



BARSAKELMES Biosphere Reserve

Kazakhstan 2015



Almaty
Office



Kazakhstan
National
Committee





Biosphere Reserve Barsakelmes

Total area of the territory of Barsakelmes Biosphere Reserve is 407 132 ha. The main core zone (territory of Barsakelmes State Nature Reserve) is 160 826 ha, buffer zone is 46 306.34 ha, development zone – about 200,000 ha.

The territory of the core zone is located in the Aral Sea area of Kyzylorda region and consists of two cluster areas: 1) location "Barsakelmes" includes the former territory of the reserve (16,795 hectares) with extension on dried land, total area - 50,884 hectares; 2) location "Kaskakulan" as a modern habitat of Wild Asian Asses and a large array of natural saxaul thickets on dried land, the total area - 109,942 ha.

The main area is located in a desert landscape temperate zone.



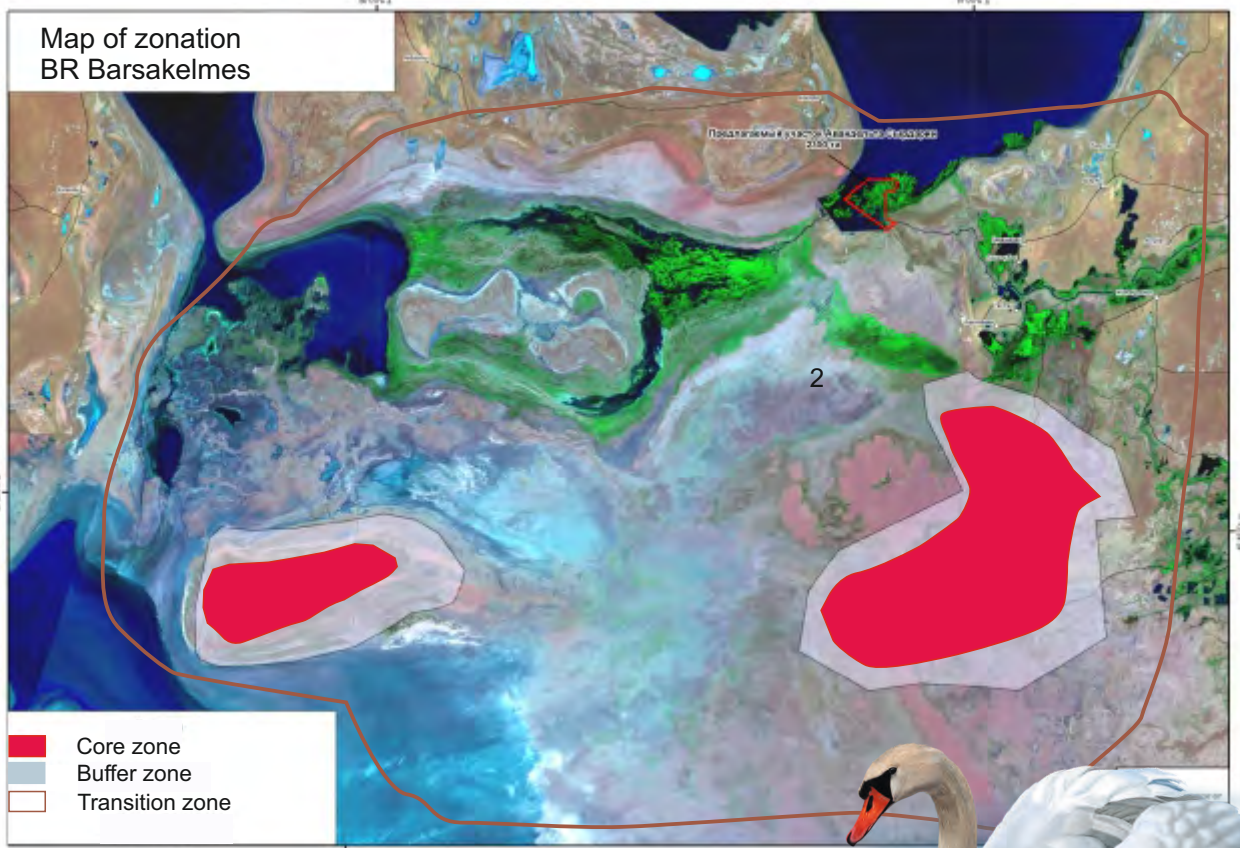
Saiga tatarica



Barsakelmes Biosphere Reserve



Map of zonation
BR Barsakelmes



Cygnus olor

Core zone of BR Barsakelmes protected by the state from December 10, 1939, when it was established as Barsakelmes State Nature Reserve within the boundaries of the island Barsakelmes. At the end of the last century, the processes of drying of the Aral Sea have intensified and a large area of the Marine Plain (the dried bottom) around the island Barsakelmes was exposed, the island joined to the mainland. Drained bottom of the Aral Sea was the scene of the primary formation of the flora, fauna and unique ecosystems. This area is the world's only natural "laboratory" for today, where you can observe the processes of formation of natural desert

ecosystems in the initial stages of their formation in conditions of climate change. The area of BR Barsakelmes is a part the continental North Turan climatic region of the desert zone and is a part of desert landscape zone of the temperate zone, north subzone of deserts (wormwood-saltwort), Precaspian-Turan State, Prearalian-Syrdaria province, North-Prearalian province, North-east Prearalian County.

Barsakelmes Biosphere Reserve





Kazakh yurt

