

BOREAL and NORTHERN TEMPERATE FORESTS

THIS region includes the eastern part of the vast belt of boreal (or taiga) forest which extends from northern Europe to north-east Asia, together with the northern temperate forests of south-east Russia, North Korea, and north-east China. Six threatened bird species breed in these forests and the associated wetlands, including three which are confined to the relatively developed south and east of the region (the riverine Scaly-sided Merganser and Blakiston's Fish-owl, and Rufous-backed Bunting). The other three are relatively widespread within the region, with Baikal Teal also nesting in tundra wetlands (see W01) and Greater Spotted Eagle ranging westwards from Asia to eastern Europe. An additional seven threatened species (Oriental Stork, Crested Shelduck, Baer's Pochard, Steller's Sea-eagle, Red-crowned Crane, Swinhoe's Rail and Spotted Greenshank) are found in wetlands on the south-eastern and eastern edges of this forest zone, and their conservation is covered in regions W02 and W03.

- **Key habitats** Boreal and temperate forest, and associated wetlands.
- **Altitude** Lowlands to c.2,000 m.
- **Countries and territories** **Russia** (Krasnoyarsk, Irkutsk, Buryatia, Chita, Yakutia, Koryakia, Kamchatka, Magadan, Khabarovsk, Amur, Jewish Autonomous Region, Primorye, Sakhalin); **Mongolia**; **Japan** (Hokkaido); **North Korea**; **China** (Heilongjiang, Jilin, Inner Mongolia).

	Threatened species			Total
	CR	EN	VU	
🦉 ¹	—	2	2	4
🦉	—	—	2	2
Total	—	2	4	6

Key: 🦉 = breeds only in this forest region.

¹ Two species which nest only in this forest region migrate to other regions outside the breeding season, Scaly-sided Merganser and Hooded Crane.

🦉 = also breeds in other region(s).

Some extensive tracts of pristine boreal forest remain in eastern Russia.

PHOTO: OTTO PFISTER



OUTSTANDING IBAs FOR THREATENED BIRDS (see Table 1)

Most threatened birds in this region breed at low densities, and their conservation principally depends on broad-scale habitat protection measures rather than the management of key sites. However, the three large IBAs selected together support significant proportions of the global populations of Scaly-sided Merganser, Blakiston's Fish-owl and Rufous-backed Bunting.

CURRENT STATUS OF HABITATS AND THREATENED SPECIES

Large areas of the region remain pristine and still relatively unaffected by intensive economic activities, but forests in some areas have been much reduced and fragmented by logging and development, notably in south-east Russia, Hokkaido and north-east China. From the 1960s to early 1980s, logging in the Ussuri river drainage (including the lower Bikin and Iman valleys) greatly reduced the habitat of



Table 1. Outstanding Important Bird Areas in the boreal and northern temperate forests.

IBA name	Status	Territory	Threatened species and habitats
1 Bikin river basin ^{W03}	— ^{WH}	Primorye	Important breeding populations of Scaly-sided Merganser and Blakiston's Fish-owl, also Hooded Crane
2 Iman river basin ^{W03}	—	Primorye	Important breeding populations of Scaly-sided Merganser and Blakiston's Fish-owl, also Hooded Crane
3 Xianghai NNR ^{W03}	PA ^{AP,R}	Jilin	Important breeding population of Rufous-backed Bunting

Several of the forest birds of this region breed in or near to some IBAs listed in regions W02 (Blakiston's Fish-owl) and W03. 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: NNR = National Nature Reserve.
 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); WH = IBA is wholly or partially a World Heritage Site (see p.34); W03 = supports some threatened wetland birds of region W03.

Scaly-sided Merganser and Blakiston's Fish-owl. However, large-scale deforestation in river valleys was then prohibited, and plans to log the Bikin basin were dropped. Wetlands in the taiga zone are also relatively secure, but there have been localised losses through development. On Hokkaido, the human population has increased greatly since the 1950s, and much of the habitat of Blakiston's Fish-owl has been lost to farmland, urban development, and logging. Fish stocks in the rivers have been reduced by the construction of dams. The protection afforded to the

forests where the species nests is still inadequate, and many of these areas remain under threat. However, immediately to the north of Hokkaido, the southern Kuril islands are relatively undeveloped, and retain large areas of undisturbed natural forest. In north-east China, much original boreal and northern temperate forest has been cleared, and much remaining forest degraded; the Chinese breeding population of Scaly-sided Merganser is greatly reduced, and Blakiston's Fish-owl may be near to national extinction.

Blakiston's Fish-owl requires stretches of mature riverine forest, a habitat that has been much reduced in north-east China, Hokkaido and parts of Russia.



