Information Sheet on Ramsar Wetlands (RIS) – 2006-2008 version

Available for download from http://www.ramsar.org/ris/key_ris_index.htm.

Categories approved by Recommendation 4.7 (1990), as amended by Resolution VIII.13 of the 8th Conference of the Contracting Parties (2002) and Resolutions IX.1 Annex B, IX.6, IX.21 and IX. 22 of the 9th Conference of the Contracting Parties (2005).

Notes for compilers:

1. The RIS should be completed in accordance with the attached *Explanatory Notes and Guidelines for completing the Information Sheet on Ramsar Wetlands*. Compilers are strongly advised to read this guidance before filling in the RIS.

2. Further information and guidance in support of Ramsar site designations are provided in the *Strategic Framework and guidelines for the future development of the List of Wetlands of International Importance* (Ramsar Wise Use Handbook 7, 2nd edition, as amended by COP9 Resolution IX.1 Annex B). A 3rd edition of the Handbook, incorporating these amendments, is in preparation and will be available in 2006.

3. Once completed, the RIS (and accompanying map(s)) should be submitted to the Ramsar Secretariat. Compilers should provide an electronic (MS Word) copy of the RIS and, where possible, digital copies of all maps.

1. Name and address of the compiler of this form:

O.A. Goroshko, E.E. Tkachenko

The Daursky State Nature Biosphere *Zapovednik*

674480 pos. N. Tsasuchei Chitinskoi Obl., p/b 66

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DD MM YY

Designation date | Site Reference Number

2. Date this sheet was completed/updated:

August 2008

3. Country:

Russian Federation

4. Name of the Ramsar site:

The precise name of the designated site in one of the three official languages (English, French or Spanish) of the Convention. Alternative names, including in local language(s), should be given in parentheses after the precise name.

Torey Lakes (No. 683)

5. Designation of new Ramsar site or update of existing site:

This RIS is for (tick one box only)**:**

a) Designation of a new Ramsar site ❑; or

b) Updated information on an existing Ramsar site ☒

"This updated version of the RIS has been accepted under the condition that the Secretariat's comments originally provided on this RIS will be taken into account during the preparation of the next update. Cartographic materials provided are schematic maps."

6. For RIS updates only, changes to the site since its designation or earlier update:

a) Site boundary and area

The Ramsar site boundary and site area are unchanged: ☒

or

If the site boundary has changed:

i) the boundary has been delineated more accurately ❑; or

ii) the boundary has been extended ❑; or

iii) the boundary has been restricted** ❑

and/or

If the site area has changed:

i) the area has been measured more accurately ❑; or

ii) the area has been extended ❑; or

iii) the area has been reduced** ❑

** **Important note**: If the boundary and/or area of the designated site is being restricted/reduced, the Contracting Party should have followed the procedures established by the Conference of the Parties in the Annex to COP9 Resolution IX.6 and provided a report in line with paragraph 28 of that Annex, prior to the submission of an updated RIS.

b) Describe briefly any major changes to the ecological character of the Ramsar site, including in the application of the Criteria, since the previous RIS for the site:

Variations of water level in the Torey Lakes occur for natural reasons. When the previous description of the Torey Lakes was made, the water level in the lakes was close to its maximum and growing. Since that, the water level in the lakes has dropped considerably and has been further decreasing. This affected aquatic and emerged vegetation: reedbeds disappeared; a rapid increase in water salinity caused a decline of pondweed groves. The habitat transformation resulted in fundamental changes of bird populations. Numbers of ducks decreased both on passage and in the breeding season. Once numerous Coot and Great Crested Grebes left the area. Crane numbers declined; the White-naped Crane stopped breeding in the area, their autumn pre-migration assemblages became much smaller. At the same time, thanks to the emersion of extensive mud, sand, and shingle beaches and shallows, numbers of shorebirds (especially passage migrants) grew considerably; moulting aggregations of waterbirds (Swan Geese, Ruddy Shelducks, Common Shelducks, and Pochards) multiplied.

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7. Map of site:

Refer to Annex III of the *Explanatory Note and Guidelines*, for detailed guidance on provision of suitable maps, including digital maps.

a) A map of the site, with clearly delineated boundaries, is included as:

i**) a hard copy** (required for inclusion of site in the Ramsar List): ☒;

ii**) an electronic format** (e.g. a JPEG or ArcView image) ☒;

iii) **a GIS file providing geo-referenced site boundary vectors and attribute tables** ☒.

b) Describe briefly the type of boundary delineation applied:

e.g. the boundary is the same as an existing protected area (nature reserve, national park, etc.), or follows a catchment boundary, or follows a geopolitical boundary such as a local government jurisdiction, follows physical boundaries such as roads, follows the shoreline of a waterbody, etc.

The wetland comprises lakes Barun-Torey and Zun-Torey with islands and shore zone; floodplains of the Uldza and Imalka rivers to the state border of the Russian Federation; area between the lakes with lakes Maly Khotogor and Bolshoi Khotogor within the protection zone of the Daursky State Nature Biosphere *Zapovednik* (163,500 ha). The southern border of the site follows the state border of the Russian Federation and Mongolia.

8. Geographical coordinates (latitude/longitude, in degrees and minutes):
Provide the coordinates of the approximate centre of the site and/or the limits of the site. If the site is composed of more than one separate area, provide coordinates for each of these areas.

Approximate coordinates of the center: 50°05’ N, 115°40’ E. Coordinates of limiting points: 49°55' - 50°14’ N, 115°05' - 115°98’ E.

9. General location:
Include in which part of the country and which large administrative region(s) the site lies and the location of the nearest large town.

The site is located in Trans-Baikal area, on territories of the Ononsky and Borzinsky rayons of the Chita Oblast. The southern border of the site follows the state border of the Russian Federation and Mongolia. Distance from the site's easternmost point to the town of Borzya is 50 km, that from the northernmost point to the city of Chita – 300 km and to the village of Nizhny Tsasuchei – 50 km.

