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MAPPING THE CURRENT STATE OF THE LOWER AMUDARYA STATE BIOSPHERE RESERVE

Annotation: In our country has wealthy nature, including four seasons of year that represents unique zone. However, a relationship to nature is being changed in the conditions of humanity developing. Therefore, now every country is organizing protected areas to save and protect their nature environment and natural resources. Government authorities manage these protected areas. Reserves are important to protect and research nature and natural resources. Reserves are organized for ecosystems in a certain zone and the animals and plants that compose them also to scientific researches and to motivate stakeholders.

Key words: Environment; Protected area; Lower Amudarya biosphere reserve; Flora and Fauna; Ecosystems.

Introduction. In Uzbekistan, there are many networks of natural zones that are crowded with several biocenoses and ecosystems. In particular, in our country there are 9 protected areas, 2 national parks, the centre of the republic (Jayron ecocentre) is according to increase types of rare animals, 12 state order offices. Total area of protected areas is 20520 km²; this is 5% of all territory of Uzbekistan. One of the reserves is Lower Amudarya reserve that is located in the lower Amudarya river, on the territory of Beruni and Amudarya districts, on the right bank of the river. First, in 1939, this reserve had been organized as a “Primorskiy qoriqxonasi”, but later it was reorganized as a “Baday-Tog’ay” in 1971. In 2011, the Cabinet Ministers of the Republic of Uzbekistan decided to accept the proposal of the Council of Ministers of the Republic Karakalpakstan and the Ministry of Agriculture and Water Resources to transform the Badai-Tugai nature reserve into Lower Amudarya State Biosphere Reserve by increasing its territory from 6462 until 68718 hectares resolution.

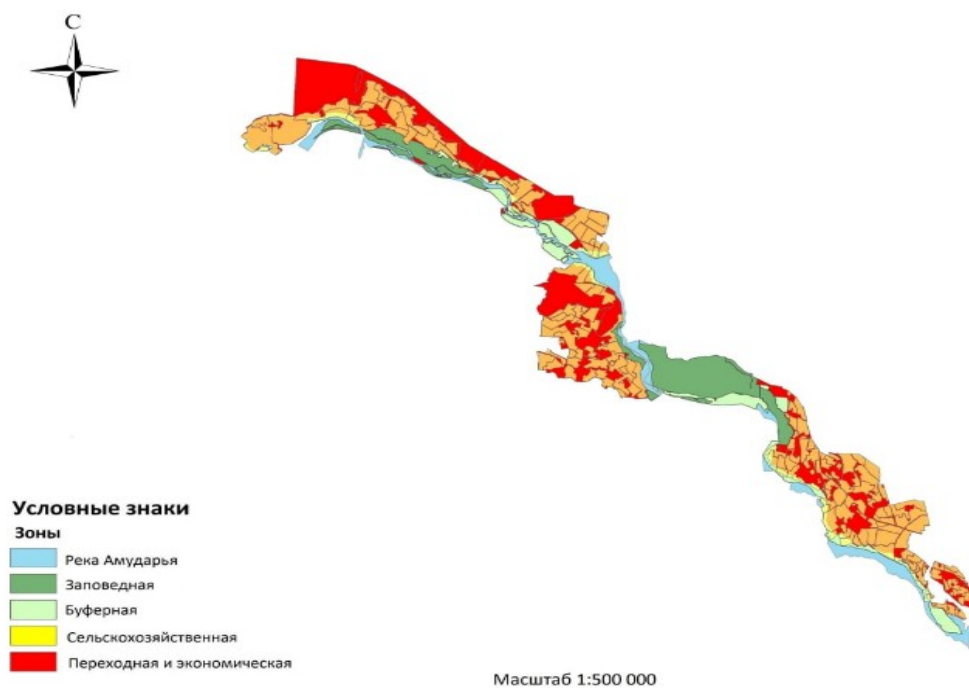
Results: The main objective of Lower Amudarya State Biosphere Reserve is to preserve and restore landscapes, flora and fauna of Tugai forests, including their rare and extinction species, improve ecological condition and provide sustainable use of natural resources and study of natural processes, and promote environmental education, training and awareness. In order to realize the aims and tasks of the biosphere reserve, the territory is divided into 3 zones:

- protection;
- buffer;
- transitional (economic) zones.

The protection zone is composed of 11568 hectare (17%) and it is under strict protection regime. This zone is for protecting natural objects and complexes, for conducting monitoring and scientific research.

The buffer zone consists of 6734 hectare (10%) and is for protection and restoration of natural objects and complexes. The regime is set according to the law. The land of Buffer zone is in possession of renters (Pic. 1).

The Transitional (Economic) zone consists of 50418 hectare (73%) and is formed for realization of household and other activities without damaging the natural objects and complex. Transitional reserves land is also in possession of land users and renters Resolution.



