at breeding or wintering sites	Government agencies, research institutions, national conservation NGOs			Ongoing	Moderate

Programme	Activity	Responsible organisation	Implementation progress	Further specific actions to undertake	Time-scale	Priority
Information and education	Develop a BFS website	Government agencies, research institutions, national conservation NGOs	Discussion on national coordination	Discussion on how to link with other international BFS websites	Short (2010-2015)	High
	Publish a BFS newsletter	Government agencies, research institutions, national conservation NGOs	Discussion on which organisation will take the lead in the compilation of the newsletter.		Short (2010-2015)	High
	Develop BFS education material	Government agencies, national conservation NGOs	Government: support the initiative. NGOs: investigate the most important needs for education materials and the most important target audiences in South Korea		Short (2010-2015)	Moderate

Japan

Programme	Activity	Responsible organisation	Implementation progress	Further specific actions to undertake	Time-scale	Priority
Develop an alarm system	Establish a system in respond to urgent threats	JBFSN, WBSJ	JBFSN: identification of threats WBSJ: response to threats		Short (2010-2015)	High
Study BFS biology	Study the feeding behaviour of wintering BFS in Japan	JBFSN, research institutions, conservation NGOs	JBFSN: participate in data gathering and discussion on data interpretation Research institutions: design study methods and data analysis	All: dissemination of results and discussion on site management issues	Short (2010-2015)	High
Site management and conservation	Develop a wise-use plan for estuarine wetlands used by BFS in Japan, particularly at sites which may not be fully protected as nature reserves	MOEJ, research institutions, conservation NGOs	MOEJ: support and fund the initiative Research institutions and conservation organisations: study and report on the sites important to the conservation of BFS. Recommend land-use measures Conservation NGOs: organise international workshops to learn from other countries' management experiences	All: dissemination of results to all wintering sites of BFS in Japan. Encourage all sites to develop land-use plans for BFS habitats and consider designation of new nature reserves at some sites	Short (2010-2015)	Very high

Vietnam

Programme	Activity	Responsible organisation	Implementation progress	Further specific actions to undertake	Time-scale	Priority
Improve knowledge of the distribution and status of BFS	Additional surveys are required to affirm the distribution and status of BFS in Vietnam	BLA Indochina Programme	The surveys should focus in the Red River Delta, where this species is believed to still occur at a number of sites		Short (2010-2015)	High?
Capacity building	Capacity building for the management boards of Tien Hai Nature Reserve and Xuan Thuy National Park	Relevant government agencies, BLA Indochina Programme	Training course organised for these two nature reserves		Short (2010-2015)	High
Protection of important sites	Management at the Red River Delta: Integrate wetland conservation into aquaculture development in the Red River Delta	Relevant government agencies, research institutions, BLA Indochina Programme.	Discussion of the plan to expand the new model of "ecological ponds" for shrimp hatching as piloting in Tien Hai Nature Reserve; incorporate the conservation needs of BFS into pond contracts as in the current system in Thai Thuy District		Long (2010-2020)	High?
	Designate the remaining key sites for BFS as Ramsar Sites	Relevant government agencies, research institutions, BLA Indochina Programme			Long (2010-2020)	High
	Strengthen protected area management at sites regularly supporting significant numbers of BFS.	Relevant government agencies, research institutions, BLA Indochina Programme.			Long (2010-2020)	High
	Confer appropriate protected area status on key wetland sites in the Red River Delta.	Relevant government agencies, research institutions, BLA Indochina Programme			Long (2010-2020)	High
Local community network	Strengthen the existing Local Conservation Group (= Site Support Group)	BLA Indochina Programme	Strengthen the existing community-based groups and establish new ones to complete a network of community support at the key sites for BFS		Long (2010-2020)	High

Programme	Activity	Responsible organisation	Implementation progress	Further specific actions to undertake	Time-scale	Priority
Promotion and awareness	Raise the awareness of local stakeholders at the key sites for BFS	BLA Indochina Programme	Use different methods to raise awareness such as: social events, posters, leaflets, mass media, etc		Ongoing	
	Raise the awareness of key planners and decision makers at district, provincial and central levels on the importance of BFS	BLA Indochina Programme			Ongoing	

Others

Programme	Activity	Responsible organisation	Implementation progress	Further specific actions to undertake	Time-scale	Priority
Safeguard sites in other South-East Asian countries	Monitor the BFS population on the Batanes Islands (the Philippines)	Philippine Government, conservation NGOs in the Philippines	Government: support the initiative. Government agencies and NGOs: conduct annual survey of BFS in the Batanes Islands and look for other wintering populations elsewhere. The habitat use of BFS in the Batanes Islands should be studied to help develop management recommendations	Recommendations on site management as a result of the study and monitoring	Short (2010-2015)	Moderate
	Conservation and management plan for the Inner Gulf of Thailand	Thai Government, BCST	As part of the conservation programme of the Inner Gulf of Thailand		Short (2010-2015)	High
Species protection	BFS to be included in the national protected species list in Cambodia	Cambodian Government, BLA	Review the protected species list in Cambodia		Short (2010-2015)	High
Promotion material on BFS produced for the Philippines, Cambodia and Thailand	Posters and leaflets on BFS produced in national languages	Government agencies, BLA and partners in South-East Asia	All: identify what are the important target groups and what types of promotion material are required		Short (2010-2015)	Moderate

Appendices

Appendix I: Biology of Black-faced Spoonbill

Breeding biology

At the sites in South Korea, Black-faced Spoonbills have been observed to nest on the ground or on short bushes. In North Korea and China, Black-faced Spoonbills build their nests on steep cliffs. This difference in nesting behaviour in South Korea is probably because entry is strictly prohibited to the breeding sites in the Demilitarized Zone meaning that there is no disturbance to the nesting birds. Birds breeding in North Korea and China are probably forced to nest on the higher cliffs.

In South Korea, the nests are usually round and average 42.3 cm in diameter. Nesting material is usually made of *Chenopodium album* and *Artemisia capillaris*. The breeding period is from April to June and the incubation period from May to July. The usual clutch size is three eggs but clutches with four eggs have also been recorded. Breeding success was observed to be 55.2% during a study in 2004, with slightly more than half of the nestlings successfully raised and fledged.

Most of the birds return to the same breeding site but build new nests. Some birds are found to change their mate in different years. There is one record of hybridization with Eurasian Spoonbill *Platalea leucorodia*.

In China, a few pairs have been found nesting on islands off the coast of Liaoning Province. They have been observed to make a 3-4 hour trip from these islands to feed on the nearest tidal flat during the breeding season.

Post-breeding

Ganghwa Island in South Korea is the most important post-breeding staging ground of Black-faced Spoonbill.

Wintering biology

In Tainan they are usually found roosting in a large reclaimed lagoon during daytime and feeding in the nearby fish-ponds at night, but they feed during daytime if disturbance is low. In Hong Kong and Vietnam they roost in tidal ponds and feed on tidal flats or drained fish-ponds. In Japan they are usually found roosting in shallow tidal areas near reedbeds, but at Hakata Bay they roost in a reclaimed lagoon. They are opportunistic feeders and will take large fish, although their main diet seems to be smaller aquatic animals but not benthos. Wintering flocks are present from October to April but a few immature birds may stay in the wintering grounds during summer. However, the main over-summering sites for non-breeding immature birds have not yet been found.

Appendix II: Action Plan drafted in 1995 and its implementation

It has been more than 10 years since the publication of the 1995 Action Plan. The following is an attempt to evaluate the effectiveness of implementation of the 1995 Action Plan that was used for reference during the drafting of this new plan. For the sake of simplicity, ranks (A-D) are given to each recommended action as presented in the 1995 Action Plan with a short explanation:

A – Action proposed has been almost fully implemented (over 80%)

B – Action proposed has been adequately implemented (30-80%)

C – Action proposed has been started but a lot remains to be done (less than 30%)

D – No action has been taken since 1995

Recommendations from the 1995 Action Plan

1. Considered to be urgent:

1-A That the Black-faced Spoonbill and sites that it uses be protected

B / C

The greatest achievement is the protection of sites in Tainan. However, many important sites throughout its range are still not yet officially protected.

1-B That studies be conducted in range states to determine the following

- a) The availability of and threats to habitat used for breeding, migration and wintering. Known sites should be surveyed first, then potential sites second. Additional breeding sites on the Korean Peninsula should be located and protected.

B.

Thorough studies at breeding sites by Korean researchers in South Korea. Some study at breeding sites in North Korea and Liaoning Province, China. At the main wintering grounds, good studies on habitat use and feeding behaviour have been conducted in Tainan and Hong Kong. A thorough survey of the wintering grounds in Mainland China was conducted by the National Bird Banding Center of China which located major wintering grounds on Hainan.

- b) The size of the total world population of the species, including the sizes of sub-populations which use each site.

A.

An annual census has been coordinated by Hong Kong conservationists since the mid-1990s. It covers almost all known sites and is probably one of the best census projects for any bird species.

c) The migration routes of this species.

A.

Satellite tracking has revealed the major migratory routes of wintering birds in Taiwan, Hong Kong and Okinawa. Colour-banded birds from South Korea have provided useful re-sighting records of birds from the breeding ground in the DMZ (Demilitarized Zone of the Korean Peninsula).

1-C That country and local task forces be established through national and local bird clubs, research institutions and/or management agencies. Each local task force should set action priorities for its respective country and identify limiting factors to the conservation of this species.

B.

An informal network initiated by BirdLife International has been active since 1996. There are also local networks on Black-faced Spoonbills in South Korea, Japan, Taiwan and Hong Kong.

1-D That an international "Black-faced Spoonbill center" be established or a liaison officer be appointed immediately under an existing Asian organisation to support organisations and people in each of the range states working toward the conservation of this species by assuming responsibility for:

B.

The Black-faced Spoonbill centre and the liaison officer have not materialized but the above-cited informal network has taken on the responsibilities listed below.

a) disseminating information on the species to those involved in conservation of the species,

A.

Information dissemination has been very effective through various mailing lists and publications since 1996

b) facilitating communication among researchers and conservationists involved with the species,

B.

There have been many international and national workshops and meetings since 1996, particularly those held in South Korea, Japan and Taiwan, which have provided excellent opportunities for communication and coordination amongst researchers and conservationists.

- c) coordinating training of personnel working in range countries,
B.
Training courses in Black-faced Spoonbill survey techniques have been conducted in Mainland China by the Hong Kong Bird Watching Society and WWF Hong Kong, and in Japan by BirdLife International.
- d) locating funding for Black-faced Spoonbill conservation and related research,
B.
Project funds have been secured in South Korea, Japan, Taiwan and Hong Kong. Mainland China has funding for the coastal survey for wintering sites.
- e) conducting an exhaustive literature search,
A.
Extensive literature search done during the compilation of Threatened Birds of Asia: The BirdLife International Red Data Book.
- f) collecting all information on captive birds by contacting zoos and animal keepers,
A.
Most captive birds are kept at Tama Zoo, Japan. Wild Bird Society of Japan has good links to this zoo.
- g) tabulating all information on museum specimens,
A.
Extensive museum search done during the compilation of Threatened Birds of Asia: The BirdLife International Red Data Book.
- h) establishing a Black-faced Spoonbill newsletter and network.
B.
Neither has been formally published nor established to cover all the range but there has been very active communication among concerned people and organisations. Websites on Black-faced Spoonbills are hosted in South Korea, Taiwan and Hong Kong.
- i) coordinating a review on a regular basis (every one to two years) of this and future action plans, and revising and rewriting them to reflect the most current needs and knowledge/understanding of the species.
A.
BirdLife Partners in Asia, and the Korean Federation of Environmental Movement (KFEM) in South Korea organise regular meetings (almost annually since 1996) to review the conservation needs of Black-faced Spoonbill.
- 1-E That national and international campaigns be initiated to promote public education and awareness of the conservation needs of the species and its habitats. Promotional and

education material for the conservation of Black-faced Spoonbills (e.g. TV documentaries, booklets and flyers, posters, T-shirts, calendars, logos etc.) should be developed in national range-state languages. Conservation educational programmes targeted at children should be developed.

