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LoLo's Flying Journey

An Education for Sustainable Development

Primary School Education Pack

LoLo's Fact

LoLo's Profile



Fig. 1 Black-faced Spoonbill. © Lai Pengzhi

English Name: Black-faced Spoonbill

Scientific Name: *Platalea minor*

Morphology: Body length: 74-82 cm

Weight: 1.4-2 kg

Beak length: 17-21 cm

Wing span: 140 cm

Description: *Adult.* black face, red pupils, white shaggy crest plumage, black beak and legs. The top and bottom of the beak is flattened and spoon-like (like a “pi pa” – a Chinese lute)(Fig. 2).



Fig. 2 Adult Black-faced Spoonbill. © Henry Lui

Juvenile: Black on wing tips and a dark pinkish grey bill (Fig. 3).



Fig. 3 Black-faced Spoonbill juvenile. © Henry Lui

Breeding: The crown, back of neck and breast turn golden yellow (Fig. 4).



Fig. 4 Black-faced Spoonbill with breeding plumage. © Neil Fifer

Distribution: East to Southeast Asia: from northeast China, Korea, Japan, Taiwan, Macau, Hong Kong to Vietnam (Fig. 5).



Fig. 5 Distribution of Black-faced Spoonbill.

Habitats: Nests on cliffs, migrates in a small groups and uses coastal wetlands as stopovers. Usually feeds and rests on tidal flats, swamps, fishponds, estuaries, paddy fields and *gei wai*.

(a gei wai is a traditional man-made intertidal pond in Southeast Asian regions. Shrimps, fishes, oysters, seaweeds and crabs can be cultured inside and then harvested in a sustainable way. Its water depth is actively managed, which assists the feeding of water birds in the pond.)

Breeding: West coast of the Korean peninsula and northeast China. Breeding season begins in April and ends in June. Tree sticks and branches are used to build nests on cliffs. Eggs and chicks are hunted by Herring Gulls (*Larus argentatus*) and Peregrine Falcons (*Falco peregrinus*) (Fig. 6).



Fig.6 Peregrine Falcon - the predator of Black-faced Spoonbill. © WWF-Canon / John S. MITCHELL

Feeding: Mainly feeds on small fishes, clams, shrimps and crabs in shallow water (with a depth ranging between 5 and 22 cm). More active feeding at night. When feeding, it submerges and sweeps its beak forward in water (Fig. 7).



Fig. 7 Black-faced Spoonbill is sweeping its beak. © Henry Lui

Population: The world population was only 300 individuals in 1994. According to the International Black-faced Spoonbill Census 2007, there are now 1,760 individuals in the world.

Threats: Habitat destruction, including industrial development and reclamation, and the modification of agricultural land are the major threats to Black-faced Spoonbills. Pollution, hunting, egg collection and disease are also contributory factors.

Conservation: Endangered (in the [2006 IUCN Red Data Book](#)).
Status (*IUCN Red Data Book provides taxonomic, conservation status, and distribution information on organisms that are facing a high risk of global extinction.*)

Conservation: The Black-faced Spoonbill is legally protected in China, Taiwan, Hong Kong, Korea and Japan. Its breeding sites and some of the wintering sites are protected. An action plan for the conservation of the Black-faced Spoonbill was implemented in 1995. An International Black-faced Spoonbill Census is carried out every year to monitor changes in its population. Both conventional ringing and satellite tracking experiments have been conducted to find their stopover sties and the route of migration.

Did you know?

MIGRATION

Migration is a common phenomenon in the animal world. The term "migration" describes the movement that always results in animals returning to the same breeding sites. Some migrating animals, such as birds and whales, travel amazingly long distances (thousands of kilometers) every year from, for example, Northern Siberia to Southeast Asia and Australia. Scientists are still not sure how animals can navigate such long distances so precisely, however studies suggest that the Sun, stars, the Earth's magnetic field, and physical landmarks such as coastlines can be used as cues to guide them.

The evolutionary benefit of migration is the increased the chance of survival due to moving to a more favourable environment when the usual habitat becomes too harsh to live in. However, when animals migrate, they face a number of the potential challenges such as increased energy requirements, predators, navigation and human disturbance, as highlighted by LoLo the Black-faced Spoonbill.

LoLo in Korea



Fig. 8 Korea.

Korea is known to be the major breeding ground for Black-faced Spoonbills. Its breeding is restricted to small islets on the west coast of the Korean peninsula. The main populations are located near the Demilitarized Zone (DMZ), a restricted area between North and South Korea.. In Korea, there is only one recorded wintering site in Jeju Island.



