

SUNDALAND WETLANDS



THIS region includes the coasts of southern peninsular Thailand and Peninsular Malaysia, Sumatra, Borneo, Java and associated small islands. The large areas of mangrove swamp (the most extensive in the world) and intertidal mudflat throughout the region provide important habitat for Milky Stork and Lesser Adjutant, both of which have their highest numbers here, and there are non-breeding populations of Chinese Egret, Spotted Greenshank and possibly Spoon-billed Sandpiper. Two waterbirds are endemic to wetlands on the coastal plains of Java, the Sunda Coucal, which survives in mangroves and associated swamps, and the Javanese Lapwing, which was last recorded in marshy grassland in 1940 and may now be extinct.

■ **Key habitats** Coastal wetlands.

■ **Countries and territories** **Thailand; Malaysia** (Peninsular, Sabah, Sarawak); **Singapore; Brunei; Indonesia** (Sumatra, Kalimantan, Java).

Threatened species

	CR	EN	VU	Total
●	1	—	4	5
✈	—	—	—	—
🐦	—	1	2	3
Total	1	1	6	8

Key: ● = breeding in this wetland region.

✈ = passage migrant.

🐦 = non-breeding visitor.

The Sundaland wetlands region is within Conservation International's Sundaland Hotspot (see pp.20–21).

Most of the global population of Milky Stork breeds in the Sundaland wetlands.

PHOTO: JON HORNBUCKLE



Some important sites for Sunda Coucal on Java are surrounded by settlements or encroached by industrial complexes, and several former localities are now covered by cities.



PHOTO: MIKE CROSBY/BIRDLIFE

OUTSTANDING IBAs FOR THREATENED BIRDS (see Table 1)

Eight IBAs have been selected to cover the largest known colonies of Milky Stork and Lesser Adjutant, plus sites for Spot-billed Pelican, Chinese Egret, Spotted Greenshank and the endemic Sunda Coucal.

CURRENT STATUS OF HABITATS AND THREATENED SPECIES

Large areas of coastal wetland have already been lost or degraded in this region. In peninsular Thailand, mangroves have been lost because of cutting for charcoal and timber and clearance for shrimp ponds, with a 22% reduction between 1961 and 1979, and even more rapid loss subsequently. In Peninsular Malaysia, c.25% of mangrove forest has been lost to agriculture and aquaculture, and cutting for wood-chips and timber. The coastal wetlands of



Table 1. Outstanding Important Bird Areas in the Sundaland wetlands.

IBA name	Status	Territory	Threatened species
1 Krabi bay	— ^R	Thailand	Non-breeding Spotted Greenshank and Chinese Egret
2 Matang Mangrove Forest R	PA	Peninsular Malaysia	Colonies of Milky Stork and Lesser Adjutant, although their numbers appear to be in decline
3 Sembilang ^{F07}	(PA)	Sumatra	Large colony of Milky Stork, also Spot-billed Pelican and Lesser Adjutant
4 Tanjung Koyan	—	Sumatra	Large colonies of Milky Stork and Lesser Adjutant
5 Way Kambas NP ^{F07}	PA	Sumatra	Milky Stork and Lesser Adjutant probably nest, also Spot-billed Pelican
6 Muara Gembong-Tanjung Sedari	(PA)	Java	Population of Sunda Coucal, also Milky Stork and Lesser Adjutant
7 Muara Cimanuk	—	Java	Population of Sunda Coucal, also Milky Stork
8 Solo delta	—	Java	Population of Sunda Coucal, also Milky Stork and Lesser Adjutant

Some waterbirds of this region occur in several of the IBAs listed for region F07, notably Berbak National Park in Sumatra and Danau Sentarum National Park in Kalimantan. 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; R = Reserve.
 Status: PA = IBA is a protected area; (PA) = IBA partially protected; — = unprotected; R = IBA is wholly or partially a Ramsar Site (see pp.31–32); F07 = supports some threatened forest birds of region F07.

Table 2. Threatened birds of the Sundaland wetlands.

Species	Distribution and population		
Spot-billed Pelican <i>Pelecanus philippensis</i>	○	VU	A small population is believed to breed on Sumatra
Chinese Egret <i>Egretta eulophotes</i>	☞	VU	Significant non-breeding populations on the Thai-Malay peninsula and on Borneo
Milky Stork <i>Mycteria cinerea</i>	●	VU	Most of the global population breeds in this region, in Peninsular Malaysia, Sumatra and Java
Lesser Adjutant <i>Leptoptilos javanicus</i>	○	VU	Significant numbers breed in Peninsular Malaysia, Sumatra and Borneo
Javanese Lapwing <i>Vanellus macropterus</i>	EX?	CR	Known from two areas of marshy grassland on the coasts of east and west Java, but no records since 1940
Spotted Greenshank <i>Tringa guttifer</i>	☞	EN	Small but significant non-breeding populations in peninsular Thailand, Peninsular Malaysia and Sumatra
Spoon-billed Sandpiper <i>Eurynorhynchus pygmeus</i>	☞	VU	Small numbers recorded in peninsular Thailand, Peninsular Malaysia and Singapore
Sunda Coucal <i>Centropus nigrorufus</i>	●	VU	Known only from Java, where it is a scarce inhabitant of mangroves and associated swamps