A.

Throughout the range countries the Black-faced Spoonbill has become one of the best-known birds for conservation.

- 1-F That there be an increase in communication and cooperation among those working on Black-faced Spoonbills, wading birds and wetlands. Furthermore, the International Crane Foundation, the Asian Wetland Bureau and other international waterbird or wetland-related NGO's operating in Asia should be contacted to remain alert for possible breeding and

wintering sites of Black-faced Spoonbills in Asia.

A.

There has been very good coordination of the activities from BirdLife Partners. International organisations active in eastern Asia are all well-informed on the status of the Black-faced Spoonbill.

- 1-G That funding sources, both in-country and international, be sought for research programmes, including the training of research and field personnel. International cooperation and coordination of training programmes should be encouraged.

B.

Funds have been raised for research projects in Japan, Mainland China, Taiwan, Hong Kong and South Korea

Summary: Most of the highest priority recommendations from the 1995 action plan have been satisfactorily implemented, except that some sites are still under threat (notably sites in Macao and the southern coast of Mainland China), and a formal conservation centre has not been established.

2. Considered to be of high priority:

2-A That international treaties and conventions reflect the Endangered status of the Black-faced Spoonbill with appropriate protection, e.g. the Black-faced Spoonbill be included in Appendix I of the Bonn Convention⁷;

A.

In 2002, BirdLife International assisted the Government of the Philippines to list the Black-faced Spoonbill in Appendix I of the CMS.

and, that international treaties among range states protect the Black-faced Spoonbill along its migratory flyways.

A.

There has been no formal international treaty on the Black-faced Spoonbill but it is listed as a species of high priority in the Asia-Pacific Migratory Waterbird Strategy (1996-2000 and 2001-2005)

2-B That joint research and training sessions be set up among scientists and field personnel working in the range states.

B.

There has been good international cooperation on Black-faced Spoonbill studies, such as joint research on satellite tracking between Japan and Taiwan, Japan and Hong Kong, a joint breeding ground study between Japan and South Korea, a joint wintering ground survey between Japan and Mainland China, a joint wintering census

between Taiwan and Vietnam, etc.

2-C That management plans for critical habitats should be developed by each range country, reflecting the situations faced by the Black-faced Spoonbill in that country.

C.

Management plans have been developed for some critical sites, but not all.

2-D That banding and radio telemetry programmes and satellite tracking schemes be established ONLY after appropriate protocols have been established and personnel have been properly trained, and that such programmes are coordinated internationally.

A.

Bird banding is well-coordinated in the region. Satellite tracking of wintering birds from Taiwan, Hong Kong and Okinawa has involved local government agencies, conservation organisations and banding schemes.

2-E That *in situ* conservation efforts described above be given priority for funding and manpower and *ex situ* conservation efforts NOT be considered at this stage.

7. Officially known as the Convention on the Conservation of Migratory Species of Wild Animals(CMS)

A.

Apparently no wild birds (except those requiring rehabilitation) have

been taken into captivity between 1995 and 2005.

Summary: Most of the high priority recommendations from the 1995 action plan have been successfully implemented, but the main weakness is again site conservation and management.

3. Considered to be of medium priority:

3-A That reports and workshops on the conservation and scientific research of Black-faced Spoonbills be included as parts of Asian conservation and ornithological meetings.

B.

Many international and national workshops were held between 1996 and 2005. Black-faced Spoonbill conservation issues have always been given high priority by BirdLife International, and the species has also been discussed at the International Ornithological Congress.

3-B That field data on this species be published in as timely a manner as possible to stimulate further studies and give feedback to all observers.

B.

Field data on migration and other studies are published regularly.

3-C That each national task force evaluate its own country's relevant legislation (e.g. environmental impact legislation, pollution control legislation and zoning and land use legislation) to determine if it adequately supports wetland conservation. Each country's task force should lobby for effective enforcement of existing laws which support wetland conservation.

C.

Not adequate as national task forces have yet to be established. There are networks on Black-faced Spoonbill in Japan, South Korea, Taiwan and Hong Kong but their role in lobbying government agencies needs to be strengthened.

Country-specific recommendations from the 1995 Action Plan that have achieved satisfactory progress from 1995 to 2005 are listed below:

- Research on breeding biology of Black-faced Spoonbill in North Korea.
- Research on breeding biology of Black-faced Spoonbills in South Korea.
- South Korea should become a party to the Ramsar Convention.
- Nature reserves should be established on the tidal mudflats on Kyushu Island, especially those of Hakata Bay and Ariake Bay, for the conservation of Black-faced Spoonbills in Japan.
- Surveys should be conducted for Black-faced Spoonbill breeding sites in Mainland China.
- Surveys should be conducted to determine migratory routes and possible stopover sites along the eastern and south-eastern coasts of Mainland China.
- Field surveys should be conducted to determine whether wintering flocks exist in potential areas on the coast of eastern and southern China.
- A nature reserve, including nearby foraging and roosting sites, should be established at the Tsengwen River estuary, Tainan, Taiwan.
- Quantitative research on the wintering needs of Black-faced Spoonbill should be conducted in Taiwan.
- The development of land adjacent to Inner Deep Bay and Mai Po marshes in Hong Kong should be made compatible with the conservation of the wetland system; fish ponds around the Inner Deep Bay area should be conserved as buffer zones and reclamation of these ponds should be prohibited.
- The Inner Deep Bay tidal mudflats should be incorporated into the Mai Po Marshes Nature Reserve and it should be listed as a Ramsar Site as soon as possible (Hong Kong).
- Fishery practices compatible with the conservation of Black-faced Spoonbills should be encouraged. Government programmes to compensate for losses to fisheries from conservation practices should be considered (Hong Kong)
- Detailed studies of the wintering ecology of Black-faced Spoonbills should be conducted in view of the rapid loss of fish-ponds in the vicinity of Mai Po (Hong Kong).
- Surveys should be conducted in northern Luzon, the Philippines, for possible wintering sites of Black-faced Spoonbills.

Conclusion:

The first International Species Action Plan for Black-faced Spoonbill was published in 1995. With support from almost all government agencies and conservation organisations throughout the range of the species, it has achieved great success. In fact it can be regarded as one of the most successful action plans for a threatened bird ever to be implemented in Asia. However, over the past 10 years new threats have arisen, including the over-concentration of the wintering population leading to an elevated risk from disease and poisoning. The lack of protection and good management of many important sites probably remains the main challenge for the conservation of Black-faced Spoonbill in the next 10 years.

Appendix III: Overview of key sites

Definition of key sites:

1. Known breeding grounds
2. Migration or wintering grounds which regularly hold (or are reported to hold) more than 15 birds (very approximately 1% of the global population).

Russian Federation:

Breeding ground undisclosed until better protection is ensured at the site. There is a real threat of disturbance from cameramen and even poachers if the location of the site is released.

China

Mainland:

Liaoning Province: Xinrentuo

Location: 39°31'N 123°02'E, Zhuanghe City, Liaoning Province.

Area: 100 ha.

Simple description of the site: A rocky island with some grass and bushes. Black-faced Spoonbills nest on the highest point of the cliff.

Wetland type: Coastal Island.

Land ownership and land use: State owned. An uninhabited island.

Contact details of management authority/authorities: Forest Department of Liaoning Province.

Threats: Egg collection from fishermen.

Conservation measures taken: In 2003, a restricted zone of water within 30 meters from the Island of Xingrentuo was declared by the Government of Zhuanghe City, Liaoning. A warden post at about 800 meters from the island was established with two 24-hour guards to prevent illegal landing on the island. The municipal protected area Shichengxiang Nature Reserve (13,950 ha including Xingrentuo and adjacent waters) was established by Dalian City in 2005.

Contact details of local researcher/conservation organisations: Dandong Birdwatching Society, Zhou Haixiang (Shenyang Ligong University).

Shandong Province: Yellow River Delta (Huanghe Sanjiaozhou) Nature Reserve

Location: 37°35'-38°12'N 118°33'-119°20'E, Dongying City of Shandong Province.

Area: 153,000ha.

Simple description of the site: The nature reserve is located at the estuary of the Yellow River (into the Gulf of Bohai). It is an alluvial coastal wetland consists of two parts: one along the main channel of the Yellow River and a smaller branch the flows and empties into the Gulf of Bohai northward. Most of the reserve is covered with reeds and small ponds. The nature reserve sits on the third biggest oil field in China.

Wetland type: Estuarine tidal flat.

Land ownership and land use: State owned.

Contact details of management authority/authorities: Administration Bureau, Shandong Huanghe Sanjiaozhou Nature Reserve. Number 64 Caozhou Road, Dong Cheng, Dongyong City, Shandong Province, China.

Tel: +86-546-8306700. Fax: +86-546-8339581.

Threats: Wetlands at the Yellow River Delta are vulnerable to changes in the amount of water from the river. In recent years reduced water inflow has resulted in changes in the wetland pattern at the delta. Suitable habitat is also fragmented. There is some disturbance from fishermen and shellfish collectors. Oil pollution is a potential threat to the whole estuarine ecosystem.

Conservation measures taken: Nature Reserve established in 1990.

Contact details of local researcher/conservation organisations: Dongying Birdwatching Society.

Tel: 86-546-8306700.

Jiangsu Province: Yancheng Nature Reserve

Location: 33°35'N 120°30'E, Counties of Dafeng, Binhai, Dongtai and Sheyang, Jiangsu Province.

Area: 453,300 ha.

Simple description of the site: A coastal wetland complex of

the Yellow Sea: Permanent, fresh to brackish ponds and marshes, reedbeds, salt marshes and wide inter-tidal mudflat. The nature reserve is a long (about 300km) and narrow strip of land along the coast, with farmland in the inland side and tidal flat in seaside.

Wetland type: Estuarine tidal flat, artificial ponds.

Land ownership and land use: State owned. Agriculture and aquaculture are main use of land at the buffer zone of the nature reserve.

Contact details of management authority/authorities: Administration Office, Yancheng National Nature Reserve, Xinyanggang, Sheyang County, Yancheng City, Jiangsu Province, China 224333. Tel: +86-515-2640806

Threats: Encroachment of wetland for aquaculture. Poisoning of waterbird has been regularly reported.

Conservation measures taken: Nature Reserve established in 1983.

Contact details of local researcher/conservation organisations: Jiangsu Wild Bird Society.

Shanghai City: Chongming Dongtan (East Coast)

Location: 121°50"-122°05'E 31°25'-31°38'N. Chongming County, Shanghai City.

Area: 24,155 ha.

Simple description of the site: Coastal wetland at the estuary of the Yangtze, with wide tidal flat and coastal salt marsh and reedbed. Wetland still growing eastwards as sediments brought down from the Yangtze, but more landward part of site is being converted into farmland or fish ponds.

Wetland type: Estuarine tidal flat, artificial ponds.

Land ownership and land use: State owned. Shellfish collection on the tidal flat by local communities. Agricultural land at landward side of the reserve. Until recently wetland is still being encroached into farmland.

Contact details of management authority: Chongming Nature Reserve, Dongwang Dadao, Chongming, Shanghai, China 202183. Tel: +86-21-59472291.

Fax: +86-21-59472291

Threats: Urban development and increasing tourist disturbance. A tunnel connecting Shanghai will be finished by 20xx. It is expected to bring more leisure seekers from Shanghai to eastern Chongming.