Fig. 9 Paddy field is one of the most important habitats for Black-faced Spoonbill in Korea. © Lew Young

Conservation

Habitat enhancement (Protected areas)

Their nesting islands, located off the coast of North Korea, have been declared a Zone of Protection and have restricted access.

Suncheon Bay was designated as a Wetland of International Importance in January 2006. This is the Republic of Korea's fourth Ramsar Site to protect wintering birds, including the Black-faced Spoonbill. Breeding sites in North Korea, at Taegam-do, Unmu-do, Sonchonrap-do and Tok-do, are designated seabird sanctuaries. The Southern Tidal-flat of Ganghwa Island is a Natural Monument and the Han River Estuary is a Wetland Protected Area because it is an important feeding and roosting site for Black-faced Spoonbills.

Protected species

The Black-faced Spoonbill is legally recognized as Natural Monument #205 and has Endangered Species Category I status in Korea.

Monitoring

Colour-banding on the legs of several young birds at or near to the breeding colonies has been implemented to help to generate essential data on migration routes and site fidelity (Fig. 10). Recent data reveals that the oldest Black-faced Spoonbill is over 11 years old. The government also supports local organisations that conduct Black-faced Spoonbill surveys.



Fig. 10 Bird ringing help determine the migration route of Black-faced Spoonbill. © WWF Hong Kong

Community, education and public awareness

Local organisations and governmental agencies help with the implementation of eco tours, camps and other mobile education programmes for both schools and the general public in order to promote the conservation of the Black-faced Spoonbill. Several education materials have been published as well (Fig. 11).



Fig. 11 Poster for conserving Black-faced Spoonbill in Korea. © KFEM 2007

Threats

Development

The construction of Incheon International Airport in the mid-1990s led to the reclamation of areas of wetland on Sammok and Yongjong islands, where small number of Black-faced Spoonbills used to be found. There have been no records on Sammok since 1996 and numbers on Yongjong have declined to fewer than five since 1995.

Saemangeum Tidal Flat Reclamation Project is the world's largest known coastal wetland reclamation project. A seawall has been built, replacing vast bird-rich tidal-flats and sea-shallows with land and a huge freshwater reservoir. The land use is still not yet planned, but the reclamation process has destroyed fishing assets, killed rare migratory birds and worsened the water quality of the rivers that feed into the tidal flat. As a result the tidal flats are choked, killing the shellfish and young fish that rare shore birds (like spoonbill sandpiper) feed on, and this will probably lead to the extinction of some bird species (Fig. 12). Black-faced Spoonbills, which used to stop at this site and fisheries might also be affected by the project.



Fig. 12 Endangered bird species—Spoonbill Sandpiper. © Henry Lui

In mid-2006, Jeju administrative authority announced a proposal to convert the extensive Seongsan Po wetlands in Jeju Island into a marine resort, which might make the site unavailable to the wintering Black-faced Spoonbill. Jeju Island is the only wintering site of the Black-faced Spoonbill in Korea and is acknowledged to be an internationally important wetland.

Disturbance

Disturbance from photographers is a potential threat to this species and is already believed to have adversely affected breeding success at some colonies in South Korea.

LoLo in Japan



Fig. 13 Japan.

The number of Black-faced Spoonbills wintering in Japan is quite stable; 189 wintered in Japan in 2006/07, mainly in the Kyushu region. There are 25 wintering sites in Japan, particularly around Hakata Bay. They rest and feed in estuaries, tidal flats, artificial islands and reedbeds.



Fig. 14 Tidal Mudflat is one of the important habitats for Black-faced Spoonbill in Japan. © WWF-Canon / WWF-Japan / Mima Junkichi

Conservation *Monitoring*

In 1998, researchers in Japan, Taiwan and Hong Kong carried out a satellite tracking programme to investigate the migration pattern of the Black-faced Spoonbill (Fig. 15). The technique is adapted from previous research on migration of the vulnerable White-naped Crane (*Grus vipio*) (Fig. 16).



Fig. 15 Installing transmitter for satellite tracking on Black-faced Spoonbill. © Yasuhiro Yamada



Fig. 16 White-naped Crane (*Grus vipio*). © WWF-Canon / WWF-Japan / Mima Junkichi

Habitat Management

In Hakata Bay, Fukuoka City, a temporary artificial island was recreated from landfill and attracted 100-150 Black-faced Spoonbills (nearly 10% of whole Black-faced Spoonbill population) to roost. Some conservation groups also created reedbeds for the water birds to roost (Fig. 17).



