

# The Ornithological Research Of The Mashankul And Khojakul Lakes During Spring Migration And Nesting Period

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## ABSTRACT

*The given article provides a description of the new 52nd most important ornithological territory of Uzbekistan (IBA). Inventory, monitoring and development of measures for the conservation of IBA are one of the modern international approaches to the territorial protection of biodiversity. The Society for the Protection of Birds of Uzbekistan has been developing this direction since 2005 as a partner of the World Association for the Protection of Birds "Bird Life International".*

*Key words: ornithology, Mashankul lake, Khojakul lake, spring migration, nesting period*

## 1. INTRODUCTION

The lake systems of the Southern Aral Sea region have historically been unique places of accumulation of hydrophilic birds. They also did not lose their exceptional importance for migratory and nesting species during the ecological catastrophe that swept the region at the end of the 20th century. Formed in the Southern Aral Sea region after the shallowing of the Aral Sea, a network of humid and wetland areas now plays an important role in the conservation of biological diversity in the Central Asian region.

The studies of 11 unstable water bodies of the Southern Aral Sea region, carried out by the Society for the Protection of Birds of Uzbekistan with the support of the International Fund for Saving the Aral Sea in autumn 2012, revealed the key role of the Mashankul and Khojakul lakes in maintaining both rare and widespread waterfowl and semi-aquatic bird species. Of the 94 species recorded during the autumn migration, 58 are registered in the two above-mentioned water bodies, 5 of them are endangered at the international and national levels. The wetland habitats of the Mashankul and Khojakul lakes are represented by numerous bays and reed thickets interspersed with open reaches, which makes them important for birds not only during migration, but also for nesting. [2, 3]

Therefore, a comprehensive study of the Mashankul and Khojakul lakes during the spring migration and nesting period is important not only from a scientific point of view, but

also of practical importance for planning the protection and rational use of available plant, pasture, fish and hunting resources.

## **2. MATERIALS AND METHODS**

The bird surveys on the Mashankul and Khojakul lakes were carried out on March 24-31 and May 13-23, 2013. Their purpose was to collect data during the spring migration and nesting period in order to include these lakes in the list of The Most Important Bird Areas (IBA).

In the study of the fauna and population of birds, standard methods of intravital study of birds were used. [7, 8]

The length of the vehicle counts was 600 km. The stationary surveys were carried out at 48 points; the total duration of observations at 2 reservoirs was 19 days. The coordinates of all observation points and landmarks were recorded using GPS "Garmin". [4]