10. Elevation: (in metres: average and/or maximum & minimum)

From 591.4 m (lake bottom) to 769.3 m (the highest point of the ridge stretching along the shore of Lake Zun-Torey).

11. Area: (in hectares)
172,500 ha

12. General overview of the site:
Provide a short paragraph giving a summary description of the principal ecological characteristics and importance of the wetland.

A system of saline shallow steppe lakes with cyclical (about 30 years) variations of water level; lower reaches and deltas of their tributary rivers. One of East Asia's most important sites where waterbirds and wetland-related birds gather before autumn migration and stage during spring and autumn migrations; it is also an important breeding place of waterbirds. The site supports a total of 317 bird species. The site is inhabited by 23 globally threatened species that are on the IUCN Red List; it is also of utter importance for the conservation of some species: the Relict Gull *Larus relictus*, Swan Goose *Anser cygnoides*, White-naped Crane *Grus vipio*, Hooded Crane *Grus monacha*, Great Bustard *Otis tarda*.

13. Ramsar Criteria:
Tick the box under each Criterion applied to the designation of the Ramsar site. See Annex II of the *Explanatory Notes and Guidelines* for the Criteria and guidelines for their application (adopted by Resolution VII.11). All Criteria which apply should be ticked.

1	2	3	4	5	6	7	8	9
☒	☒	☒	☒	☒	☒	☐	☐	☐

14. Justification for the application of each Criterion listed in 13 above:
Provide justification for each Criterion in turn, clearly identifying to which Criterion the justification applies (see Annex II for guidance on acceptable forms of justification).

Criterion 1. Torey Lakes contain an example of a natural wetland type found within a transboundary (Russia – Mongolia – China) Dauria ecological and biogeographic region: a closed saline sodic lake with a shallow dish-shaped basin and a variable hydrological regime. At the same time, Torey Lakes are unique for the Dauria biogeographic region, since they are the greatest water body of Transbaikalia with a pronounced 30-year periodicity of water level variations. They are natural water bodies.

Criterion 2. The wetland supports a great number of vulnerable and endangered species. 23 species of birds included in the IUCN Red List have been registered on territory of the wetland. The wetland was designated as a Ramsar site in order to conserve seven globally threatened species of birds. In particular, Torey Lakes are

important breeding habitats of the White-naped Crane *Grus vipio*, Great Bustard *Otis tarda*, Asiatic Dowitcher *Limnodromus semipalmatus*, Relict Gull *Larus relictus*, and Swan Goose *Cygnopsis cygnoides*. The site is also an important staging habitat of the Siberian White Crane *Grus leucogeranus*, White-naped Crane, Hooded Crane *Grus monacha*, Great Bustard, Asiatic Dowitcher, and Swan Goose.

Moreover, the site supports 38 species of birds listed in the Red Data Book of the Russian Federation. It is important for the conservation of the following species: The Demoiselle Crane *Anthropoides virgo*, Bewick's Swan *Cygnus bewickii*, Black-winged Stilt *Himantopus himantopus*, Avocet *Recurvirostra avosetta*, and Mongolian Lark *Melanocorypha mongolica*.

Criterion 3. Torey Lakes play a key role in supporting the biological diversity of the Daurian biogeographic region, in particular of avifaunal diversity. In the region, Torey Lakes has the greatest biodiversity (it supports the greatest number of bird species, the greatest number of rare birds, and the greatest number of breeding and migrating birds). It is the only breeding place of the Relict Gull in the bioregion. It supports very important staging places of migrating cranes (aggregations of cranes on Torey Lakes and in their vicinity during migration can count 42,000 birds, with up to six species present at the same time). It is also the most important breeding and moulting area of the Swan Goose in Russia and one of the most important ones in the Dauria biogeographic region.

Torey Lakes are one of East Asia's most important sites where waterbirds and wetland-related birds gather before autumn migration and stage during spring and autumn migrations. The intracontinental branch of the East Asian – Australian flyway has a bottleneck in the vicinity of Torey Lakes, and therefore the density of bird migration flow there is extremely high and migration assemblages numerous.

Criterion 4. Torey Lakes are extremely important habitats of waterbirds and wetland-related birds at three critical stages of their life cycles: breeding, moulting, and migration. In the course of long-term (about 30 years) climatic cycles, Torey Lakes also provide important habitats in dry periods that are extremely unfavorable for waterbirds and wetland-related birds. Up to 97% of lakes in the Dauria region can completely disappear during dry periods. Thanks to their large dimensions and a great water capacity, Torey Lakes dry much slower than most smaller water bodies and, therefore, provide birds with refuges during the droughts.

Criterion 5. Numbers of breeding waterbirds and wetland-dependent birds at the site is usually much greater than 20,000 individuals and can only be smaller at the crests of dry periods. Birds breeding at the site are mostly colonial species: the Great Cormorant *Phalacrocorax carbo*, Grey Heron *Ardea cinerea*, Relict Gull *Larus relictus*, Yellow-legged Gull *Larus cachinnans*, Caspian Tern *Hydroprogne caspia*, Gull-billed Tern *Gerlochelidon nilotica*, Common Tern *Sterna hirundo*. Other common breeding species are: the Swan Goose *Anser cygnoides*, Great Crested Grebe *Podiceps cristatus*, and Coot *Fulica atra*. Crane numbers in autumn pre-migration assemblages on Torey Lakes and in their surroundings reach 42,000 birds (predominant species being the Demoiselle Crane *Anthropoides virgo*), while the total simultaneous number of waterbirds and wetland-related birds at the crest of autumn migration usually exceeds 100,000 individuals. One can assume that the total number of waterbirds and wetland-related birds using the site during the autumn period is about one million individuals. At that, predominant species are either cranes and ducks (in high water level periods) or shorebirds (in low water periods).