Fig. 17 Black-faced Spoonbills are resting in front of the reedbed. © Neil Fifer

Community, education and public awareness

Education work, including an outreach education programme and roadside panels, have been implemented to increase public awareness of the plight of the Black-faced Spoonbill.

Threats

Development

The closure of Isahaya Bay in Nagasaki Prefecture by a sea dyke has affected clam cultivation and other fishery-related activities as well as depriving the Black-faced Spoonbill of a wintering or stopover site. The extensive tidal flat of Ariake Bay at Isahaya was dammed and dried in 1997.

Construction of the Kyushu Shinkansen bridge over the Hikawa River estuary in Kumamoto Prefecture started in May 2004. The bridge construction will disturb the resting area of the Black-faced Spoonbill (Fig. 18).



Fig. 18 Urban development is the major threat to Black-faced Spoonbill. © WWF-Canon / Michel GUNTHER

Dredging

Dredging occurs in the estuary of the Tatara River, Fukuoka City. Although it helps avoid flooding, it destroys the roosting and feeding of Black-faced Spoonbill.

LoLo in China



Fig. 19 China.

Black-faced Spoonbill has been recorded in several provinces of China, including Guangdong, Hainan, and Laoning. The first breeding site was discovered in Laoning Province in 1999. Hainan Province is the third largest wintering site of Black-faced Spoonbills; 110 were found in 2007, and numbers have increased in recent years.



Fig. 20 Mangrove is a suitable habitat for Black-faced Spoonbill in China. © Karen Lui

Conservation

Protected Species

Black-faced Spoonbill has been listed as a Class I Protected Animals. The hunting of other birds has also been banned in Guangdong Province.

Establishment of Nature Reserve

There are currently 30 Ramsar Sites in China, with some located in coastal areas. Since most migratory water birds follow the coastline as a flyway, the protection of the coastal wetland is important for their migration. In 2006, the first Black-faced Spoonbill Nature Reserve was established at Hainan Province in order to enhance the conservation and monitoring of Black-faced Spoonbills, as well as other water birds.

Community, education and public awareness

Outreach education programmes have been implemented and leaflets have been dispatched to enhance the public's understanding of the natural environment (Fig. 21).



Fig. 21 Education in China. © WWF-Canon / Yifei ZHANG

Corporate sponsorship has also led to the establishment of educational facilities in protected areas such as Zhangjiang Estuary National Mangrove Nature Reserve in Fujian Province.

Monitoring

In Guangdong Province water bird monitoring has been implemented since 2005 to follow any changes in the populations.

Threats

Development

Habitat destruction is probably the biggest threat to Black-faced Spoonbills in southern China, where mangroves and tidal flats are being reclaimed for city development and aquaculture. For example, in Houshui Bay, Hainan Province, habitat change has decreased the number of Black-faced Spoonbills from 13 to 7 in just 4 years. It has been estimated

that over twenty thousand square kilometers of tidal wetland (about half of the total area of coastal wetlands) and about thirteen thousand square kilometers of lakes have been reclaimed in mainland China since 1949.

In Jiangsu, economic development along the coast has driven the Red-crowned Cranes (*Grus japonensis*) to concentrate in the core area of Yancheng Nature Reserve (Fig. 22). Black-faced Spoonbills at Yancheng probably face similar pressures.



Fig. 22 Red-crowned Crane (*Grus japonensis*). © WWF-Canon / Hartmut JUNGIUS

In Guangdong, development in the Shenzhen Special Economic Zone has greatly reduced the number of fishponds and mangroves, and has diminished the area of Futian Nature Reserve in Deep Bay. In Guangxi, the construction of fishponds and port facilities is destroying the wintering habitats of the Black-faced Spoonbill. In Hainan, large areas of mangroves and tidal flats have been converted into shrimp-ponds at Sanjiang and at the site where the species roosts in Dongzhaigang much of coastal wetland has been converted into coconut and other plantations (Fig. 23).



Fig. 23 Mangrove forest cleared for shrimp farming. © WWF-Canon / Elizabeth KEMF

Dam construction affects the hydrology, and has a negative impact on the roosting site of White-naped Crane (*Grus vipio*). Black-faced Spoonbills and other water birds will face similar pressures from the construction of a dam and reservoirs in the upper regions of the Changhua River in Hainan Province (Fig. 24).



