International key ornithological areas of the Khabarovsk Territory

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Abstract. A list of key areas of the Khabarovsk Territory, which are of international importance for the conservation of bird populations, is provided on the basis of our own data and academic sources. A brief description of the ornithological significance and the conservation status of 19 areas are presented. The major factors determining the formation of increased densities of breeding birds and mass gatherings of migrants are considered. Twelve species are used as identifiers for International Key Bird Areas. They are represented by the following families: Phalacrocoracidae (1 species), Anatidae (2), Accipitridae (1), Scolopacidae (1), Laridae (1), and Alcidae (6). Among the 19 areas important for birds, 7 areas have a conservation status. Other areas either do not have a protected status, or it covers only a part of important habitats. Information is provided on the prospects for the organization of protected areas in some sea bays of the Sea of Okhotsk.

1. Introduction

The idea of identifying and preserving the areas most valuable for birds was laid down in a special international conservation program “Important Bird Areas” (IBA), developed in the 1980s by the International Council for Bird Preservation (ICBP). In Russia, work on the identification and cataloging of areas most important as the habitats of birds began in 1988. To date, five large summaries on Important Bird Areas in Russia have been prepared, which are “Important Bird Areas of International Importance in European Russia” (2000), “Important Bird Areas of International Importance in Western Siberia” (2006), “Important Bird Areas of International Importance in the Caucasian Ecoregion” (2009) and “Important Marine Bird Areas of the Russian Far East” (2016). The last catalog presents the natural waters of the Far Eastern region of Russia, which are of international importance for the preservation of populations of seabirds only. For the vast territories of Eastern Siberia and the mainland part of the Far East, it is planned to prepare a separate report on the IBA.

In Russia, there are four ranks of the IBA: global, regional (all-Asian), federal (all-Russian) and local (region, territory, and republic) [1]. The first two ranks correspond to the criteria for identifying the habitats important for birds, which are developed by the international organization BirdLife International. These are the areas of international significance, Important Bird Areas.
2. Objects, data and methods
To date, 46 IBA of various levels have been allocated in the Khabarovsk Territory. Among them, 19 meet the criteria of international importance [1–4].

It should be noted that the area of the Khabarovsk Territory has been studied very unevenly from an ornithological point of view, i.e., the most complete information has been accumulated for the southern and central regions of the Khabarovsk Territory. The northern areas are poorly explored. Therefore, the process of allocating the IBA there and setting their status continues. To identify key bird areas, we used special criteria contained in the methodological guidelines [1], which are based on estimates of the abundance of indicator bird species. In our study, we used two categories of criteria. Category A1 “Globally Threatened Species” (includes 1 criterion): the area supports the population of one or more globally endangered species. Category A4 “Flocks (congregations) of birds” (includes 2 criteria): A4.1 – the territory regularly maintains at least 1 % of the biogeographic population of waterfowl and shorebirds; A4.3 – the territory regularly supports at least 20 thousand waterfowl and shorebirds or at least 10 thousand pairs of seabirds of one or more species.

3. Results and discussion
1. Iona Island. The IBA is included in the catalog of International Important Bird Areas of the Russian Far East. On the 16.3 hectares island there are about 1.3 million seabirds of 14 species. The international status is assigned to the territory due to the high abundance of the three species of seabirds: Common Murre and Thick-billed Murre (Uria aalge, U. Lomvia), and Whiskered Auklet (Aethia pygmea). Iona Island and the adjacent water area have the status of a natural sanctuary of regional significance.

2. Shantar Islands. The IBA is listed in the catalog of International IBA of the Russian Far East on the basis of the abundance status of three species: Harlequin Duck (Histrionicus histrionicus), Spectacled Guillemot (Cepphus carbo) and Long-billed Murrelet (Brachyramphus marmoratus). In addition, on the islands there is a large group of Steller’s Sea Eagle (Haliaeetus pelagicus), possibly the habitat of Nordmann’s Greenshank (Tringa guttifer). The archipelago, together with the coastal water area, has the status of a national park.

3. The Uda Bay. The IBA is included in the catalog of International IBA of the Russian Far East. In 1991, 5 km northwest of the Uda River mouth, a colony of Aleutian Tern (Sterna camtschatica) with a total number of 700–800 individuals was found. Later, the territory was not surveyed and the current state of the colony is unknown. During the drainage of the bay, migrating waders create clusters of several tens of thousands. In the mouth of the Uda River, nests an endangered species of the world avifauna, namely, Nordmann’s Greenshank, The territory has no protection status.

4. The southern part of the Tagur Bay. The endangered species of the world avifauna Nordmann’s Greenshank nests in this IBA. In 1990, it numbered at least five pairs. Later, the territory was not surveyed. During the period of summer-autumn migrations in the vast tidal zone of the bay, accumulations of waders of various species with a total number of more than 20 thousand individuals were formed. The territory has no protection status.

