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MONGOLIA



MONGOLIAN  
PROTECTED  
AREAS



WETLANDS OF INTERNATIONAL  
IMPORTANCE

**AIRAG LAKE**



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MONGOLIAN  
PROTECTED  
AREAS

## WETLANDS OF INTERNATIONAL IMPORTANCE

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# AIRAG LAKE

2022



## CONVENTION ON THE WETLANDS OF INTERNATIONAL IMPORTANCE ESPECIALLY AS WATERFOWL HABITAT



### What is the RAMSAR Convention?

The Convention on the Wetlands of International Importance especially as Waterfowl habitat was first adopted on a meeting held in the Iranian city of Ramsar on February 2, 1971. Governments and non-governmental organizations from countries around the world negotiated and adopted the global treaty concerned about increasing loss and degradation of the wetland habitat for migratory water birds, one of the most vulnerable and irreparable ecosystems on the planet, due to a number of factors such as global warming, climate change and improper human activities and recognized the wetland ecosystem must be protected. The Convention is so named for the city Ramsar in Iran, where the treaty came into force. As of 2021, there were 172 Contracting Parties (member countries) and a total of 2,431 wetlands covering 254,620,630 hectares of internationally importance in List in the Appendix to the Ramsar Convention.



### What is a purpose of the Ramsar Convention?

A purpose of the Convention is to provide a framework for national and international cooperation for conservation and wise use of wetlands and their resources. Its activities are regulated by inter-governmental treaties and agreements. A primary reason for global signing the international Convention is to recognize that water fowl in their seasonal migrations do transcend frontiers and so should be regarded as an international resource while considering that the wetlands,

their key habitat, must be protected globally through the Convention.



### What is a wetland?

Wetlands are basically transition zones between terrestrial and water environments, where a specific ecosystem is created, supported, and interacted by water flows, soil nutrient cycles, and solar energy.

The Ramsar Convention uses a broad definition of the wetlands which include all lakes, rivers, streams, and ponds and their floodplains, wet grasslands, peatland, oasis, estuaries, deltas, mineral water bodies, tidal flats, mangroves, and other coastline areas, coral reefs, and all human-made sites such as fish ponds, rice paddies, reservoirs, and salt pans. The definition under the Convention encompasses a variety of the wetlands and encourages preservation, protection, and wise (balanced) use of the globally significant biodiversity thereof through enhanced wetland conservation framework.



### How are areas designated and listed as the Ramsar sites?

Countries in the world signed the Convention do commit to designate and nominate suitable wetlands within their territories for the List of Wetlands of International Importance ("Ramsar List") based on the following nine criteria:

**A**

Sites containing representative, rare or unique wetland types

#### Criterion 1

Sites contain representative, rare or unique example of a natural or near-natural wetland type found within the appropriate biographic region;

**B**

Sites of international importance for conserving biological diversity

*Criteria based on species and ecological communities*

**Criterion 2** Sites support vulnerable, endangered, or critically endangered species or threatened ecological communities

**Criterion 3** Sites support populations of plant and/or animal species important for maintaining the biological diversity of a particular biogeographic region

**Criterion 4** Sites support plant and/or animal species at a critical stage in their life cycles, or provide refuge during adverse conditions

*Specific criteria based on water birds:*

**Criterion 5** Sites regularly support 20,000 or more individuals of a species or sub-species of water birds

**Criterion 6** Sites regularly support 1% or more of the individuals in a population of one species or subspecies of water birds

*Specific criteria based on fish*

**Criterion 7** Sites support a significant proportion of indigenous fish subspecies, species or families, life-history stages, species interactions and/or populations that are representative of wetland benefits and /or values and thereby contributes to global biological diversity

**Criterion 8** Sites are an important source of food for fishes, spawning ground, nursery and/or migration path on which fish stocks, either within the wetland or elsewhere, depend

