

3. Information Sheet on Ramsar Wetlands

Categories approved by Recommendation 4.7 of the Conference of the Contracting Parties.

NOTE: It is important that you read the accompanying *Explanatory Note and Guidelines* document before completing this form.

1. **Date this sheet was completed/updated:**
September 1997

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Designation date

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Site Reference Number

2. **Country:** Russian Federation

3. **Name of wetland:** Lake Khanka

4. **Geographical coordinates:** 44°53' N, 132°30' E

5. **Altitude:** 68-70 m a.s.l.

6. **Area:** 310,000 ha

7. **Overview:** A large trans-border freshwater lake, surrounded by grass mires. The site supports a rich diversity of plants and animals, including rare and threatened species, and is particularly important for migrating and breeding populations of waterfowl.

8. **Wetland Type** (please circle the applicable codes for wetland types as listed in Annex I of the *Explanatory Note and Guidelines* document.)

marine-coastal: A · B · C · D · E · F · G · H · I · J · K

inland: (L) · M · N · (O) · P · Q · R · Sp · Ss · (Tp) · (Ts)
(U) · Va · Vt · W · Xf · Xp · Y · Zg · Zk

man-made: 1 · 2 · 3 · 4 · 5 · 6 · 7 · 8 · 9

Please now rank these wetland types by listing them from the most to the least dominant: O,Ts,U,Tp,L.

9. **Ramsar Criteria:** (please circle the applicable criteria; see point 12, next page.)

1a · 1b · (1c) · 1d · 2a · (2b) · 2c · 2d · 3a · 3b · 3c · 4a · (4b)

Please specify the most significant criterion applicable to the site: 1c, 2a, 2b, 4a

10. **Map of site included?** Please tick *yes* ✓ -or- *no*

(Please refer to the *Explanatory Note and Guidelines* document for information regarding desirable map traits).

11. **Name and address of the compiler of this form:** E.S.Gusakov: Central Research Laboratory, Hunting Management Office, Minselhozprod, Losinoostrovskaya Lesnaya Dacha-18, Moscow 129347, Russia

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12. Justification of the criteria selected under point 9, on previous page: The site provides an example of a specific type of wetland, which supports a great number of waterbirds, including rare and threatened species.

13. General location: On the border with China, approximately 200 km north-northeast of the city of Vladivostok, in Primorsky Region, southeasternmost Russian Federation. The northern part of the lake is in China.

14. Physical features: The site is situated on a lake-alluvial plane, dissected by degraded mountains and ridges which are not very high. To the west and east, the plain is surrounded by mountains. Lake Khanka is characterized by long-term cyclical changes in water level. As a result, the water area varies over the range from 501,000 to 394,000 ha, and the total volume of water varies from 22,6 m³ to 12,7 m³. The fluctuations in the level of the lake are up to two m, with a recorded maximum of 389 cm above sea level (1973). Water from the lake is diverted to rice fields, and this results in a serious decline in breeding populations of waterbirds, especially during the periods of low water, when the number of nesting birds falls 5-10 times.

The rivers flowing into the lake carry a large amount of suspended sediment which is deposited in the deltas. In the periods of high water, the rivers wash away their low boggy banks. As a result, the waters are always enriched with organic substances. The water flow from the rice fields brings large amounts of mineral fertilizers and pesticides to the lake and nearby waters. The chemical composition of the water has not been studied recently. The mean depth of Lake Khanka is 4 m, with a maximum of 10 m. The floodplain water bodies are 1-1.5 m deep.

The catchment area of the lake comprises 1,689,000 ha, including 1,537,000 in Russia. On the Chinese territory, the major part of the catchment belongs to Lake Malaya Khanka which is separated from the main water body by a narrow sand spit. There is some underground water exchange between the two lakes, and in wet years, they are connected by a channel. The Suezgach and Ussuri Rivers bring Khanka's waters to the Amur River. The floodplains of these rivers are extensively used for agriculture.

The Lake Khanka is situated in the region which has a monsoon climate. The Khankaiskaya depression has a specific microclimate, formed by both monsoon and local circulation processes. It warms up well in summer and accumulates cold air in winter.

