SEA OF OKHOTSK and SEA OF JAPAN COASTS

THE coastal wetlands around the Sea of Okhotsk and the northern Sea of Japan are rich in threatened waterbirds, both breeding and on passage. These include two species which only breed in this region, Steller's Sea-eagle and Spotted Greenshank, both of which nest at low densities in a mixture of coastal wetland and forest habitats around the Sea of Okhotsk; conservation issues affecting forests in this region, and therefore relevant to these two species, are discussed under F01. Another important breeder is Red-crowned Crane, which nests in eastern Hokkaido and the southern Kuril islands. Chinese Egret, Baer's Pochard and Styan's Grasshopper-warbler have significant breeding populations in southern Primorye, which is also an important staging area for several threatened species. The last confirmed records of Crested Shelduck were from here; its breeding grounds have never been found and it could now be extinct.

	Threatened species			
	CR	EN	VU	Total
breeding	—	3	4	7
passage	—	1	6	7
non-breeding	1	1	—	2
Total	1	5	10	16

Key: breeding in this wetland region. passage migrant. non-breeding visitor.

- **Key habitats** Coastal wetlands, freshwater wetlands on coastal plains.
- **Countries and territories** **Russia** (Chukotka, Koryakia, Kamchatka, Magadan, Khabarovsk, Primorye, Sakhalin); **Japan** (Hokkaido); **North Korea**.

The spectacular Steller's Sea-eagle is unique to this region, nesting in a mixture of coastal wetland and forest habitats around the Sea of Okhotsk. PHOTO: BIRDLIFE