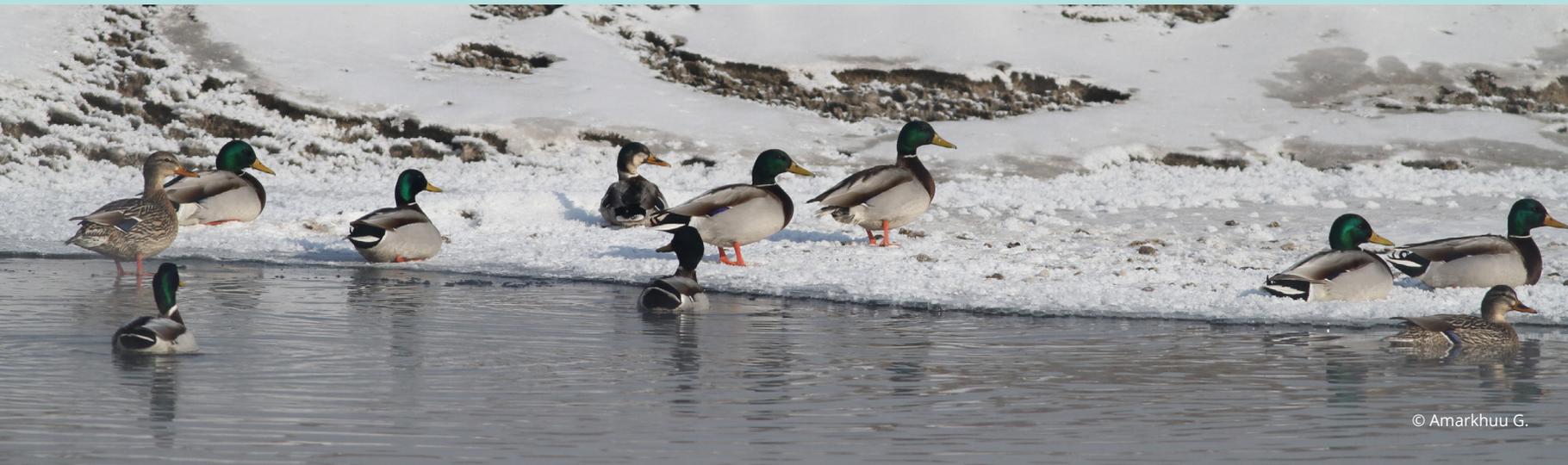
*Specific criteria based on other taxa*

**Criterion 9** Sites regularly support 1% or more of the individuals in a population of one species or subspecies of wetland-dependent non-avian animal species.