5. Western part of the Gulf of Constantine. Nordmann’s Greenshank nests in this IBA. In 1990, at least 30 pairs of this species were observed here. During the summer-autumn migration period, the number of stopping waders reaches several tens of thousands of individuals. The territory has no protection status.

6. The southern part of the Ulban Bay. Nordmann’s Greenshank nests on the coastline between the Syran and Ulban river mouths. The total number of breeding birds has not been found. In 2016, birds were observed near chicks. In 1989, migrating Nordmann’s Greenshanks with a population of up to 20 individuals were also observed here. Several tens of thousands of waders regularly stop at the extensive drainage of the bay during the migration period. The territory has no protection status.

7. The Nerlichya Bay in the Gulf of Nikolay. The territory is of key importance for the reproduction of Nordmann’s Greenshank and its migration stops. In 2010, at least six pairs of this species breed here. In addition, up to 150 birds of this species were recorded during the summer-autumn migration. The territory has the status of a reserve of regional significance.
8. **Lake Mukhtel.** The territory is classified as a land of international importance on the basis of the habitat of a Long-billed Murrelet with a population of more than 200 individuals, hosting migratory accumulations of waterfowls exceeding 20 thousand individuals. The territory has the status of a reserve of regional significance.

9. **The Nerpichya Spit in the Gulf of Nikolay.** Breeding of Nordmann’s Greenshank is expected on this territory. In 2016, one pair of birds was observed here near the brood. The territory has no protection status.

10. **The southern part of the Gulf of Nikolay.** The IBA is a breeding ground for Nordmann’s Greenshank. The total number of breeding birds is not clear. In the second half of July 2011, one pair of Nordmann’s Greenshanks was observed here, keeping near the chicks. During the spring migration, several tens of thousands of waterfowls stop on coastal meadows. The territory has no protection status.

11. **The Schaste Bay.** The IBA is included in the catalog of International IBA of the Russian Far East. In 1986–1987, about 2,000 individuals of the Aleutian Tern bred on the islands located in the bay. To date, the situation with the abundance of this species has changed dramatically for unknown reasons, and only a few birds breed in the bay.

At the end of the last century, during the nesting period, up to 100 individuals of Long-billed Murrelet were counted in different parts of the bay. The Schaste Bay is a key breeding area of worldwide importance for the reproduction of Nordmann’s Greenshank and Steller’s Sea Eagle. More than 1% of the world’s birds breed here. During the summer-autumn migration, the number of waders stopping at the same time at the bay exceeds 100 thousand individuals. The water area of the bay has the status of a natural sanctuary of regional significance.

12. **The Amur Estuary.** In the Amur Estuary, a key ornithological territory of international importance has been identified in the water area adjacent to the Amur River mouth and limited by the following geographical points: Petakh, Pronge, Nale, and Orimif capes, as well as a lowland including the basin of the lower reaches of the Koryushka River.

In this area, there are accumulations of two species of Swans (*Cygnus Cygnus, C. bewickii*) of up to 40 thousand individuals, of which 30 thousand individuals are Tundra Swan. The number of waders stopping at the same time in shallow waters of the IBA reaches several tens of thousands. The territory has no protection status.

13. **The Nevelskoy Bay.** The IBA is an important breeding area for Nordmann’s Greenshanks. In 2005–2011, presumably 1 or 2 pairs of Nordmann’s Greenshanks nested there. The territory has no protection status.

14. **The Chikhachev Bay.** The IBA is an important habitat for three species of colonial seabirds, namely, the Japanese Cormorant (*Phalacrocorax capillatus*), Spectacled Guillemot (*Cepphus carbo*) and Ancient Murrelet (*Synthliboramphus antiquus*). In 2001–2006, on average 180–750 Japanese Cormorants and 2,860–3,140 Spectacled Guillemots bred here. In 2005–2006, the number of the nesting Ancient Murrelets was in the range of 26,400–32,400 individuals. A small part of the territory (Ostrichny Island) has the status of a natural sanctuary of regional significance.

15. **The Amur-Angun lowland.** The IBA is important for the Steller’s Sea Eagle’s habitat. At least 50 or 60 pairs of this species nest here, which is about 1.5% of the world’s population.

16. **Lake Udyly.** The IBA is the largest Steller’s Sea Eagle reserve in the Amur region, with the number of at least 150 adults, accounting for about 2.5% of the world population of this endemic of the Russian Far East. The territory has the status of a federal reserve.

17. **Pool of Lake Bolon.** The territory is a key one for migratory stops of waterfowls and shorebirds. During the period of seasonal migrations, their total number exceeds 20 thousand individuals. The territory has the status of a federal reserve.