The mean air temperature is 20°C in July. Annual precipitation is 600 mm, with 500 mm falling in summer. The warm period, when the temperature is above zero, lasts 150 days, the snow cover is 30 cm deep and persists for about 100 days. The shallow floodplain water bodies are frozen down to the bottom in winter.

The soils at the site are peatland-gley and marshy, the bottom of the lake is sandy.

15. Hydrological values: The lake is located in the upper course of the Ussuri River, which is one of the biggest rivers in the Russian Far East, and plays important regulating functions. The wetland acts as a filter between the Amur River and the extensive rice-growing complexes of South Primorie.

16. Ecological features: Cyclical changes in the level of Lake Khanka determine the biological capacity of the wetlands, the numbers and composition of animal species. The period between the highest and lowest peaks in the water level is 12-13 years (Vaskovsky, 1978). The medium level conditions (about 300 cm) are the most favourable to the waterfowl. The medium-level phase lasts for 5-7 years. When the level increases slowly, a lot of floating islands, formed by aquatic vegetation, appear on the surface. This improves nesting conditions for waterfowl. Besides, during this phase the wetlands are almost inaccessible for people, domestic and wild animals, and the breeding success is high.

In years, when the water level is high and is combined with strong winds and storms, the floating islands become smaller and are often damaged, together with the waterfowl nests. Conversely, when the water level is low, the islands stick to the bottom and can be easily covered by water during the storms. This causes mass deaths of the catches. Besides, during the low-water periods the breeding places can be easily reached by people and animals. These factors decrease the breeding success.

The floodplain water bodies and deltas are overgrown with *Patamogeton alaianus*, *P.compressus*, *P.perfoliatus*, *P.asiaticus*, *P.grammineus*, *P.natans*, *Myriophyllum ussuriense* and *Hippuris vulgaris*. The surface of the lake is occupied with *Trapa incisa*, *Nuphar pumilum*, *Najas marina*, *Nimpea tetragona*, *Ceratophyllum demersum*, *Limnanthemum nymphaeoides*, *Spirodela polyrrhiza*, *Salvinia natans*, *Lemna trisulca*, *L.minor*, *Caldesia parnassifolia*, and at some places with *Nelumbo nucifera komarovii*, but the most part of the water area is open. Lands on the higher lake-alluvial terraces are used for agriculture. The floodplain areas are covered by marshes with *Phragmites australis*, *Typha latifolia*, *Calamogrostis neglecta*, *C.angustifolia*, *Carex lasiocarpa*, *Egusetum limosum* and *Menianthes tryfoliata*. On the edge of open water, wild rice *Zizania latifolia* occurs. The higher places are covered with trees: *Quercus mongolica*, *Ulmus pumila*, *Betula sp.* and *Salix sp.* The rice fields adjacent to the site are used by waterbirds as feeding places.

17. Noteworthy flora: The plants listed in the Russian Red Data Book, that occur at Lake Khanka are: *Caldesia parnassifolia*, *braselia scherberi*, *Eleocharis tetraquetra*, *Dioscorea japonica*, *Aldrovanda vesiculosa*, *Eriocaulon komarovii*, *Lespedeza cyrtobotrya*, *Quercus dentata*, *Iris ensata*, *I.ventricosa*, *Fritillaria ussuriensis*, *Lillium callosum*, *L.pseudotrigrinum*, *Nelumbo nucifera komarovii*, *Euryale ferox*, *Pagonia japonica*, *Paeonia lastifolia*, *P.obovata*, *Armeniaca mandshurica*, *Trapella sinensis*, *Trapa natans*, *Juniperus rigida*, *Pinus densiflora* and *Pirrosia lingua*. Among the species which are not listed in the Red Book, the wild rice *Zizania latifolia* is noteworthy as the most important feeding plant for waterfowl.

18. Noteworthy fauna:

Birds

The information available on the numbers and population status of waterbird species is abundant, but the data differ considerably depending on the year and climatic phase of observation, as well as on the counting methods used, as many different ornithologists have taken part in the counts.