Conservation measures taken: Nature Reserve established in 1998, with good research and training facilities.

Contact details of local researcher/conservation organisations: Dr. Ma Zhijun, School of Life Sciences, Fudan University Shanghai, China 200433. Shanghai Bird Watching Society, 37 Guhua Road, Nanqiao Town, Fengxian District, Shanghai, China 201400.

Fujian Province: Xinghua Bay

Location: 25°33'N 119°37'E, Between Fuqing City and Putian City of Fujian Province.

Area: One suggestion is about 1,400 ha, but difficult to estimate.

Simple description of the site: Several farms at the northern side of Xinghua Bay are main areas of Black-faced Spoonbill distribution, particularly Jiangjing Farm because it has some big aquaculture ponds (82 Black-faced Spoonbills were recorded at Jiangjing Farm on 8 December 2005). The area is rather open farmland area with sparse trees.

Wetland type: Estuarine tidal flat and artificial ponds.

Land ownership and land use: Tidal flat is state owned. The farms belong to the local community. The main economic activities are farming and fish farming.

Contact details of management authority/authorities: Forest departments of Fuqing City and Putian City, Fujian Province.

Threats: Human activities and disturbance. Encroachment of tidal flat. Human disturbance. Drainage of fish ponds in winter reduces food supply to Black-faced spoonbills.

Conservation measures taken: Not protected.

Contact details of local researcher/conservation organisations: Fujian Wildlife and Wetland Monitoring Center., Fujian Bird Watching Society, Xiamen Bird Watching Society.

Fujian Province: Funing Bay (between Hougang Village and Gulingxia Village)

Location: 26°52'N 120°07'E, Xiapu County of Fujian Province.

Area: About 400 ha.

Simple description of the site: Hougang Wetlands at Xiapu County. A natural coastal wetland with wide tidal mudflats. Black-faced Spoonbills often seen foraging in shallow channels at low tides. Population rather stable (10-15 birds in winter).

Wetland type: Estuarine tidal flat.

Land ownership and land use: State owned. Local people have fishing activities on the tidal flat.

Contact details of management authority/authorities: Forest Department of Xiapu County.

Threats: Fish farming and economic development. Disturbance by fishing activities.

Conservation measures taken: A small protected area has been established by the Xiapu County in 1997.

Contact details of local researcher/conservation organisations: Fujian Wildlife and Wetland Monitoring Center., Fujian Bird Watching Society, Xiamen Bird Watching Society.

Fujian Province: Min Jiang Estuary

Location: 26°03'N 119°37'E, Changle City of Fujian Province.

Area: About 2.921 ha.

Simple description of the site: Black-faced Spoonbills are mostly found at a five sq km wetland (mudflat, sandbank, reeds) called Shanyutan. It is an important migratory stop-over to Black-faced Spoonbills. More than 300 birds were seen annually during migration. Few records of birds in winter or summer.

Wetland type: Estuarine tidal flat.

Land ownership and land use: Tidal flat is state owned.

Local people farming fish and ducks in the area.

Contact details of management authority/authorities: Forest Department of Changle City.

Threats: Main threats are fish farming and duck farming in the area. Disturbance from human activities and boat traffic.

Conservation measures taken: A county level nature reserve was established in 2003.

Contact details of local researcher/conservation organisations: Fujian Wildlife and Wetland Monitoring Center.. Fujian Bird Watching Society, Mailbox 01A-226 Fuzhou, Fujian Province, China 350001.

Fujian Province: Tsihu⁸ Lake, Jinmen⁹ Island (Under Taipei administration)

Location: 24 ° 27' N, 118 ° 24' E.

Area: 3780 ha.

Simple description of the site: Jinmen islets are situated east of coastal line of Fujian Province, China. Tsihu Lake was originally an outlet of Hsuangli Lake, which was dammed and became a lake. Currently it is the ecological protection area of Jinmen National Park and includes fish ponds, reservoirs, marshes, windbreak forests and farmlands. A maximum of 16 Black-faced Spoonbills recorded during migration season.

Wetland type: Artificial ponds.

Land ownership and land use: 90% Government owned, 10% private fish ponds.

Contact details of management authority/authorities: Jinmen National Park.

Threats: development pressure from business groups.

Conservation measures taken: Jinmen National Park was established in October 1995.

Contact details of local researcher/conservation organisations: Wild Bird Society of Jinmen.

Guangdong Province: Gongping Dahu

Location: The area covers three areas: Gongping (23°03'-23°07'N 115°23' – 115°29'E), Dongguan Lian'anwei (22°53' – 22°50'N, 115°19' – 115° 12'E), Dahu (22°50' – 22°53N 115°30' – 115°37 E), Haifeng County of Guangdong Province.

Area: 11,590 ha (Gongping 4,703 ha, Dongguan Lian'anwei 4,501 ha, Dahu 2,386 ha)

Simple description of the site: The nature reserve consists of three parts: Dongguan Lian'anwei is fish ponds reclaimed from tidal flat, Dahu is estuarine wetland and Gongping a reservoir.

Wetland type: A rather diverse system with freshwater, brackish and saline habitat, both natural and artificial.

Land ownership and land use: State land but local community has the land use right in fish farming.

Contact details of management authority/authorities: Reserve Management Office of Guangdong Haifeng Gongping Dahu Provincial Nature Reserve, 2F Forestry Bureau, Yunlin Road, Haifeng County, Guangdong Province, China 516400.

Tel: +86-660-6891955 Fax: +86-660-6863550.

E-mail: zengxianwu@sohu.com or hflinye@163.com

Threats: Large areas of mangrove forest were reclaimed as fish ponds in the 1970s. The fish ponds have become regular feeding ground of Black-faced Spoonbills and conflicts between fish farmers and bird conservation are increasing. Some poaching of migratory waterbirds has also been reported.

Conservation measures taken: The site has been established as a provincial nature reserve with 10 reserve staff.

Contact details of local researcher/conservation organisations: Dr Hu Huijian, South China Institute for Endangered Animals, Xingang West Road, Guangzhou City, China.

Tel: +86-20-84191955

Guangdong Province: Futian

Location: 114°2'E 22°32'N, Shenzhen City (Special Economic Zone), Guangdong Province.

Area: 304 ha

Simple description of the site: The eastern part of the mangrove stand in Futian Nature Reserve is located at the mouth of the Shenzhen River, adjacent to Mai Po Nature Reserve, Hong Kong. The southern part of the nature reserve is an inter-tidal mudflat zone. Much of the area has

8. Also written as Cihu.

9. Also written as Kinmen or Quemoy.

been reclaimed for urban and industrial development. Every year a large number of migratory and wintering waterbirds utilize this wetland. Futian can be regarded as an important buffer area for Mai Po Nature Reserve, with birds using both Mai Po and Futian.

Wetland type: Brackish, permanent estuarine habitat with mangroves.

Land ownership and land use: State Owned (National Level Nature Reserve)

Contact details of management authority/authorities: Futian Nature Reserve Management Office.

Threats: Industrialization, urbanization and various kind of pollution are threatening the natural environment in Futian. Conservation measures taken: National Level Nature Reserve.

Contact details of local researcher/conservation organisations: Futian Nature Reserve Management Office, Shenzhen Bird Watching Society..

Hong Kong: Mai Po and Inner Deep Bay

Location: 22° 29' N, 114° 02' E, Hong Kong Special Administrative Region

Area: 1,540 ha (area of the Ramsar Site designated)

Simple description of the site: The site is located in the estuarine area of several small rivers, including Shenzhen River, San Pui River, downstream of canalised Kam Tin River, Yuen Long Creek and the eastern part of the Pearl River Estuary area. This site also comprises various, but mainly man-made, habitats such as inter-tidal mudflat, fishponds, gei wai (i.e. traditional shrimp ponds) and mangrove forest. Wetland type: Artificial ponds. Estuarine Tidal flat.

Land ownership and land use: Both Government and private land.

Land use: conservation, recreation, residential.

Contact details of management authority/authorities:

Agriculture, Fisheries and Conservation Department, Agriculture, Fisheries and Conservation Department, Government of Hong Kong Special Administrative Region, People's Republic of China; World Wide Fun For Hong Kong.

Threats: As described above, main threats are habitat loss and degradation

Conservation measures taken:

- Guidelines for the implementation of the wise use concept produced by the Ramsar Convention . A total of 1500 hectare of wetland, including the Mai Po Nature Reserve and a large portion of Inner Deep Bay mudflat, was declared as Mai Po Inner Deep Bay Ramsar Site in 1995.
- Wetland Conservation Area (WCA) and Wetland Buffer Area (WBA) proposed by Town Planning Board. A Wetland Conservation Area was

designated by the Planning Department to prevent uncontrolled development in fishponds around the Ramsar Site. A "no-net-loss of wetland" policy was adopted.

- Mai Po Nature Reserve (MPNR) is designated a restricted area under the Wild Animals Protection Ordinance (Cap. 170). The boundary of the Restricted Area under the Wild Animals Protection Ordinance was extended to cover mudflats of Inner Deep Bay in 1995.
- Frontier Closed Area (FCA): area is restricted from public access. Part of the area lies within the FCA and it provides further protection from development and disturbance.
- MPNR is managed by WWFHK for conservation and education purposes.
- A monitoring programme for the Ramsar Site is run by AFCED. A baseline ecological monitoring programme for the Mai Po Inner Deep Bay Ramsar Site is being undertaken by AFCED.
- A wetland compensation study was commissioned in 1996 to study and recommend practical means of mitigation, and identify specific areas where wetland could be restored, enhanced or created to compensate for the adverse impacts of development project on wetlands.

Contact details of local researcher/conservation organisations: Hong Kong Bird Watching Society; Ecosystem Ltd; Kadoorie Farm and Botanic Garden Corporation; Asia Ecological Consultants Ltd; World Wide Fund for Nature Hong Kong.

Macao: Taipa-Colone

Location: 22° 06' N, 113° 32' E, Macao Special Administrative Region.

Area: 80 ha.

Simple description of the site: A narrow strip of muddy inter-tidal area formed by sedimentation at a reclaimed area (road built to connect the islands of Taipa and Colone).

Wetland type: Estuarine tidal flat.

Land ownership and land use: Public land.

Contact details of management authority: Parque de Seac Pai Van, Instituto Para os Assuntos Cívicos e Municipais, Coloane, Macao. Tel: +853-870277. Fax: +532-870271

Threats: Under very severe development pressure. Degree of disturbance is also very high as the tidal area lies at a major road.

Conservation measures taken: Two small protected areas established by the Macao Government in 2001. One (40 ha) located in the inter-tidal area.

Taiwan: Sitsao¹⁰

Location: 23 ° 03' N, 120 ° 08' E, An-Nan and Anping districts, Tainan City.

Area: 1800 ha.

Simple description of the site: North to the Tsengwen River, south to Yanshui River, east to Tainan Science and Technology Industrial Park and west to coast line. Abandoned salt field, fish ponds and marshes attract migratory waterbirds for stopover or wintering. It is a regular winter site for BFS. A maximum of 313 birds was recorded here.

Wetland type: Salt pans and artificial ponds.

Land ownership and land use: Government owned and as Wildlife Refuge.

Contact details of management authority/authorities: Tainan City Government.

Threats: Illegal occupation and reclamation of the site, stealthy dumping of trash degrades habitat, wetland shrinking and habitat fragmentation because of development of peripheral area.

Conservation measures taken: 515.1 ha of Tainan City Wildlife Refuge established on November 30, 1994.

Contact details of local researcher/conservation organisations: Wild Bird Society of Tainan.

