KORGALZHYN
Biosphere
Reserve

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Kazakhstan National Committee
for the UNESCO Programme
“Man and Biosphere”

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KAZAKHSTAN

Biosphere Reserve Nomination

PART I : SUMMARY

1 Name

Korgalzhyn Biosphere Reserve

2 Country

Kazakhstan

3 Fulfilment of the three functions of biosphere reserves

3.1
Conservation

Korgalzhyn Bioshpere Reserve is a natural complex of fresh and saline waters with their coastal territories, which include unique landscapes characteristic for dry steppe zone of Eurasia. The territory of the Reserve is a place where unique model areas of natural steppe ecosystems, degraded in other parts of Kazakhstan, are conserved. The territory of Biosphere Reserve is one whole area located in the steppe zone of Central Kazakhstan at the crossing of Central Asian – Indian and Siberian – Eastern-African birds' migration routes. It is also an important wetland of international importance not only for Kazakhstan, but for the whole Asia. Spacious waters of Biosphere Reserve provide the necessary habitat for the largest in Asia waterbirds' population.

Potential fodder reserves of only one Tengiz lake are able to provide food for 15 million birds. The most Northern nesting population of Flamingo is located here; its population number in some years may reach 50,000-60,000 birds. This is why in 1974 Tengiz-Korgalzhyn lakes (which are part of the Biosphere Reserve) were included in Ramsar list of internationally important wetlands. The unique Tengiz lake, as well as its shores, were never anthropogenically influenced; in 2000 this lake was included in the list of Living Lakes international organization, which consists of the most unique lakes of the world. In 2007 this territory also became a part of the world network of sites proved to be extremely valuable for birds' conservation (Important Bird Area).

In 2008 a part of the Reserve's territory (Korgalzhyn State Nature Reserve) in nomination «Saryarka – steppes and lakes of Northern Kazakhstan» was inscripted on the List of World Heritage Sites of UNESCO. Before it was included in UNESCO list, the Government of Kazakhstan increased its territory more than twice. The majority of adjoined territory is occupied by steppe area Western from Tengiz lake which has a high international nature protection status – conservation of steppe biome of the planet as a habitat for some steppe mammal species. Here are some favorite habitats of Corsac Fox, Steppe Pika and Saiga, as well as large colonies of Marmot. Besides, this area is important for conservation of steppe birds' fauna; here is the nesting place of such rare species as Steppe Eagle, Pallid Harrier, Pallas's Sandgrouse, Demoiselle Crane, Great and Little Bustard. All these species of mammals and birds are listed in the Red Data Book of Kazakhstan and Red List of IUCN. The importance of Biosphere Reserve in local Saiga population conservation is especially noteworthy. In 1970-80s huge flocks of

these steppe antilopes came to this not populated steppes every year in early May to have offsprings. According to the data of last years' surveys, more than 1600 Saigas are annually counted on Biosphere territory, and some part of them stays for the winter.

In a whole, biodiversity of this territory includes more than 500 species of plants (a quarter of the whole flora of Kazakh melkosopochnik) and more than 1400 species of water and terrestrial animals, consisting of 42 mammal species, 14 fish species and 344 bird species (126 of them are nesting). Waterbirds of Tengiz-Korgalzhyn lakes (territory of Biosphere Reserve) include 112 species, which is 87% of total waterbird fauna of Kazakhstan. To the present date more than 700 species of insects is recorded there, although their species diversity may reach more than 3000 species.

More than 60 rare species of animals and plants, listed in the Red Data Books, are registered at the territory of Biosphere Reserve. For example, 37 bird species are listed in the Red Data Book of Kazakhstan and 20 species – in IUCN Red List. Up to 10% of world population of Dalmatian Pelican (IUCN Red List) and up to 10-20% of world population of White-headed Duck are concentrated at Biosphere Reserve's lakes. During summer molt and autumn migration a huge number of birds (tens of thousands of Geese, hundreds of thousands of Ducks and Sandpipers) may be found at the spacious and rich in fodder waters of the territory.