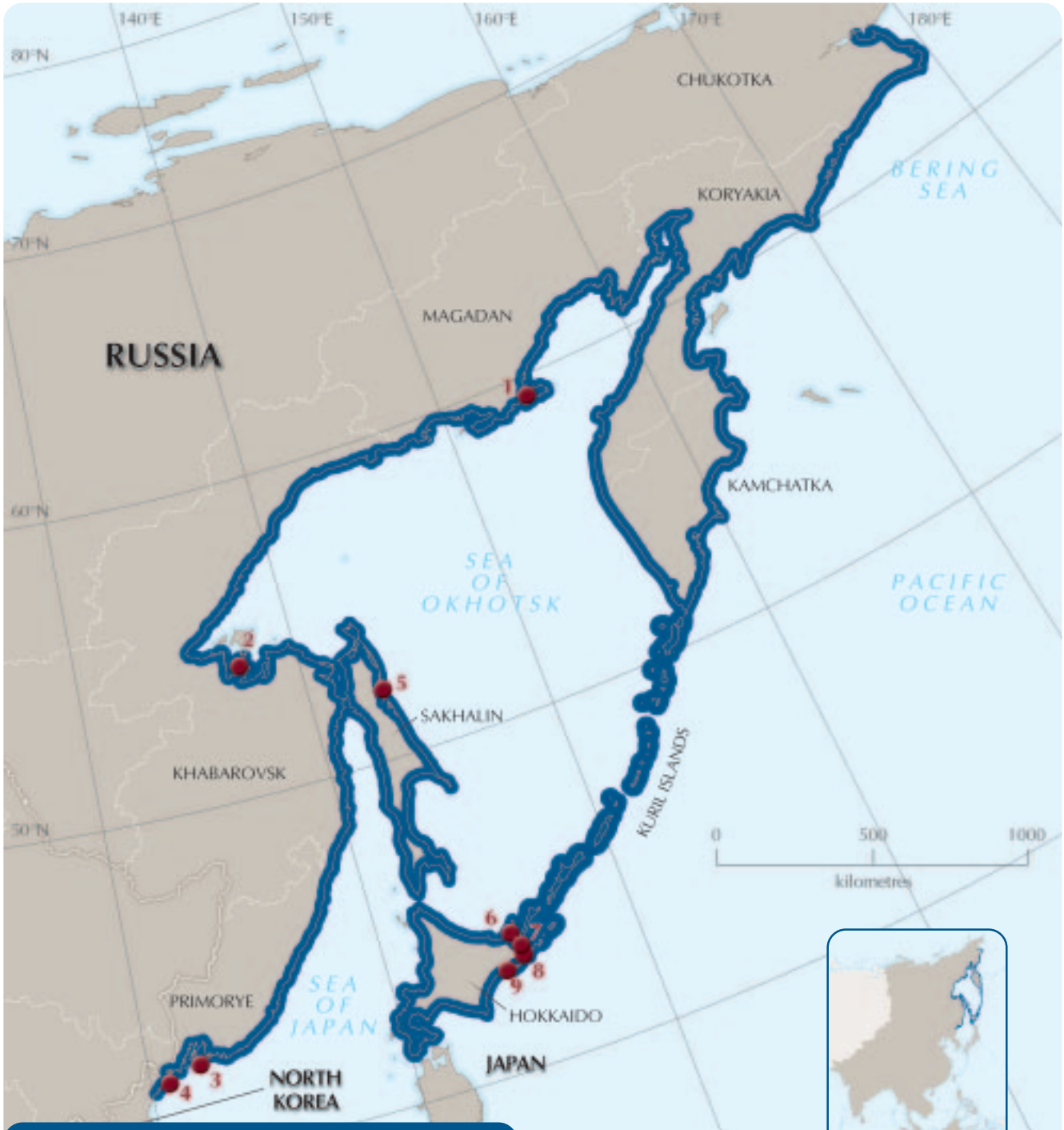

Table 1. Outstanding Important Bird Areas on the Sea of Okhotsk and Sea of Japan coasts.

	IBA name	Status	Territory	Threatened species
1	**Malkachan tundra**	—	Magadan	Breeding Steller's Sea-eagle and Spotted Greenshank, important staging area for waterfowl
2	**Konstantin bay**	—	Khabarovsk	Important breeding site for Spotted Greenshank
3	**Islands in Peter the Great bay**	(PA)	Primorye	Breeding Styan's Grasshopper-warbler, Crested Shelduck was recorded in the 1960s
4	**Tumen estuary**	PA	Primorye	Breeding Baer's Pochard and Chinese Egret (on Furugelm island), important staging area for cranes and shorebirds
5	**North-east Sakhalin lowlands**	—	Sakhalin	Important breeding area for Swan Goose and Spotted Greenshank
6	**Shiretoko peninsula**[F01]	PA	Hokkaido	Important wintering area of Steller's Sea-eagle
7	**Notsuke peninsula**	PA	Hokkaido	Important breeding site for Red-crowned Crane
8	**Furen-ko lake**[F01]	PA	Hokkaido	Important breeding site for Red-crowned Crane, and wintering area of Steller's Sea-eagle
9	**Kushiro marshes**	PA [AP,R]	Hokkaido	Important breeding site for Red-crowned Crane

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 *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); F01 = also supports a threatened forest bird of region F01.

OUTSTANDING IBAs FOR THREATENED BIRDS (see Table 1)

Nine IBAs have been selected, covering many important breeding and passage populations of threatened waterbirds. Steller's Sea-eagle and Spotted Greenshank breed at low densities, and require conservation at the landscape level, and only a few outstanding IBAs have been selected for these species.

CURRENT STATUS OF HABITATS AND THREATENED SPECIES

Large parts of this region are relatively undeveloped, particularly in the north, and the natural habitats are mainly intact. However, there has been extensive wetland loss on Hokkaido and in parts of south-east Russia, and increased development could lead to further habitat reduction and degradation in many areas. On Hokkaido,

The Red-crowned Cranes on Hokkaido are resident, and virtually dependent on artificial feeding sites in winter.

PHOTO: P. B. TAYLOR/BIRDLIFE

Table 2. Threatened birds of the Sea of Okhotsk and Sea of Japan coasts.