Taiwan: Chiku

Location: 23 ° 08' N, 120 ° 05' E, Chiku and Jiangjun Villages, Tainan County.

Area: 8820 ha.

Simple description of the site: The site north to Chingkunsheng, south to the Tsengwen River, east to Yancheng, and west to coastline. Very active aquaculture and fisheries with very high productivity. The northern mudflats of Tsengwen River Estuary with abundant benthos and plankton attracts vast quantities of wintering migratory waterbirds. It is also the most important roosting site for Black-faced Spoonbill. A maximum of 688 birds was recorded here.

Wetland type: Estuarine tidal flat, artificial ponds.

Land ownership and land use: River mouth: public land. Fishponds privately owned.

Contact details of management authority/authorities: Tainan County Government.

Threats: a proposal to constructing an international airport at north of the Chiku.

Conservation measures taken: Tainan County Government

Contact details of local researcher/conservation organisations: Macao Association for Science and Technology, Macao Ecological Society.

designated 300 ha of most important wintering site: 'Tainan Hsien Tseng-Wen Estuary north bank Black-faced Spoonbill Protection Area' on November 1st 2002.

Contact details of local researcher/conservation organisations: Wild Bird Society of Tainan.

Taiwan: Pa-chang¹¹ Estuary

(Bachang river mouth)

Location: 23 ° 19' N, 120 ° 07' E, at the boundary of Beimen, Tainan County and Budai, Chiayi County.

Area: ~ 300 ha.

Simple description of the site: The river mouth of Bachang River, sand accumulating from the ocean currents has formed a lagoon system. The estuary and lagoon support abundant fisheries resources. Thus the area attracts many water birds during migration and for wintering. A maximum of 30 birds recorded here in winter.

Wetland type: Estuarine tidal flat, lagoon.

Land ownership and land use: Public land, free access for fishers.

Contact details of management authority/authorities: Chiayi County Government, Tainan County Government.

Threats: Unknown.

Conservation measures taken: The north of the river mouth is Haomeiliao Nature Area for protection of mangroves.

Contact details of local researcher/conservation organisations: Wild Bird Society of Chiayi, Wild Bird Society of Tainan.

Taiwan: Wen-di

Location: 24° 49' N, 121° 47' E, Chuan river mouth and coastal areas, Ilan County.

Area 2340 ha.

The area around Chuan was once a large marshes, which encompassed Chuan, Hsiapu, and Wendi and served as habitat for many migratory waterbirds. Since 1986 much of the area has been converted into aquaculture ponds. This area serves as a roosting site for birds wintering in Lanyang River Estuary, with maximum of 8 birds in April 1998.

Wetland type: Artificial ponds.

Land ownership and land use: 78% agricultural.

Contact details of management authority/authorities: Council of agriculture and Ilan County Government.

Threats: Pesticides and fertilizers pollution from agriculture practice.

Conservation measures: None.

Contact details of local researcher/conservation organisations: Wild Bird Society of Ilan.

10. Also written as Szutsao or Sicao.

11. Also written as Bazhang.

Taiwan: Tatu River Mouth Wildlife Refuge

Location: 25 ° 10' N, 120 ° 24' E, Tatu river mouth, which crosses Taichung and Changhua Counties, and coastal areas.

Area: 2668 ha.

Simple description of the site: North to north shore of the Tatu River, south to the boundary between Shianshi and Lugang, east to the Shenggang, and west to tidal mudflats of the coastline. The habitats include inter-tidal mudflats, sand flats, agricultural land and fish ponds. An important stopover and wintering site for waterbirds, including BFS, a maximum of 13 birds were recorded stopping over during migration.

Wetland type: Estuarine tidal flat, artificial ponds.

Land ownership and land use: 80% public land. 20% farmland.

Contact details of management authority/authorities: Council of Agriculture, Changhua County Government, Taichung County Government.

Threats: Pollution by domestic and industrial waste to the river. Constant development pressure.

Conservation measures taken: Established Tatu River Mouth Wildlife Refuge on February 28, 1995. Primary protected features include river mouth and coastal ecosystems, birds and other wildlife.

Contact details of local researcher/conservation organisations: Wild Bird Society of Changhua.

south to the bank of Langyang River, west to Provincial Highway 9, and east to the coastline. The estuary consists mostly of riparian wetlands. Together with agricultural fields on the north riverbank between Hsinnan and Meifu forms an important wintering site for migratory waterbirds. A maximum of 18 BFS recorded wintering here.

Wetland type: Riparian wetland.

Land ownership and land use: Public land with some agriculture on the Estuary.

Contact details of management authority/authorities: Council of agriculture and Ilan County Government.

Threats: pesticides and fertilizers pollution from agriculture practice.

Conservation measures taken: 206 ha of Lanyang River Mouth Waterbird Refuge was established on September 16, 1996, Primary protected features include: river mouth and coastal ecosystems, birds and other wildlife.

Contact details of local researcher/conservation organisations: Wild Bird Society of Ilan.

Taiwan, Lanyang River Estuary

Location: 24 ° 42'N, 121 ° 48'E, Lanyang river mouth, Ilan County.

Area: 2350 ha.

Simple description of the site: North to the Gongguan,

North Korea

North Pyongan Province: Daegamdo, Sogamdo and Sonchonrab-do

Location: 39°25' – 39°42'N 124°24'-124°39'E. Jongju County of North Pyongan Province.

Area: Daegando 11.5 ha., Sogamdo 6 ha.

Simple description of the site: Islands in the Hamsong-ryoldo. When exposed inter-tidal land and it provides good feeding ground for Black-faced Spoonbills.

Wetland type: Coastal islands.

Land ownership and land use: State owned. Only a lighthouse is built on Daegamdo.

Contact details of management authority/authorities: No information.

Threats: No information.

Conservation measures taken: Designated as Sea Bird Breeding Protected Area in 1981.

Contact details of local researcher/conservation organisations: No information.

South Pyongan Province: Dokdo

Location: 38°49'N 125°08'E, Onchon County of South Pyongan Province.

Area: 18 ha.

Simple description of the site: Island with a slack slant at the south side and cliff facing the west, north and east. Black-faced Spoonbills nest at the top of the cliff.

Wetland type: Coastal islands.
Land ownership and land use: State owned.
Contact details of management authority/authorities: No information.
Threats: No information.

South Korea

Gyeong Gi-do Province: Yudo

Location: 37° 46'N, 126° 32'E, Kimpo-si (city) of Gyeonggi-do (province).

Area: 20 ha.

Simple description of the site: Wooded island in the Han-gang river estuary. Breeding colony of Great Cormorants, Grey Herons, Little Egrets, Great Egrets, Cattle Egrets, Intermediate Egrets, Herring Gulls, etc. It is the largest known breeding site (around 100 pairs) of Black-faced Spoonbills.

Wetland type: Island in estuarine/brackish area; 100% natural; principal vegetation woodland (90% coverage).

Land ownership and land use: No information and not used.

A prohibited area as it is located on the border.

Contacts details of management authority/authorities: Military zone, Ministry of Environment / Kimpo-si (city) office.

Threats: Most nests have failed in recent years presumably because of predators such as raccoons or cats, and possibly also Great Eagle Owls.

Conservation measures taken: This site is in the Wetland Conservation Area in the Han-gang river estuary, designated in 2006 by the Ministry of Environment.

Contacts of local researcher/conservation organisations: Lee Kisup, NGO strategy meeting for Han-gang river estuary.

Incheon City: Gaksiam

Location: 37° 35'N 126° 28'E, Ganghwa-gun (county) of Incheon city.

Area: 0.07 ha

Simple description of the site: Gaksiam, a rocky islet, is a breeding and roosting site of Black-faced Spoonbill, with 6-10 pairs breeding, and an important roost from May to October usually of 100-150 birds.

Wetland type: Island in inter-tidal mudflat/salt; 100% natural; no vegetation cover.

Land ownership and land use: No information (perhaps not owned).

Contacts details of management authority/authorities: Ganghwa-gun office.

Threats: Landing by tourists or fishermen. A tidal power project is planned starting in 2010.

Conservation measures taken: Designed as a Seabird Protected Area and Natural Monument Number 37 in 1982.

Contact details of local researcher/conservation organisations.

Conservation measures taken: Not protected.

Contacts details of local researcher/conservation organisations: Lee Kisup, Ganghwa Civil Union.

Incheon City: Suhaam

Location: 37° 32'N 126° 32'E, Jung-gu (district) of Incheon city.

Area: 0.06 ha.

Simple description of the site: Suhaam is a rocky islet in the tidal mudflat of north Youngjongdo Island. It is a breeding site of Black-faced Spoonbill, with 10-20 breeding pairs, and an important roost from May to October usually of 50-80 birds.

Wetland type: Island in inter-tidal mudflat/salt; 100% natural; no vegetation cover.

Land ownership and land use: No information (perhaps not owned).

Contacts details of management authority/authorities: Jung-gu office of Incheon city.

Threats: Passing hovercraft create noise. A tidal power project is planned starting in 2010.

Conservation measures taken: Not protected.

Contacts details of local researcher/conservation organisations: Lee Kisup, Incheon Green Union.

South Hwanghae Province: Yodo

Location: 37° 49'N 126° 11'E, Yodo is on the boundary between Yeonbaek-gun (county) of South Hwanghae province and Kanghwa-gun (county) of Incheon city.

Area: 0.4 ha.

Simple description of the site: Yodo is a grassy island in a neutral zone between the north and south. Its other name is Yeoksum. It is a breeding and roosting site of Black-faced Spoonbill, with at least 60-80 pairs breeding in a mixed colony with Herring Gulls and Great Cormorants.

Wetland type: Island in estuarine/brackish tidal flat; 100% natural; principal vegetation is grass (50% cover).

Land ownership and land use: No information.

Contacts details of management authority/authorities: Not managed.

Threats: No information. Projects to mine sand and construct an artificial island are proposed by some authorities in South Korea, but no action yet.

Conservation measures taken: Yodo is not protected, but the southern section is protected by Natural Monument Area No. 419.

Contacts of local researcher/conservation organisations: Lee Kisup, Ganghwa Civil Union.

Incheon City: Suribong (small Suribong)

Location: 37° 39'N 126°12'E, Ganghwa-gun (county) of Incheon city.

Area: 0.12 ha.

Simple description of the site: A rocky island between Bolumdo and Jumundo islands. It is smaller of two islands named Suribong. A breeding site of Black-faced Spoonbill, with 4-10 pairs breeding, and a roosting site from May to October usually of 20-30 birds.

Wetland type: Island on seacoast/salt; 100% natural; 15% vegetation cover.

Land ownership and land use: No information (perhaps not owned).

Contacts details of management authority/authorities: Culture and Tourism Division of Ganghwa-gun / Han River Basin Environmental Office.

Threats: Landing by photographers or fishermen is the main reason for breeding failure.

Conservation measures taken: Protected as a Special Protection Island by the Ministry of Environment.

Contacts details of local researcher/conservation organisations: Lee Kisup, Ganghwa Civil Union & Korean Federation for Environmental Movement (KFEM).

Incheon City: Bido

Location: 37° 36'N 125° 58'E, Ganghwa-gun (county) of Incheon city.

Area: 1.1 ha.

Simple description of the site: A rocky and grassy island with two hills. Wudo is the nearest island (500 m distant) and a military zone. A breeding site of Black-faced Spoonbill, Black-tailed Gull and Japanese Cormorant. Chinese Egret and other egrets started to breed in 2007. The number of breeding of Black-faced Spoonbill has recently increased to 100 pairs.

Wetland type: Island; 100% natural; 60% vegetation cover.

Land ownership and land use: No information, military area.

Contacts details of management authority/authorities: Culture and Tourism Division of Ganghwa-gun / Han River Basin Environmental Office.