**Why do wetlands need to be protected?**

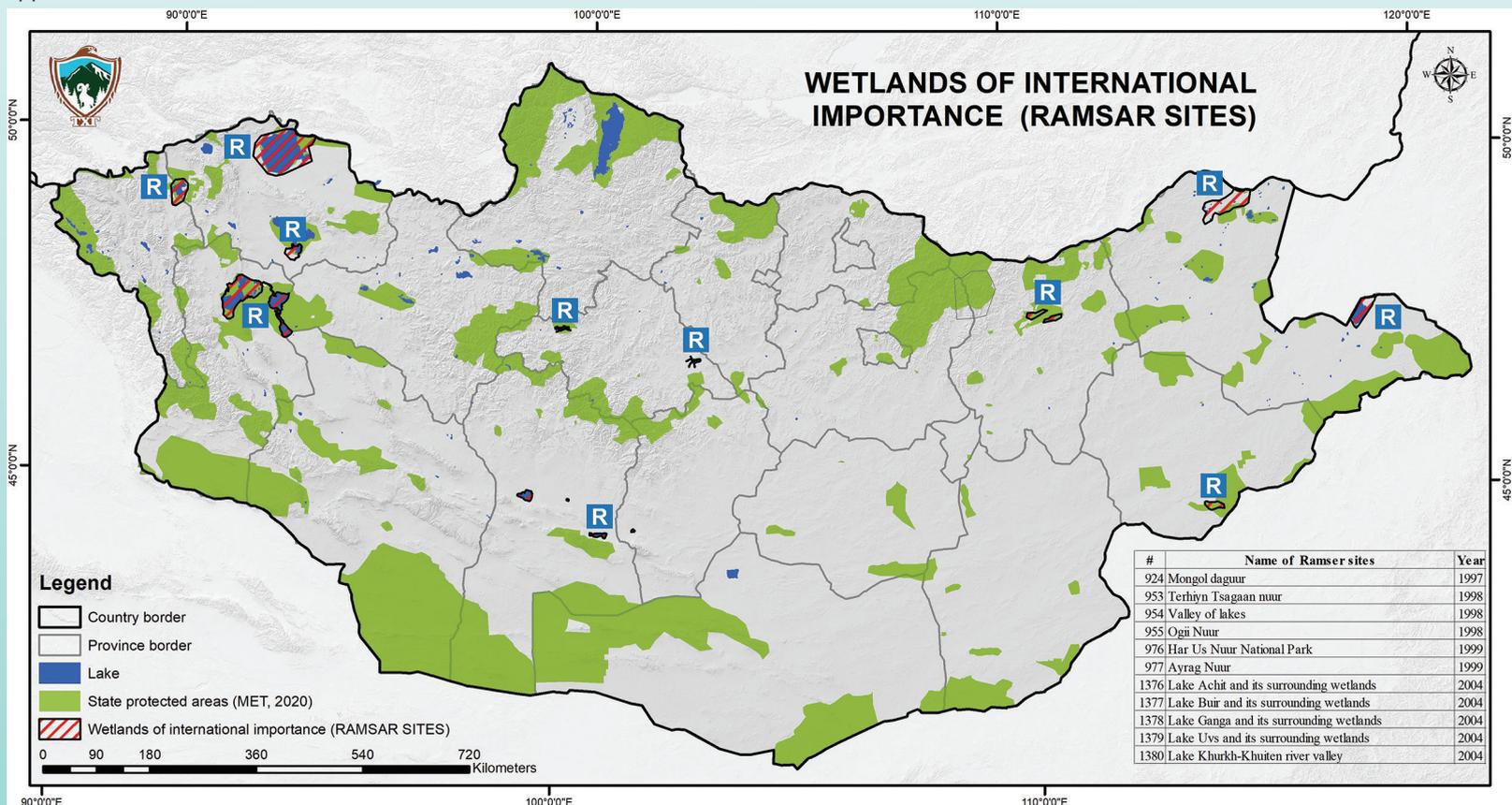
There are numerous types of wetlands existing worldwide. Each type of wetland provides habitat for thousands of species of terrestrial and aquatic plants and animals. Wetlands are valuable for flood protection, water quality improvement, and riparian zone and shoreline erosion control. Also, wetlands have recreational, aesthetic, and cultural values.



## MONGOLIA AND THE RAMSAR CONVENTION

Mongolia officially signed the Convention on Wetlands of International Importance especially as Waterfowl habitat on April 8, 1998 and became the 104<sup>th</sup> Contracting Party. The Contracting Parties to the Convention act as its policy making unit represented by the Governments of the countries signed. Thus, the officially recognized body representing Mongolia at the Ramsar Convention is the Ministry of Environment and Tourism.

**Map 1.** Sites in Mongolia designated in the Ramsar Convention Appendix List



As of 2021, Mongolia has included a total of 1,439,530 ha of its 11 designated areas in the Ramsar Convention Appendix List. Three sites out of 11 Ramsar sites in Mongolia are still outside the national PA network (*Table 1*) while the rest are included in the national PA system and conservation activities are undertaken in accordance with their protection status in the PA network.

As the Contracting Party to the Convention, Mongolia commits to implement the wetlands conservation management, submit its performance progress reports, and regularly take part in implementation of the Convention activities under its commitment to the Convention.