Species			Distribution and population
Chinese Egret *Egretta eulophotes*	○	VU	The only Russian breeding colony is on Furugelm island in southern Primorye
Oriental Stork *Ciconia boyciana*	✶	EN	Occurs on passage in the south of this region
Swan Goose *Anser cygnoides*	○	EN	Nests in northern Sakhalin and the lower Amur in Khabarovsk, and moults on the south-west coast of the Sea of Okhotsk
Lesser White-fronted Goose *Anser erythropus*	✶	VU	Widespread on passage within this region
Crested Shelduck *Tadorna cristata*	EX?	CR	Recorded the 1960s on an island in Peter the Great bay, Primorye
Baikal Teal *Anas formosa*	✶	VU	Widespread on passage within this region
Baer's Pochard *Aythya baeri*	○	VU	Nests in wetlands near the coast of southern Primorye
Scaly-sided Merganser *Mergus squamatus*	?	EN	Small numbers winter on the coast of Primorye
Steller's Sea-eagle *Haliaeetus pelagicus*	●	VU	Nests in coastal Chukotka, Koryakia, Kamchatka, Magadan, Khabarovsk and Sakhalin, many winter in Japan (mainly Hokkaido)
White-naped Crane *Grus vipio*	✶	VU	Occurs on passage in the south of this region, largest numbers in southern Primorye
Hooded Crane *Grus monacha*	✶	VU	Occurs on passage in the south of this region
Red-crowned Crane *Grus japonensis*	◐ ✶	EN	Breeds on Hokkaido and the southern Kuril islands, and occurs on passage in southern Primorye
Swinhoe's Rail *Coturnicops exquisitus*	✶	VU	Occurs on passage in the south of this region
Spotted Greenshank *Tringa guttifer*	●	EN	Nests in larch forest by wet coastal meadows and mudflats in Magadan, Khabarovsk, Sakhalin, and presumably Kamchatka
Spoon-billed Sandpiper *Eurynorhynchus pygmeus*	✶	VU	Widespread on passage within this region
Styan's Grasshopper-warbler *Locustella pleskei*	◐	VU	Nests on several islands in Peter the Great Bay, Primorye

Other threatened waterbirds recorded from this region as rare visitors are: Black-faced Spoonbill *Platalea minor*, Siberian Crane *Grus leucogeranus*, Saunders's Gull *Larus saundersi* and Relict Gull *L. relictus*.

● = region estimated to support >90% of global breeding population, ◐ = 10–50%, ○ = <10%; ? = regional proportion of global non-breeding population unknown;
✶ = region estimated to support >90% of global population on passage, ✶ = 10–50%, ✶ = <10%; EX? = probably extinct

the wetlands favoured by nesting Red-crowned Cranes continue to be lost to development, especially agricultural expansion, river channelisation and road-building; for example, since the 1970s one-third of the 291 km^2 of marshland in Kushiro has been converted to agricultural, industrial or residential use. On Sakhalin, wetland habitats have been lost because of exploitation of the oil and gas reserves in the north of the island. The coastal meadows and estuaries where Spotted Greenshank nest are usually adjacent to villages, and are therefore subject to disturbance by people, livestock and dogs.

CONSERVATION ISSUES AND STRATEGIC SOLUTIONS (summarised in Table 3)

Habitat loss and degradation

CONVERSION TO AGRICULTURE

Agricultural expansion and associated river channelisation continue to reduce the breeding habitat of Red-crowned Crane on Hokkaido, and are presumably a potential threat elsewhere in the region.

DEVELOPMENT (URBAN, INDUSTRIAL, ETC.)

Hokkaido is already industrially developed, and several major coastal ports, new roads and other development projects are planned or underway in eastern Russia. The Tumen River Area Development Programme plans a large seaport and railway, and could lead to habitat loss and increased human disturbance, pollution and other pressures; this may affect breeding populations of Chinese Egret and Styan's Grasshopper-warbler in southern Primorye, as well as migratory waterbirds in the Tumen river estuary. Further north, proposed large-scale coastal developments for the petrol industry in Magadan and other provinces are potential threats to the habitats of Steller's Sea-eagle, and presumably also Spotted Greenshank, and could cause coastal pollution. These projects should be subject to environmental impact assessments, to consider their potential impacts on the environment and threatened species, and to develop plans for mitigation of any negative effects. Management plans need to be prepared for any key areas for threatened birds that could be directly affected by these projects, to ensure that all human activities are compatible with the conservation of the area.

COLLISIONS WITH POWER-LINES

On Hokkaido, a study in the 1970s found that c.70% of the Red-crowned Cranes found dead in the wild were killed by collision with power-lines, and this is still a major cause of mortality, particularly when cranes are flushed. Techniques need to be developed to minimise collisions, including relocation of power-lines away from crane roosts, improved control of disturbance (especially by tourists), and possibly by marking power-lines to make them more visible to cranes.