Threats: No threats.

Conservation measures taken: National Monument Area No. 419. Protected as a Special Protection Island by the Ministry of Environment.

Contacts details of local researcher/conservation organisations: Lee Kisup, Ganghwa Civil Union, KFEM.

Incheon City: Sokdo

Location: 37° 35'N 125° 57'E, Ganghwa-gun (county) of Incheon city.

Area: 0.7 ha.

Simple description of the site: Offshore rocky island. Wudo is the nearest island (1.3 km distant) and a military zone. A breeding site of Black-faced Spoonbill, Black-tailed Gull, Japanese Cormorant, Herring Gulls, herons, etc. There are around 15 breeding pairs of Black-faced Spoonbill.

Wetland type: Island; 100% natural; 10% vegetation cover.

Land ownership and land use: Government, military area.

Contacts of management authority/authorities: Culture and Tourism Division of Ganghwa-gun / Han River Basin Environmental Office.

Threats: No threats. The vegetable cover is an important factor for breeding.

Conservation measures taken: National Monument Area No. 419. Protected as a Special Protection Island by Ministry of Environment.

Contacts of local researcher/conservation organisations: Lee Kisup, Ganghwa Civil Union, KFEM.

Incheon City: Hambakdo

Location: 37° 40'N 126° 01'E.

Area: 6 ha.

Simple description of the site: A wooded island lying to the west of the Bolumdo Islands. Located on the NLL (Northern Limit Line) designated by South Korea. A breeding colony of egrets, Black-tailed Gull and Black-faced Spoonbill. The breeding population of Black-faced Spoonbill is assumed to be 10-20 pairs.

Wetland type: Offshore island; 100% natural; principal vegetation woodland (80% cover).

Land ownership and land use: No information.

Contacts details of management authority/authorities: Military zone.

Threats: The breeding colony, including the egrets and gulls, suddenly disappeared in 2007 for an unknown reason.

Contacts details of local researcher/conservation organisations: None.

Jeollanam-do Province: Chilsando

Location: 35° 18'N 126° 16'E, Yeonggwang-gun (county) of Jeollanam-do (province).

Area: 2 ha (Ilsando), 25 ha including other islands.

Simple description of the site: A group of 5-7 islands. Breeding site of Black-tailed Gull, Chinese Egret and Black-faced Spoonbill. 1-2 pairs of Black-faced Spoonbill recently breed on Ilsando (island).

Wetland type: Islands; 100% natural; 30-40% vegetation

cover.

Land ownership and land use: Government (Forest Service), not used.

Contacts details of management authority/authorities: Culture and Tourism Division of Yeonggwang-gun.

Threats: Rabbits, reclamation of feeding areas.

Conservation measures taken: National Monument Area No. 389, designated by Cultural Heritage Administration.

Contacts of local researcher/conservation organisations: Kim, Inkyu.

Incheon City: tidal flat of southern Ganghwado

Location: 37° 36'N 126° 22'E-37° 34'N 126° 30'E, Ganghwa-gun (county) of Incheon city.

Area: 3,000 ha.

Simple description of the site: The inter-tidal flat of south Ganghwado is the most important feeding area during the breeding and post-breeding seasons from May to October, 100-200 Black-faced Spoonbills usually feed and roost.

Wetland type: Inter-tidal mudflat/salt; 100% natural; principal vegetation: salt marsh 10% cover.

Land ownership and land use: Government, fishing and shell collecting.

Contacts of management authority/authorities: Ganghwa-gun office.

Threats: tourists. A tidal power project is planned to go ahead starting in 2010.

Conservation measures taken: Some of this area is included in National Monument Area No. 419.

Contacts of local researcher/conservation organisations: Lee Kisup, Kanghai Civil Union.

Incheon City: tidal flat of northern Yeongjongdo

Location: 37° 33'N 126° 30'E-37° 33'N 126° 34'E, Jung-gu (district) of Incheon city.

Area: 3,000 ha.

Simple description of the site: The inter-tidal flat of north Yeongjongdo is another important feeding area connected with south Ganghwado during the breeding and post-breeding seasons from May to October, when 80-150 Black-faced Spoonbills feed and roost.

Wetland type: Inter-tidal mudflat/salt; 100% natural; principal vegetation: salt marsh 30% cover.

Land ownership and land use: Government.

Contacts of management authority/authorities: Jung-gu office of Incheon city.

Threats: A tidal power project is planned to go ahead starting in 2010.

Conservation measures taken: Not protected.

Contacts of local researcher/conservation organisations: Lee Kisup, Incheon Green Union.

Gyeong Gi-do Province: Han and Imjin-gang (river) estuary

Location: 37° 47'N 126° 29'E-37° 46'N 126°40'E.

Area: 10,000 ha, core area 1,000 ha.

Simple description of the site: Estuary where the Han-gang and Imjin-gang rivers join. An important wintering and migration site for waterbirds, including Swan Geese, White-naped Crane, Bean Geese, etc. 20-50 Black-faced Spoonbills feed and roost from April to October.

Wetland type: Estuarine inter-tidal flat, 95% natural, principal vegetation reed 5% cover.

Land ownership and land use: Government.

Contacts of management authority/authorities: Ministry of Environment / Cultural Heritage Administration.

Threats: Urbanization, bridge and roads planned, sand collecting.

Conservation measures taken: This site is in the Wetland Conservation Area established in the Han-gang river estuary by the Ministry of Environment. Some of the area is in National Monument Area No. 250, established to protect White-naped Crane.

Contacts of local researcher/conservation organisations: Lee Kisup, NGO strategy meeting for Han-gang river estuary.

Gyeong Gi-do Province: Sihwa-ho reclaimed area & Songdo

Location: 37° 19'N 126° 41'E, Ansan-si (city) of Gyeonggido province.

Area: 8,000 ha.

Simple description of the site: 20-30 Black-faced Spoonbills occur irregularly from spring to autumn. It appears to be a feeding area for young birds or non-breeders.

Wetland type: Artificial, reservoir and reclaimed area.

Land ownership and land use: Government (Korea Water Resources Corporation).

Contacts of management authority/authorities: KWRC.

Threats: Water pollution from industrial complex.

Conservation measures taken: Not protected.

Contacts of local researcher/conservation organisations: Choi Jongin, Sihwa-ho life protectors, Korea Wild Bird Society.

Gyeong Gi-do Province: Hwahong-ho reclaimed area

Location: 37° 06'N 126° 43'E, Hwaseong-si (city) of Gyeonggido province.

Area: 4,500 ha.

Simple description of the site: 20-30 Black-faced Spoonbills occur irregularly from spring to autumn. It appears to be a feeding area for young birds or non-breeders.

Wetland type: Artificial reservoir.

Land ownership and land use: Government.

Contacts of management authority/authorities: n/a.

Threats: Unknown, perhaps development of the reclaimed area.

Conservation measures taken: Not protected.

Contacts of local researcher/conservation organisations: KFEM in Hwaseong.

Seongsanpo: Seogwipo, Jeju Special Self-governing Province, Korea

Location: 33° 27'N 126° 55'E

Area: ca. 142ha.

Description of the site (key habitats): Seongsanpo is a kind of shallow inner bay with two large fish farms; one is active and the other is abandoned. Seongsanpo is used as roosting and foraging sites. All of these areas are separated from the open sea by a water gate and the Seongsan Harbour, but experience semi-diurnal tidal conditions. The two fish farms are surrounded with dikes but also show weak tides through open water ducts. Many small coastal ponds and reed beds have developed around the fish farms, but some of them have been converted into dry lands for cultivation and grazing. The Black-faced Spoonbills generally use the abandoned fish farm and adjacent reed beds.

Wetland type: Inner bay, fish farms, coastal marshes, and reed beds.

Land ownership and land use: Large areas (c. 100ha) of Seongsanpo bay are owned by governments as public waters. However, fish farms, reed beds and adjacent wetlands, where are important as habitats for the spoonbill, are privately owned and used for fish farming, cultivation, and grazing.

Contacts of management of authorities: Seogwipo city, Jeju Special Self-governing Province, Ministry of Maritime Affairs and Fisheries.

Threats: Habitat loss and degradation, human disturbance, accidental poaching.

Habitat change is the most serious threat. A large-scaled development plan to construct a resort complex in this area has been considered.

Conservation measures: None.

Contacts of local researcher/conservation organisations
Kim Eun-Mi (Jeju Wildlife Research Center: www.birdsinjeju.com, kemi00@hanmail.net)

Chang-Yong Choi (Migratory Birds Center, National Park Research Institute: subbuteo@hanmail.net)

Hado-ri fish farms: Jeju, Jeju Special Self-governing Province, Korea

Location: 33° 30' N 126° 53' E

Area: ca. 40ha.

Description of the site (key habitats): Hado-ri fish farms consist of several abandoned fish farms connected with open sea through a small water gate. This area is an important wetland for waterfowl, cormorants, egrets and spoonbills as roosting sites and foraging sites. From late 1990s to early 2000s, the Black-faced Spoonbills avoided this area and wintered in Seongsanpo since the closed water gate maintained high water levels and prevented water circulation. Recently the water gate is always open and the number of wintering spoonbills is slowly increasing due to dispersed individuals from Seongsanpo. Fish farms are divided with several rocky dikes, small channels and reed beds. This area is 6 km away from the wintering site in Seongsanpo. Many new and big buildings are under construction along the wetlands.

Wetland type: Abandoned fish farms, coastal marshes, reed beds.

Land ownership and land use: Korea Rural Community and Agriculture Cooperation (KRC) owns most areas of the Hado-ri wetlands. Recently, some channels were sold to private owners by KRC.

Contacts of management of authorities: Jeju provincial office of KRC (<http://jeju.ekr.or.kr/ekr/jeju.html>), Jeju city, Jeju Special Self-governing Province, Ministry of Maritime Affairs and Fisheries.

Threats: Habitat loss and degradation, Human disturbance, Accidental poaching.

Conservation measures: None.

Contacts of local researcher/conservation organisations
Kim Eun-Mi (Jeju Wildlife Research Center: www.birdsinjeju.com, kemi00@hanmail.net)
Chang-Yong Choi (Migratory Birds Center, National Park Research Institute: subbuteo@hanmail.net)

Jongdal-ri coast: Jeju, Jeju Special Self-governing Province, Korea

Location: 33° 29' N 126° 54' E

Area: ca. 60 ha.

Description of the site (key habitats): Jongdal-ri coast is a coastal sand beach 3km away from Soongsanpo. This area is open to the sea and shows strong semi-diurnal tides, prevalent winds and waves. Many small tidal pools and creeks occur in low tides and the black-faced spoonbills from Seongsanpo use this area as a foraging site. Many buildings for tourists are under construction along the coast line.

Wetland type: Coastal sand beach.

Land ownership and land use: Coastal sand beaches are

designated as public waters. Adjacent lands along the coast are private areas.

Contacts of management of authorities: Jeju city, Jeju Special Self-governing Province, Ministry of Maritime Affairs and Fisheries.

Threats: Human disturbance.

Conservation measures: None.

Japan

Fukuoka Prefecture: Imazu Tidal Flat¹²

Location: 33°35'N 130°14'E.

Area: 80 ha.

Simple description of the site: Tidal flat at the western side of Hakata Bay. Surrounded by farmland. Within the vicinity of the Artificial Island of Hakata Bay, Wajiro Tidal Flat and Tataro River. Substrate muddy and sandy. Black-faced Spoonbills roost on a small island in the Zuibaiji River and the flood control basin by the Zuibaiji River.

Wetland type: Estuarine tidal flat.

Land ownership and land use: No information.

Contacts of management authority/authorities: No information.