# WETLANDS OF AIRAG LAKE

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Name: **Airag Lake**

Ramsar site code: 977

Area: 45,000 ha

Location: 48°52'N 93°25'E

Elevation: 1030 m

## IMPORTANCE OF WETLANDS IN WESTERN MONGOLIA

A primary role wetlands play is that it acts as an ecological regulator for maintaining water regimes and wildlife (flora and fauna) habitats. Mountainous Altay area or Western Mongolia is a home to 13.3% of total lakes in the country. Lakes in the region are relatively large in their covering areas and most of them are of modern glaciation, glaciers, and tectonic origins. Geographically, the region lies along Central Asian-Indian, East African-West Asian, East Asian-Australian-Asian flyways provided for a major strategically important stopover and resting land for numerous migratory bird species. As such, lakes and their wetlands in the region have international importance. One of the major wetlands is Airag Lake and its wetlands.



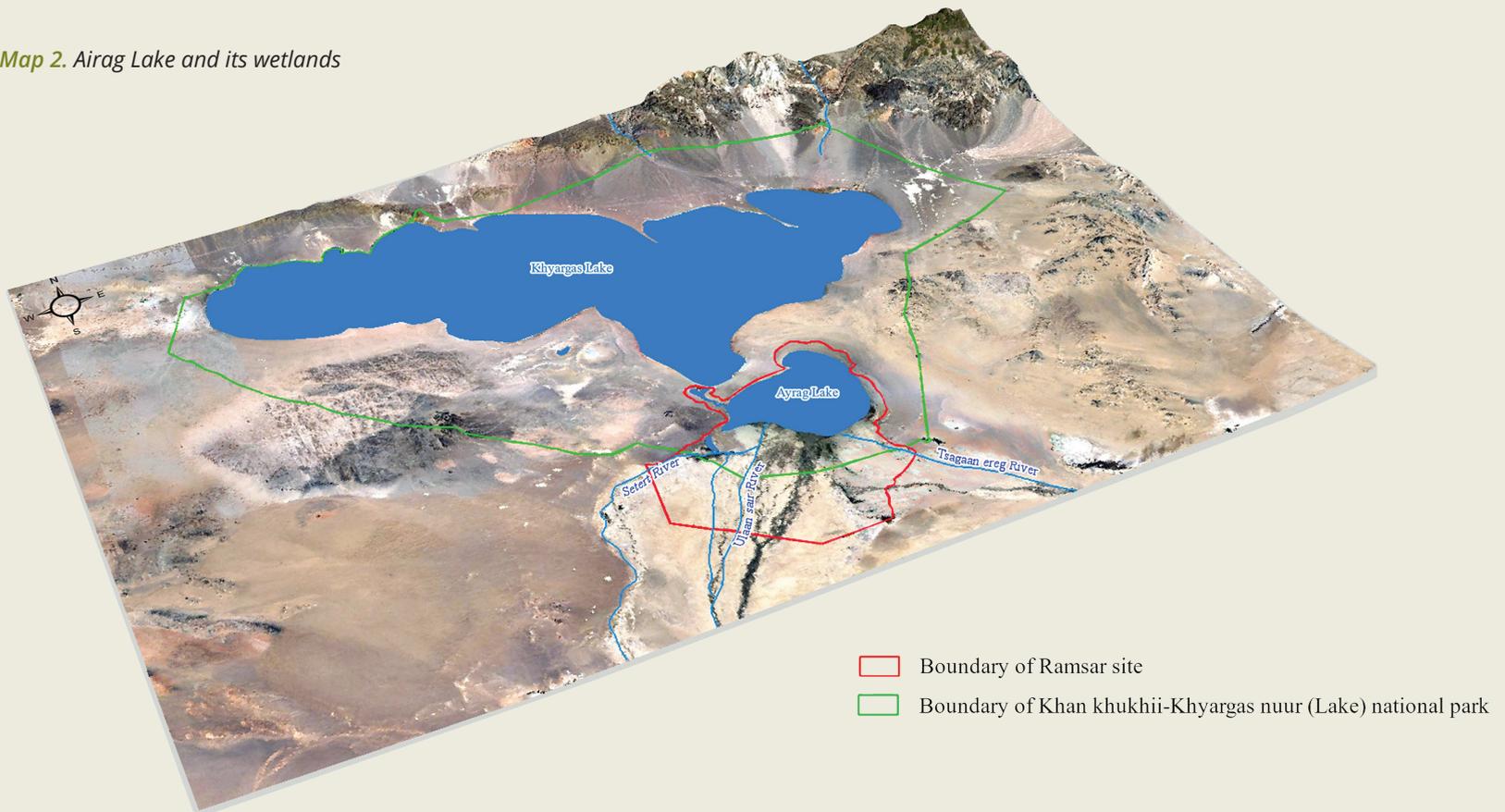
## LOCATION

Located in Western Mongolia, wetlands of Airag Lake are at 150 km in the north from Khovd town, a centre of Khovd province, and in the east from Ulaangom town, a centre of Uvs province each and at 1300 km from Ulaanbaatar, the Capital City of Mongolia. Airag Lake, a unique representative in freshwater Great Lake Depression, is a freshwater lake situated at the lowest point of Khyargas Lake depression. The Lake is surrounded by Mongol Altay Range in the west, by Sajon Range in the north, by Khangay Range in the east, and by Govi-Altay Range in the south. These mountain ranges lie at 3000-4000 m a.s.l. while the depression is at 1000-1200 m a.s.l. A total of 45,000 ha of the Lake and its vicinity (including 14,330 ha of Airag Lake's water surface) are designated as the Ramsar site.

