

Information Sheet on EAA Flyway Network Sites

(SIS) – 2017 version

Available for download from <http://www.eaaflyway.net/nominating-a-site.php#network>

Categories approved by Second Meeting of the Partners of the East Asian-Australasian Flyway Partnership in Beijing, China 13-14 November 2007 - Report (Minutes) Agenda Item 3.13

Notes for compilers:

The management body intending to nominate a site for inclusion in the East Asian - Australasian Flyway Site Network is requested to complete a Site Information Sheet. The Site Information Sheet will provide the basic information of the site and detail how the site meets the criteria for inclusion in the Flyway Site Network. When there is a new nomination or an SIS update, the following sections with an asterisk (*), from Questions 1-14 and Question 30, must be filled or updated at least so that it can justify the international importance of the habitat for migratory waterbirds.

The Site Information Sheet is based on the Ramsar Information Sheet. If the site proposed for the Flyway Site Network is an existing Ramsar site then the documentation process can be simplified.

Once completed, the Site Information Sheet (and accompanying map(s)) should be submitted to the Flyway Partnership Secretariat. Compilers should provide an electronic (MS Word) copy of the Information Sheet and, where possible, digital versions (e.g. shapefile) of all maps.

1. Name and contact details of the compiler of this form*:

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EAAF SITE CODE FOR OFFICE USE ONLY:

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2. Date this sheet was completed*:

04/02/2016

3. Country*:

Mongolia

**4. Name of the Flyway Network
site*: Terkhiin Tsagaan Lake**

5. Map of site*:

The most up-to-date available and suitable map of the wetland should be appended to the SIS (only in digital format and shape file). The map must clearly show the boundary of the site. Please refer to the “Digitising Site Boundaries in Google Earth” file linked [here](#).

[Terkhiin Tsagaan lake wetland](#)

6. Geographical coordinates* (latitude/longitude, in decimal degrees):

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.

Terkhiin Tsagaan Lake: 48°10'10.3"N 99°42'10.7"E

7. Elevation*: (in metres: average and/or maximum & minimum) Terkhiin Tsagaan Lake: 2,060 m *a.s.l.*

8. Area*:

The total area of the site, in hectares. If the areas of discrete site units are known, please also list each of these together with the names (or labels) used to identify and differentiate these units.

Terkhiin Tsagaan Lake: 99.3 km² or 99,300 ha

9. General overview of the site*:

A brief (two sentences) summary of the site, mentioning principal physical and ecological functions, and its importance for migratory waterbirds.

Terkhiin Tsagaan Lake is situated almost at the centre of the Khorgo-Terkhiin Tsagaan Lake National Park. It has a wonderful natural formation and is rich in many threatened species of animals and plants, as well as hosts the 8 watersheds of many larger rivers that are strategically important for clean water reserves. Traditional nomadic livestock husbandry and eco-tourism have been developing in the area in a way that they support environmental protection and sustainable natural resource management through their active participation. The Terkhiin Tsagaan Lake located in the valley of the Suman River, a tributary of the Selenge River in the central Khangai Mountains. The oligotrophic freshwater lake was formed by volcanic activity. Maximum depth of the lake is 19.5 m. About 20% of the lake supports aquatic macrophytes. The aquatic vegetation is not as well developed as that of Ugii Nuur, but mostly the same species are present along with some *Dutomus umbellatus*. Blue-green algae dominate the phytoplankton in summer. The lake is surrounded by grassy hills and mountains with patched larch forest and volcanic rocks mixed with shrubby vegetation. The fish fauna is dominated by typically Eurasian species. The lake is significant habitat of breeding and moulting Anatidae including Bar-headed Goose, Goldeneye, White-winged Scoter, Common Pochard and many other ducks in large numbers. The lake also support large numbers of migratory waders on migration and migratory Demoiselle cranes.

10. Justification of Flyway Site Network criteria*:

Please provide waterbird count information (with year of latest count) that demonstrates that the site meets the criteria of the Flyway Site Network (Annex 1). That is:
it regularly supports > 20 000 migratory waterbirds; or,
it regularly supports > 1 % of the individuals in a population of one species or subspecies of migratory waterbird; or,
it supports appreciable numbers of an endangered or vulnerable population of migratory waterbird
it is a “staging site” supporting > 5 000 waterbirds, or > 0.25% of a population stage at the site.

A listing of the populations of migratory waterbirds covered by the East Asian – Australasian Flyway Partnership and the 1% thresholds is attached (Annex 3).

The “staging site” criterion is particularly difficult to apply and application of this should be discussed with the Secretariat. Also note that some species have several populations that are very difficult to distinguish in the field.