Threats: River training, sedimentation and turbidity due to construction because of development of the nearby area.

Conservation measures taken: Not protected.

Contacts of local researcher/conservation organisations: Fukuoka Chapter of WBSJ.

Fukuoka Prefecture: Wajiro Tidal Flat

Location: 33°41'N 130°25'E.

Area: 254 ha.

Simple description of the site: At the eastern side of Hakata Bay. Heavily built up but some tidal flats and reedbeds remain. An artificial island was built by reclamation since 1994. At the time of drafting this action plan (2006-2007) a temporary wetland site exists on the artificial island which The Black-faced Spoonbill use as a roosting site. It is an important stop-over for migrating The Black-faced Spoonbill on the southward migration.

Wetland type: Estuarine tidal flat, artificial freshwater pond (on the island).

Land ownership and land use:

Contacts of management authority/authorities:

Threats: Tidal current has changed since the artificial island was built which may affect the formation and sedimentation of tidal flats. Recreation activities such as pleasure boats and personal watercraft near-shore may have some impact on BFS behaviour. The plan to construct a new (Fukuoka) airport may directly affect BFS roosting and feeding areas.

Contacts of local researcher/conservation organisations:

Kim Eun-Mi (Jeju Wildlife Research Center: www.birdsinjeju.com, kemi00@hanmail.net)

Chang-Yong Choi (Migratory Birds Center, National Park Research Institute: subbuteo@hanmail.net)

Conservation measures taken: Protected area (254 ha) established in 2003.

Contacts of local researcher/conservation organisations: Save Wajiro Association, Fukuoka Chapter of WBSJ.

Kumamoto Prefecture: Kumamoto New Port

Location: 32°42'N 130°36'E.

Area: about 40 ha.

Simple description of the site: A river mouth with tidal flats is a feeding ground of Black-faced Spoonbills, which roost in the reedbeds on reclaimed land. Summer records of Black-faced Spoonbills in 2003 and 2004.

Wetland type: Estuarine tidal flat.

Land ownership and land use:

Contacts of management authority/authorities:

Threats: Reclamation, fishing and hunting activities (for other game birds).

Conservation measures taken: No yet protected but local conservation groups have appealed to the local and central government to protect the wintering ground of Black-faced Spoonbills.

Contacts of local researcher/conservation organisations: Kumamoto Chapter of WBSJ.

Kumamoto Prefecture: Hikawa Estuary

Location: 32°36'N 130°37'E.

Area: about 70 ha.

Simple description of the site: Black-faced Spoonbills roost on the island of the Hikawa River. From here they fly daily to nearby rivers for food.

Wetland type: Estuarine tidal flat, riparian wetland.

Land ownership and land use:

Contacts of management authority/authorities:

Threats: The bridge constructed for the Shinkansen train (Fukuoka – Kagoshima) may pose a potential threat to the birds.

Conservation measures taken: Not yet protected.

Contacts of local researcher/conservation organisations: Kumamoto Chapter of WBSJ.

12. 'Higata' in Japanese.

Miyazaki Prefecture: Hitotsuse-gawa Estuary

Location: 32°02'N 131°29'E.

Area: 404.2 ha.

Simple description of the site: Sandy island about 500 metres from the river mouth with drier parts converted to farmland. Artificial pond (sometimes used for eel farming) by the river mouth used by The Black-faced Spoonbill as roosting area and feeding ground. A fishing port at the northern side of the river mouth.

Wetland type: River mouth (sandy) and artificial ponds.

Land ownership and land use:

Contacts of management authority/authorities: State owned?

Threats: Disturbance from fisheries and leisure activities.

Conservation measures taken: Not yet protected.

Contacts of local researcher/conservation organisations:

Kagoshima Prefecture: Beppu Estuary

Location: 31°43'N 130°38'E.

Area: 55.6 ha.

Simple description of the site: Sandy island at the river mouth with bamboo grove that sometimes serve as roosting ground of Black-faced Spoonbills. Black-faced Spoonbills roost and feed at artificial ponds about 1 km from here.

Wetland type: River mouth (sandy) and artificial ponds.

Land ownership and land use:

Contacts of management authority/authorities:

Threats: Reclamation of ponds and urban development. Fisheries and human disturbance.

Conservation measures taken: Not yet protected.

Contacts of local researcher/conservation organisations: Kagoshima Chapter of WBSJ.

Kagoshima Prefecture: Manose Estuary

Location: 31°26'N 130°18'E.

Area: About 50 ha.

Simple description of the site: Black-faced Spoonbills are found from the river mouth to about 2 km upstream (?). They roost at about 1 km from the river mouth and feed on the tidal flat exposed during low tide.

Wetland type: River mouth (sandy) and artificial ponds.

Land ownership and land use:

Contacts of management authority/authorities:

Threats: River training. Fishery and human disturbance.

Conservation measures taken: Designated as a Natural Monument in 2008.

Contacts of local researcher/conservation organisations: Kagoshima Chapter of WBSJ.

Okinawa Prefecture: Southern Okinawa Island

Location: 26°10'N 127°39'E.

Area: Manko 250 ha. No data for other sites.

Simple description of the site: The area consists of four tidal flats: Manko, Gushi and Toyosaki tidal flats, and Yone flood control basin. Manko is surrounded by built-up areas and is now only occasionally used by Black-faced Spoonbills. The other three sites are the main roosting areas. Gushi has mangroves and reedbeds. Yone Pond is a flood-control basin with some reeds in the pond. These are the roosting areas of Black-faced Spoonbills which feed at Manko and Oomine coast. Oomine is the only natural coast remaining at the site.

Wetland type: Estuarine tidal flat and artificial ponds.

Land ownership and land use:

Contacts of management authority/authorities:

Threats: Urbanization, construction and illegal dumping.

Oomine is under the potential threat of airport expansion.

Conservation measures taken: Manko was designated as a Ramsar Site in 1999. (National Park?) A wetland centre was established at Manko.

Contacts of local researcher/conservation organisations: Wild Bird Society of Okinawa.

Vietnam

Red River Delta

I. The coastal zone Red River Delta:

The Red River rises in the Van Nam highlands in China and flows south-east for about 1,300 km before it enters the Gulf of Tonkin in the South China Sea, through an extensive delta covering 17,000 km² on the north-east coast of Vietnam. In Vietnam, the delta includes the mouths of the Day, Thai Binh and Van Uc Rivers. The coastal zone of the Red River Delta covers 300 km² comprising 12 districts in five provinces: Hai Phong, Thai Binh, Nam Dinh, Ninh Binh and Thanh Hoa. Based on results of the previous surveys undertaken by BirdLife Vietnam Programme, the following sites are potentially important for the conservation of the Black-faced Spoonbill:

1. An Hai

Hai An District (20°50'N, 106°45'E to 20°46', 106°44'E), Hai Phong City.

The site comprises the coastal zone of An Hai district, which stretches for 9 km between the Lach Tray estuary in the south and the Cam estuary in the north. A single Black-faced Spoonbill was observed in the Lach Tray estuary in 1996. The site probably does not regularly support a significant population of this species.

2. Tien Lang

Tien Lang District (20°37'N, 106°37'E to 20°40'N, 106°42'E), Hai Phong City.

The IBA comprises a 13 km stretch of coastline bordered by the Van Uc estuary to the north and the Thai Binh estuary to the south. The site regularly supports small but significant populations of Black-faced Spoonbill. This species was believed to be a regular winter visitor in small numbers, with the biggest single count being 16 birds in March 1996.

3. Thai Thuy

Thai Thuy District (20°37'N, 106°37'E to 20°28'N, 106°35'E), Thai Binh Province.

The site includes a 16 km stretch of coastline, bordered by the Thai Binh River to the north and the Tra Ly River to the south. After Xuan Thuy, the site is one of the most important wintering areas for Black-faced Spoonbill in the coastal zone of the Red River Delta. Black-faced Spoonbill

was believed to be a regular winter visitor in small numbers at the site, with maximum counts of 23 birds in the winter of 1995/1996.

4. Tien Hai

Tien Hai District (20°21'N, 106°34'E to 20°14'N, 106°35'E), Thai Binh Province.

The site comprises Tien Hai Nature Reserve, to the north of the mouth of the main channel of the Red River, known as the Ba Lat River. Tien Hai is a known wintering site of Black-faced Spoonbill, with a record of a group of six birds observed feeding along the bank of the Ba Lat River in 1996.

5. Xuan Thuy

Giao Thuy District (20°21'N, 106°34'E to 20°14'N, 106°35'E), Nam Dinh Province.

The IBA comprises Xuan Thuy Ramsar site, to the south of the mouth of the main channel of the Red River. Xuan Thuy was gazetted as a national park by the Government of Viet Nam in 2003. Xuan Thuy supports the largest wintering population of Black-faced Spoonbill in Vietnam, with around 60 birds each winter in recent years.

6. Nghia Hung

Nghia Hung District (20°00'N, 106°12'E to 19°58'N, 106°06'E), Nam Dinh Province.

Nghia Hung site comprises 12 km of coastline, between the estuaries of the Day and Ninh Co rivers. Nghia Hung used to be an important site for Black-faced Spoonbill with a number of records during the mid 1990s. However, under the pressure of rapid development in last decade, the most suitable habitat for this species was converted. Coupled with the high hunting pressure at the site, this species unlikely to occur in Nghia Hung anymore.

7. Ha Nam

Yen Hung District (20°52'N, 106°49'E), Quang Ninh Province.

Situated in the northern tip of the Red River Delta, Ha Nam Island is another known site for Black-faced Spoonbill.

The site consists of Ha Nam Island, which is situated at the mouth of the Bach Dang River, the northernmost estuary in the Red River Delta. The site was believed to regularly support a small but significant population of Black-faced Spoonbill, with 3 to 4 birds recorded in the winters of 2001-2002, 2002-2003, and 2003-2004.

Appendix IV: Winter census results (1993 – 2008)

Year	Total	Korea	Mainland China and Hainan	Japan	Taiwan	Hong Kong and Shenzhen	Macao	Vietnam
Jan 94	351	-	22	16	206	70	12	25
Jan 95	430	-	21	14	286	78	8	23
Jan 96	551	15	21	31	300	99	10	75
Jan 97	535	16	58	28	298	101	13	-
Jan 98	613	25	5	75	363	146	9	59
Jan 99	586	14	3	60	380	96	12	34
Jan 00	660	20	9	99	380	90	6	46
Jan 01	828	21	72	87	427	135	36	47
Jan 02	969	29	24	107	582	139	37	54
Jan 03	1069	22	17	128	580	203	46	65
Jan 04	1206	23	91	149	632	243	50	15
Jan 05	1475	21	187	103	757	311	39	56
Jan 06	1679	24	206	155	826	346	51	74
Jan 07	1695	20	247	189	790	356	48	45
Jan 08	2065	28	313	224	1030	369	50	49

Appendix V: Colour-banded birds and re-sighting records as of May 2008

Legend:

Colour

G = green, R = red, B = blue, W = white, Y = yellow, Br = Brown, A = air blue

Location:

DPRK = Democratic People's Republic of Korea (North Korea)

HK = Hong Kong

ROK = Republic of Korea (South Korea)