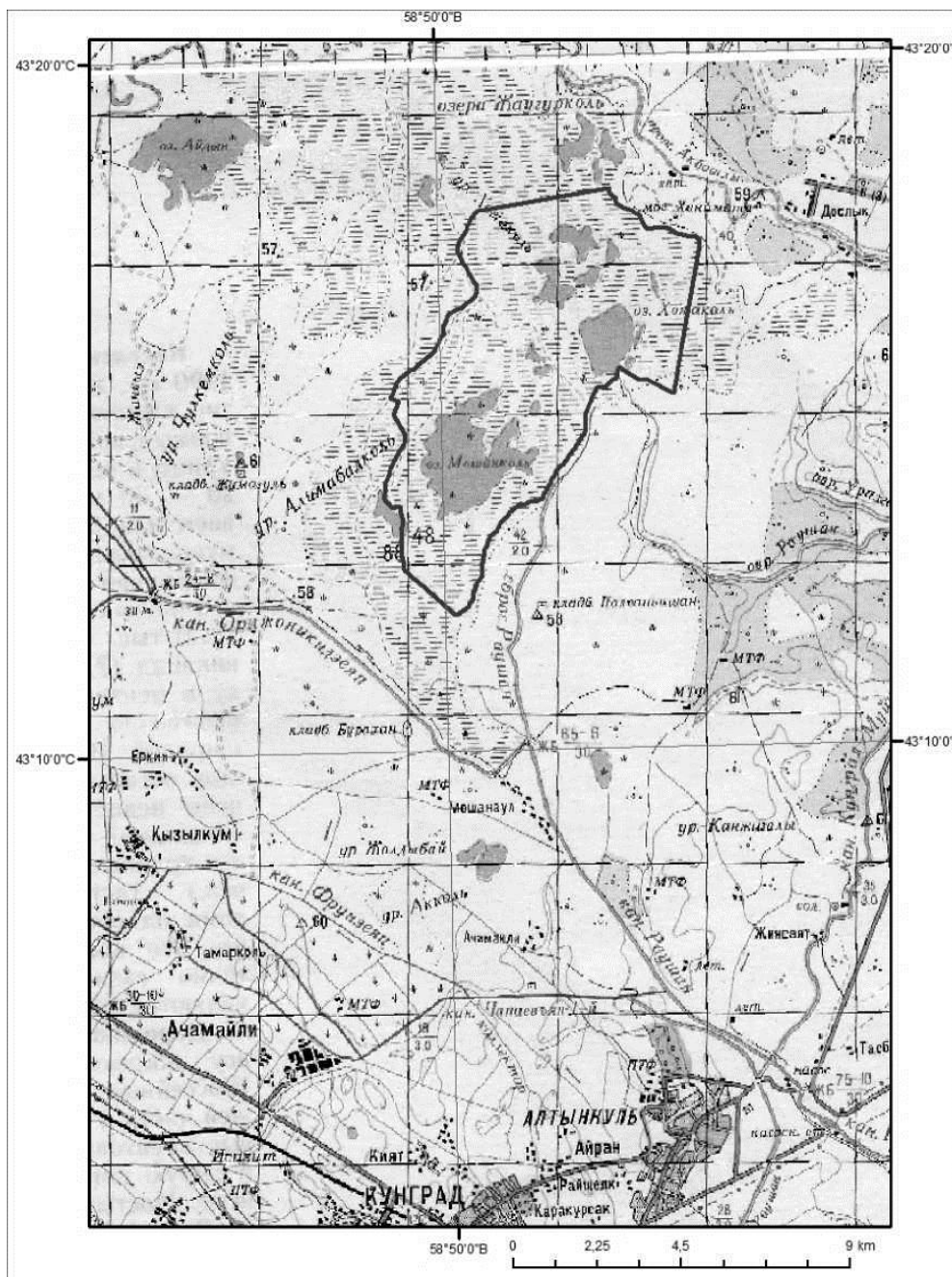


Figure 1. The location and border of the new IBA “Mashankul and Khojakul Lake complex”

### 3. RESULTS AND DISCUSSION

*Description of the territory.* The IBA covers the entire area of the lakes Mashankul (488 ha) and Khojakul (900 ha), as well as adjacent shallow waters and coastal thickets and deserts. Lake Khojakul is located on the territory of the Muynak region, and Lake Mashankul is located on the territory of the Kungrad region. The nearest settlements: the village of Doslyk is located 8 km northeast of the IBA, and the village of Mashanaul is 11 km to the south (Fig.1).

The area of the new IBA is 5070 hectares. Lake Khojakul is fed by the waters of the Ustyurt collector, fed with irrigation water from the Suenli Canal (due to this, a relatively low

salinity of water in the lake is provided). Lake Mashankul receives water from the Kattagar Canal. The maximum depth of Lake Khojakul is 3.5 m, and Lake Mashankul is 5 m. Lake Mashankul has an indented, gently sloping, and in some places steep coastline, and consists of many aydins - open water areas: Maral Aydin, Koptinkul, Asan Oy, Kara Aydin, Takyr Aydin. The lakes are 70% dense reed (80%) and reed mace (20%). The bottom of large open reaches is 20-40% covered with soft vegetation.

Table 1.  
International IBA criteria and rare bird species of the “Mashankul and Khojakul Lake complex”

Key species	Comments	
	nesting	flight / wintering
<b>A1 - Globally endangered species</b>		
<b>White-eyed Duck</b> <i>Aythya nyroca</i> <sup>1/2</sup>	from 8 to 40 (2013)	536 in migration (2012); 1000-2000 in migration
<b>A4i - 1% or more of the biogeographic population</b>		
<b>Glossy Ibis</b> <i>Plegadis falcinellus</i> <sup>2</sup>	154 (2013) species	391 in migration (2012)
<b>A4iii - Habitat of over 20,000 waterfowl or semi-aquatic birds</b>		
<b>Waterfowl or semi-aquatic birds</b>		22023 (2013)
<b>Rare species</b>		
<b>Red-Headed Duck</b> <i>Aythya ferina</i> <sup>1</sup>	803 (2013)	
<b>Pygmy Cormorant</b> <i>Phalacrocorax pygmeus</i> <sup>2</sup>	9 (2013)	818 (2012); 164 (2013)
<b>Little Egret</b> <i>Egretta garzetta</i> <sup>2</sup>	18 (2013)	8 (2012); 10 (2013)
<b>Spoonbill</b> <i>Platalea leucorodia</i> <sup>2</sup>	2 (2013)	
<b>Mute Swan</b> <i>Cygnus olor</i> <sup>2</sup>	7 (2013)	8 (2012); 12 (2013)
<b>White-Tailed Sea-eagle</b> <i>Haliaeetus albicilla</i> <sup>2</sup>	2 (2013)	
<b>Golden Eagle</b> <i>Aquila chrysaetos</i> <sup>2</sup>	1 (2013)	
<b>Houbara Bustard</b> <i>Chlamydotis macqueeni</i> <sup>1/2</sup>		1 (2012)
<b>Great Black-Headed Gull</b> <i>Larus ichthyaeus</i> <sup>2</sup>		4 (2012)
<b>Pin-Tailed Sandgrouse</b> <i>Pterocles alchata</i> <sup>2</sup>		52 (2012)

