

## Turkmenistan, National report, 2021

### **Task 1: Threats to Altyn-Kol lake according to measures to mitigate negative anthropogenic impacts**

Geography and history of the lake, status, significance, how many people live there. What environmental services does it provide.

Altyn Kol Lake is located (N37°57' & E58°22') in the northern part of Ashgabat. It appeared as a water reservoir as a result of filling of Kurtli depression by waters of Karakum canal (Karakum river) in 1962. Design dimensions are 5 x 3.7 km, maximum depth is 7 m, average depth is 4.4 m, area is 80 thousand ha, of which 14.210 ha is water surface, length of coastline is 25 km.

The coast of the lake is flat, without high steep cliffs, sandy, in some places boggy, with reeds, comb-grass, saltwort, mostly on the south shore, in some places there are artificial plantings of tree species - elk, Eldarian pine.



Pondweed and urula dominate in shallow waters. On coastal fixed areas there is an ephemeral cover with sparse shrubs - kandym, cherkez, astragalus, selin. Temperature averages 0.8°C in January and +30°C in July. Frost-free period - 232 days a year, clear sunny days - 231.

Lake Altyn Kol contributes to water replenishment, purifies air, softens the dry climate by influencing local temperature conditions and other local climatic processes; participates in the regulation of water in the Karakum River by its flow for agricultural and urban industrial and domestic needs, purifies water from sediments and silt, restores water quality by removing excess organic and other pollutants from it.

Lake Altyn Kol is an IBA (14210 ha), which supports more than 20 thousand individuals of water and wetland birds, including those listed in the Red Book of Turkmenistan, during migration and wintering.

The structure and content of ecosystem services depend on hydrological and biodiversity values. They include providing (water storage and water supply), regulating (water purification, climate and air quality regulation, containment of desert impact and coastal zone protection), supporting (soil formation, biodiversity conservation and restoration) and cultural (recreational, recreation and tourism, spiritual and other intangible benefits).

In 2013 the reservoir with adjacent areas was included in the boundaries of Ashgabat city, the population of which is more than 800 thousand people. The recreational zone includes:

small beaches, a boat station. The green recreation area created in 2021-2023 around the lake will include cottage complexes with children's and sports fields, shopping center, yacht club, mini-hotels, fitness centers, outdoor pools, water park, parking lot, polyclinic, boat docks, etc., an environmental trail with observation towers will be built.

Who owns it, who are the stakeholders, who manages and uses it, are there management programs.

The territory surrounding the wetland belongs to the urban agglomeration with a corresponding structure. The land around Altyn-Kol lake, as well as the lake itself, belongs to the khakimlik (mayor's office) of Ashgabat city. The transformation and development of the infrastructure of the lake and adjacent shores, as an urban recreation area, is carried out by decision of the President of Turkmenistan. The wetland management program is under preparation, in conjunction with the ongoing project to develop the recreation zone. All decisions on legislative issues in the whole country, and hence on the city of Ashgabat, on the territory of which the wetland Altyn-Kol is located, are made and approved by the Mejlis (the lower palace of Parliament) of Turkmenistan.

In the near future, Altyn-Kol will become a territory of culture, entertainment, active recreation and water tourism. It will carry educational role as well - opportunities for education, training and outreach activities.

There are plans to create an island of "unspoiled" nature, which can become a favorite destination for wildlife enthusiasts and athletes for recreational fishing and scuba diving.

It is planned to create a science center and an ecological trail with observation towers from which it will be possible to observe birds and conduct monitoring in conditions as close to natural as possible.

What kind of anthropogenic impacts exist?

As a result of the restructuring of the shoreline and the creation of urban infrastructure in the coastal zone, the whole wetland undergoes transformation and has practically turned into an urban wetland, which is under the corresponding impact of urban agglomeration. Impacts of anthropogenic nature - recreational and health.

Proposals to mitigate negative anthropogenic impacts for inclusion in the Wetland Management Plan.