18. **Basin of the Anyui middle reaches.** The IBA is of great importance for the conservation of the endangered species of the world fauna, an endemic of eastern Asia, Scaly-sided Merganser (*Mergus squamatus*). The world population in the pre-nesting period is estimated at 1,937 pairs, or 4,664 individuals, including immature birds. Most of the world population of Scaly-sided Merganser (85%) nests in Russia [5]. In 2010 and 2015, in the territory of the Anyui National Park, the number of Scaly-
Scaly-sided Merganser was from 50 to 60 pairs, which is about 3% of the world population of this species. The territory is part of the Anyui National Park.

19. Basin of the Khor middle reaches. In mid-May 2016, when examining the Khor and its tributaries including the Sukpui, Chuken, Kafe, and Katen (total length of 440 km), 123 pairs and 157 individuals of Scaly-sided Merganser were counted in the flocks. This is about 9% of the world population of the species. A significant part of the territory has no conservation status. Only one of the Khor tributaries, the Chuken River, is a regional reserve.

Figure. Key ornithological areas of the Khabarovsk Territory: 1 – Iona Island; 2 – Shantar Islands; 3 – Uda Bay; 4 – the southern part of the Tuguy Bay; 5 – the western part of the Gulf of Constantine; 6 – the southern part of the Ulban Bay; 7 – Nerpichya Bay in the Gulf of Nikolay; 8 – Lake Mukhetel; 9 – Nerpichya Spit in the Gulf of Nikolay; 10 – the southern part of the Gulf of Nikolay; 11 – Schaste Bay; 12 – Amur Estuary; 13 – Nevelskoy Bay; 14 – Chikhachev Bay; 15 – Amur-Amgun lowland; 16 – Lake Udyly; 17 – pool of Lake Bolon; 18 – basin of the Anyui middle reaches; 19 – basin of the Khor middle reaches.
4. Conclusion
A significant part of the IBA of international importance of the region is located in the western Okhotsk region. For these territories, there are a number of factors that cause the increased densities of breeding birds and massive stops of migrants. In the first place, the high forage productivity of the habitats stands out. In the sea islands (Iona and the Shantar), it is determined by intensive water exchange — tidal and cyclonic currents, upwelling, hydrological fronts [2]. On the mainland coast, the zones of maximum forage productivity are confined to the Uda, Tugur, Constantine, Ulban, Nikolay and Schaste large sea bays. These bays are characterized by high sea tides and the formation of significant drainage areas (up to several kilometers wide) during low tides, which, in combination with the removal of organic matter by rivers, create favorable conditions for the development of invertebrates that are food for migrating and nesting birds. A significant proportion of the ichthyophagous birds’ food ration is made up of migratory salmon fish species. The seacoast is a “launching pad” for birds before flying across a vast sea area to the north and the first “finishing” stop when migrating to the south. Most sea bays are characterized by a relatively low level of anthropogenic load and weak disturbance of natural complexes. In the inland key areas of the western Okhotsk region, namely, the Amur-Angun lowland and Lake Udylin fishing is also characterized by high productivity due to the high abundance of sedentary fish and anadromous salmon species, which determines the high abundance of the flag species, the Steller’s Sea Eagle.

Lake Bolon basin stands out among other territories for its well-developed hydrological network, consisting of medium-to-small size rivers, channels, small reservoirs overgrown with aquatic and coastal vegetation, which form the basis of the food ration of waterfowls. The interfluves are covered with vast, partly impenetrable grass and grass-moss bogs.

The basins of the Anyui and Khor middle reaches are characterized by a relatively high fish productivity, a high proportion of hollow trees, mainly broad-leaved species in the stand and numerous rifts that create favorable conditions for the reproduction of the obligate hollow nest, the Scaly-sided Merganser.

In the territory of the Khabarovsk Krai, the key (indicator) species for the identification of habitats most important for the conservation of birds are Japanese Cormorant, Nordmann’s Greenshank, Aleutian Tern, Common and Thick-billed Murre, Whiskered Auklet, Spectacled Guillemot, Long-billed Murrelet, Ancient Murrelet, Harlequin Duck, Scaly-sided Merganser and Steller’s Sea Eagle. The greatest number of IBAs (nine) was identified as a breeding ground for the globally endangered species, which is Nordmann’s Greenshank.

Among the key bird areas of international importance in the Khabarovsk Territory are Iona Island, the Shantar Islands, Lake Mukhtel and the Nerpichya Bay, Lake Udylin, Lake Bolon basin, the middle reaches of the Anyui have a conservation status. Other key areas of international importance either do not have a conservation status, or it is insufficient for the conservation of ornithological objects. In the near future, it is likely that the protected status of a federal protected area will be given to the following coastal areas of the western Okhotsk region including the western part of the Constantine Bay, the southern part of the Ulban Bay, the Nerpichya Spit and the southern part of the Nikolay Bay. Materials substantiating the need to organize protected areas at these key points are currently being considered by the Ministry of Natural Resources of Russia.

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