(a) Migrating species

The numbers of migrating Anatidae have been studied by ornithologists from the Far Eastern Department of the Russian Academy of Sciences (Bocharnikov & Shibaev, 1996). On the base of the counts conducted in the 1980s and 1990s, they estimate the number of dabbling ducks at 300,000-350,000 (mainly pintail *Anas acuta*, wigeon *Anas penelope*, falcated teal *Anas falcata* and common teal *Anas crecca*), the number of geese at 100,000-130,000 (mainly bean goose *Anser fabalis* and white-fronted goose *Anser albifrons*), and the number of swans at 3,000-5,000 (mainly whooper swan *Cygnus cygnus*). Migrating birds stay on the lake for about a month both in spring and in autumn. The amounts of migrants are about the same during both migration seasons, though the number of geese is larger in spring.

The Committee for Environmental Protection of Primorsky Region estimates the number of migrating Anatidae at two million.

(b) Breeding and moulting species

Anatidae

The information presented below was collected during the 'optimum' phase between 1961 and 1964 (Polivanova, 1971) and later (Glushchenko, 1981; Velizhanin & Gusakov, 1982):

- Whooper swan *Cygnus cygnus*: 10-15 breeding pairs were registered in the 1960s, and only 2 pairs later.
- Greylag goose *Anser anser*: 30 pairs in the 70s. The moulting population totalled 3,000 birds, with concentrations of 30-50 birds occurring at once.
- Swan goose *Anser cygnoides*: the numbers were always low. Single pairs were noted regularly in the breeding period, but a group of young flying birds was registered only once. At present, there must be several breeding pairs.
- Falcated duck *Anas falcata*: dozens of pairs. The flocks of moulting birds reached 200-300 individuals.
- Baikal teal *Anas formosa*: an occasional breeding species.
- Mallard *Anas platyrhynchos* was common during the breeding period. Moulting flocks reached 30 -50 birds.
- Spot-billed duck *Anas poecilorhyncha* was a common breeding species. The numbers were equal to those of mallard. Now the population has decreased several-fold and this species has become rare.
- Gadwall *Anas strepera* was not plentiful. Only several pairs were recorded on breeding and 50-80 birds on moulting in 1978-1980.
- Garganey *Anas querquedula* was common during the breeding and moulting periods. Moulting concentrations reached 600 birds.
- Shoveler *Anas clypeata*: several dozens of pairs.
- Baer's pochard *Aythya baeri*: several pairs. This species usually increases in numbers when the water level begins to fall.
- Tufted duck *Aythya fuligula*: several dozens of pairs. Moulting aggregations reached 300 birds.

Even in the most favourable years, only 12 breeding species of Anatidae have been registered at the site, with only two or three species occurring in large numbers. In dry years, the site does not play an important role for breeding populations of waterbirds. In July-August 1978, a project and an aerial survey to study the importance of Lake Khanka for waterbirds during a dry climatic phase was undertaken (Velizhanin, Gusakov, 1982). The total number of Anatidae and coots was estimated at 2,500-3,500 with the dominance of *Anas platyrhynchos* and *A. querquedula*.

The grebes *Podiceps cristatus* and *P. griseigena* are common species at the lake, but they have never been counted.

Colonial shore birds

Six breeding colonies of grey heron *Ardea cinerea* and purple heron *Ardea purpurea*, with a total population of 5,800-6,500 pairs, and 200-230 pairs of great egret *Egretta alba* were registered at the site in the early 1960s (Polivanova, 1971). At present, the total number of herons is estimated at 2,400-5,000 pairs (Bocharnikov & Shibaev, 1996; Glushchenko & Shibaev, 1996). The population of herons on Kalugin Island (5,000 pairs) has not changed since the 1960s.