Pic. 1. Proposed zonal map of the Lower Amudarya State Biosphere Reserve

Also, in this reserve have objects of cultural and historical heritage :

- Shilpik. Shrine building e.a. II-IV - IX-XI centuries.
- Janpikh-castle. Ancient Castle e.a. IX-XI - XIII-XIV centuries
- Gyaur Castle II - IV centuries.
- The signal tower in the Janpikh-Kala castle (Koyanshikh-say) from the 10th century to the 13th century.
- Mausoleum of Sultan Uays Baba e.a. XIV century.
- Ancient Khiyat Castle XII-XIV centuries. (From uzbekistan.travel.uz site)

During the 33rd International Coordination Council of the "Human and Biosphere" program, a decision was made to include the Amudarya State Biosphere Reserve in the UNESCO network of global biosphere reserves. Now

there are two nature reserves of Uzbekistan in this network: the first one is Shatkal state biosphere reserve (included in 1978 volume). About it informed by Aziz Abduhakhimov who is the deputy prime minister, chairman of the commission for UNESCO affairs.

Adding to network of global biosphere reserves gives opportunity to expand cooperation with YuNESKO, in details, the reserve received the following technical support under the programm "Human and biosphere»:

Results from humanity and natural activities changes in biosphere and influences on human and nature, basically, identify and assessment within climate change;

Interdependence between natural ecosystems and social-economic processes basically, researching and comparing of ecosystems for human welfare in the conditions of rapid loss of biodiversity and cultural diversity;

Provide living environment and human welfare in the conditions of intensive urbanization and using energy as a changing environment; sharing experience and encourage about ecological problems and solutions, spread ecological education for sustainable development.

Flora of Lower Amudarya State Biosphere Reserve represented by Tugai forest. Tugai is the Turkic word for a floodplain forest in the desert regions of Middle and Central Asia. Tugai can consist of herbaceous shrubs, wood or their combination. The reserve has rich biodiversity of plants: there are 6 types of typical trees: Jida (Jew)-1 type, Willow-2 type, Turanga-3 types. Jida (Jew) is an ancient plant that emerged in the tropical conditions as evergreen. Jew's fruits are widely consumed by the local population as food. Jew is also known for its medicinal properties, with intestinal disorders, especially in children, the Jew is an indispensable and the most common treatment option.

Fauna of the Lower Amudarya State Biosphere Reserve is a suitable space for the various species of birds, mammals and fishes. The reserve provides habitat for about 95 bird species. In the character of staying in Bio Reserve, they

are distributed as follows: nesting birds-40, sedentary-19, wintering-18 and migratory-18. Some species of birds are listed in the Red Book of Uzbekistan. These include Pygmy Cormorant, Serpent eagle, brown dove, falcon, peregrine falcon and pheasant. Furthermore, the reserve provides habitat for 8 predator species: jackals, foxes, weasels, wild chorus, peregusna, badger, steppe cat and jungle cat. In addition, sometimes wolfs were observed in the reserve. One of main prides of the Lower Amudarya Bio Reserve is acclimated Bukharan deer. The Bukharan deer are listed as endangered in the Red List of the International Union for Conservation of Nature and all modern red book of countries of Central Asia. Moreover, the length of the riverbed along the Lower Amudarya State Biosphere Reserve is 18 km. It provides habitat service to more than 50 species of fish including large Amudarya barbell, bream, saber fish, carp, pike, perch, chub, silver carp, rudd, Aral chipper, Amudarya char.

Conclusion. In recently, there were identified main 4 types of ecosystems services in the area, there are provisioning (cotton, wheat, small buildingstone and building limestone) services, regulating (carbon sequestration) service, habitat (gene pool protection service and nursery) and cultural (ecotourism).

The reserve provides mainly of food and construction products. The production of food includes agriculture activities as crops (cotton and wheat) growing production. The construction products include building stones and limestone production. These construction products are used in construction industry. The main stakeholders of these services are farmers and industries that make direct benefit from these products.

References

1. Reymov P.R., Statov V.A., Xudaybergenov Ya.G., Mamutov N.K., Reymov M.P. K sravnitel'nomu issledovaniyu opustinivayuchixsiya delt s ispolzovaniyem strukturnix metric risunka landshafta // Mejdunarodnaya nauchno-prakticheskaya konferensiya "Degradatsiya zemel' y opustinivanie:

problemiy ustoychivogo prirodopolzovaniya y adaptatsii". – Moscow., 2020. – P. 79-81.

2. Reimov M.P., Pulatov A.S. Some aspects of ecosystem service analysis in Lower Amudarya State Biosphere Reserve in Uzbekistan // IRRIGATSIYA va MELIORATSIYA Jurnalı № 03 (5). Toshkent, 2016. Pp. 64-69. (05.00.00 №22)

3. Reimov M.P. Ecologic condition at the Aral Sea and its negative consequences // Water Management-State and Prospects and Development, Collected articles of young Scientists. Ukraine, Rivne, 2010, Pp. 97-101.

4. Baxieva A. Monitoring of riparian ecosystems of Baday-Tugai nature reserve. Paper presented at the Materials of science and practical conference which is dedicated problems biodiversity in protected areas of Uzbekistan, Nukus.– 2008.

5. Samper. The millenium ecosystem assessment: Science and Policy for sustainable development. Bioscience, 53(12),– 2003.– 1148 p.

6. Aslanov I., Jumaniyazov I., Embergenov N., Allanazarov K., Khodjaeva G., Joldasov A., Alimova S. Remote Sensing for Land Use Monitoring in the Suburban Areas of Tashkent, Uzbekistan // XV International Scientific Conference "INTERAGROMASH 2022", 1-9 pp.