Place of banding	Released date	Metal ring (Y/N)	Right (colour)	Right (No.)	Left (colour)	Age	PTT (Y/N)	Last re-sighting records
Tok-do, DPRK	14 Jul 95	N	RG	-	Y	Pullus	N	Izumi, Japan, Nov 1995; Red River Delta, Vietnam, Jan 2003; Mai Po, HK, winter 2006-07
Tok-do, DPRK	14 Jul 95	N	RB	-	Y	Pullus	N	Red River Delta, Vietnam, Dec 1995
Mai Po, HK	26 Feb 98	Y	G	A01	GR	Young	Y	Shenzhen, Mainland China, Dec 2004; Mai Po, HK, winter 2006-07
Mai Po, HK	26 Feb 98	Y	G	A02	GY	Young	N	Deep Bay, HK, Apr 1998
Mai Po, HK	26 Feb 98	Y	G	A03	GB	Young	N	Tainan, Taiwan, winter 1999-2000
Mai Po, HK	26 Feb 98	Y	G	A04	GW	Young	N	Deep Bay, HK, Mar 1998
Mai Po, HK	26 Feb 98	Y	G	A05	WR	Young	N	Deep Bay, HK, Apr 1998
Mai Po, HK	27 Feb 98	Y	G	A06	WY	Adult	Y	
Mai Po, HK	27 Feb 98	Y	G	A07	WB	Adult	Y	Deep Bay, HK, Mar 1998
Mai Po, HK	27 Feb 98	Y	G	A08	WG	Young	N	Tainan, Taiwan, winter 2006-07
Mai Po, HK	27 Feb 98	Y	G	A09	RY	Young	N	Deep Bay, HK, Apr 1998
Mai Po, HK	27 Feb 98	Y	G	A10	RB	Young	N	Deep Bay, HK, Mar 1998
Mai Po, HK	27 Feb 98	Y	G	A11	RG	Young	N	Deep Bay, HK, Apr 1998
Mai Po, HK	27 Feb 98	Y	G	A12	RW	Young	N	Deep Bay, HK, May 1998
Mai Po, HK	27 Feb 98	Y	G	A13	YR	Young	N	Deep Bay, HK, Apr 1998
Mai Po, HK	9 Jan 99	Y	G	A14	YB	Adult	Y	Deep Bay, HK, Nov 2003
Mai Po, HK	9 Jan 99	Y	G	A15	YG	Young	Y	Deep Bay, HK, Feb 1999, Chongming Dongtan, Shanghai, Mainland China Mar 2005; Ganghwa, ROK, Apr 2007

Place of banding	Released date	Metal ring (Y/N)	Right (colour)	Right (No.)	Left (colour)	Age	PTT (Y/N)	Last re-sighting records
Mai Po, HK	10 Jan 99	Y	G	A17	BR	Adult	Y	Mai Po, HK, Nov 2002
Mai Po, HK	10 Jan 99	Y	G	A18	BY	Adult	Y	Mai Po, HK, Feb 2008
Mai Po, HK	10 Jan 99	Y	G	A19	BG	Adult	Y	Near Mai Po, HK, Dec 2002
Mai Po, HK	10 Jan 99	Y	G	A20	BW	Young	Y	Mai Po, HK, Nov 2005
Mai Po, HK	11 Jan 99	Y	G	A21	GRY	Adult	Y	Mai Po, HK, Feb 2008
Mai Po, HK	11 Jan 99	Y	G	A22	GRB	Young	N	Mai Po, HK, winter 2001-02; Tainan, Taiwan, Nov 2000
Mai Po, HK	11 Jan 99	Y	G	A23	GRG	Adult	N	Shenzhen, Mainland China, Dec 2004; Mai Po, HK, Dec 2007
Panyu, Guangzhou, China	25 Dec 00	Y	G	A24	GRW	Young	N	
Mai Po, HK	1 Feb 01	Y	G	A25	GYR	?	N	Mai Po, HK, Jan 2008
Mai Po, HK	30 Jan 02	Y	G	A26	GYB	Adult	N	Shenzhen, Mainland China, Dec 2004; Sok-do, ROK, Apr 2006; Bi-do, ROK, Jun 2006; Mai Po, HK, Nov 2007
Mai Po, HK	5 Dec 02	Y	G	A27	-	Adult	Radio	Mai Po, HK, Dec 2005
Mai Po, HK	5 Dec 02	Y	G	A28	-	Young	Radio	Mai Po, HK, winter 2002-03
Mai Po, HK	5 Dec 02	Y	G	A29	-	Adult	Radio	Mai Po, HK, winter 2002-03
Mai Po, HK	5 Dec 02	Y	G	A30	-	Adult	Radio	Mai Po, HK, Feb 2006
Mai Po, HK	5 Dec 02	Y	G	A31	-	Adult	Radio	Mai Po, HK, Dec 2004 (Mar 2006?)
Mai Po, HK	5 Dec 02	Y	G	A32	-	Adult	Radio	Mai Po, HK, winter 2002-03
Mai Po, HK	5 Dec 02	Y	G	A33	-	Adult	Radio	Mai Po, HK, Nov 2004
Mai Po, HK	5 Dec 02	Y	G	A34	-	Adult	Radio	Mai Po, HK, Dec 2005
Mai Po, HK	5 Dec 02	Y	G	A35	-	Adult	Radio	Chongming Dongtan, Shanghai, Mainland China Apr 2003; Mai Po, HK, Nov, 2007
Mai Po, HK	5 Dec 02	Y	G	A36	-	Subadult	Radio	Macao, Nov 2003; Mai Po, HK, Feb 2008
Mai Po, HK	5 Dec 02	Y	G	A37	-	Subadult	Radio	Mai Po, HK, Dec 2004; Chongming Dongtan, Shanghai, Mainland China Mar 2005;
Mai Po, HK	28 Feb 08	Y	G	A39	-	Young		Mai, Po, HK, May 2008
Tainan, Taiwan	22 Dec 97	N	RWR		R	Adult	Radio	
Tainan, Taiwan	22 Dec 97	N	W		BWB	Subadult	Radio	

Place of banding	Released date	Metal ring (Y/N)	Right (colour)	Right (No.)	Left (colour)	Age	PTT (Y/N)	Last re-sighting records
Tainan, Taiwan	31 Dec 97	N	RWR		YWY	Young	Radio	
Tainan, Taiwan	4 Jan 98	N			BW	Young	Radio	
Tainan, Taiwan	21 Dec 98	Y			RW	Adult	Radio	Tainan, Taiwan, found dead, Jan 2002
Tainan, Taiwan	21 Dec 98	Y			WB	Young	Radio	Tainan, Taiwan, winter 2006-07; Gaksiam, Ganghwado, ROK, Sep 2007
Tainan, Taiwan	19 Feb 98	N	B	T01	BR	Young	Y	Tainan, Taiwan, Dec 1999
Tainan, Taiwan	25 Feb 98	N	B	T05	GR	Young	N	Tainan, Taiwan, winter 2006-07
Tainan, Taiwan	2 Mar 98	N	B	T06	GY	Young	Y	Tainan, Taiwan, Mar 2000
Tainan, Taiwan	10 Mar 98	N	B	T07	GB	Young	Y	
Tainan, Taiwan	8 Dec 98	Y	B	T08	GW	?	N	Tainan, Taiwan, winter 1999-2000
Tainan, Taiwan	8 Dec 98	Y	B	T09	WR	?	N	
Tainan, Taiwan	8 Dec 98	Y	B	T10	WY	?	N	Tainan, Taiwan, winter 2000-01
Tainan, Taiwan	8 Dec 98	Y	B	T11	WB	?	N	Tainan, Taiwan, winter 2001-02
Tainan, Taiwan	9 Jan 99	Y	B	T13	RY	Young	N	Chongming Dongtan, Shanghai, Mainland China, Mar 2005; Yudo, Kimpo, ROK, Apr 2005; Tainan, Taiwan, winter 2006-07; Sok-do, ROK, May 2007
Tainan, Taiwan	10 Jan 99	Y	B	T14	RB	Adult	Y	Tainan, Taiwan, winter 2000-01
Tainan, Taiwan	10 Jan 99	Y	B	T15	RG	Young	Y	Tainan, Taiwan, Nov 2002
Tainan, Taiwan	11 Jan 99	Y	B	T16	RW	Adult	Y	Tainan, Taiwan, winter 2006-07
Tainan, Taiwan	16 Mar 03	Y	B	T17	WYR	Unknown	N	Tainan, Taiwan, Jan 2006
Tainan, Taiwan	13 Mar 99	Y	B?	T18	YB	Subadult	Radio	Tainan, Taiwan, winter 2006-07; Gaksiam, Ganghwado, ROK, Jul 2007
Tainan, Taiwan	13 Mar 99	Y	B?	T19	YG	Young	Y	Tainan, Taiwan, Mar 2003
Tainan, Taiwan	18 Feb 03	Y	Br	T20	AR	Unknown	N	Tainan, Taiwan, Nov 2004
Tainan, Taiwan	18 Feb 03	Y	Br	T21	AY	Unknown	N	Tainan, Taiwan, Dec 2004
Tainan, Taiwan	18 Feb 03	Y	Br	T22	YA	Adult	N	Tainan, Taiwan, Dec 2006
Tainan, Taiwan	18 Feb 03	Y	Br	T23	RA	Adult	N	Sok-do, ROK, May 2006; Tainan, Taiwan, winter 2006-07
Tainan, Taiwan	18 Feb 03	Y	Br	T24	GR	Adult	N	Tainan, Taiwan, winter 2006-07
Tainan, Taiwan	18 Feb 03	Y	Br	T25	GA	Adult	N	Tainan, Taiwan, winter 2006-07
Tainan, Taiwan	18 Feb 03	Y	Br	T26	BrY	Adult	N	Kyodongdo, ROK, Apr 2004; Tainan, Taiwan, winter 2006-07
Tainan, Taiwan	18 Feb 03	Y	Br	T27	ABr	Adult	N	Tainan, Taiwan, winter 2006-07
Tainan, Taiwan	18 Feb 03	Y	Br	T28	AG	Adult	N	Tainan, Taiwan, winter 2006-07

Place of banding	Released date	Metal ring (Y/N)	Right (colour)	Right (No.)	Left (colour)	Age	PTT (Y/N)	Last re-sighting records
Tainan, Taiwan	18 Feb 03	Y	Br	T30	YR	Adult	N	Tainan, Taiwan, winter 2004-05; Sok-do, ROK, Jun 2006
Tainan, Taiwan	18 Feb 03	Y	Br	T31	YG	Adult	N	Tainan, Taiwan, Jan 2006; Sok-do, ROK, Apr 2006; Bi-do, ROK, May 2007
Tainan, Taiwan	18 Feb 03	Y	Br	T32	YBr	Adult	N	Tainan, Taiwan, winter 2006-07; Bi-do, ROK, May 2007
Tainan, Taiwan	18 Feb 03	Y	Br	T34	RBr	Adult	N	Tainan, Taiwan, winter 2004-05
Tainan, Taiwan	18 Feb 03	Y	Br	T35	BrA	Adult	N	Ganghwa, ROK, Apr 2006; Kyodongdo, ROK, May 2006; Tainan, Taiwan, winter 2006-07
Tainan, Taiwan	18 Feb 03	Y	Br	T36	BrR	Adult	N	Tainan, Taiwan, winter 2006-07
Tainan, Taiwan	15 or 16 Mar 03	Y	B	T37	GRY	Unknown	N	Tokunoshima, Japan, Nov 2003; Hadori, Jeju, ROK, Apr 2004; Tainan, Taiwan, winter 2006-07; Suribong, Bolumdo, ROK, Apr 2007; Yudo, Kimpo, ROK, Jul 2007; Ganghwa, ROK, Oct 2007
Tainan, Taiwan	13 Dec 04	N	B	T38	GRB	??	N	Tainan, Taiwan, winter 2006-07
Tainan, Taiwan	13 Dec 04	N	B	T39	GRG	??	N	Mai Po, HK, Nov 2007
Sok-do, ROK	4 Jun 02	Y	R	K31	RGB	Pullus	N	Hitotsuse-gawa, Miyasaki, Japan, Dec 2003; Shibushi, Kagoshima, Japan, winter 2003-04; Kumamoto Port, Japan, Dec 2004; Bi-do, Korea, May 2007; Fukuoka, Japan, Nov 2007;
Sok-do, ROK	4 Jun 02	Y	R	K32	RGW	Pullus	N	Manose Estuary, Japan, Nov 2002
Sok-do, ROK	4 Jun 02	Y	R	K33	RWR	Pullus	N	Tainan, Taiwan, Dec 2005
Sok-do, ROK	4 Jun 02	Y	R	K34	RWY	Pullus	N	
Sok-do, ROK	31 May 05	N	R	K40	YRW	Pullus	N	
Sok-do, ROK	31 May 05	N	R	K41	YBR	Pullus	N	Tainan, Taiwan, Dec 2007
Sok-do, ROK	31 May 05	N	R	K42	YBY	Pullus	N	
Sok-do, ROK	31 May 05	N	R	K43	YBG	Pullus	N	
Sok-do, ROK	31 May 05	N	R	K44	YBW	Pullus	N	Tainan, Taiwan, Mar 2006; Baekryengdo, ROK, found dead, 23 May 2006
Sok-do, ROK	31 May 05	N	R	K45	YGR	Pullus	N	
Sok-do, ROK	31 May 05	N	R	K46	YGY	Pullus	N	
Sok-do, ROK	31 May 05	N	R	K47	YGB	Pullus	N	Mai Po, HK, Mar 2008