PHOTO: YASUYUKI MAKINO

CONSERVATION ISSUES AND STRATEGIC SOLUTIONS (summarised in Table 3)

Habitat loss and degradation

■ FORESTRY

Forestry provides almost 10% of total industrial output in the Russian Far East, but timber production fell significantly in the 1990s following the political changes in Russia. Logging concessions have recently been granted in many areas (many to joint ventures between Russian and foreign companies), new logging roads are being constructed, and it is likely that the intensity of logging will accelerate. The largest remaining primary forests in the south-east Russian breeding grounds of Scaly-sided Merganser and Blakiston's Fish-owl are inside concessions, included those in the Bikin and Iman river basins. Extensive areas of primary forest must be protected from logging, through the cancellation of concessions and the establishment of nature reserves. Although all riparian forests are technically protected in Russia, to preserve water supplies and salmon spawning grounds, the upper levels of the riverine terraces and the banks of small streams are often subject to intensive logging; protection of riverine flood-plain forests should be extended to include riverine terraces and small streams on valley sides, as these are an integral part of the ecosystems required by Scaly-sided Merganser and Blakiston's Fish-owl. The logging practices in this part of Russia are generally inefficient, and 40–60% of all timber cut may be lost in the production process; foreign capital and reduced-impact logging equipment and practices could reduce waste, and help create a sustainable industry, with processing at local Russian sawmills rather than exporting raw logs. Very little undisturbed taiga forest remains in north-east China, but it was recently protected by a national logging ban; this ban should be strictly enforced (and continued) to prevent any further logging of

Table 2. Threatened birds of the boreal and northern temperate forests.

Species		Distribution and habitat
Baikal Teal <i>Anas formosa</i>	☛ ^m VU	Breeds in wetlands in the northern taiga of Krasnoyarsk, Chita, Yakutia, Kamchatka, Magadan, Khabarovsk and Amur (as well as in tundra: see W01)
Scaly-sided Merganser <i>Mergus squamatus</i>	☛ ^m EN	Breeds along mountain rivers with tall riverine forest, in Khabarovsk, Amur, Jewish A. R., Primorye, North Korea, Heilongjiang, Jilin and Inner Mongolia
Greater Spotted Eagle <i>Aquila clanga</i>	☛ ^{mo} VU	In the Asia region, breeds in forest and forest steppe, usually near wetlands, in Irkutsk, Buryatia, Khabarovsk, Amur, Jewish A. R., Primorye, Heilongjiang, Jilin and Inner Mongolia, and presumably northern Mongolia
Hooded Crane <i>Grus monacha</i>	☛ ^m VU	Breeds in wetlands in larch taiga in Krasnoyarsk, Yakutia, Khabarovsk, Amur, Primorye and Heilongjiang, probably in Irkutsk, Khakassia and Sakhalin, and possibly northern Mongolia
Blakiston's Fish-owl <i>Ketupa blakistoni</i>	☛ EN	Inhabits densely forested, rather large rivers in Magadan, Khabarovsk, Jewish A. R., Primorye, Sakhalin, Hokkaido and (at least formerly) Heilongjiang, Jilin and Inner Mongolia
Rufous-backed Bunting <i>Emberiza jankowskii</i>	☛ VU	Breeds (or formerly bred) in sparse vegetation in semi-humid transitional areas between Manchurian deciduous forest and Mongolian steppe, in Primorye, North Korea, Heilongjiang and Jilin

☛ = breeds only in this forest region; ☛ = also breeds in other region(s); ^m = migrates to other region(s); ^o = also breeds outside the Asia region

Much boreal forest has been cleared or logged in Hokkaido and north-east China, and logging operations are set to expand in eastern Russia.



PHOTO: OTTO PFISTER

mature forest, with special protection given to mature trees near river banks. In logged forests, where nest holes may be limited, nest boxes should be provided for Scaly-sided Mergansers and Blakiston's Fish-owls. Rufous-backed Bunting has been found nesting in young plantations, and there may be potential to influence forestry practices for its benefit, perhaps by introducing a rotational system of planting.

■ FOREST AND WETLAND CONVERSION

Natural forests and wetlands continue to be converted to farmland and urban areas in the more densely populated parts of the region. This is affecting the habitat of Greater Spotted Eagle in southern Russia, Blakiston's Fish-owl on Hokkaido and Rufous-backed Bunting in north-east China. On Hokkaido, a recovery plan is needed for the natural river systems and forests, to preserve the remaining areas of habitat for Blakiston's Fish-owl, and to restore these habitats in selected areas.

■ DEVELOPMENT (URBAN, INDUSTRIAL, ETC.)