In 2021-2022 the territory of Altyn-Kol will be reconstructed in accordance with the General Development Plan of Ashgabat for 2020-2025. The project of creating infrastructure on the banks of the Altyn-Kol recreational area is planned and already approved. Based on this, according to the strategy of the Working Group of the Interdisciplinary Commission on Environmental Protection for the implementation of the Ramsar Convention obligations in Turkmenistan, Altyn-Kol will have to be accredited as an urban wetland park.

Therefore, before we start drafting and adjusting the Management Plan and monitoring program of Altyn kol at the request of the Mayor's office ( Khakimlik), it is necessary to

determine the full hydrological cycle of water flow rate, assess the climatic characteristics in this area of the city, wastewater loads, which will certainly occur during and after construction. Adjustment of the Management Plan, taking into account measures to mitigate anthropogenic load according to our plans will depend on the development of the northern part of Ashgabat and the surrounding area, but necessarily taking into account compliance with the Ramsar criteria and the concept of sustainable management of this wetland, for which Altyn- Kol is nominated to the Ramsar List under Task 2 of this report.

Assessing the hydrological role of individual anthropogenic factors, it is logical to analyze their cumulative impact, while at the same time not forgetting the indirect impact of urbanization of the territory, which is ambiguous. It is difficult to fully assess the ratio of climatic and anthropogenic factors in changing hydrological indicators, but we can say that their role is commensurate, and sometimes anthropogenic changes exceed the climatic ones. First of all, this refers to changes in water quality and shoreline structure, where the prevailing role of anthropogenic factors is obvious, especially in the modern period, when Altyn-Kol is being rebuilt into a wetland park.

In the process of adjusting the Management Plan, the main points on identifying the load of effluents of anthropogenic origin, conducting some assessments of eutrophication, which is characteristic of the standing water bodies of the Karakum River zone, will be taken into account. As well as the identification of all relevant pollutants entering the lake in one way or another.

Next: the monitoring area should be defined according to informational, cultural and environmental needs. This will require a list of all activities that may affect the hygienic state of the Altyn-Kol water.

The task of predicting the ecological ill-being on the wetland is relevant due to the inevitability of pollution during construction works during the expansion of the recreational area. It is recommended to use a comprehensive approach to assess the ecological trouble on various physico-chemical, hydrobiological and toxicological indicators using methods of ecological indication during the rapid assessment of this wetland, which will need to be carried out repeatedly in the near future.

Among the characteristics of wetland when adjusting the Management Plan, an assessment of the state of ecological well-being of wetland should be emphasized. At the same time, consideration of the prevailing weather and hydrological conditions at the time of sampling should be well thought out. In case of inconsistencies between results obtained at the same sampling time, or in case of significant variation in results compared to previously collected samples, it is important to be prepared to take repeated samples.

Infrastructure development activities at Altyn-Kol wetland will increase anthropogenic pressure, especially during the construction and infrastructure building phase. Therefore, the following measures/steps are proposed for inclusion in Altyn-Kol Management Plan to maintain the ecosystem balance of the wetland:

1. To monitor and control water pollution according to the latest and highest water quality requirements.

2. To create, or leave a minimal natural area intact recreationally, where biodiversity will be preserved (Biodiversity's refugium) and where visitors will not be allowed, or only accompanied by a guide, and there will be feeding and/or breeding sites for waterfowl and concentrations of other representatives of BR (Biodiversity's refugium).
3. A visitor center needs to be created to ensure public attention and raise awareness and knowledge of visitors to this wetland park and its importance as a wetland.
4. To hold regular consultations with representatives of the Working Group of the Interindustry Commission for Environmental Protection on the fulfillment of obligations in implementing the requirements of the Ramsar Convention in Turkmenistan.

**Task 2: Preparation of the Nomination Dossier for the Altyn-Kol Ramsar Site in Turkmenistan.**

The nomination dossier was prepared in accordance with the guidelines <https://www.ramsar.org/sites/default/files/documents/pdf/lib/hbk4-17.pdf>.

The completed off-line form is available in Russian on the CAREC website in the section of RRI\_CA project - <https://carececo.org/publications/Turkmenistan%20National%20Report%202020.pdf>.

The form includes a shape-file of the boundaries of the nominated wetland.

For this part, a GIS-expert was involved and a GIS-map was made.

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*15.06.2021.*