Criterion 6. Numbers of the Relict Gull *Larus relictus*, a globally threatened species that breeds at the site, reach 20% of the world's population of the species. In some species of waterbirds and wetland-dependent birds (including globally threatened ones), maximal one-time numbers in migration assemblages on Torey Lakes may exceed 10% of the global population of the species or subspecies: the Hooded Crane *Grus monacha* – up to 13% of the species population; Demoiselle Crane *Anthropoides virgo* – up to 14% of the species population; Red-necked Stint *Calidris ruficollis* – up to 14% of the species population; Great Bustard *Otis tarda dybowskii* – up to 13% of the Eastern subspecies population, etc. In some species of waterbirds and wetland-dependent birds (including globally threatened ones), maximal one-time numbers on Torey Lakes during breeding, moulting, or migration may exceed 1% of the global population of the species: the Siberian White Crane *Grus leucogeranus*, White-naped Crane *Grus vipio*, Swan Goose *Cygnopsis cygnoides*, Asiatic Dowitcher *Limnodromus semipalmatus* etc.

15. Biogeography (required when Criteria 1 and/or 3 and /or certain applications of Criterion 2 are applied to the designation):

Name the relevant biogeographic region that includes the Ramsar site, and identify the biogeographic regionalisation system that has been applied.

a) biogeographic region: Typical steppe

b) biogeographic regionalisation scheme (include reference citation):

A.A. Tishkov. Biosphere functions of natural ecosystems in Russia. 2005. 309 p.p. in Russian (Tishkov A.A. Biosfernye funktsii prirodnykh ekosistem Rossii. Moskva, Nauka. 2005. 309 s.)

a) biogeographic region: Dauria steppe ecological (biogeographic) region

b) biogeographic regionalisation scheme (include reference citation):

One of the 200 global ecoregions identified by the World Wide Fund for Nature (www.panda.org/.../global200). The site is located in the northern portion of the steppe zone in East Asia. According to the system of botanical-geographic regionalization, it falls into the Dauro-Mongolian subregion of the Euro-Asian steppe region (Atlas Zabaikalya 1967; Natsionalny atlas Mongolskoi Narodnoi Respubliki 1990).

16. Physical features of the site:

Describe, as appropriate, the geology, geomorphology; origins - natural or artificial; hydrology; soil type; water quality; water depth, water permanence; fluctuations in water level; tidal variations; downstream area; general climate, etc.

In what is now the Torey basin, a large lake existed approximately since Eo-pleistocene that gradually contracted in size. Traces of these contractions can be seen as terraces of various age. Characteristic of the topography are natural levees located on the floodplain and the first upper floodplain terrace of the lakes. They were formed, as the shoreline moved due to variations of water level of the lakes. There can be 19-20 levees on one slope. They vary in sized from 0.5m to 2-3 m high and up to 20-30 m wide.

Climate at the site is extreme continental, with hot summers and dry, cold winters. Daily variations of air temperature reach 15-20°C, while annual ones - 80°C. Annual precipitation varies between 150 mm in dry years to 350 mm in wet years (mean 290 mm over a long term period). Most of the annual precipitation falls in summer, between June and August, and coincide with river floods. The winter is cold, with no heavy winds and little snow; precipitation measure 10 to 30 mm. July is the warmest month, with mean monthly air temperature of +19-20°C; January is the coldest one, with mean monthly temperature of -24-26°C.

The wetland comprises close-basin lakes of Zun-Torei and Barun-Torei that differ from each other morphologically. The lakes are connected by two narrow channels (one of them dried completely in 2007). The Uldza and Imalka rivers that feed the lake flow into the southwest portion of Lake Barun-Torey. The most of the river catchment is located in Mongolia. The unstable water regime of the lakes determines a broad variability of morphometric features over a long-term period. An important feature of the area is the alternation of well-pronounced long-term dry, warm and wet, cool climatic periods, which causes cyclical variations of water content of the tributary rivers and water level in Torey Lakes. This results in radical transformations of habitats, considerable changes in vegetation character and bird population, in particular waterbirds and wetland-related birds. In dry periods, Torey Lakes dry partially or completely, and give way to *solonchak* depressions, while lake shores turn into muddy, sandy, or shingle beaches. In wet years, the lake basins become filled with water; soon, the steppe vegetation on the shores is succeeded by emergent vegetation. In periods with the highest water level, the lakes become fringed by a continuous reed stripe. For example, before 1998 reeds on Torey Lakes were limited to the Uldza River delta, but from 1990 onwards, they spread to other areas (like the southwest shore) and rapidly occupied most of the shore. In the late 1990s it turned to a virtually continuous fringe at all the lakes and formed extensive impenetrable stands in the Uldza River delta. With the onset of another dry period, the reverse process began, and reed beds gradually gave way to sedge meadows and steppe vegetation.

In wet years, the total water surface of Torey Lakes may measure over 900 km^2. As the lakes grow, especially in the end, water is nearly fresh, but it can be saline then the lakes dry out. The duration of cyclic changes in water level of Torey Lakes is 28 to 40 years, about thirty years on the average (Obyazov 1994). The second-to-last filling peak of Torey Lakes was registered in 1965; the lakes begin to dry from 1966 to 1983, when Lake Barun-Torey was completely dry. Lake Barun-Torey started to fill in 1984; between 1996 and 1999 the water level fluctuated around its maximum (a drop in 1996 and a rise in 1998 and 1999), and a rapid decline began in 2000 and continued till 2007. The lake bottom has become exposed as fast as up to 1.5 km per year on gently sloping shores.

Lake Barun-Torey

Lake Barun-Torey has a larger area (550 km^2) than Lake Zun-Torey, but it is shallower, with the maximal depth 4.26 m and mean depth 2.51 m. The lake's volume is 1.38 km^3 (at the highest water level). The shoreline is deeply indented, with numerous headlands and bays. There are up to 10 islands on the lake; number of these varies depending on the water level. The lake bottom is flat, with greatest depths located in its central portion. Barun-Torey is fed by two rivers. The Uldza (Uldza-Gol) river enters the lake on the south, forming an expansive delta. On entering the paludified lowland, it divides to channels that disappear in alluvial deposits of the lake. Only two of the channels, the Borokholoi and Uldza rivers, have slightly developed watercourses. These rivers discharge in high-water years only. They become completely dry in low-water years. In particular, the two rivers were dry in the summer 2007. In winters, they are frozen to the bottom from December to March. The Imalka River enters Lake Barun-Torey on the west. The lower reaches of the river are only drained in summers of high-water years. Annual variations of water level are from 14 to 95 cm. The lake shores are paludified to a small degree.