Many ongoing and planned industrial and infrastructure development projects could affect the natural forests and wetlands. New ports and free-trade zones (with associated new roads and rail links), such as the Tumen River Development Project, will create new opportunities to export timber, oil and gas, and will probably affect natural habitats inland, particularly in areas most accessible from the coast. Environmental impact assessments should review and, if necessary, revise these projects, to reconcile nature conservation and economic development. New developments should be avoided near protected areas and other sites of high biodiversity value. The southern Kuril islands retain most of their natural habitats, unlike nearby Hokkaido, which is now highly developed. Should the current dispute between Japan and Russia over ownership of the islands be resolved, there is a danger that rapid development could take place. Measures are needed to

protect the richest areas of natural habitat on the islands, perhaps through the designation of an international Peace Park.

■ POLLUTION

Mining of minerals is seriously affecting the quality of Scaly-sided Merganser (and presumably also Blakiston's Fish-owl) habitat in the Bikin and Iman river basins, through direct pollution of the water with heavy metals, and increased clay in suspension, which may reduce fish populations and their detectability by birds. Controls on mining activities in environmentally sensitive areas need to be improved.

■ REDUCED FOOD SUPPLY

Overharvesting of fish, especially salmonids, is affecting the food supply of Blakiston's Fish-owl (and presumably also Scaly-sided Merganser), for example in the Bikin river basin. On Hokkaido, the collection of salmon and trout at the river mouths for artificial spawning has reduced food availability upstream, and some pairs of the fish-owl have therefore been fed supplementary fish. However, the long-term solution is to improve the management of river fisheries, to allow sufficient fish for both birds and human consumption.

■ DISTURBANCE

The riverine habitat of Scaly-sided Merganser and Blakiston's Fish-owl is subject to disturbance, principally from river traffic which has continued to increase since motorboats became widely available in eastern Russia in the 1970s. Another source of disturbance is the rafting of logged timber down rivers. These activities need to be managed, to minimise disturbance in the richest areas for riverine threatened birds, particularly during the breeding season when the mergansers have young. Human disturbance is a problem for Blakiston's Fish-owl on Hokkaido, including by bird photographers, and measures

need to be put in place to address this problem. The Russian breeding range of Greater Spotted Eagle is in a relatively densely populated region, and human disturbance causes some pairs to abandon their nests, and increased predation of nests by crows; improved protection of nests is required (see *Gaps in protected areas system* below).

■ **INCREASED MORTALITY**

Many Blakiston’s Fish-owls are killed on Hokkaido as a result of human activities, including drowning in fishponds (usually when entangled in nets), traffic accidents (often on bridges, where the owls perch) and electrocution by power-lines. Measures are therefore needed to prevent fish-owls being caught in nets and other equipment at fish farms, to discourage the birds from perching on road bridges, and to prevent them coming into contact with power-lines. Many young Scaly-sided Mergansers are drowned in fishing nets in their Russian breeding grounds, and fishing activities must be scaled back on these stretches of river in the breeding season.

Protected areas coverage and management

■ **GAPS IN PROTECTED AREAS SYSTEM**

All countries in this region have well-developed protected areas systems, with many important areas of taiga forest within nature reserves, but there are some significant gaps. The only relatively large protected area in the Russian breeding range of Scaly-sided Merganser is the Sikhote-Alin’ State Biosphere Reserve, with the other nature reserves only protecting small, isolated blocks of primary forest. It is therefore a high priority to give formal protection (e.g. national park status) to the Bikin river basin, which has the largest remaining area of primary forest in this part of Russia and large breeding populations of several threatened bird species. Proposals for other new reserves in Russia

include in the Iman river basin (possibly in the largely undeveloped Armu river basin), along the Anyuy and Khor rivers in Khabarovsk (for Blakiston’s Fish-owl), in Yakutia (for Baikal Teal and Hooded Crane) and in the Barguzinskaya valley and the Uoyan–Kumora extension to the Verkhnyaya Angara riverine floodplain in Buryatia (for Greater Spotted Eagle). In China, new protected areas have been proposed at Xiaobei Hu lake in Heilongjiang (for Scaly-sided Merganser) and at Yaotuo and Yushutai in Jilin (for Rufous-backed Bunting).