To be considered for inclusion in the Flyway Site Network, this Partnership adopts the following criteria:

Convention on Wetlands (Ramsar, Iran, 1971) criteria for internationally important sites for migratory water birds. That is:

Criterion 2: The wetland supports globally threatened and near threatened species: Pallas’s Fish Eagle, White-naped Crane, Falcated Duck and Ferruginous Pochard (Gombobaatar et al. 2011).

Criterion 5: The site supports over 27,000 waterbirds (Batchuluun et al. 2012).

Criterion 6: The wetland supports 1% of the individuals of Ruddy Shelduck (2.9%, 1,757 individuals) (Batchuluun et al. 2012).

The staging criteria as applied under the Asia - Pacific Migratory Water bird Conservation Strategy.

The wetland supports 0.25% of global individuals in a population of the following species in single season: Greylag Goose (0.3%, 500 individuals), Great Cormorant (0.43%, 520), Bar-Headed Goose (0.27 %, 154 individuals), Ruddy Shelduck (1%, 647 individuals), other ducks (0.6%, 3,500 individuals), Common Pochard (0.28 %, 1,200 individuals) and Tufted Pochard (0.3%, 1,678 individuals) (Batchuluun et al. 2012).

It supported over 5000 at one time during migration in the spring of 2009 and spring and autumn of 2010.

c. Under exceptional circumstances a site can be nominated if it supports migratory water birds at a level or stage of their life cycle important to the maintenance of flyway populations. Justification of such nominations will be considered by the Partnership on a case by case basis.

11. Wetland Types*:

List the wetland types present (see Annex 2). List the wetland types in order of their area in the Flyway Network site, starting with the wetland type with the largest area.

Inland wetlands:

O -- **Permanent freshwater lakes** (over 8 ha); includes large oxbow lakes.

Tp -- **Permanent freshwater marshes/pools**; ponds (below 8 ha), marshes and swamps on inorganic soils; with emergent vegetation water-logged for at least most of the growing season.

12. Jurisdiction*:

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

Khangai Nuruu Protected Area Administration, Erdenebulgan Sum of Arkhangai Province and Ministry of Environment, Green Development and Tourism

13. 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 and the title and/or name and email address/phone number of the person or persons in this office with direct responsibility for managing the wetland.

Local Governor, Tseterleg sum, Arkhangai Province

In collaboration with

Mongolian Ornithological Society and Khorgo-Terkhiin Tsagaan Lake PA

Dr. Sundev Gombobaatar and Iderbat

Tel: 976-99180148

E-mail: info@mos.mn

14. Bibliographical references*:

A list of key technical references relevant to the wetland, including management plans, major scientific reports, and bibliographies, if such exist. Please list Web site addresses

dedicated to the site or which prominently feature the site, and include the date that the Web site was most recently updated. When a large body of published material is available about the site, only the most important references need be cited, with priority being given to recent literature containing extensive bibliographies.

Batchuluun, D., Tseveenmyadag, N., Bodisaikhan, Kh. and Dashnyam, Sh. 2012. *Report on Avian influenza surveillance study in 2009-2011*. Ulaanbaatar, Mongolia p.148-150. (in Mongolian and English)

Biodiversity conservation action plan for Mongolia. 1996. The Ministry for Nature and Environment Ulaanbaatar, Mongolia.

David Li Zuo Wei, Taej Mundkur. 2007. *Numbers and distribution of water birds and wetlands in the Asia-Pacific region*. p.28.

A Directory of Asian Wetlands, 1989. IUCN, The World Convention Union.

Dulmaa, A. 1979. *Hydrobiological Outline of the Mongolian Lakes*. Int. Revue ges. Hydrobiol. 64: 703-736.

Ecosystems of Mongolia. The map is published with the assistance of UNEP. Russian-Mongolian complex biological expedition.

Gombobaatar, S. (compiler), Brown, H.J., Sumiya, D., Tseveenmyadag, N., Boldbaatar, Sh., Baillie, J.E.M., Batbayar, G., Monks, E.M., Stubbe, M. (editors). 2011. *Summary Conservation Action Plan for Mongolian Birds. Regional Red List Series Vol. 8*. Zoological Society of London, Mongolian Ornithological Society and National University of Mongolia. 847-856 pp. (in English)

Mongolian Red Book. 1997. Ministry of Nature and Environment. Ulaanbaatar. Mongolia.

Mongolia's Wild Heritage. 1996, Mongolia Ministry for nature and Environment, UNDP\GIF, WWF. Avery Press in Hong Kong.

National Atlas, 1990. MPR's Academy of Science and Academy of Science, USSR, Ulaanbaatar, Moscow.