The ice sheet on the lakes thaws up before mid-May (on April 15 at the earliest and May 17 at the latest). A stable ice sheet usually forms in end October, or, very seldom, in early November.

The lake's water has a sodium hydrocarbonate-chlorid composition. On a long-term scale, the chemical composition of water changes depending on the hydrological regime of the lake. In high-water years, the water salinity oscillates around 1-1.5 g/l. As the water volume decreases, the salinity raises to 17 g/l and more. The water is turbid, grayish-white. The turbidity is mainly caused by wind-induced mixing and fine silt detachment. The lake bottom is muddy, with viscous or dense clayed mud widespread at depths of over 1.5 m.

The trophic status of the lake is estimated as oligomesotrophic (Lokot, Strizheva et al. 1991).

Lake Zun-Torey

Zun-Torey has a rounded shape, a slightly indented shoreline, and the only island that turns to a peninsula in lower-water periods. The water surface of Zun-Torey covers 285 km^2 when the maximal depth reaches 6.76 m. The mean depth of the lake is 5.68 m, while its volume measures 1.62 km^3. Lake Zun-Torey is connected to Lake Barun-Torey by two channels 200 to 300 m long and about 100 m wide; one of them, the Utochi River, also has a flow in low-water periods. As the water levels in lakes and the channels become equal, the direction of stream changes according to wind and other factors.

Shores are mostly gently sloping to the lakes. The water regime of Lake Zun-Torey differs slightly from that of Lake Barun-Torey, because of a smaller catchment area and lack of surface tributaries. In high-water periods that the two lakes are connected by the Utycha channel, the water levels of the lakes are similar. When the water levels drops, Lake Barun-Torey dries out faster.

The lake bottom is muddy. The water is turbid, grayish-white. Its composition is the same as in Lake Barun-Torey.

The Uldza-Gol and Imalka Rivers

Water regimes of the rivers are similar. The Uldza is the main tributary. Mean annual discharge of the Uldza is 7.43 m^3/s and that of the Imalka is 0.5 m^3/s. The rivers become completely dry in low-water years. In particular, the two rivers were dry in the summer 2007.

Soils

The most widespread are chestnut and mountain chestnut soils, as well as soil complexes with *solonchaks*.

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17. Physical features of the catchment area:

Describe the surface area, general geology and geomorphological features, general soil types, and climate (including climate type).

Torey Lakes are mainly fed by the rivers Uldza and Imalka. The Uldza plays the key role because of its greater length and catchment area. Nearly all of the Uldza River catchment is located in Mongolia – mostly in the steppe zone and, to a small degree, in the forest steppe zone. The Imalka is also mostly located on territory of Mongolia, with its riverhead in the forest steppe zone. The river network is poorly developed in the steppe zone; few rivers that cross this area (the Onon, Uldza, Kerulen and others) have hardly any tributaries. In the forest steppe and forest zones, the drainage network is dense and rivers have numerous tributaries. Contrastingly, lakes are much more abundant in the steppe than in the forest steppe zone. The expansive Torey basin covering an area of about 30,000 km^2 (Fig. 1.1, 1.2) is especially rich in lakes; there can be over 1500 lakes there in high-water years (e.g. in 1995-1999).

The steppe is represented by flat and hilly plains that stand at 600-900 meters above sea level, while peaks and ranges rise to 1100 m a.s.l. Typical of the forest steppe zone is the alternation of low or medium-high mountain ridges rising to 1100-1900 m above sea level and elongated basins stretched in the northeasterly direction.

Climate is extreme continental, with little precipitation, low temperatures, strong wings in spring, and plenty of sunshine (Zhukov 1965, Atlas Zabaikalya 1967, Shamsutdinov 1991, Obyazov 1996a). Mean annual air temperature is negative and varies between -0.5°C and -4°C. Daily air temperatures swings reach 20 to 30°C. January is the coldest month, with mean annual temperature of -20 to -30°C. July is the warmest month (+15 to +20°C); it is warmer in steppe areas compared with the forest steppe. The frost-free period in steppe areas lasts for 100 to 110 days, while it is only 60 to 100 days in forest steppe areas. Usual dates of the transition of the mean daily temperatures over 0°C are April 10-19 and October 4-16. The total annual precipitation in steppe areas (200 to 300 mm) is much lower than that in forest steppe areas (300-600 mm). Precipitation is unevenly distributed throughout the year, with up to 80% of the annual total falls in July and August. There is little snow in winter; a continuous snow cover does not form every year.

Rivers in the steppe zones, even small ones like the Imalka, have very broad valleys. Their water reserves vary greatly, especially in the lower reaches. The Uldza and Imalka originate at the border between the forest steppe and steppe zones. They receive their main feeding in the upper reaches, while their lower reaches are located in the dry steppe zone with no additional water supply. Statuses of the wetlands and rivers change frequently and quickly. After abundant rains, the rivers swell and inundate the floodplain. However, they dry quickly out when water level in the rivers drops, because the water flows freely. For instance, floodplain meadows were completely flooded in the spring 1999 (because of a rainy autumn of 1998), but they were virtually dry in the spring 2000. Much less pronounced changes take place in the upper reaches of the rivers, where precipitation is more abundant, there are many springs, and a rough terrain.

Predominant soils in the Torey basin are chestnut mealy-carbonate frozen sandy loams and light loams; common are also frozen *solonchak* soils. Chernozem and meadow-forest frozen soils predominate in adjacent areas in the north, east, and west of the basin. A common feature of the soils is a large content of shingle, gravel, and chips (Atlas Zabaikalya 1967, Natsionalny atlas Mongolskoi Respubliki 1990).