Place of banding	Released date	Metal ring (Y/N)	Right (colour)	Right (No.)	Left (colour)	Age	PTT (Y/N)	Last re-sighting records
Sok-do, ROK	31 May 05	N	R	K48	YGW	Pullus	N	
Sok-do, ROK	31 May 05	N	R	K49	YWR	Pullus	N	
Sok-do, ROK	31 May 05	N	R	K50	YWY	Pullus	N	Mai Po, HK, Nov 2005
Sok-do, ROK	16 Aug 06	N	R	K62	BGY	Pullus	N	Mai Po, HK, Apr 2008
Bi-do, ROK	4 Jun 02	Y	R	K35	RWB	Pullus	N	
Bi-do, ROK	4 Jun 02	Y	R	K36	RWG	Pullus	N	Bi-do, ROK, May 2005; Bolumdo, ROK, Aug 2006; Tainan, Taiwan, winter 2006-07
Bi-do, ROK	4 Jun 02	Y	R	K37	YRY	Pullus	N	Tainan, Taiwan, winter 2002-03 Mai Po, Hong Kong, 2003 Nov 2003; Bi-do, ROK, May 2005
Bi-do, ROK	4 Jun 02	Y	R	K38	YRB	Pullus	N	Bi-do, ROK, Jun 2006; Tainan, Taiwan, Dec 2007
Bi-do, ROK	19 Jul 05	Y	R		R	Pullus	N	
Bi-do, ROK	19 Jul 05	N	G		G	Pullus	N	Shicheng Dao, Liaoning, Mainland China, May 2006; Yuanbaotuo, Liaoning, Mainland China, Jun 2007; Mai Po, HK, Nov 2007
Bi-do, ROK	19 Jul 05	N	Y		Y	Pullus	N	Mai Po, HK, winter 2005-06
Bi-do, ROK	19 Jul 05	N	B		B	Pullus	N	Tainan, Taiwan (2006. Date unknown); Amami, Kagoshima, Japan, May 2006; Kamisu, Ibaragi, Japan, Jul 2006
Bi-do, ROK	20 Jul 06	N	R	K51	YWB	Pullus	N	Penghu, Taiwan, Nov 2006; Tainan, Taiwan, winter 2006-07; Haifeng, Guangdong, Mainland China Nov 2007
Bi-do, ROK	20 Jul 06	N	R	K52	YWG	Pullus	N	Yeochari, ROK, May 2007; Gaksiam, Ganghwa, ROK Sep 2007; Tainan, Taiwan, November 2007
Bi-do, ROK	20 Jul 06	N	R	K53	BRY	Pullus	N	
Bi-do, ROK	20 Jul 06	N	R	K54	BRB	Pullus	N	Bolumdo, ROK, Aug 2006; Tainan, Taiwan, Dec 2007
Bi-do, ROK	20 Jul 06	N	R	K55	BRG	Pullus	N	Chongming Dongtan, Shanghai, Mainland China, winter 2006-07
Bi-do, ROK	20 Jul 06	N	R	K57	BYR	Pullus	N	Mai Po, HK, winter 2006-07
Bi-do, ROK	16 Aug 06	N	R	K58	BYB	Pullus	N	Macao, Dec 2007
Bi-do, ROK	16 Aug 06	N	R	K59	BYG	Pullus	N	Putian, Fujian, Mainland China, Nov 2007
Bi-do, ROK	16 Aug 06	N	R	K60	BYW	Pullus	N	

Place of banding	Released date	Metal ring (Y/N)	Right (colour)	Right (No.)	Left (colour)	Age	PTT (Y/N)	Last re-sighting records
Bi-do, ROK	16 Aug 06	N	R	K61	BGR	Pullus	N	
Suhaam, ROK	17 Jun 07	N	R	K63	BGB	Pullus	N	
Suhaam, ROK	17 Jun 07	N	R	K64	BGW	Pullus	N	Mai Po, HK, winter 2007-08
Suhaam, ROK	17 Jun 07	N	R	K65	BWR	Pullus	N	
Suhaam, ROK	17 Jun 07	N	R	K66	BWY	Pullus	N	Mai Po, HK, Nov 2007
Suhaam, ROK	17 Jun 07	N	R	K67	BWB	Pullus	N	
Suhaam, ROK	17 Jun 07	N	R	K68	GWB	Pullus	N	Itsukaichi, Hiroshima, Japan, Nov 2007; Kumamoto Port, Japan, Nov 2007; Tatara river, Fukuoka, Japan, Nov 2007; Jinkotou, Kashiihama, Fukuoka, Japan, Nov 2007; Okinawa, Japan, winter 2007-08; Tatara river, Fukuoka, Japan, Nov 2008
Suhaam, ROK	2 Aug 07	N	R	K71	GRG	Pullus	N	Xuan Thuy National Park, Vietnam, Nov 2008
Suhaam, ROK	2 Aug 07	N	R	K73	GYR	Pullus	N	Mai Po, HK, Nov 2007
Suhaam, ROK	2 Aug 07	N	R	K74	GYB	Pullus	N	Futian, Shenzhen, Mainland China, Nov 2007
Suhaam, ROK	2 Aug 07	N	R	K75	GYG	Pullus	N	
Suhaam, ROK	2 Aug 07	N	R	K76	GYW	Pullus	N	
Suhaam, ROK	2 Aug 07	N	R	K77	GWB	Pullus	N	Mai Po, HK, Nov 2007
Suhaam, ROK	6 Jul 08	N	R	K78	GBY	Pullus	N	
Suhaam, ROK	6 Jul 08	N	R	K79	GBG	Pullus	N	Beppu-kawa, Kagoshima, Nov 2008
Suhaam, ROK	6 Jul 08	N	R	K80	GBW	Pullus	N	
Kanghwa-do, ROK	9 Jul 04	N	R	K39	YRG	Pullus	N	
Kanghwa-do, ROK	12 Sep 05	Y	(Metal ring)		RGR	Juvenile	N	
Gaksiam, ROK	15 Jul 2007	N	R	K69	GRY	Pullus	N	Tainan, Taiwan, Nov 2007; Miyako-jima, Okinawa, Japan Jan 2008
Gaksiam, ROK	15 Jul 2007	N	R	K70	GRB	Pullus	N	Tainan, Taiwan Dec 2007
Gaksiam, ROK	15 Jul 2007	N	R	K72	GRW	Pullus	N	Tainan, Taiwan, Nov 2007

Place of banding	Released date	Metal ring (Y/N)	Right (colour)	Right (No.)	Left (colour)	Age	PTT (Y/N)	Last re-sighting records
Tomigukusu, Okinawa, Japan	10 Mar 04	Y	Y	J01	YR	Adult	Y	Yudo, Kimpo, ROK, Apr. 2005; Suhaam, ROK, Jun 2007; Ganghwa, ROK, Sep 2007; Okinawa, Japan, winter 2007-08;
Tomigukusu, Okinawa, Japan	10 Mar 04	Y	Y	J02	YB	Adult	Y	
Tomigukusu, Okinawa, Japan	7 Mar 05	Y	Y	J03	YG	Adult	Y	Okinawa, Japan, winter 2007-08
Tomigukusu, Okinawa, Japan	7 Mar 05	Y	Y	J04	YW	Adult	Y	Okinawa, Japan, winter 2007-08; Tokyo Bay, Japan, Mar 2008
Tomigukusu, Okinawa, Japan	7 Mar 05	Y	Y	J06	BY	Subadult	Y	Jisanri, Ganghwa, ROK, May 2006; Okinawa, Japan, winter 2007-08; Yongchongdo, ROK, May 2007
Tomigukusu, Okinawa, Japan	7 Mar 05	Y	Y	J07	BG	Juvenile	N	Furgelma Island, Russia, summer 2006
Tomigukusu, Okinawa, Japan	7 Mar 05	Y	Y	J08	WB	Juvenile	N	Saemangum,, ROK, Apr 2007; Ganghwa, ROK, Nov 2007; Okinawa, Japan, winter 2007-08; Manose-kawa, Kagoshima Pref. Nov. 2008
Tomigukusu, Okinawa, Japan	7 Mar 05	Y	Y	J09	GR	Juvenile	N	Unbukdong, Yongchongdo, ROK, Jun 2005; Sihwaho, ROK, Jul 2005; Okinawa, Japan, winter 2006-07
Tomigukusu, Okinawa, Japan	7 Mar 05	Y	Y	J10	GY	Juvenile	N	Okinawa, Japan, winter 2007-08;
Tomigukusu, Okinawa, Japan	7 Mar 05	Y	Y	J11	GB	Juvenile	N	Jeju Island, ROK, summer 2006
Tomigukusu, Okinawa, Japan	7 Mar 05	Y	Y	J12	GW	Subadult	N	Deep Bay, HK, winter 2005-06

Place of banding	Released date	Metal ring (Y/N)	Right (colour)	Right (No.)	Left (colour)	Age	PTT (Y/N)	Last re-sighting records
Tomigukusu, Okinawa, Japan				J13				Okinawa, Japan, winter 2007-08;
Furugelma Island, Russia	11 Jul 06	Y (right) B176997	---	---	RY	Pullus	N	Western Kyushu, Japan winter 2006-07
Furugelma Island, Russia	11 Jul 06	Y (right) B176998	---	---	YR	Pullus	N	Mai Po, HK, winter 2006-07
Furugelma Island, Russia	15 Jul 07	Y (left) B176999	RY	---	---	Pullus	N	
Furugelma Island, Russia	15 Jul 07	Y (left) B177000	YR	---	---	Pullus	N	Xuan Thuy National Park, Vietnam, Nov 2008
Furugelma Island, Russia	15 Jul 07	Y (left) B46058	RB	---	---	Pullus	N	
Furugelma Island, Russia	15 Jul 07	Y (left) B46064	BR	---	---	Pullus	N	Xuan Thuy National Park, Vietnam, Nov 2008
Furugelma Island, Russia	15 Jul 08	Y (left) B46067	WA	---	---	Pullus	N	
Furugelma Island, Russia	15 Jul 08	Y (left) B46072	AW	---	---	Pullus	N	
Furugelma Island, Russia	15 Jul 08	Y (right) B46073	---	---	WA	Pullus	N	
???	???	??	(No ring on right leg)	??	GYG	??	??	Mai Po, HK, Nov 2007

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