

CHINA SEA COAST



THE coasts of southern Japan, southern China, Taiwan and northern Vietnam are fringed with wetlands, mainly estuaries with their associated freshwater and saltwater marshes, mangroves and intertidal mudflats. These wetlands are vital for waterbirds migrating from North-East Asia to their wintering grounds to the south, including substantial numbers of Chinese Egret, Spotted Greenshank and Spoon-billed Sandpiper. They are also important for wintering waterbirds, most notably almost the entire global population of Black-faced Spoonbills and large numbers of Saunders's Gull, while the main wintering grounds of Styan's Grasshopper-warbler also appear to be in this region.

■ **Key habitats** Coastal wetlands.

■ **Countries and territories** **Japan** (Kyushu, Nansei Shoto); **China** (*mainland*: Zhejiang, Fujian, Guangdong, Guangxi, Hainan; *Hong Kong; Macau; Taiwan*); **Vietnam**.

Threatened species

	Threatened species			Total
	CR	EN	VU	
●	—	—	1	1
✈	—	—	3	3
🐦 ¹	—	5	6	11
Total	—	5	10	15

Key: ● = breeding in this wetland region.

✈ = passage migrant.

🐦 = non-breeding visitor.

¹ The Conservation Dependent Dalmatian Pelican is also a non-breeding visitor to this region.

The China Sea coast region overlaps with part of Conservation International's Indo-Burma Hotspot (see pp.20–21).

Mai Po and Inner Deep Bay is an important passage and wintering area for many threatened waterbirds. PHOTO: RAY TIPPER



OUTSTANDING IBAs FOR THREATENED BIRDS (see Table 1)

Nine IBAs have been selected to cover the most important concentrations of threatened waterbirds in the region, particularly for the wintering populations of Black-faced Spoonbill and Saunders’s Gull.

CURRENT STATUS OF HABITATS AND THREATENED SPECIES

The coastal lowlands of southern Japan, southern China and northern Vietnam support a very large human population. Many wetlands have been converted to agricultural land or shrimp- and fish-ponds, or reclaimed

for industrial, infrastructural and urban development. For example, several large tidal flats have been reclaimed on Kyushu and c.1,700 km² of intertidal mudflats have been reclaimed in Zhejiang province since 1950. The region still has some extensive intertidal wetlands of major importance for threatened birds, but they are under great pressure from further development, human disturbance and pollution.

CONSERVATION ISSUES AND STRATEGIC SOLUTIONS (summarised in Table 3)

Habitat loss and degradation

■ **COASTAL RECLAMATION**

There is huge demand for land in this region because of human population pressure and very rapid economic



Table 1. Outstanding Important Bird Areas on the China Sea coast.

IBA name	Status	Territory	Threatened species
1 Sone tidal flats	—	Kyushu	Wintering Saunders’s Gull
2 Hakata bay	—	Kyushu	Wintering Black-faced Spoonbill
3 Ariake bay	— ^{AP}	Kyushu	Wintering Black-faced Spoonbill and Saunders’s Gull
4 Wenzhou bay	—	Zhejiang	Wintering Dalmatian Pelican and Saunders’s Gull, passage Black-faced Spoonbill
5 Min Jiang estuary	—	Fujian	Wintering Black-faced Spoonbill and Swan Goose
6 Mai Po and Inner Deep Bay	PA ^{AP,R}	Hong Kong	Passage and wintering Dalmatian Pelican, Oriental Stork, Black-faced Spoonbill, Spotted Greenshank, Spoon-billed Sandpiper and Styan’s Grasshopper-warbler
7 Taipa-Colones wetland	—	Macau	Wintering Black-faced Spoonbill
8 Tsengwen estuary	PA	Taiwan	Supports almost half of the global wintering population of Black-faced Spoonbill
9 Xuan Thuy NP	PA ^R	Vietnam	Passage and wintering Chinese Egret, Black-faced Spoonbill, Spotted Greenshank, Spoon-billed Sandpiper and Saunders’s Gull

Note that more IBAs in this region will be included in the *Important Bird Areas in Asia*, due to be published in early 2004.