A significant part of the core and buffer zones is the zonal habitats. The basic territory of the island occupied by a group of plain complexes. On the territory of the transit zone of BR 5 vegetation types are allocated: desert, meadow, tugai, marsh, water. Currently, in the main area and the buffer zones of two cluster areas of Barsakelmes BR there are 298 species of vascular plants, about 2,000 species of invertebrates; 2 species of amphibians; 20 species of reptiles, that is 46.9% of the whole herpetofauna of Kazakhstan; 30 species of mammals or 71.4% of Kazakhstan desert fauna (42 species); and 178 bird species. At the same time, according to the current information the territory of transition zone of BR in the area of Syrdaria delta there are also:

- 112 species of flora, including 2 water plants not protected before and inserted into Red

Data Book of Kazakhstan (*Scirpus kasachstanicus* and *Nymphoides peltata*), that in other areas of the reserve is not found, and nowhere more than in Kazakhstan are not protected;

- 85 species of zooplankton including 4 rare and 2 endemic;
- 250 species of birds, consists of about 100 nesting (including 40 rare and endemic), 27 species inserted into Red Data Book of vertebrates and 13 species from the IUCN Red List. Wetlands of Small Aral Sea plays an important role as a place of rest and stop on the migratory routes of birds, linking Siberia to their wintering places in South Asia and Asia Minor and Africa, so they are included in the international list of Important Bird Areas in Kazakhstan (IBA). During migration 20-50 thousand of waterbirds stops here, so it meets international standards (A1 A4i b A4ii), according to which the Small Aral Sea and new Syrdaria delta were included in the list of the Ramsar Convention as a globally significant wetlands of international importance;
- 18 species of fish (from 20), inhabiting in Small Aral Sea including 3 rare species from Red Data Book of Kazakhstan: (*Barbus brachycephalus brachycephalus*), (*Chalcalburnus chalcoides*), (*Abramis sapa aralensis*).



Barsakelmes Biosphere Reserve



Canis lupus

The main protected species - ungulates; antelopes, wild asses, gazelles, adapted to the harsh conditions of the desert island and have become the main components of biocenosis.

Administratively, the territory of Barsakelmes Biosphere Reserve is located in the Aral District of Kyzylorda Province. The rural population consists of 57.9% of the total human population in this district.

The area is home to 74.7 thousand people, population density -1.2 people per sq.km. The problem of water supply of settlements is solved at the expense of the centralized water supply systems, imported drinking and industrial water.