The catchment is a developed agricultural territory of an extensive character. Steppe areas are mainly used for cattle grazing (sheep, cows, horses, sometimes camels), hay harvesting, and, to a smaller degree, as croplands. There are many small cattle camps maintained by one or two shepherd families. The camps are usually located a few kilometers away from each other. The number and distribution of the camps are largely determined by the availability of freshwater sources.

In the Russian portion of the catchment (Southeast Transbaikalia), most of the population lives in villages. Livestock breeders in cattle camps represent a fraction of the rural population, but they make a massive impact on populations of rare animals, because the camps are usually situated close to wetland habitats of cranes and

other rare species. The cattle are pastured in the vicinity of the camps all the year round or in winter only, while other grazing grounds are used in summer.

An important peculiarity of the region is a difference in human impact on natural steppe complexes in the Russian and Mongolian parts of the catchment. It has to do with the fact that population density in Mongolia is 10 times smaller than in Russia.

About 20% of the steppe areas in the Russian part of the Torey basin are used as croplands.

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18. Hydrological values:

Describe the functions and values of the wetland in groundwater recharge, flood control, sediment trapping, shoreline stabilization, etc.

The Torey Lakes are the largest water body in Transbaikalia and among the largest ones in the Dauria biogeographical region. The site is very important for the support of a natural ground water regime in the extensive Torey basin and hydrological regimes of hundreds of small lakes in the basin.

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19. Wetland Types

a) presence:

Circle or underline the applicable codes for the wetland types of the Ramsar "Classification System for Wetland Type" present in the Ramsar site. Descriptions of each wetland type code are provided in Annex I of the *Explanatory Notes & Guidelines*.

Marine/coastal: A • B • C • D • E • F • G • H • I • J • K • Zk(a)

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

Human-made: 1 • 2 • 3 • 4 • 5 • 6 • 7 • 8 • 9 • Zk(c)

b) dominance:

List the wetland types identified in a) above in order of their dominance (by area) in the Ramsar site, starting with the wetland type with the largest area.

Q, L, M, Ts, N

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20. General ecological features:

Provide further description, as appropriate, of the main habitats, vegetation types, plant and animal communities present in the Ramsar site, and the ecosystem services of the site and the benefits derived from them.

The site is located in the northern portion of the steppe zone in East Asia. According to the system of botanical-geographic regionalization, it falls into the Dauro-Mongolian subregion of the Euro-Asian steppe region. The central portion of the Torey basin is occupied by dry bunchgrass steppe predominated by reed-grass *Calamagrostis sylvatica* and feather-grasses. The periphery of the basin and adjacent areas on the east and south are occupied by forbs-grass meadow steppe dominated by *Tanacetum* spp. and feather-grasses. Floodplain vegetation is represented by reed communities, paludified sedge meadows, herb grass meadows and willow groves (Atlas Zabaikalya 1967, Natsionalny atlas Mongolskoi Respubliki 1990).

The vegetation character undergoes considerable changes due to the cyclic alternation of dry and wet climatic periods. The emergent vegetation on floodplains of steppe rivers and around numerous lakes is especially vulnerable. Reed beds and sedge stands in lakes basins virtually disappear in driest years. Reeds on river floodplains almost disappear too, while sedge meadows decrease drastically. As mean annual precipitation begins to grow, expansive sedge meadows form on river floodplains and wet meadows develop around springs in lake basins. As the water content of rivers grows further, the meadows paludify and reeds sprawl. By the end of a wet period, reed beds may dominate over meadows. With the onset of another dry period, the reverse process begins on river floodplains: reed beds gradually give way to sedge meadows. Steppe vegetation in dry

periods is short and scarce, but it grows prolifically in wet years. Changes in the species composition take place as well.

Main habitats are as follows: paludified reed beds, shallow waterlogged sedge meadows, wet grass meadows, mudflats, sandy and shingle beaches. The most widespread at the moment are mudflats and sandy/shingle beaches. Reed beds have disappeared almost completely (some reed patches are still found in the Uldza River delta). Common on lake shores are vegetation associations dominated by seepweed, saltbush, and saltgrass.

Rapid drops of water level in the lakes result in the expansion of *solonchak* vegetation and formation of wide (up to 5 km) barren *solonchak* shores. Growth of water salinity leads to a contraction of pondweed groves and, from 2004 onwards, to fish kills. The fish fauna is mainly represented by *Carassius auratus*.

21. Noteworthy flora:

Provide additional information on particular species and why they are noteworthy (expanding as necessary on information provided in 14, Justification for the application of the Criteria) indicating, e.g., which species/communities are unique, rare, endangered or biogeographically important, etc. *Do not include here taxonomic lists of species present – these may be supplied as supplementary information to the RIS.*

The site's vegetation is unique for southern Transbaikalia. The relatively small are supports both steppe and wetland vegetation communities that are situated in immediate vicinity. Steppe areas adjacent to the Torey Lakes are occupied by associations dominated by *Festuca ovina*, *Filifolium sibiricum*, *Stipa pennata*, and forbs/grasses. A great number of valuable rare and medicinal plants is found at the site.

Two species of plant listed in the Red Data Book of the Russian Federation have been registered at the site: *Asparagus brachyphyllus* and *Tripogon chinensis*. The following local plants are listed in the Red Data Book of the Chita Oblast and Agin-Buryat Autonomous Area: *Artemisiaa nitrosa, Asparagus brachyphyllus, Cotoneaster mongolicus, Ephedra dahurica, Iris lactea, Iris tigridia, Iris pontica, Allium anisopodium, Limonium aureum, Salsola monoptera, Kochia angustifolia, Saussurea davurica, Argusia sibirica, Glycyrrhiza uralensis,* and *Scutellaria baicalensis*.