Fig. 24 Dam in Min River. © WWF-Canon / Claire DOOLE

In Zhaoqing, economic development has converted the fox nut pond into a construction site, leading to decreased population of Pheasant-tailed Jacana (*Hydrophasianus chirurgus*) (Fig. 25).



Fig. 25 Pheasant-tailed Jacana (*Hydrophasianus chirurgus*). © Henry Lui

Pollution

Most of the Black-faced Spoonbill's wintering and migratory sites in China are on the southern and eastern coasts, where economic development and urbanisation is the fastest in China. The pollution from industry, domestic sewage and agrochemicals is severe. It has

been estimated that nearly two thirds of the rivers in the seven main river systems in China are polluted (Fig. 26).



Fig. 26 Pollution is one of the major threats to wetland environment. © WWF-Canon / Mauri RAUTKARI

Hunting

In Liaoning, local people collect birds' eggs for food and even set fire to the previous year's withered grass in order to find the nests and eggs more easily. Hunting is a threat to all migratory birds in Guangxi, and fish farmers regard herons and egrets (for which Black-faced Spoonbill could be mistaken) as pests that should be shot. Hunting has occasionally been reported on the Shenzhen side of Deep Bay since the late 1980s, and fishermen from China sometimes catch and sell birds. The collecting of mudskippers also affects the water birds, which feed on mudskippers as well. One Eurasian Spoonbill (*Platalea leucorodia*) was found shot dead there in late 1996 (Fig. 27). In Hainan, hunting is a major threat to Black-faced Spoonbills. Bird shooting is a serious problem, even inside protected areas (Fig. 28).



Fig. 27 Eurasian Spoonbill (*Platalea leucorodia*). © Henry Lui



Fig. 28 Hunting and egg collection are the threats to Black-faced Spoonbill.

© WWF-Canon / Michel GUNTHER

Disturbance

After the breeding site was discovered in Liaoning, birds were disturbed many times by visitors during egg incubation and this affected their breeding. In Guangxi and Hainan, disturbance caused by un-managed tourism is one of the main threats to Black-faced Spoonbills. In Fujian, human disturbance has increased because a fishpond operation has been intensified and diversified to cater for increasing human needs, and this has affected the roosting and feeding of Black-faced Spoonbills.

LoLo in Taiwan



Fig. 29 Taiwan.

Taiwan is the largest wintering site of Black-faced Spoonbills, hosting nearly half of the global population. Birds mainly winter at Tsengwen estuary area, Chiku, Tainan, where they roost and feed in fishponds (Fig. 30).



Fig. 30 Black-faced Spoonbill in Chiku Taiwan. © Lai Pengzhi

Conservation

Establishment of Protected Area

At Chiku, a Black-faced Spoonbill Reserve of about 300 hectares has been established, conserving lagoons, estuary areas and fishponds. Since fishing with nets is prohibited,

some fishermen have become reserve wardens, so their livelihood is not affected. Habitat enhancement, such as the provision of fish and shelter for Black-faced Spoonbills have been put in place by local conservation organizations.

Protected species

In 1992, the Council of Agriculture (COA) listed the Black-faced Spoonbill on the endangered species register, thus putting an end to legal hunting of the bird in Taiwan.

Monitoring

Radio-tracking of Black-faced Spoonbills was done in 1995 to investigate their migration route. Physical data, like water quality, wind speed, wind direction and temperature have also been collected alongside surveys to try to identify any changes in the Black-faced Spoonbill's habitat. Several local conservation organizations carry out Black-faced Spoonbill censuses to monitor its population (Fig. 31).



Fig. 31 Bird monitoring is essential in determining the change of bird number.

© WWF-Canon / WWF-Japan / Mima Junkichi

Community, education and public awareness

An annual festival has been held in Chiku since 2004 to promote the conservation of the Black-faced Spoonbill. Cultural, artistic and ecological approaches were used by conservationists in order to raise public awareness about the beauty and ecology of Chiku's wetland.

Due to the promotion of eco-tourism, Chiku became an educational hot spot for the conservation of Black-faced Spoonbill, and this has supported the livelihood of the local people. A new bird hide has been established to minimize the disturbance from visitors.

Threats

Development

The main wintering ground at the Tsengwen estuary faces pressure from industrial development: the famous industrial estate (Bin-nan) north of Chi-ku has been planned since 1994. It is an industrial complex that, if it goes ahead, is likely to destroy the feeding sites used by Black-faced Spoonbills.