(c) Rare and threatened species

The species listed in the Red Data Book of the Russian Federation that occur at the site include 25 species of waterfowl:

- Cattle egret *Bubulcus ibis*: an occasional visitor.
- Intermediate egret *Egretta intermedia*: a rare breeding species (several pairs have been registered in the colonies of gray herons and purple herons). Single nomadic birds and small flocks of about six birds occur in summer.
- Spoonbill *Platalea leucorodia*: a rare breeding species (<10 pairs).

- Japanese crested ibis *Nipponia nippon*: this species used to breed in the area, but has not been registered during the last 50 years.
- Oriental white stork *Ciconia boyciana*: a breeding species (10-15 pairs).
- Lesser white-fronted goose *Anser erythropus*: a rare passage migrant (was last registered in the 1960s).
- Swan goose *Anser cygnoides*: an occasional breeding species.
- Bewick's swan *Cygnus columbianus bewickii*: a passage migrant (several dozens).
- Mandarin duck *Aix galericulata*: a passage migrant (tens of birds). Single pairs have been registered in summer but breeding is not proved.
- Baer's pochard *Aythya baeri*: a rare breeding species (several dozens of pairs, but the population varies considerably).
- Osprey *Pandion haliaetus*: a rare visitor.
- Golden eagle *Aquila chrysaetos*: a vagrant.
- White-tailed eagle *Haliaeetus albicilla*: a breeding species (1-3 pairs).
- Japanese crane *Grus japonensis*: a breeding species (20-25 pairs).
- White-naped crane *Grus vipio*: a breeding species (5-6 pairs).
- Hooded crane *Grus monacha*: a rare passage migrant (Gluschenko, 1987).
- Swinhoe's yellow rail *Porzana exqu Coast*: a rare breeding species.
- Great bustard *Otis tarda*: single breeding pairs have been registered until recently.
- Long-billed ringed plover *Charadrius placidus*: a passage migrant.
- Black winged stilt *Himantopus himantopus*: a rare breeding and migrating species.
- Spotted greenshank *Tringa guttifer*: a rare migrating species (Gluschenko, 1987).
- Asiatic dowitcher *Limnodromus semipalmatus*: a breeding species. Single pairs nest throughout the site, and a colony of 30 nests has been found near the Verkhniy Sungatch River. The maximum number of 300 individuals was registered in 1977 on the shore of the lake.
- Chinese bush warbler *Bradypterus taczanowskius*: a rare species with unknown status.
- Paradise flycatcher *Terpsihore paradisi*: a rare breeding species.
- Yangtse parrotbill *Paradoxornis heudei*: a breeding species (100 pairs).

Amongst the other bird species, Pechora pipit *Anthus gustavi menzbiri* is noteworthy. This is a common species for the area, the breeding population of which is estimated at 5,000 pairs (Glushchenko, 1981). However, the original range of this sub-species is located in the forest-tundra zone, far away of Lake Khanka., so this sub-species is an endemic to the area, or maybe a different species.

Other fauna

The lake is rich with fishes, including: *Huso dauricus*, *Acipenser schrencki*, *Hucho taimen*, *Brachymystax lenok*, *Caregonus chadary*, *C.ussuriensis*, *Esox raicherti*, *Myopharyngon piceus*, *Louciscus walecki*, *Phoxinus logowskii*, *Ph.cztkanowski czerskii*, *Ph.phoxinus*, *Ctenopharyngodon idella*, *Pseudaspius leptcephalus*, *Opsariichthys uncirostris*, *Plagnognathops microlepis*, *Gobi gobio*, *G.ussuriensis*, *G.chankaensis*, *Chilgobio szerskii*, *Sarcochilichthys sinensis*, *saurogobio amurensis*, *S.dabryi*, *Hemibarbus labeo*, *H.maculatus* *Megalobramus termenatus*, *Parabramus pekinensis*, *Erythroculter erythropterus*, *E.oxicephalus*, *E.mongolicus*, *Culter alburnis*, *Hemiculter leucisculus*, *Acanthorhodeus asmussi*, *A.hankaensis*, *Crassius auratus*, *Cyprinus carpio*, *Elopichthys bambuza*, *Hypophthalmichthys molitrix*, *Lufua costata*, *Misgurnus anguillicaudus*, *Parasilurus asotus*, *Pseudobarbus fulvidraco*, *Liocassis ussuriensis*, *Lota lota*, *Ophiocephalus argus*, *Siniperca chua-tsi*, *Percottus glehni* and some others. Fish species listed in the Russian Red Data Book are *Myopharyngon piceus* and *Siniperca chu-tsi*.