Key IBA name: NP = National Park.
 Status: PA = IBA is a protected area; (PA) = IBA partially protected; — = unprotected; AP = IBA is wholly or partially an Asia-Pacific waterbird network site (see p.35);
 R = IBA is wholly or partially a Ramsar Site (see pp.31–32).

development. Large areas of wetland have been reclaimed for agriculture and aquaculture, and in recent decades for industrial and urban land. Reclamation of tidal flats has been widespread on Kyushu in Japan, while ongoing and proposed reclamation projects threaten to reduce the extent and quality of wetland habitat still further. A sea wall built at Isahaya in 1997 dried out Japan's largest tidal flat, such that it no longer attracts shorebirds. An airport has been constructed near Daijukarami tidal flat in Saga prefecture, and another is planned near Sone tidal flat at Kitakyushu. A 4 km² artificial island at Wajiro in Fukuoka prefecture is now under construction. Similar reclamation has taken place on Taiwan, particularly on the west coast, and the Tsengwen estuary, the most important wintering site for Black-faced Spoonbill, has recently been under considerable

pressure for industrial development. In southern China, coastal provinces are experiencing one of the highest rates of economic development of any region in the world, placing wetland habitats under great pressure. In Zhejiang province, large areas of mudflats have already been lost, and there are plans to reclaim a further 659 km² in the next 15 years. The wetlands of Deep Bay near Hong Kong have been degraded by housing estates and container storage facilities, as well as by the Shenzhen Special Economic Zone in Guangdong province, which has greatly reduced the area of Futian Nature Reserve. The wintering habitats of Black-faced Spoonbill have been lost in Guangxi through the construction of port facilities.

All future coastal reclamation and development projects in the region should be reviewed and revised, in order to

Large numbers of Saunders's Gulls winter on the China Sea coast.



PHOTO: RAY TIPPER

Table 2. Threatened birds of the China Sea coast.

Species		Distribution and population
Dalmatian Pelican <i>Pelecanus crispus</i>	CD	Small wintering populations in Hong Kong and Zhejiang
Spot-billed Pelican <i>Pelecanus philippensis</i>	VU	Very small and declining non-breeding population in northern Vietnam
Chinese Egret <i>Egretta eulophotes</i>	VU	Widespread on passage in significant numbers
Oriental Stork <i>Ciconia boyciana</i>	EN	Irregular winter visitor, mainly to Hong Kong
Black-faced Spoonbill <i>Platalea minor</i>	EN	Almost the entire global population winters, with important concentrations in Taiwan, Hong Kong, Vietnam, Japan and Macau
Swan Goose <i>Anser cygnoides</i>	EN	Scarce winter visitor
Baikal Teal <i>Anas formosa</i>	VU	Scarce winter visitor
Baer's Pochard <i>Aythya baeri</i>	VU	Scarce winter visitor
Scaly-sided Merganser <i>Mergus squamatus</i>	EN	Scarce winter visitor
Swinhoe's Rail <i>Coturnicops exquisitus</i>	VU	Scarce winter visitor
Spotted Greenshank <i>Tringa guttifer</i>	EN	Widespread on passage, a few overwinter in northern Vietnam
Spoon-billed Sandpiper <i>Euryrhyynchus pygmeus</i>	VU	Widespread on passage, a few overwinter in northern Vietnam
Saunders's Gull <i>Larus saundersi</i>	VU	Widespread in winter, with important concentrations at several sites
Styan's Grasshopper-warbler <i>Locustella pleskei</i>	VU	Nests on islets off Kyushu in Japan, all known wintering sites are in southern China, mostly in Hong Kong
Streaked Reed-warbler <i>Acrocephalus sorghophilus</i>	VU	Recorded on migration
Manchurian Reed-warbler <i>Acrocephalus tangorum</i>	VU	Recorded on migration

Other threatened waterbirds recorded from this region as rare visitors are: Lesser White-fronted Goose *Anser erythropus*, White-naped Crane *Grus vipio*, Hooded Crane *G. monacha*, Red-crowned Crane *G. japonensis* and Relict Gull *L. relictus*. In addition to the waterbirds, Greater Spotted Eagle *Aquila clanga* (VU; see F01) and Imperial Eagle *A. heliaca* (VU; see G01) occur on migration and in winter.

○ = region estimated to support <10% of global breeding population; = region estimated to support >90% of global non-breeding population, = 50-90%, = <10%, = proportion of global non-breeding population unknown: = region estimated to support >90% of global population on passage, = 50-90%, = 10-50%, = <10%

reconcile the needs of nature conservation and economic development. Environmental impact assessments should be used, and the management of coastal wetlands needs to be better coordinated between the relevant sectors. New protected areas should be established at some important wetlands for threatened birds. Conservation awareness initiatives are required to inform local authorities and communities about the ecological services that coastal wetlands provide (e.g. water purification, fish spawning grounds), as well as their importance for biodiversity.