A proposed highway on the west coast of Taiwan would destroy the Spoonbill's coastal habitats, especially in Tainan and Hsinchu. Wetlands along the west coast and in Ilan County have already succumbed to a number of development pressures.

Pollution

An outbreak of Avian Botulism in the Tsengwen estuary killed a total of 73 Black-faced Spoonbills in the winter of 2002/03 (about 7% of the global population). Scientists suspected that the disaster was caused by the sudden drop in temperature led to the appearance of botulism toxin in the fish, which was passed on to the Black-faced Spoonbills through the food chain.

Human Disturbance

At Chi-ku in Tainan, one bird was shot dead and another seriously injured in November 1992. This incidence was suspected to be done by local people. This was a response to the fact that the presence of this threatened species could prevent the reclamation of the mudflats for development. Moreover, one Black-faced Spoonbill was recorded in 2002 with its left foot broken by a mousetrap. Disturbance to the roosting of Black-faced Spoonbills also occurred in 2004 due to the presence of helicopters, airplanes and parachutes in the Tsengwan Estuary.

Invasive Alien Species

Stray dogs are a potential threat to Black-faced Spoonbills, as they have been recorded disturbing bird roosting in the Tsengwan estuary (Fig. 32). Dog traps have been set up to stop them attacking Black-faced Spoonbills.



Fig. 32 Stray dogs scare away the birds. © Neil Fifer

LoLo in Hong Kong



Fig. 33 Hong Kong.

Hong Kong is the second largest wintering site of Black-faced Spoonbills, with 359 individuals being recorded in early December 2006. More than one fifth of its global population stays at Mai Po and Inner Deep Bay. The mudflats, fishponds and nearby *gei wai* are used as feeding and roosting sites (Fig. 34).



Fig. 34 Birds in the mudflat, Deep Bay Hong Kong. © WWF Hong Kong

Conservation

Protected area

Mai Po marshes were declared as a “No Hunting Area” in 1973. In 1995, the Mai Po marshes and Inner Deep Bay wetland (1,500 ha) was formally designated as a Ramsar

Site.

Management

In 1983, WWF Hong Kong initiated its Mai Po Marshes Project, and in 1984 it began active management of Mai Po Marshes Nature Reserve for education and the conservation of wildlife. *Gei wai*, the traditional and multifunctional shrimp pond, remain operative and the water depth is actively managed, which supports the feeding of Black-faced Spoonbill and other water birds (Fig. 35). It is also a sustainable practice: shrimp harvesting occurs alongside the roosting of wildlife, as well as supporting the livelihood of the operators.



Fig. 35 *Gei wai*, a traditional shrimp pond supports feeding and roosting of birds.

© WWF-Canon / Hartmut JUNGIUS

Community, education and public awareness

There are over 400 tours by school children, corporate staff and volunteers who visit Mai Po Nature Reserve every year (Fig. 36). Public awareness of wetland and water bird conservation has been enhanced.



Fig. 36 Education in Mai Po Nature Reserve. © Samson So

Conservation of fishponds

Under an “Adopt a Green Fishpond” scheme, initiated by WWF Hong Kong, some fishponds are conserved under a “Management Agreement Programme (MA)” and act as a buffer zone for urban development, as well as a feeding area for Black-faced Spoonbill and other water birds (Fig. 37). Although a small number of fishponds are being developed into housing estates as part of the “Private-Public-Partnership Programme (PPP)”, the majority of fishponds in the Fung Lok Wai project area are being maintained and actively managed. Thus environmental considerations are being taken into account during development planning.



Fig. 37 Drain down of fishpond, a traditional operation practice benefits water birds for food.

© WWF Hong Kong / Tobi Lau

Threats

Pollution

Inner Deep Bay is suffering from severe pollution from the surrounding area, particularly Shenzhen. Some coastal waters in the Deep Bay area show signs of severe eutrophication (high mineral levels and low oxygen) caused by sewage and industrial wastes.

Hunting

A Black-faced Spoonbill was killed by swallowing a fish-hook in January 2000, in a trap set by fishermen to kill birds that feed in fishponds. In 1998 and 1999 more than 500 fish-eating birds were killed by fish-hooks or nets that are occasionally (and illegally) set up at fishponds near Deep Bay.

Competition for food

Mudskipper harvesting on the mudflats of Inner Deep Bay area is active because there is a high demand for human consumption (Fig. 38). Thus humans compete with Black-faced Spoonbill and other water birds that also feed on mudskippers.



Fig. 38 Fishermen on mudflat not only compete the food with water birds, but also scare them away.

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