## JUSTIFICATION FOR LISTING AS THE RAMSAR CONVENTION SITE

Wetlands of Airag Lake are a major representative of shallow lakes in Great Lakes' Depression in Western Mongolia provided important nesting, stopover, and resting grounds for numerous species of globally threatened birds during their migrations. Annually, more than 20,000 individuals of water birds do arrive at Airag Lake for nesting and stopover in summer. Vicinity of the Lake is distributed by globally threatened mammals and unique plant species and the Lake supports fish species endemic to Western Mongolia. All these specific characteristics provide for a basis for consideration of the criteria, namely I, II, III, and IV out of nine criteria for designation of Ramsar Convention sites. Thus, Airag Lake and its wetlands were officially designated as a site of the Ramsar Convention on April 6, 1999.

*Map 2. Airag Lake and its wetlands*



## INCLUSION OF THE WETLANDS IN THE NATIONAL PROTECTED AREA NETWORK

Airag Lake and its wetlands are entirely included in Khyargas Lake National Park. The region, where the park lies, is specific with its natural formations to clearly delineate Lakes' depression and to halt expansion of desert and steppe that are vital to ensure ecological balance. Besides, the region is included in international geo-biospheric research zone. The region is characterized by co-existence of the distinct landscapes such as the westernmost continued mountains (e.g. Khan Khuhii Range) of Khangay Range and the desert landscape around lower areas of Lakes Khyargas and Airag and Rivers Zavkhan and Khungui on other side. To protect the unique natural formation, ensure sustainable use, and develop tourism, the national park with a total covering area of 221.598 ha was designated in the national PA network according to the State Ikh Khural (the Parliament) Resolution No.29 in 2000.



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## HABITAT CHARACTERISTICS OF WETLANDS OF AIRAG LAKE

Basically, geographical location of Airag Lake has been regarded as a part of Khyargas Lake for years. Water level of Airag Lake is dependent on feeding water of Zavkhan and Khungui Rivers, inflowing streams to the Lake, and excess water of Airag Lake runs through a 5 km long and 200-300 wide channel and inflows into Khyargas Lake. Depths of the channel is 5 to 7 m in its some parts and water in the channel is not frozen in winter.