■ CONVERSION TO AQUACULTURE

In recent decades, large areas of natural wetland in this region have been converted to shrimp- and fish-ponds. In Vietnam, this is causing the loss of intertidal mudflats in the Red River delta, although the extra accretion of sediment south of the Red River mouth may compensate for this. Reclamation for aquaculture should be controlled, but because shrimp- and fish-ponds that use traditional, extensive practices can provide valuable habitat for waterbirds, this type of sustainable aquaculture should be promoted.

■ DISTURBANCE

The feeding and roosting sites of waterbirds are disturbed by human activities at many coastal wetlands. Tourists and shellfish collectors cause major disturbance at Dongzhaigang Nature Reserve on Hainan and in Zhejiang, and fishermen from mainland China cause disturbance to Inner Deep Bay. People also collect molluscs and crabs in the intertidal zone of the Red River delta, Vietnam, disturbing foraging waterbirds. Indeed, a certain degree of conflict may occur between people and Black-faced Spoonbills at various sites, as *Tellina* (a bivalve thought to be important in the diet of spoonbills) is increasingly collected as food for people, and domestic ducks and crabs. Human access to coastal wetlands needs to be managed, and access to the most sensitive sites limited, particularly around feeding and roost sites.

■ POLLUTION

Pollution—in the form of industrial effluent, domestic sewage and agrochemical run-off—is generally severe. For example, there is a serious pollution problem linked to the rapid development of Shenzhen and Hong Kong around the Inner Deep Bay area, as 90% of untreated sewage from Shenzhen is directly released and water treatment plants for this and industrial effluent will not be available for the next 10 years. The water quality of Inner Deep Bay has declined sharply as a result, and in summer 1996 the dissolved oxygen content dropped to almost 0%; there were also indications that the numbers of mudskippers, crabs and worms were declining. The levels of pollution are higher still around Shanghai, and southwards along the coasts of Zhejiang and Fujian. In Vietnam, large quantities of pesticides and fertilisers are used throughout the Red River delta, with agricultural run-off, mixing with untreated human and animal waste from Hanoi and Hai Phong, draining into the Red, Thai Binh, Day and other major tributaries discharging into the Gulf of Tonkin. Long-term programmes are required to reduce pollution levels throughout the region, using stronger and more enforceable environmental legislation, and specific projects to address the major sources of pollution.

Protected areas coverage and management

■ GAPS IN PROTECTED AREAS SYSTEM

There are several large and vitally important wetland reserves in this region, including Mai Po Marshes Nature Reserve in Hong Kong and Xuan Thuy National Park in Vietnam, but many key wetlands are not officially protected, and new reserves are needed. Several sites on Kyushu deserve protection, including Ariake bay and Sone tidal flat in Fukuoka and Daijyu-garami in Saga. In southern China, new nature reserves are needed, at (e.g.) Wenzhou and Yueqing bays in Zhejiang. In Vietnam, new protected areas should be promoted in the Red River delta and the coastal zone of Quang Ninh province. Although Vietnam was early to ratify the Ramsar Convention, it has

Large areas of coastal wetland have been converted to shrimp- and fish-ponds, but traditional, extensive management of these ponds can provide valuable habitat for waterbirds.



PHOTO: JOHN HOLMES

About half of the global population of Black-faced Spoonbills winters at the Tsengwen estuary on Taiwan.

PHOTO: MARTIN HALE



Table 3. Conservation issues and strategic solutions for birds on the China Sea coast.