DISTURBANCE AND INCREASED PREDATION

As one of the largest of all raptor species, Steller's Sea-eagle is easily energetically stressed and thus intolerant of more than 5–6 flights a day caused by human disturbance, which may explain its avoidance of human settlements. On Sakhalin, the proportion of abandoned nesting sites has increased in areas where human activity has increased. Disturbance by holiday-makers is a potential threat at the Chinese Egret nesting colony in Primorye. The main predator of Spotted Greenshank nests is the Carrion Crow *Corvus corone*, and the development of settlements near to breeding areas on Sakhalin has led to an increase in the crow population. Industrial and urban development should be controlled around the breeding areas of all of these threatened species, with special measures at some sites to minimise human disturbance during the nesting season.

POISONING

In Primorye, Steller's Sea-eagle have been poisoned by fish from water polluted by industrial waste, and high levels of airborne pollutants (DDT/DDE and PCBs) in Magadan and Khabarovsk may be affecting the eagles and other

The fishing industry on Hokkaido has until recently provided an abundant supply of waste fish for wintering Steller's Sea-eagles.

PHOTO: JON HORNBUCKLE

wildlife. On Hokkaido, wintering Steller's Sea-eagles are tending to move inland because of changes in the availability of fish and scavenge on sika deer *Cervus nippon* killed by hunters, thus running a high risk of lead poisoning through ingestion of lead shot; at recent rates of poisoning, the eagle population could be halved within c.50 years. In 2001, the Ministry of the Environment of Japan banned the use of lead bullets for deer hunting, requiring hunters to replace them with copper bullets. However, lead bullets can still be used to shoot bears (as hunters claim that copper is not strong enough), making it difficult to police any illegal use of lead bullets to kill deer. This loophole must be removed, possibly by strictly controlling the use of lead shot.

■ REDUCTION IN FOOD SUPPLY

On the large salmon rivers near Magadan, the Steller's Sea-eagle population could soon collapse, following the overharvesting of salmon runs during the 1990s, and this is also likely to be a problem elsewhere on the coast and on the large rivers flowing into the Sea of Okhotsk. In Primorye, several fur farms where wintering eagles used to feed on waste have recently closed down, and some of the remaining fur farms have started to recycle the waste, which has deprived the eagles of one of their sources of food. The wintering population on Hokkaido relies heavily on waste fish, but its distribution there has already shifted in response to changes in fishing activities, and future changes are likely to continue to affect it. If food availability on the wintering grounds is low, the breeding success of the eagles may also be lower. Regulations restricting salmon fishing to certain sections of the coast and rivers flowing into the Sea of Okhotsk need to be more strictly enforced. The industrial-scale collection of fish eggs from the spawning grounds to supply salmon hatcheries also needs to be controlled, including through the establishment of new reserves (see below). Given the dependence of some wintering populations of Steller's Sea-eagle on artificial food supplies, supplementary feeding may need to be temporarily provided when these are disrupted, although in the longer term efforts should be made to increase their natural and semi-natural food supplies.

■ OVER-CONCENTRATION CAUSED BY SUPPLEMENTARY FEEDING

The population of Red-crowned Cranes on Hokkaido is resident, despite the fact that only a few wetlands on the island (those kept free of ice by hot springs) are available for them to forage in winter. The cranes are therefore virtually dependent on c.20 artificial feeding sites, and the concentration of wintering birds at these sites might put them at risk from the outbreak of disease or some other catastrophe. In the short term, this could be addressed by providing limited supplies of food at more scattered feeding stations, but in the long term a strategy should be devised to encourage the cranes to migrate southward in winter to the warmer parts of Japan.

Protected areas coverage and management

■ GAPS IN PROTECTED AREAS SYSTEM

Many important sites for threatened waterbirds in this region are inside protected areas, but there are some significant gaps in coverage. The breeding grounds of Spotted Greenshank need to be protected in new sanctuaries, including at Konstantin bay in Khabarovsk, where the exploitation of natural resources should be strictly regulated and reindeer herds moved elsewhere during the nesting period. Several sanctuaries have been established in northern Sakhalin for Spotted Greenshank, but additional reserves are needed to protect the breeding and moulting habitats of Swan Goose, particularly those on the north-west coast. New reserves to protect the main salmon spawning grounds that Steller's Sea-eagle relies on for food are vital for its conservation in Russia, for example on the lower Inya river in Khabarovsk. The Tumangan Nature Park has been established on the coastal plains around the Tumen river estuary, but designated hunting areas (for wildfowling and pheasant shooting) close to this park cause disturbance, and the zonation of peripheral

Table 3. Conservation issues and strategic solutions for birds of the Sea of Okhotsk and Sea of Japan coasts.