Odonchimeg, N., Namkhai, A. 1998. *Information sheet on Ramsar wetlands*, Terkhiin Tsagaan Nuur. Accessed on November 27th.

Simon Delany. 2006. *Waterbird Population Estimates*, Fourth edition. Wetland International.

15. 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.

The relief of the area is characterized by high mountains, alluvial plains, and a lake of volcanic genesis (ASM&ASU, 1990). The lake, channels and small rivers are located in the valley of the lake. One of the largest river is Suman, a tributary of the Selenge river in the central Khangai mountain. The valley is formed by volcanic activity. The Terkhiin Tsagaan Lake is about 16 km long and four to six km wide. Its surface area covers 61.1 km² (Dulmaa, 1979), its water volume amounts to 0.37 km³ and its catchment area to 7,880 km² (Odonchimeg & Namkhai, 1998). Mineralization 0.43 mg/l. Dark chestnut, meadow chestnut soil, meadow with carbonaceous. Extreme continental climate.

16. Physical features of the catchment area:

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

The catchment area is 7,880 km². Wetland areas in the park have humus-rich dark brown till peaty soils (Haase et al.1963a). Where “bugry” hummocks caused by permafrost exist, the soils have cryogleyic properties. The lake is surrounded by mountains with patched conifer forest and large volcanic rocky hills and bushes. The mean air temperatures vary from -38° C in January to + 33.2° C in July. The warm period, when the temperature is above zero, lasts for 150 to 160 days. The Lake freezes over in the period between late October and mid-May. Annual precipitation varies from 100-150 mm, of which 80% fall between July and end of August.

17. Hydrological values:

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

The Terkhiin Tsagaan Lake is about 16 km long and four to six km wide. Its surface area covers 61.1 km² (Dulmaa, 1979), its water volume amounts to 0.37 km³ (Odonchimeg & Namkhai, 1998). The lake lies in the wide valley heading from north-east to south-west and 2,060 m a.s.l. It has an outlet through the Suman river valley east of the lake. From the west, the Terkh and Tariat rivers discharge into the lake. In the west, there are extensive marshes with pools (Odonchimeg & Namkhai, 1998; Scott, 1989). The lake is important water source for the rivers and recharge ground water in the area.

18. General ecological features:

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

As we mentioned above the lake is surrounded by volcanic rocks and mountains. There are old volcanic craters. The Khorgo volcano crater is one of the largest and located at 2,178 m. a.s.l. The Khorgo volcano erupted and produced extensive lava fields between 7,200 and 7,500 years ago (M.Walther per com., 2007). The lava streams dammed the local river. The water level in the mountain valley rose creating a large lake. There are different natural habitats and zones such as high mountain, forest steppe, wetland and wide shores with aquatic vegetation. The mountains are covered by patched larch forests on their northern slopes, which have moister soils as they are less exposed to solar radiation. South facing slopes have mountain steppe vegetation. The lake and river shores are wetlands, the water bodies have aquatic vegetation, and the mountain tops show high mountain vegetation.

19. Noteworthy flora:

Provide additional information on particular species and why they are noteworthy 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 SIS.*

About 20% of the lake supports aquatic macrophytes. The aquatic vegetation is not as well developed as that of Ugii Nuur, but much the same species are present. Blue-green algae dominate the phytoplankton in summer. From the recorded 120 plant species, four are listed in the Mongolian Red Book (1997) as very rare (*Rhododendron adamsii*) and rare (*Rhodiola rosea*, *Juniperus pseudosabina* and *Valeriana alternifolia*). Also, 11 medicinal plants such as *Rosa acicularis* and *Thymus gobicus* also occur here. Dominant species

are *Betula rotundi folic*, *Dryas oxydontha*, *Koelaria cristata*, *Poa attenuota*, *Aster Alpinus*, *Oxvtropis filiformis*, *Artemisia frigida*.

20. Noteworthy fauna:

Provide additional information on particular species and why they are noteworthy (expanding as necessary on information provided in 10. *Do not include here taxonomic lists of species present – these may be supplied as supplementary information to the SIS.*

The benthos is comparatively poor. The zooplankton is dominated by copepods and cladocerans. The fish fauna is dominated by Eurasian species of cyprinids. The marshes at the west end of the lake are an important breeding and staging area for migratory waterfowl. Basic limnologic research, as well as research on large mammals and on birds has been carried out in the park. However, there is no research on insects, small mammals (such as bats), amphibians and reptiles, and no current information on fish species and population. In order to determine key species for conservation, more research will be necessary.