Note: <sup>1</sup>- types of IUCN Red List; <sup>2</sup>- types of the Red Book of Uzbekistan

Both reservoirs are of great importance for fishery in the Republic of Karakalpakstan. The reservoirs are of great fishing importance for the region and are leased. [9] The nearby village of Birdem is located 40 km south-west of the lakes.

*IBA criteria:* IBA criteria, as well as data on rare and endangered species of the “Mashankul and Khojakul Lake complex”, are presented in Table 1.

*Birds:* In total, 91 bird species have been recorded on this lake system, among them 62 are nesting. 10 species (Pygmy Cormorant, Great White Pelican, Little Egret, Glossy Ibis, Spoonbill, Mute Swan, White-Eyed Duck, Golden Eagle, White-Tailed Sea-Eagle, Pin-Tailed Sandgrouse) are included in the Red Book of Uzbekistan and 2 (White-Eyed and Red-Headed Ducks) in the list of IUCN. [1]

This system is a key nesting site for waterfowl and near-water birds, which is associated with the presence of dense reed thickets bordering the aydins and alternating open reaches. Mute Swans, Herons, Cormorants, Coots, Common Shelduck, Shepherdesses, Bitterns, Glossy Ibis, White-Eyed Duck, Sandpipers and other waterfowl and semi-aquatic birds nest on the lakes. Numerous passerines nest in the reed thickets, among which Reed Penduline-Tit *Emberiza schoeniclus* should be noted; Khiva Pheasants *Phasianus colchicus chrysomelas* nest in the coastal zone.

During the migration period, numerous flocks of waterfowl birds accumulate on the Khojakul and Mashankul reservoirs, in which the Coot *Fulica atra* (8426 individuals), Green Sandpiper *Tringa ochropus* (1764), Red-Nosed Pochard *Netta rufina* (1511) and Red-Headed Duck *Aythya ferina* (803) prevail. [6]

35.2% of the bird species noted here uses both lakes during spring and autumn migrations and for nesting. 12.1% of birds stop at the lakes only during the migration period. For 23.1% of the species composition, both lakes are equally significant during the nesting period, but are not visited during the autumn migration. 28.5% of species selectively use only one of the lakes and do not occur on the other. Thus, for 64 species (70.3%) of birds living here, the Mashankul and Khojakul lakes represent a single complex of habitats that provide favorable conditions during the migration and nesting periods of life.

*Other animals:* The main fish species of the lake system are commercial ones: Common Carp, Silver Carp, Snakehead, Crucian Carp. Wild boar, jackal, muskrat, badger, tolai hare and fox are quite common and even numerous. [5]

*Economic use:* the IBA area is of great commercial importance. There is also hunting for waterfowl birds, pheasant, wild boar, jackal and muskrat. The open coastal areas are used for grazing.

*Main threats and conservation issues:*

Drought, the main limiting factor for water bodies, regularly leads to the complete drying out of water bodies. On the western side of Lake Mashankul there is the “Chinese Construction” collector, which is much deeper than the lake. During low water periods, water from the lake goes to the collector.

The coastal areas of the lakes are used as pastures. In spring, fish lays eggs in shallow water, and grazing cattle trample them.

One of the threats is the clogging of reservoirs with Chinese-made plastic fishing nets, which cause the death of waterfowl diving birds, and also create persistent littering of the coastal zone of water bodies.

Poaching is one of the main serious threats to the biodiversity of the lake complex. During research, in the spring-summer season, hunters were seen on the lakes, and shots were heard every day.

For the conservation and sustainable use of the natural resources of this territory, all of the above threats require the adoption of adequate measures by the environmental authorities.

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