■ **WEAKNESSES IN RESERVE MANAGEMENT**

A number of problems are affecting the protected areas system in eastern Russia, linked to the ongoing decentralisation of administrative structures within the country, a recent steep decline in funding for reserves, the lack of a unified management and planning structure, and poor public support. In Buryatia, the habitats of Greater Spotted Eagle are under pressure from recreational and agricultural activities inside several national parks; improved protection of nests of this species is needed, by establishing ‘protecting zones’ around the nest sites. Although Sikhote-Alin’ State Biosphere Reserve is a major stronghold for Scaly-sided Merganser, ongoing threats to the surrounding areas must be addressed if the current population of this species is to be maintained. In China, there is a need to prepare and implement explicit and transparent management plans for nature reserves. In general, many reserves are overstaffed, and need fewer but better trained management staff. In Xianghai National Nature Reserve in Jilin, Mongolian oak *Quercus mongolica*, the Rufous-backed Bunting’s favoured songpost tree, is being cut; the reserve’s existing management plan needs to be implemented, including measures designed to maintain the present numbers of the bunting.

Table 3. Conservation priorities for birds of the boreal and northern temperate forests.

Conservation issues	Strategic solutions
Habitat loss and degradation	
<ul style="list-style-type: none"> ■ FORESTRY ■ FOREST AND WETLAND CONVERSION ■ DEVELOPMENT (URBAN, INDUSTRIAL, ETC.) ■ POLLUTION ■ REDUCED FOOD SUPPLY ■ DISTURBANCE ■ INCREASED MORTALITY 	<ul style="list-style-type: none"> ➤ Protect key areas of primary forest in Russia from logging, and maintain the logging ban in north-east China ➤ Enforce the laws protecting riverine forests in Russia from logging, and extend them to cover forests on the valley sides ➤ Promote reduced-impact logging practices in Russia ➤ Provide nest boxes for Scaly-sided Merganser and Blakiston’s Fish-owl in logged forest ➤ Manage plantations for the benefit of Rufous-backed Bunting ➤ Prepare a recovery plan for key natural river systems and forests on Hokkaido ➤ Assess the environmental impact of development projects in Russia ➤ Develop measures to protect key sites in the southern Kuril islands ➤ Prevent pollution of key rivers in Russia by mining activities ➤ Improve management of river fisheries ➤ Control human activities along rivers to minimise disturbance of threatened birds, particularly in the breeding season ➤ Develop methods to reduce accidental mortality of Blakiston’s Fish-owls on Hokkaido
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 in Russia and China, notably in the Bikin and Iman river basins in Primorye ➤ Address the current problems with reserve funding and management in eastern Russia ➤ Prepare and implement management plans for nature reserves in north-east China
Exploitation of birds	
<ul style="list-style-type: none"> ■ HUNTING 	<ul style="list-style-type: none"> ➤ Improve enforcement of existing hunting legislation in Russia and China, including through education and awareness programmes
Gaps in knowledge	
<ul style="list-style-type: none"> ■ INADEQUATE DATA ON THREATENED BIRDS 	<ul style="list-style-type: none"> ➤ Survey Scaly-sided Merganser and Blakiston’s Fish-owl in eastern Russia and north-east China, to identify further key sites for their conservation ➤ Search for Rufous-backed Bunting in Russia and North Korea

The Bikin and Iman river basins in Primorye support the most important known breeding populations of Scaly-sided Merganser.



PHOTO: FRANK TODD

Exploitation of birds

■ HUNTING

Shooting of birds for food and sport is widespread. It is unlikely that hunting on the breeding grounds is a major problem for Baikal Teal and Hooded Crane, which nest at low densities in the more remote parts of the taiga, but it could be reducing the populations (at least locally) of Greater Spotted Eagle and Blakiston's Fish-owl in Russia and probably China. Shooting of Scaly-sided Merganser is a problem in Russia, with 80–100 birds killed annually in the Bikin river basin alone, mainly for sport and shooting practice (as they have an unpleasant taste and smell) by local people, who were recently given licences to shoot any species of duck at any time of year (despite the fact that the species is officially protected in Russia). Education and awareness programmes are required; however, Scaly-sided is difficult to distinguish from Common Merganser *Mergus merganser*, so the shooting of all merganser species probably needs to be banned. Measures to enforce existing hunting legislation are required, backed up by education programmes.

Gaps in knowledge

■ INADEQUATE DATA ON THREATENED BIRDS

The distribution and numbers of all of threatened species in this region are incompletely known. Further surveys are a priority to clarify the most important sites for Scaly-sided Merganser and Blakiston's Fish-owl, for example in the river basins along the Okhotsk Sea coast and in the lower Amur river valley, along the rivers flowing into the Sea of Japan, and in the Changbai, Xiao Hinggan and Da Hinggan mountains in China. Synchronised surveys are required to obtain more accurate information on the size of the Scaly-sided Merganser population in the Bikin basin; an international research centre has been proposed there, to develop research projects for the improved management of threatened species. There are no recent records of Rufous-backed Bunting from Russia, and very little information on its status in North Korea, so surveys are required, together with investigations to try to establish how changes to the habitats in its former breeding range caused it to decline so rapidly.