The region has huge reserves of table salt, sodium, merabilit, tevardit and quartz sand for glass industry.

On the territory of the transit zone BR various forms of economic activity, has no negative impact on the ecological systems are carried out: Forestry activities; Traditional land use, including grazing and hay, as well as other activities in the framework of long-term safety and invulnerability of biological diversity; Tourism and recreational activities; Use mineral water, balneological and environmental resources; commercial and recreational (sport) fishing; conducting ground and aerial work on extinguishing forest and steppe fires; reclamation of disturbed lands; restoration of forest and other



Equus hemionus

plant communities; habitat restoration and the number of wild animals; land use for arrangement of tourist attractions and tourists devices nurseries for artificial breeding, cultivation, breeding of endemic, rare and endangered plant species and animals, as well as construction of office buildings (cordons) to stay BR employees, providing them with official land plots.



Living house in transition zone of BR

Barsakelmes Biosphere Reserve





Wild Baktrian Camel, *Camelus bactrianus*



Sailor in Small Aral Sea

The rural population living in villages in the delta is mainly engaged in fishing. Fishing villages appeared positioned away from fishing areas, fishing camps or camp did not have a permanent location, in connection with the unstable hydrological regime of the sea. To replace the widely held in the 1990s, species *Pleuronectes (Platichthys) flesus luscus* 16 species of fish have been restored to the level of fishing at the moment in the Small Aral Sea.

All three zones are connected and complement each other. The core zone is closed for visits and represents reference areas of regional natural complexes, as well as important genetic reserve of wild flora and fauna species; this zone is a control in long-term monitoring. The buffer zone is also under protective regime, but limited human activity is allowed here (such as tourism, scientific research, educational programs, partial use of natural renewable resources, etc.). Both zones serve for conservation of natural complexes and partially for sustainable development. The transition zone

is used for living of local people, development of economy, culture and education. Here there is no strict protection regime of natural complexes, but there are some restrictions on the nature use (ecologically dirty production is prohibited). As a whole, this zoning provides conditions for elimination of the conflict between social-economic development and protection of wild natural complexes and gives an opportunity for stable development of economy and culture.

The current goal for core and buffer zone is formulated as follows: to provide monitoring observations of succession processes in wild nature ecosystems as well as to protect some wild species of animals and plants against climate change impact.



Barsakelmes Biosphere Reserve



Vulpes corsac in winter

At the present time there is a Management Plan for core and buffer zones of Barsakelmes Biosphere Reserve, which describes management of the main protected areas of Biosphere Reserve. In the transition zone the land users have their own management plans, which are in accordance with Management Plan of core and buffer zones. So, simple combination of all these plans is in fact Overall Integrated Management Plan of the whole territory of Biosphere Reserve. All controversial issues are discussed at the sessions of Coordinational Council of Biosphere Reserve.

The biosphere reserve is managed through Barsakelmes Biosphere Reserve Coordinational Council created in 2014. Before that the territory of the core and buffer zone was managed by Scientific-Technical Council of the Nature Reserve (until 2014). Coordinational Council is a collegial public body created to introduce policies of effective management and sustainable use of biosphere reserve's resources,



Transition zone of BR (coast of Small Aral Sea)

alternative activities, resource-conserving and resource-restoring technologies. The Coordinational Council of biosphere reserve consists of representatives of state agencies (territorial agency of forestry and hunting, oblast territorial agency of fishery), state nature reserve, Akimat (department of land resources, agriculture, etc.), local NGOs and land users, and is necessary in providing collaboration and problem-solving opportunities for all stakeholders.



Transition zone of BR (former island Kokaral)



Core zone of BR (former island Barsakelmes)

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Male of the Wild Bactrian Camel in watering place

Former sailor with his grandson, Karateren Village



Japanese students read a book with local girls



Kokaral Dam



United Nations Educational, Scientific and Cultural Organization

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