Other threatened waterbirds recorded from this region are: Black-faced Spoonbill *Platalea minor* and Sarus Crane *Grus antigone*. In addition to the waterbirds, Greater Spotted Eagle *Aquila clanga* (VU; see F01) and Imperial Eagle *A. heliaca* (VU; see G01) winter on the Thai-Malay peninsula, and the former also on Sumatra. Note that two species which occur in forested wetlands in the Thai-Malay peninsula, Sumatra and West Java (at least formerly), White-winged Duck *Cairina scutulata* and Masked Finfoot *Heliopais personata*, are covered in region F07.

● = region estimated to support >90% of global breeding population, ○ = 10–50%, ○ = <10%; ☞ = region estimated to support 10–50% of global non-breeding population, ☞ = <10%; EX? = probably extinct

Brunei are almost pristine, but those of Kalimantan, Sumatra and Java have been extensively converted to cultivation (principally rice) and aquaculture. The process is most advanced on Java, where a high proportion of the mangrove and adjacent swamp areas has been destroyed. Despite these pressures, some extensive areas of biodiversity-rich intertidal wetland remain in the region, notably on the east coast of Sumatra.

CONSERVATION ISSUES AND STRATEGIC SOLUTIONS (summarised in Table 3)

Habitat loss and degradation

■ CONVERSION TO AGRICULTURE

Conversion of coastal wetlands for cultivation is continuing in many parts of this region, through bunding, installation of sluices, and canalisation. River and coastal sedimentation, exacerbated by deforestation, is affecting estuarine and other coastal areas and making many wetlands shallower and easier to drain. This sedimentation must be minimised, mainly through forest protection (see F07). Awareness initiatives should better inform local authorities and communities about the ecological services that coastal wetlands provide (e.g. mitigation of flooding, control of coastal erosion, fisheries), and of their importance for biodiversity.

■ CONVERSION TO AQUACULTURE

Coastal wetlands, mainly mangrove swamps but also some intertidal mudflats, are being converted to shrimp- and fish-ponds throughout this region. Major new plans include large-scale brackish-water fish-farms in southern Sumatra. The extent and impact of conversion for aquaculture must be reduced through application of existing land-use plans, laws and policies, establishment of new nature reserves (see below) and development of alternative options for employment and livelihood improvement. Malaysia has a national policy on coastal resources management, and aims to formulate integrated coastal zone management plans for all states in the country; these plans need to take into account the need for biodiversity conservation, and prevent conversion of key wetlands for threatened birds.

■ DEVELOPMENT (URBAN, INDUSTRIAL, ETC.)

This region is experiencing rapid industrial development and human population growth, and many coastal wetlands

have been lost to mining, land-filling and coastal reclamation for housing, industry, tourist facilities and roads. For example, some important sites for Sunda Coucal on Java are surrounded by housing estates or encroached by industrial complexes, and several former sites are now built over. The reclamation of wetlands for development needs to be controlled through existing land-use laws and policies (including environmental impact assessments), and new nature reserves (see below).

■ CUTTING OF MANGROVES

In addition to the clearance of mangroves for aquaculture, large areas are affected by exploitation. Cutting tall mangroves removes the main nesting habitat of Milky Stork and an important one for Lesser Adjutant, but small-scale exploitation for fuelwood, charcoal, housing and fish-traps appears to have little impact. However, commercial mangrove exploitation poses a real threat to the sustainability of this ecosystem; for example, cutting by the woodchip industry has greatly reduced mangrove cover and quality in Peninsular Malaysia and on Borneo. In many areas illegal logging has destroyed mangrove habitat by clear-felling. Even where mangroves are managed as production forests, the logging tends to leave little old growth suitable for nesting storks. In these production forests, core blocks of habitat should be left undisturbed and unharvested, to provide nesting habitat for storks. There is scope for greater community participation in

Many of the coastal wetlands on Java have already been converted to agriculture and aquaculture.



PHOTO: BIRDLIFE

mangrove forest management and conservation. In Indonesia, local governments are developing mangrove and coastal area rehabilitation programmes, which are an important initiative towards restoring lost habitats; however, it is important that mangroves are planted only in areas which were forested in the past, as planting on open mudflats destroys vital waterbird feeding areas.