In the south of Airag Lake, there are multiple branches of Zavkhan River created quite many individual riverbeds along with islands. Average depth of the Lake is 5.7 m with the maximum depth of 10.5 m. The highest amount of precipitation occurs in June -August, but annual rainfall amounts are generally low in the region. In the years with abundant rainfall amounts, the Lake's water level rises up to 1 m and overspills of the Lake water make its ordinary covering area expanded.

Vicinity of Airag Lake is characterized by the sparse semi-desert vegetation cover. The Lake is poor with benthic organisms, but species of the Crustaceans are dominant in the zoo-plankton. Tourism development is still low due to its remoteness from the nearest settlements. In comparing to the rest of Lakes in the region, Lake Airag is low by water clearness (transparency) due to high turbidity at up to 3 m depths. At bottom of the Lake, the sand and gravel are accumulated and dark clay with slight phosphor and hydrogen odours are accumulated in its deepest parts.



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# BIODIVERSITY

## MAMMAL

There are 23 mammalian species recorded in the region. Amongst, the species recorded include the five-toed pygmy jerboa (*Cardiocranius paradoxus*) listed in the Mongolian Red Book and the Pallas' cat (*Otocolobus manul*), Mongolian gazelle (*Procapra gutturosa*), and grey wolf (*Canis Lupus*) assessed as regionally threatened according to the IUCN Red List criteria. Additionally, it is distributed by the stoat (*Mustela erminea*), Siberian polecat (*Mustela eversmanni*), tolai hare (*Lepus tolai*), red fox (*Vulpes vulpes*), long-eared hedge hock (*Hemiechinus auritus*), Mongolian gerbil (*Meriones unguiculatus*), long-tailed hamster (*Cricetulus longicaudatus*), and dwarf hamster (*Phodopus campbelli*).

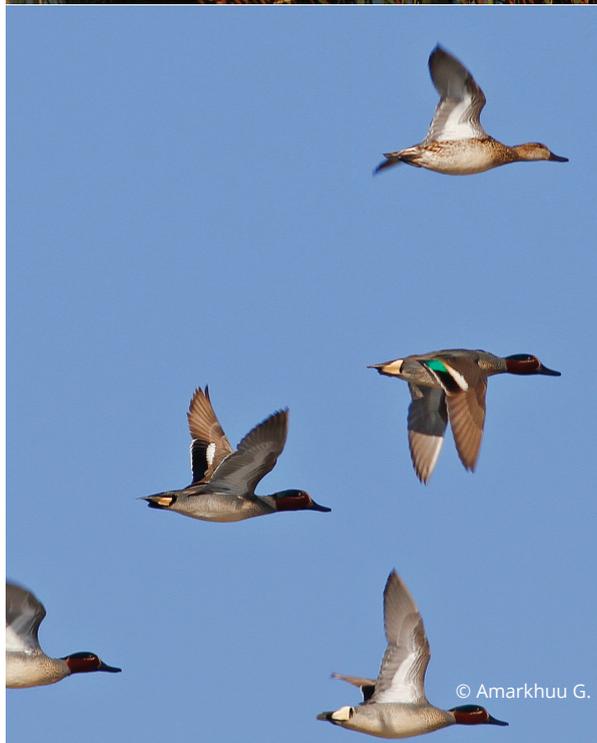


## BIRD

Wetlands of Airag Lake are distributed by 183 bird species of 103 genera of 34 families of 15 orders which comprise about 36 per cent of the total bird species recorded in Mongolia. According to their occurrence in the region, there are 99 nesting migrant species, 23 resident species, 45 transit migrant species, three summering species, six wintering species, and two vagrant species. Amongst, there are 12 species listed as rare and six near threatened according to the Law of Mongolia on Fauna; and five and 23 species listed in CITES Appendices I and II respectively; and three and 26 species listed in the CMS Appendices I and II, respectively. From the migratory bird species, the threatened wetland species such as Eurasian bittern (*Botaurus stellaris*), swan goose (*Anser cygnoides*), Pallas's fish eagle (*Haliaeetus leucoryphus*), white-tailed eagle (*Haliaeetus albicilla*), Dalmatian pelican (*Pelecanus crispus*), Asian dowitcher (*Limnodromus semipalmatus*), relict gull (*Larus relictus*), and common crane (*Grus grus*) and the threatened desert species such as Macqueen's bustard (*Chlamydotis macqueenii*) and Mongolian ground jay (*Podoces hendersoni*) do occur at Airag Lake and its wetlands.