Mammals listed in the Red Data Book are: *Sorex mirabilis*, *Ursus thibetanus*, *Panthera pardus* and *Felis euptilura*. Among the other mammals, muskrat *Ondatra zibethicus* is noteworthy as a species playing an important role in the wetland ecosystems.

Tryonys sinensis represents the rare reptiles.

19. Social and cultural values: Lake Khanka is very important for fish production and waterfowl shooting.

20. Land tenure/ownership: The main forms of land ownership at the site are state and communal. The territory of the Khankaisky Nature Reserve ('Zapovednik') is state owned. The rest of the lands is under communal ownership.

21. Current land use: In dry years, the site is partly used as a pasture for grazing and for hay-making. Fishing takes place in the waters. To the west of the site, rice fields are located. The large amounts of water are diverted to irrigation canals. These waters are returned to the lake with pesticides and fertilizers. The area is crossed by the roads and irrigation canals.

22. Factors (past, present or potential) adversely affecting the site's ecological character, including changes in land use and development projects: Agricultural pollution from the rice fields poses the major threat to the site. The present economic situation has resulted in some decrease in the level of the impact. Another important factor is disturbance of birds by people and domestic animals. It increases in dry years, when the marshy lowland becomes accessible.

23. Conservation measures taken: The area was designated as a wetland of international importance by Decree No 1049 of the USSR Government on 25 December 1975.

The site includes the 38,000 ha Khankaisky Nature Reserve ('zapovednik') established in 1990. The reserve has a buffer zone of 73,740 ha. There is also a 16,500 ha wildlife refuge ('zakaznik').

The Administration of Primorsky Region has established the special regime for the buffer zone (Resolution N° 191 issued on 15 April 1995), which includes:

- prohibition against tree cutting, grass burning and keeping fertilizers in the open;
 - limitations on hunting and fishing;
 - prohibition against gathering of plants, berries and mushrooms, use of fertilizers, drainage work, road and pipe-line construction, and other activities which cause alteration of the natural environment, in particular the waterfowl habitat.
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24. Conservation measures proposed but not yet implemented: Nine sites in the Khankaiskaya lowland, which have a total area of 56,200 ha, are proposed to be included in the Khankaisky Nature Reserve. This will provide protection to all the breeding populations of cranes, storks and some other birds listed in the Red Data Book of the Russian Federation.

25. Current scientific research and facilities: The site has long been used as a field base for a number of the Vladivostok scientific institutions. The central problem for the site, which has not been adequately studied so far, is the relation between the climatic cycles on the one hand, and plant successions and animal population dynamics, on the other.

26. Current conservation education: Some publications about Lake Khanka are available, but the level of work on raising public awareness is not sufficient.

27. Current recreation and tourism: The site is widely used by hunters and fishermen.

28. Jurisdiction:

Territorial: Administration of Primorsky Region (22 Svetlanskaya Street, Vladivostok 690110, Russia).

Functional: State Committee of the Russian Federation for Environmental Protection (4/6 Bolshaya Gruzinskaya Street, Moscow 123812, Russia).

29. Management authority: Administration of the Khankaisky Nature Reserve (4 Svobodny Pereulok, Spassk-Dalnii, Primorsky Krai 692240, Russia).

Committee of Primorsky Region for Environmental Protection (93 Pushkinskaya Street, Vladivostok 690091, Russia).

30. Bibliographical references: Bocharnikov & Shibaev (1996); Glushchenko (1981, 1987); Glushchenko & Shibaev (1996); Nazarov, Kazykhanova & Kurinny (1996); Pilshchikov (1984); Polivanova (1971); Vaskovsky (1978); Velizhanin & Gusakov (1982).