The most important medicinal plants are: *Cymbaria daurica, Euphorbia maackii, Inula britannica, Leontopodium leontopodioides, L. conglobatum, Lepidium densiflorum, Plantago depressa, Poligonatum sibiricum, Poligonum alpestre, Potentilla acaulis, Silene jeniseensis, Thymus dahuricus, Scabiosa comoza, Sanguisorba officinalis, Schizonepeta multifida, Tanacetum vulgare, Achillea asiatica, Lespedeza juncea, Bupleurum scorzonerifolium,* and *Scutellaria baicalensis*.

In addition to these, plant species endemic to southern Transbaikalia and Siberia have been registered at the site: *Allium tenuissimum, Haplophyllum davuricum, Iris lactea, Gypsofila davurica, Thermopsis lanceolata, Ptilotrichum davuricum, Pardanthopsis dichotoma, Stipa krylovii,* and *S. sibirica*.

22. Noteworthy fauna:

Provide additional information on particular species and why they are noteworthy (expanding as necessary on information provided in 12. Justification for the application of the Criteria) indicating, e.g., which species/communities are unique, rare, endangered or biogeographically important, etc., including count data. *Do not include here taxonomic lists of species present – these may be supplied as supplementary information to the RIS.*

Migratory bird fauna

Torey Lakes are one of East Asia's most important sites where waterbirds and wetland-related birds gather before autumn migration and stage during spring and autumn migrations. The intracontinental branch of the East Asian – Australian flyway has a bottleneck in the vicinity of Torey Lakes, and therefore the density of bird migration flow there is extremely high and migration assemblages numerous. In long-term wet climatic periods, the migration flow is mainly composed of anseriformes and ciconiiformes, while charadriiformes predominate in dry periods. Since the onset of the current dry period, numbers of shorebirds that migrate and stage at the wetland have sharply increased.

Bird species that regularly stage at the wetland on spring migration during wet climatic periods are as follows: the Bean Goose *Anser fabalis* (up to 2000 ind.), Bewick's Swan *Cygnus bewickii* (up to 600 ind.), Mallard *Anas platyrhynchos* (up to 3000 ind.), Common Teal *Anas crecca* (up to 6000 ind.), Gadwall *Anas strepera* (up to 6000 ind.), Wigeon *Anas penelope* (up to 2000 ind.), Pochard *Aythya ferina* (up to 3000 ind.), Goldeneye

Bucephala clangula (up to 2000 ind.), Coot *Fulica atra* (up to 10,000 ind.), Black-headed Gull *Larus ridibundus* (up to 4000 ind.), and Caspian Gull *Larus cachinnans* (up to 10,000 ind.).

Bird species that regularly stage at the wetland on autumn migration during wet climatic periods are as follows: the Siberian White Crane *Grus leucogeranus* (up to 32 birds), Common Crane *Grus grus* (up to 1500 ind.), White-naped Crane *Grus vipio* (up to 135 ind.), Hooded Crane *Grus monacha* (up to 1200 birds), Demoiselle Crane *Anthropoides virgo* (up to 42,000 ind. on wheat fields around the Torey Lakes), Greylag Goose *Anser anser* (up to 700 ind.), Bean Goose *Anser fabalis* (up to 1000 ind.), Swan Goose *Anser cygnoides* (up to 2400 ind.), Ruddy Shelduck *Tadorna ferruginea* (up to 12,000 ind.), Mallard *Anas platyrhynchos* (up to 18,000 ind.), Common Teal *Anas crecca* (up to 9000 ind.), Gadwall *Anas strepera* (up to 11,000 ind.), Wigeon *Anas penelope* (up to 5000 ind.), Pochard *Aythya ferina* (up to 11,000 ind.), Goldeneye *Bucephala clangula* (up to 6000 ind.), Coot *Fulica atra* (up to 11,000 ind.).

Bird species that regularly stage at the wetland on spring and autumn migration during dry climatic periods are as follows: the Pacific Golden Plover *Pluvialis fulva* (up to 20,000 birds), Grey Plover *Pluvialis squatarola* (up to 3000 birds), Black-tailed Godwit *Limosa limosa* (up to 1000 birds), Red-necked Stint *Calidris ruficollis* (up to 25,000 birds).

Breeding bird fauna

The Torey Lakes are the most important breeding area of waterbirds and wetland-related birds in Transbaikalia and one of the most important ones in the Dauria biogeographic region (including many species that are on the IUCN Red List, Red Data Book of the Russian Federation, and Red Data Books of Chita Oblast and Agin-Buryat AA). The site supports a total of 317 bird species.

Bird species on the IUCN Red List that breed at the site are: the Swan Goose *Anser cygnoides* (up to 82 pairs), Baer's Pochard *Aythya baeri* (a few pairs), White-naped Crane *Grus vipio* (up to 15 pairs), Japanese Crane *Grus japonensis* (1 pair), Relict Gull *Larus relictus* (up to 1215 pairs), Asiatic Dowitcher *Limnodromus semipalmatus* (up to 80 pairs), Great Bustard *Otis tarda* (up to 10 pairs).

Bird species on the Red Data Book of the Russian Federation that breed at the site are: the Steppe Eagle *Aquila nipalensis* (2 pairs), Saker *Falco cherrug* (up to 5 pairs), Demoiselle Crane *Anthropoides virgo* (up to 90 pairs), Black-winged Stilt *Himantopus himantopus* (up to 80 pairs), Avocet *Recurvirostra avosetta* (up to 3000 pairs), Caspian Tern *Hydroprogne caspia* (up to 635 pairs), Eagle Owl *Bubo bubo* (1-3 pairs), Mongolian Lark *Melanocorypha mongolica* (about 10,000 pairs).

The Torey Lakes are of special importance for the conservation of the following species listed in the Red Data Book of the Chita Oblast and Agin-Buryat Autonomous Area: the Great Cormorant *Phalacrocorax carbo* (up to 2854 pairs) and Mongolian Bunting *Emberiza pallasi lydiae* (about 1000 pairs).