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## FISH

There are five fish species recorded at Airag Lake. Although few species are recorded in the Lake, all the fish species are endemic to Western Mongolia. The species recorded in the Lake include the vulnerable narrow headed Altay Osman (*Oreoleuciscus angusticephalus*) and dwarf Altay Osman (*Oreoleuciscus humilis*), and near threatened Mongolian grayling (*Thymallus brevirostris*) those are assessed by the IUCN criteria.

Fish resources in the Lake were conducted as legally stated in the Law on Protected Areas and their results suggested to annually harvest 20 tons of fish at Airag Lake and Galba channel area to regulate fish herd structures.



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## PLANT

There are 221 plant species of 77 genera of 16 orders recorded in the region. Amongst, there are six very rare and 13 rare species according to the Law of Mongolia on Natural Plants; and five species listed in the Mongolian Red Book. Vegetation cover within the vicinity of Airag Lake is specific with its zonal nature which is the *Chenopodium frutescens* and *Asterothamnus spp.* bearing or dominant plant communities endemic to Western Mongolia. In addition, the North-Western Gobi-Western Mongolian semi-shrubbery-ephemeral *Stipa* and *Artemisia-Agropyron-ephemeral Stipa* communities are common. Areas surrounding the Lake are distributed by semi-shrubbery, but mainly Anabasis containing steppe desert communities and

the *Stipa-Artemisia* steppe desert sandy communities in the west and south east of the depression. River valleys nearby are abundant by birch, poplar, and aspen stands.

From medicinal plants, the species such as *Dianthus superbus*, *Rhodiola Rosea*, *Adonis Sibirica*, *Valeriana Officinalis*, and *Paeonia Anomala* are abundant. Also, the wild berry bushes such as *Ribes nigrum*, *Grossularia acicularis*, *Ribes altissimum*, *Vaccinium vitis-idaea*, and *Fragaria orientalis* are grown. The *Typho minima*, which is rarely found in the rest of water environments in Mongolia, is grown in the Lake.



## OTHER APPLICABLE INTERNATIONAL TREATIES AND CONVENTIONS

**Global 200 List of Priority Eco-Regions for Conservation identified by WWF:** Altay Sayan Eco-Region, one of Global 200 Eco-Regions announced by WWF, includes Airag Lake and its wetlands. Altay Sayan Eco-Region is designated to protect the distinct landscapes such as high mountains, vast steppe, Gobi Desert, and lakes, and their wetlands co-existing in the region. Altay Sayan Eco-Region lies over territories of Mongolia, Russia, Kazakhstan, and China covered a total of 86,200,000 km<sup>2</sup>: 29% in Mongolia, 62% in Russia, 5% in Kazakhstan, and 4% in China.

**Important Bird Areas in Mongolia (MN012):** It is one of the fewest nesting grounds for some breeding pairs of Dalmatian pelican (*Pelecanus crispus*) in East Asian population. The globally threatened species such as white-headed duck (*Oxyura leucocephala*) (EN), swan goose (*Anser cygnoides*) (VU), Asian dowitcher (*Limnodromus semipalmatus*) (NT), relict gull (*Larus relictus*) (VU), and Pallas's fish eagle (*Haliaeetus leucoryphus*) (EN) are recorded and the Eurasian steppe and desert biome communities are dominant. During their migrations, the species such as great crested grebe (*Podiceps cristatus*), red-crested pochard (*Netta rufina*), Northern lapwing (*Vanellus vanellus*), greater sand plover (*Charadrius leschenaultii*), Eurasian spoonbill (*Platalea*

*leucorodia*), white-headed duck (*Oxyura leucocephala*), and ruddy shelduck (*Tadorna ferruginea*) do stopover in large numbers at the Lake and its wetlands. Based on these characteristics, a total of 73,348 ha within Airag Lake and its wetlands are taken as IBA in accordance the criteria A1, A3, A4i, and A4iii.