■ DISTURBANCE

Population growth and economic development has caused an increase in human disturbance in wetlands, e.g. by crab-catchers, fishermen, motorboats, etc. Some formerly remote wetlands in Sumatra and Kalimantan have been affected by transmigrants from Java. In many areas of both Malaysia and Indonesia, riverbanks are eroded by speedboat and barge traffic. Disturbance leads to reductions in waterbird numbers and abandonment of breeding sites, e.g. the colony of Milky Storks at Pulau Dua, Java, was lost after it became accessible to people. Human access to important wetland sites must be controlled, particularly at active stork colonies.

■ POLLUTION

Pollution threatens waterbirds in Peninsular Malaysia, and is presumably a problem elsewhere in the region. Oil pollution from the Kelang estuary conurbation and the busy shipping lanes in the Straits of Melaka is a major threat to coastal wetlands. Heavy industries along the west coast of Peninsular Malaysia are contaminating coasts and wetlands with high levels of lead, manganese, iron and mercury. Toxic chemicals are sometimes used by prawn farmers to control pests, which could cause problems for species such as Chinese Egret which forage near prawn-ponds. Existing laws to restrict toxic chemical usage need strict enforcement.

Protected areas coverage and management

■ GAPS IN PROTECTED AREAS SYSTEM

There are several protected areas in this region which include substantial areas of coastal wetlands, but many important sites remain unprotected. The wetlands of Java are under particular pressure, and new reserves are needed to protect the habitat of Sunda Coucal and other species, including the

proposed nature reserves at two of the outstanding IBAs on Java, Muara Gembong-Tanjung Sedari and Muara Cimanuk. Another priority is to protect the large nesting colonies of Milky Stork and Lesser Adjutant on Sumatra.

■ WEAKNESSES IN RESERVE MANAGEMENT

Responsibility for reserve management in Indonesia lies with the Directorate General of Forest Protection and Nature Conservation (PKA), but its effectiveness is constrained by shortages of staff, expertise and money. It is necessary to strengthen the PKA through training, improved terms and conditions and equipment for reserve staff, and to improve reserve management through more intensive patrolling, clear demarcation of boundaries, and stricter enforcement of environmental laws.

Exploitation of birds

■ HUNTING

Waterbirds are hunted in many parts of this region, and stork nests are robbed of eggs and chicks. In Indonesia, individual storks or pelicans are sometimes seen for sale at local markets, either for food or as pets. Wetland protected areas need to be more intensively patrolled, with campaigns to make hunters more aware of threatened species and existing hunting laws. Efforts are needed to protect nesting colonies of storks from exploitation, particularly on Sumatra.

Gaps in knowledge

■ INADEQUATE DATA ON THREATENED BIRDS

The distribution and numbers of the threatened waterbirds are poorly known in some parts of this region, and surveys are required to help identify new areas for conservation action. Searches should continue for Javanese Lapwing until all potential sites on Java have been visited, and surveys (and assessments of habitat extent and quality) at known and potential sites for Sunda Coucal would also be valuable. Surveys are also required to locate Spot-billed Pelican, Milky Stork and Lesser Adjutant colonies on Sumatra (and on Borneo for Lesser Adjutant, e.g. in the Mahakam lakes region), and the numbers and breeding success of storks should be monitored at the larger colonies.

Table 3. Conservation issues and strategic solutions for birds of the Sundaland wetlands.

Conservation issues	Strategic solutions
Habitat loss and degradation	
<ul style="list-style-type: none"> ■ CONVERSION TO AGRICULTURE ■ CONVERSION TO AQUACULTURE ■ DEVELOPMENT (URBAN, INDUSTRIAL, ETC.) ■ CUTTING OF MANGROVES ■ DISTURBANCE ■ POLLUTION 	<ul style="list-style-type: none"> ➤ Limit wetland conversion for aquaculture and reclamation for development, based on existing land-use plans, laws and policies ➤ Protect core blocks of undisturbed habitat in mangrove production forests, to provide nesting habitat for storks ➤ Develop community participation in mangrove forest management and conservation, and mangrove and coastal area rehabilitation programmes ➤ Control human access at key wetland sites, particularly stork colonies ➤ Enforce laws to control pollution
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 nature reserves to protect coastal wetlands on Java and large stork colonies on Sumatra ➤ Strengthen the PKA through training, improved terms and conditions and equipment for staff ➤ Improve reserve management through more intensive patrolling, boundary demarcation and stricter law enforcement
Exploitation of birds	
<ul style="list-style-type: none"> ■ HUNTING 	<ul style="list-style-type: none"> ➤ Strengthen enforcement of existing hunting laws, including through patrolling of nature reserves and protection of nesting colonies of storks
Gaps in knowledge	
<ul style="list-style-type: none"> ■ INADEQUATE DATA ON THREATENED BIRDS 	<ul style="list-style-type: none"> ➤ Search for Javanese Lapwing and survey Sunda Coucal on Java ➤ Survey and monitor large waterbird colonies on Sumatra and Borneo