The wetland is also the Russia's only habitat of the Mongolian Gazelle *Procapra gutturosa* and an important habitat of the Daurian Hedgehog *Hemiechinus dauuricus* that are listed in the Red Data Book of the Russian Federation.

Small and medium-sized islands on the lakes (11-12 islands) are the most important breeding grounds of colonial waterbirds and wetland-related birds at the site. A very important breeding ground of waterbirds and shorebirds is the paludified delta of the Uldza River, where they nest in reed beds and waterlogged sedge meadows.

Moulting bird fauna

The Torey Lakes are an important moulting area of waterbirds and wetland-related birds: the Swan Goose *Anser cygnoides* (up to 1800 pairs), Ruddy Shelduck *Tadorna ferruginea* (up to 5000 birds), Shelduck *Tadorna tadorna* (up to 5000 birds), Pochard *Aythya ferina* (up to 3000 birds). In dry years, several tens of thousands of river ducks moult on the lakes.

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23. Social and cultural values:

a) Describe if the site has any general social and/or cultural values e.g., fisheries production, forestry, religious importance, archaeological sites, social relations with the wetland, etc. Distinguish between historical/archaeological/religious significance and current socio-economic values:

The Torey Lakes are the most fish productive lakes of southern Trans-Baikal area. However, one should mention that decrease in lake level and changes of water composition cause mass death of *Carassius aureus*.

The indigenous people always used the lakes as watering sites of cattle. Many camps of the indigenous people are located on lake shores outside the borders of the Daursky state biosphere nature *zapovednik*. They also have an important social value, as there are several sacred sites of the Buryats in the vicinity.

The Torey Lakes are a most important recreation site of the local population living for 100-120 km around.

The lakes have attracted attention of scientists since the times of P.S. Pallas. Sporadic investigations were carried out since the second half of the 20th century till the late 1970s, when the research became regular. The establishment of the Daursky state nature biosphere *zapovednik* on the Torey Lakes allowed expanding the variety of research issues. Until recently, the main attention was given to ornithological research, but now mammalogical, hydrological, and botanical investigations have been carried out.

b) Is the site considered of international importance for holding, in addition to relevant ecological values, examples of significant cultural values, whether material or non-material, linked to its origin, conservation and/or ecological functioning?

If Yes, tick the box ❑ and describe this importance under one or more of the following categories:

i) sites which provide a model of wetland wise use, demonstrating the application of traditional knowledge and methods of management and use that maintain the ecological character of the wetland:

ii) sites which have exceptional cultural traditions or records of former civilizations that have influenced the ecological character of the wetland:

iii) sites where the ecological character of the wetland depends on the interaction with local communities or indigenous peoples:

iv) sites where relevant non-material values such as sacred sites are present and their existence is strongly linked with the maintenance of the ecological character of the wetland:

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24. Land tenure/ownership:

a) within the Ramsar site:

The territory of the Daursky state biosphere *zapovednik* is state owned and excluded from economic activities.

The buffer zone of the Daursky state biosphere *zapovednik* is private property.

b) in the surrounding area:

Most of the surrounding area is in private ownership, and some are communal property.

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25. Current land (including water) use:

a) within the Ramsar site:

Main land users at the site are:

- The Daursky State Biosphere *zapovednik*;
- *Gigant* kolkhoz farm;
- *Rassvet* kolkhoz farm;
- *Krasnaya Imalka* sovkhoz farm;
- *Solovievsky* sovkhoz farm;
- *Toreysky* sovkhoz farm;

- *Lokha* sovkhoz farm;
- About 10 family farms (the number is variable).

About 15% of the buffer zone of the Daursky state biosphere *zapovednik* are used for crop production, while the rest is occupied by hay fields, grazing grounds, and a small portion by earth roads.

There are sites designated for amateur fishing with nets on the eastern shore of Lake Zun-Torey and northern and southern shores of Lake Barun-Torey. Fishing is allowed from May to October, with its pressure being especially high at the sites in the southern portions of the lakes (near the Utycha channel). Ice fishing is practiced in winter on Lake Barun-Torey.

b) in the surroundings/catchment:
Lands in the surroundings are used by collective farms (sovkhoz, kolkhoz) and individual farmers.

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26. Factors (past, present or potential) adversely affecting the site's ecological character, including changes in land (including water) use and development projects:
a) within the Ramsar site:

One of the most important factors adversely affecting the site's ecological character is frequent spring fires in the steppe and prescribed burning of old vegetation by the local population in order to prepare hayfields and grazing grounds for a new season. Despite great efforts of the Daursky state biosphere *zapovednik* on fire prevention and control, some fires spread over to the territory of the *zapovednik*. Steppe fires often spread to river floodplains. As a result of the fires, especially in spring, large areas of reed beds and bulrush groves are destroyed by fire, which is unfavorable for breeding waterbirds and wetland-related birds.

Disturbance by cattle and people poses a great danger (especially in dry years) for broods of Swan Geese and some other birds.
Another threat is poaching, though these episodes are rare thanks to active work of the *zapovednik*.

b) in the surrounding area:

The greatest danger in the surrounding area is spring steppe fires that happen every year and spread over to paludified areas on river floodplains and lake basins. Spring hunt is another threat, since migration periods of northern waterbirds and wetland-related birds overlap with the breeding period of local birds. Disturbance of birds by cattle, tourists, fishermen is also a threat for breeding birds. The greatest danger for migrating birds, especially geese, is poaching.

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27. Conservation measures taken:
a) List national and/or international category and legal status of protected areas, including boundary relationships with the Ramsar site:
In particular, if the site is partly or wholly a World Heritage Site and/or a UNESCO Biosphere Reserve, please give the names of the site under these designations.

By Decree of the Government of the Russian Federation No. 1050 from September 13, 1994, the site was included in the list of wetlands on territory of the Russian Federation that are of international importance especially as waterfowl habitats.

The Statute of the Ramsar Wetland "Torey Lakes" was signed into law by the Head of the Chita Oblast Administration (Decree No. 247 from 13.07.1995).