**East-Asian-Australian-Asian Flyway Network (EAAF129):** Lakes Airag and Khyargas are registered in the East-Asian-Australian-Asian Flyway Network because more than 30,000 individuals of waterfowls do stopover and nest at these Lakes in every summer and 6,700 individuals of mallard (*Anas platyrhynchos*) are counted during autumn migrations. Moreover, there are some species, whose populations occurring at the Lakes are counted at 1% and more against their global populations, during spring and autumn migrations. These species include the great cormorant (*Phalacrocorax carbo*): 4670 individuals (3.9%); Eurasian spoonbill (*Platalea leucorodia*): 739 individuals (6.9%), Whooper swan (*Cygnus cygnus*): 502 individuals (1.4%); ruddy shelduck (*Tadorna ferruginea*): 893 individuals (1.5%); graylag goose (*Anser anser*): 368 individuals (0.27%); mallard (*Anas platyrhynchos*): 6729 individuals (0.31%); gadwall (*Mareca strepera*): 3484 individuals (0.45%); and common pochard (*Aythya ferina*): 2680 individuals (0.64%). As these features meet criteria a.- (II, V, VI), b.- (I, II) for designation of sites in East-Asian-Australian-Asian Flyway Network, the Lakes were officially included in the network in 2016.

## THREAT

The vicinity of Airag Lake is one of the livestock grazing areas as local herders along with their herds stay there all year around. Increasing herds in the region is a main cause of habitat deterioration and negative impacts (disturbance) on nesting and breeding species populations occurring in riparian zones and wetlands of the Lake. In addition, water flow into the Lake varies in relation to the ongoing climate change and

anthropogenic interventions, so a loss of biodiversity is being threatened. Since 2007, water level of Airag Lake has lowered by 3.54 km<sup>2</sup> in average a year. A cause of these declines is a change in Zavkhan River flow, inflowed into Airag Lake, to Gegeen Lake or a reservoir of of Taishir hydro-power plant. If the reservoir is mismanaged, it is likely to negatively impact Khyargas Lake's water level.



## CONSERVATION MANAGEMENT AND COOPERATION

Conservation management of Khan Khuhii Nuruu and Khyargas Lake National Parks was laid with Administration for Uvs Nuur Basin State Protected Area between 2000 and 2012 and then has been delegated to Administration of Khan Khuhii Nuruu State Protected Area since 2012. The park administration prepares and implements a management plan for the National Parks in the region in accordance with the recommendations for preparation of management plans for Protected Areas that were approved by the Protected Area Management Department of the Ministry of Environment and Tourism in 2012 and the MIRADI or Open Standard guidelines that are broadly used for environmental planning in the current international practice. Target conservation values within the Lake and its wetlands include the biodiversity such as Siberian ide or dace, Henderson's ground jay, *Artemisia* spp., and *Agriophyllum*.

Under its cooperation agreements, the park administration collaborates with the local stakeholders including governments, the Governor's Offices, environmental and specialized inspectorate offices, forestry and police (e-police) divisions and international organizations. The park administration in cooperation with National University of Mongolia, Mongolian Ornithological Society, National Centre for Zoonotic Disease Studies, and Japanese Society "Yamashina" carried out a research on a migratory route of whooper swan. Furthermore, the park administration and researchers from Wildlife Research Centre, Institute for General and Experimental Biology under the Mongolian Academy of Sciences (MAS), Institute of Animal Husbandry, and National Centre for Zoonotic Disease Studies conducted some joint studies on migration of threatened bird species and collection of avian flu samples and data on habitat change.

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