Conservation issues	Strategic solutions
Habitat loss and degradation	
■ CONVERSION TO AGRICULTURE ■ DEVELOPMENT (URBAN, INDUSTRIAL, ETC.) ■ COLLISIONS WITH POWER-LINES ■ DISTURBANCE AND INCREASED PREDATION ■ POISONING ■ REDUCTION IN FOOD SUPPLY ■ OVER-CONCENTRATION CAUSED BY SUPPLEMENTARY FEEDING	➤ Assess the environmental impact of proposed development projects, and prepare management plans for any key areas affected ➤ Develop techniques to minimise collisions by Red-crowned Cranes with power-lines on Hokkaido ➤ Control development and human disturbance around the breeding grounds of threatened species ➤ Stop the use of lead bullets for deer hunting on Hokkaido, to prevent poisoning of Steller's Sea-eagles ➤ Enforce the existing regulations to manage salmon fisheries around the Sea of Okhotsk, and control salmon egg collection from spawning grounds for hatcheries ➤ Provide food to Red-crowned Cranes on Hokkaido at more widely spread feeding stations, and encourage them to migrate to southern Japan in winter
Protected areas coverage and management	
■ GAPS IN PROTECTED AREAS SYSTEM	➤ Establish new reserves for nesting Spotted Greenshank and on Sakhalin for Swan Goose, and to protect the salmon stocks required by Steller's Sea-eagle ➤ Improve zonation of Tumangan Nature Park, and establish this site as an international protected area ➤ Extend the boundaries of the Far Eastern Marine Reserve
Exploitation of birds	
■ WILD BIRD TRADE	➤ Prohibit trading of Steller's Sea-eagle
Gaps in knowledge	
■ INADEQUATE DATA ON THREATENED BIRDS	➤ Survey breeding Baer's Pochard, Spotted Greenshank and Styan's Grasshopper-warbler ➤ Search for Crested Shelduck ➤ Study the effects of pollutants and other potential threats on Steller's Sea-eagle

areas needs to be improved; ideally, an international protected area should be established to include all important habitats for waterbirds around the estuary, including areas in Russia, China and North Korea. Although the breeding colony of Chinese Egrets on Furugelm island is inside the Far Eastern Marine Reserve, the coastal lagoons and bays between the Tumen river mouth and Pos'yet bay, where the birds from the colony feed, are not protected; the reserve boundaries should be extended to include this stretch of coastline, as well as the islets in Peter the Great bay where Styan's Grasshopper-warbler breeds.

Steller's Sea-eagle populations could soon collapse in parts of Russia, following overharvesting of salmon runs during the 1990s.

PHOTO: EUGENE POTAPOV

Exploitation of birds

HUNTING

Some of the threatened waterbirds are hunted in this region, including Baer's Pochard and Swan Goose, but at levels that do not appear to constitute a major threat.

WILD BIRD TRADE

Several animal trading companies in eastern Russia have collected chicks and eggs from Steller's Sea-eagle nests, and continue to put pressure on the local Nature Protection Agency in Magadan to allow trade in the species; this could negatively affect the eagle population, particularly as disturbance at nests is believed to affect breeding success adversely, and trade in this protected species should not be allowed.

Gaps in knowledge

INADEQUATE DATA ON THREATENED BIRDS

There are important gaps in knowledge of the distribution and numbers of several threatened waterbirds in this region. Early summer surveys are required to locate more breeding sites of Spotted Greenshank in potentially suitable habitats to the south-west of Okhotsk and between the Ul'beya river and Cape Onatsevich. A comprehensive survey is needed of Baer's Pochard in Russia. Studies are also required of the islands in Peter the Great bay in Primorye, to locate more populations of Styan's Grasshopper-warbler, and searches are needed to try to locate the little known Crested Shelduck both on these islands and elsewhere in the region. Many studies have been conducted on Steller's Sea-eagle in Russia and Japan, but, given its potential vulnerability to many of the environmental changes taking place or planned within its range, further work is needed, for example to monitor the effects on the eagles of pollutants (DDT/DDE and PCBs) in Russia and lead shot in Japan.