Conservation issues	Strategic solutions
Habitat loss and degradation	
<ul style="list-style-type: none"> ■ COASTAL RECLAMATION ■ CONVERSION TO AQUACULTURE ■ DISTURBANCE ■ POLLUTION 	<ul style="list-style-type: none"> ➤ Assess the environmental impact of proposed reclamation and development projects ➤ Minimise conversion of key wetlands for aquaculture ➤ Promote traditional, extensive aquacultural practices, to maximise the value of shrimp- and fish-ponds for waterbirds ➤ Control access to important waterbird feeding and roosting sites ➤ Develop long-term programmes to reduce coastal pollution levels
Protected areas coverage and management	
<ul style="list-style-type: none"> ■ GAPS IN PROTECTED AREAS SYSTEM ■ WEAKNESSES IN RESERVE MANAGEMENT 	<ul style="list-style-type: none"> ➤ Establish new protected areas at key coastal wetlands in Japan, mainland China, Taiwan, and Vietnam ➤ Designate more wetlands in Vietnam under the Ramsar Convention ➤ Strengthen reserve management through improved funding, infrastructure and staff training ➤ Stop afforestation of intertidal flats with mangroves in China and the Red River delta
Exploitation of birds	
<ul style="list-style-type: none"> ■ HUNTING 	<ul style="list-style-type: none"> ➤ Strengthen hunting laws and their enforcement, particularly inside protected areas ➤ Control gun and mist-net ownership
Gaps in knowledge	
<ul style="list-style-type: none"> ■ INADEQUATE DATA ON THREATENED BIRDS 	<ul style="list-style-type: none"> ➤ Survey poorly known areas, to locate key sites for threatened birds ➤ Continue coordinated counts of Black-faced Spoonbill, and study the impact of human resource use on its distribution and numbers ➤ Investigate the wintering range of Styan's Grasshopper-warbler

so far only nominated a single site, and the relevant government agency should list more of the countries' outstanding wetlands under this convention. Other important roosting or foraging sites for waterbirds should be considered for designation as local nature reserves, where reclamation is not allowed and disturbance and hunting are controlled.

■ WEAKNESSES IN RESERVE MANAGEMENT

There are major problems in managing some nature reserves because of pressures from development, disturbance and pollution. At some sites, protected area status is virtually ignored by local people, requiring improvements in institutional capacity, management, manpower and equipment. However, it should be recognised that effective protection of the highly productive coastal wetlands in these reserves would be of great benefit to the livelihood of

the local people, particularly through increased fish stocks. At Mai Po Marshes Nature Reserve in Hong Kong, protection of the buffer zones should be strengthened, and development controlled wherever possible. The Tsengwen estuary on Taiwan, the main wintering site for Black-faced Spoonbill, was designated an 'Important Wildlife Area' in 2002; a management plan for this new reserve needs to be prepared and implemented, and proposed developments in the adjacent areas should be carefully assessed and monitored. In the Red River delta in Vietnam, the reserve managers are pursuing inappropriate afforestation schemes, promoted by central government and some development NGOs, causing the loss of intertidal mudflats by planting them with mangroves. This practice is probably the main reason for recent declines in the numbers of wintering Black-faced Spoonbills and Saunders's Gulls at sites in the delta, and should be stopped.

Exploitation of birds

■ HUNTING

Hunting is a serious threat on the coasts of mainland China and Vietnam, even inside protected areas. All waterbirds are hunted in China, and in some areas mist-netting of shorebirds for food is very common. Fish-farmers sometimes shoot herons and egrets (for which Black-faced Spoonbills could be mistaken) as pests. Similarly, in Vietnam, trapping and shooting of shorebirds and wildfowl (using mist-nets, air-guns and shot-guns) for both local consumption and export to major cities and to China pose a severe threat to migratory waterbirds in the Red River delta. Laws designed to control hunting should be strengthened,

Black-faced Spoonbills have recently been satellite-tracked from Hong Kong, which has identified some important stopover and breeding sites.



PHOTO: TUNG-HUEI KUO

and increased efforts made to enforce the existing (and any new) legislation, particularly inside protected areas. Conservation awareness campaigns are required to make hunters more aware of hunting laws and of the pressure that they are putting on threatened species. However, given the difficulties of implementing hunting and trapping regulations, resources might most effectively focus on control of gun and mist-net ownership, especially near key wetlands.

Gaps in knowledge

■ INADEQUATE DATA ON THREATENED BIRDS

The coastal wetlands in parts of this region are poorly known, for example in Fujian and Zhejiang, China, and surveys are needed to identify important sites for waterbird conservation which may warrant designation as new nature reserves. Recent surveys in the poorly known coastal zone of Quang Ninh province in Vietnam found this area to be of greater importance than was previously believed, and located several important sites. The numbers of wintering Black-faced Spoonbills have been counted annually in this region for several years, and this monitoring should continue; studies to investigate the effects of human resource use on the distributions and numbers of this species and other threatened birds would be valuable. An outbreak of avian botulism killed 73 Black-faced Spoonbill at the Tsengwen estuary on Taiwan in winter 2002/2003; the causes of this disease need to be investigated, and plans developed to try to prevent any further outbreaks. The only wintering records of Styan's Grasshopper-warbler are from southern China, mainly in Hong Kong, and systematic surveys are required to clarify of its non-breeding range, and locate additional wintering sites.