The site includes the territory of the Daursky state nature biosphere *zapovednik*, covering an area of 45790 ha, and its buffer zone.

Entrance to the *zapovednik* is forbidden to people (except the staff of the *zapovednik*) and cattle. The following activities are forbidden on territory of the buffer zone: change hydrological regimes, apply pesticides and fertilizers, hunt. Fishing is allowed at specially designated sites.

In 1997 the Daursky *zapovednik* was included in the network of UNESCO biosphere reserves. It is also on the list of Important Bird Areas of international importance (IBAs), East Asian Network of Crane Reserves, East Asian Network of Anseriformes. Due to the expansion of the reserve's buffer zone, the whole territory of the Ramsar wetland "Torey Lakes" is now situated within the borders of the reserve and its buffer zone.

The Dauria international reserve was established in 1994 on the base of the Daursky state nature biosphere *zapovednik* (Russia), Mongol-Daguur state nature reserve (Mongolia), and the Lake Dalainor national nature reserve (China).

b) If appropriate, list the IUCN (1994) protected areas category/ies which apply to the site (tick the box or boxes as appropriate):

Ia ☒; Ib ❑ ; II ❑; III ❑; IV ☒; V ❑; VI ❑

c) Does an officially approved management plan exist; and is it being implemented?: Yes.

d) Describe any other current management practices:
Measures on optimization of ecosystem status have been developed based on yearly scientific research and monitoring wetland status and wildlife populations.

28. Conservation measures proposed but not yet implemented:
e.g. management plan in preparation; official proposal as a legally protected area, etc.

It would be reasonable consider possibility to expand the *zapovednik* area and thus include the shore zone steppe. This would considerable strengthen the protection regime of wetlands and facilitate conservation of the Swan Goose population, as well as other waterbirds and wetland-related birds.

29. Current scientific research and facilities:
e.g., details of current research projects, including biodiversity monitoring; existence of a field research station, etc.

The *zapovednik* has a research department with a staff of the senior officer (who is also the ornithologist), 5 researchers (teriologist, botanist, phenologist, land use specialist) and 2 technicians. Every year, the *zapovednik* staff carries out scientific research and monitoring of statuses of wetlands and wildlife population. Monitoring has been conducted in a designated network of over 40 transects and squares. The main emphasis in studies of the ecology and population status of birds is on globally threatened species (the Swan Goose, White-naped Crane, Relict Gull, and Great Bustard).

Over the period of 1987 to 2007, lists of vertebrate fauna and vascular plants found at the site, as well as of some invertebrate groups were compiled; new data were obtained on the ecology of important rare species of birds and mammals; and data on population numbers and trends of the most important breeding wetland-related birds. About 15,000 birds were banded with standard steel rings; over 200 birds, mostly cranes, were marked with plastic color rings and collars; and 39 birds (the Japanese Crane, White-naped Crane, Common Crane, Hooded Crane, Demoiselle Crane, Swan Goose, and Whooper Swan) were fitted with satellite radio transmitters. In 1990-1992 helicopter counts of birds were carried out. Scientific research and monitoring work have been financed from the national budget.

From 1994 on, large-scale scientific investigation have been carried out in the framework of the Dauria international (Russia-China-Mongolia) reserve on territory of the Dauria biogeographic region. Special attention has been given to studying ecology and population status of important rare species of birds and mammals: the White-naped Crane, Japanese Crane, Great Bustard, Swan Goose, and Mongolian Gazelle. About 70 joint Russian-Chinese-Mongolian research expeditions were carried out over the period of 1994-2007.

30. Current communications, education and public awareness (CEPA) activities related to or benefiting the site:
e.g. visitors' centre, observation hides and nature trails, information booklets, facilities for school visits, etc.

The *zapovednik* has an environmental education department with a staff of the senior officer and 6 experts. There is an information visit center in the office of *zapovednik*. The staff of the *zapovednik* has been permanently implementing awareness-raising work on environmental issues among the general public. The main target group is children. The work involves publications and mass media events (newspapers, magazines, television); lectures and multimedia presentations at schools and in the visit center of the reserve; regular international children's art and craft contests (drawings, crafts, paintings), with winners going to summer ecological camps on the Torey Lakes. Exhibitions of children's drawings (also international) and photo exhibitions have regularly been organized. Several non-fiction films were made about the Torey Lakes; booklets and calendars have regularly been published. Over the period of 1990-2007, about 1000 popular science articles about the Torey Lakes and the *zapovednik* were published in the local and provincial printed media; about 500 excursions were organized for the local population.

31. Current recreation and tourism:

State if the wetland is used for recreation/tourism; indicate type(s) and their frequency/intensity.

The Torey Lakes are a recreation and sport fishing place popular with the local population. Specially equipped sites were designated for these purposes in the buffer zone of the *zapovednik* that are regularly scavenged. The local population mainly uses the shore of Lake Zun-Torey for recreation. Major negative impacts of the recreation and fishing are as follows: disturbance, pollution of the shore with domestic garbage, and trampling of the grass cover. Tourism is poorly developed on the wetland; scientists and birdwatchers from Russia and other countries visit the area but not no a regular basis.

32. Jurisdiction:

Include territorial, e.g. state/region, and functional/sectoral, e.g. Dept of Agriculture/Dept. of Environment, etc.

Government of the Zabaikalsky Krai, Ministry of Natural Resources and Environment of the Russian Federation, Federal Supervisory Natural Resources Management Service *(Rosprirodnadzor)*.

33. Management authority:

Provide the name and address of the local office(s) of the agency(ies) or organisation(s) directly responsible for managing the wetland. Wherever possible provide also the title and/or name of the person or persons in this office with responsibility for the wetland.

The Daursky State Nature Biosphere Zapovednik; 674480 pos. Nizhny Tsasuchei Chitinskoi Obl., p/b 66, Government of the Zabaikalsky Krai, local authorities.

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Scientific/technical references only. If biogeographic regionalisation scheme applied (see 15 above), list full reference citation for the scheme.

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