21. Social, economic and cultural values:

a) Describe if the site has any general social, economic 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 conservation significance of Khorgo-Terkhiin Tsagaan Nuur National Park is based on its rich natural and cultural features, giving the protected area national and international importance. Terkhiin Tsagaan Nuur is one of the high priority areas for development of the eco-tourism. Number of domestic and international tourists will see the magnificent landscape of volcano mountain and experience with local nomadic traditions and lifestyle. The tourism has been increasing last years. The lake supports a very small fishery with an annual yield of 50-100 tonnes (Dulmaa,1979)

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? (Double-click the checkbox to check and choose “Checked” under “Default Value” from “Check Box Form Field Options” window)

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

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:

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

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

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:

22. Land tenure/ownership:

a) Within the Flyway Network site:

State owned but managed by local government

b) In the surrounding area:

State owned but managed by local government

23. Current land (including water) use:

a) Within the Flyway Network site:

State owned but used by local government

b) In the surroundings/catchment:

State owned but used by local government. Much water consumption

24. 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 Flyway Network site:

- Livestock overgrazing-disturbance to breeding and migratory birds and habitat degradation
- Drought – small lakes and rivers drying out.

b) In the surrounding area:

- Livestock overgrazing
- Merging less managed eco-tourism- Scattered tourist camps near to the lake.
- Drought
- Waste pollution- waste from local tourists

25. Conservation measures taken:

a) List national and/or international category and legal status of protected areas, including boundary relationships with the Flyway Network 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.

Khorgo-Terkhiin Tsagaan Nuur National Park was established in 1995 and its buffer zone was established in 1996. Management of the Ramsar site is provided by Administration of Khangai Nuruu Natural Parks. A total of 5-6 rangers of the park administration work at the site.

b) If appropriate, list the IUCN (1994) protected areas category/ies which apply to the site (tick the box or boxes as appropriate, see Annex 3):

Ia ; Ib ; II ; III ; IV ; V ; VI ; N/A

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

If yes, is it being implemented?: If no, is one being planned?

Yes.

d) Describe any other current management practices:

26. Conservation measures proposed but not yet implemented:

e.g. management plan in preparation; official proposal as a legally protected area, etc.

The Park Administration has gathered data of studies carried out by other organizations and scientists in Khangai Nuruu. The Park administration has not conducted systematic study on Khorgo-Terkhiin Tsagaan Lake national Park (KTTNNP) independently yet. Database on biodiversity at the park is merging.

27. Current scientific research and facilities:

e.g., details of current research projects, including biodiversity monitoring; existence of a field research station, etc.

Bird surveys were conducted by bird experts last years. Basic limnological research has been carried out at the lake.

28. 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.

There is no specific program and budget for systematic trainings and public awareness activities. Because of lack of education on nature conservation and ecology, law enforcement by people has not been enough. There are no guide and necessary material for trainings and public awareness activities.

29. Current recreation and tourism:

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

In consideration of the growing tourism market, the tourism zone boundary was defined. The boundary contains the crater Khorgo, its environment and the Terkhiin Tsagaan Lake. The tourism zone comprises 13.4% of total National Park territory.

30. Threats*

Which of the following threats is present historically – when the threat stopped but the effects are still there (H), currently (C) or potentially (P)?

Which of the following threats is present historically – when the threat stopped but the effects are still there (H), currently (C) or potentially (P)?

	Historically	Currently	Potentially
Residential and commercial development			
housing and urban areas	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
commercial and industrial areas	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
tourism and recreation areas	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Agriculture and aquaculture			
annual and perennial non-timber crops	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
wood and pulp plantations	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
livestock farming and ranching	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
marine and freshwater aquaculture	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Energy production and mining			
oil and gas drilling	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
mining and quarrying	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

renewable energy

Transportation and service corridors

roads and railroads

utility and service lines

shipping lanes

flight paths

Biological resource use

hunting and collecting terrestrial animals

gathering terrestrial plants

logging and wood harvesting

fishing and harvesting aquatic resources

Human intrusions and disturbance

recreational activities

war, civil unrest and military exercises

work and other activities

Natural system modifications

fire and fire suppression

dams and water management/use

other ecosystem modifications

Invasive and other problematic species and genes

invasive non-native/alien species

problematic native species

introduced genetic material

Pollution

household sewage and urban waste water

industrial and military effluents

agricultural and forestry effluents	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
garbage and solid waste	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
air-borne pollutants	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
excess energy	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Geological events

volcanoes	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
earthquakes/tsunamis	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
avalanches/landslides	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Climate change and severe weather

habitat shifting and alteration	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
droughts	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
temperature extremes	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
storms and flooding	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

Please write here any additional threats and comments/queries you have on the threats.