3.2
Development

The territory of Korgalzhyn Biosphere Reserve is situated on the land of 13 rural districts, which are included in 3 areas of 2 regions (oblast) – Egindykol (Akmola region), Korgalzhyn and Nura (Karaganda region). More than 12,000 people in total live at this territory in 28 settlements. Besides state nature reserve, more than 20 land users are registered here. Potential productivity of agricultural lands is low, the region is a zone of risky agriculture, this is why crop production is not perspective here. Productive landscapes of Biosphere Reserve located near strictly protected nature territory are suitable for cattle keeping, fishery, hunting and ecological tourism development. Farms were chosen during functional zoning of Biosphere Reserve's territory to carry out works on sustainable agriculture methods on their basis.

Animal breeding. Cattle population in all farms' categories (according to the data of 2005) is 13,300 animals, containing 7,600 sheep, 5,000 horses, 665 pigs, and 24,600 birds. Local people and farms own 99% of the cattle. In the last 5 years there is a tendency of stable decrease of cattle and birds' population. The development of agrarian sector at Biosphere Reserve's territory is caused by the traditions, experience in sheep and horses breeding in extreme conditions of all-year pasture, considerable demand for sheep and horses production, proximity of Astana (the main market), high prices for meat production at Kazakhstan's internal market.

Fishery. A part of biosphere territory's water reservoirs is owned by 10 nature users who practice commercial fishery. Average annual yield of fish is 519 tons, of which only 178 are registered by nature users; the other 341 tons are not registered. Due to the increasing demand for fish productions it is necessary to organize activity for restoration and sustainable development of fish resources. Biosphere Reserve allows successful solving these problems in the frames of its Coordinational Council.

Hunting. Hunting farms of Biosphere Reserve's territory include agricultural lands (arable and fallow lands), steppe lands (pastures, hayfields), and wetlands. At the present time paid sites of temporary accomodation are created for the hunters visiting hunting farm for a long time; necessary staff of rangers and game managers is hired; and also normative documentation is introduced for better counting of game animals taken from the nature.

Ecological tourism. Modern territory of Biosphere Reserve was used for ecological, educational, tourist and recreational purposes from 1996. At the present time 4 ecological routes are developed in protection zone for educational excursions. Due to long routes only vehicles are used, provided by “Akmolatourist” company (tourist buses with 36 and 24 sitting places, 2 microbus, one of them is off-road vehicle), as well as vehicles of State Nature Reserve. The routes lie on the field roads of common use in protected zone with defined places for stops and halts. All vehicles are accompanied by state inspectors of nature reserve's security service on a mandatory basis. A lot of time is dedicated to educational excursions for schoolchildren of local regions and Astana city; these excursions follow a short program of one-day acquaintance with nature attractions of Biosphere Reserve. In the present time a tourist base is created at “Karazhar” cordon, and a visit center was recently built and opened in Korgalzhyn village.

3.3
Logistic Support

To the present date the main scientific-technical support of Biosphere Reserve's territory is provided by the staff of Korgalzhyn State Nature Reserve, “Rodnik” public association, and participants of GEF/UNDP Project on Conservation of Wetlands, which supports pilot projects on folk craft, ecological education and knowledge propaganda; Conception of ecological tourism in Biosphere Reserve is developed; Conception of sustainable fishery at the territory of Birtaban-Shalkar lakes is developed; a series of educational seminars for local people, school teachers and scientific staff was conducted.

Activities of Korgalzhyn State Nature Reserve (besides the main activity at the Reserve's territory): 1) on the base of visit center – ecological excursions, nature protection activities, ecological festivals, organization of ecological clubs, and advertising - publishing activity, work with mass media, etc.; 2) education of local hunting inspectors to properly conduct counting works; 3) educational – field pratices of students; 4) collaborative activity with emergency service of Korgalzhyn village in steppe fires extinguishing; 5) implementation of scientific research and monitoring of nature condition at Biosphere Reserve's territory.

In the limits of «Rodnik» public assiciation – creation of 5 guest houses, development of 3 ecological routes; work with tourists; conduction of educational seminars for local people; help in conduction of ecological events and activities on the territory.

4 Criteria for designation as a biosphere reserve

4.1

Encompass a mosaic of ecological systems representative of major biogeographic regions

Biosphere Reserve plays an important role in conservation of natural complexes of unique and characteristic ecosystems of dry steppe zone of Eurasia and includes the whole spectrum of dry steppe ecosystems. According to botanic-geographical sub-division, the territory of Biosphere Reserve is situated in Euro-Asian steppe region, Zavolzhsko-Kazakhstan province, Central Kazakhstan steppe subprovince, Priishimskiy (Northern and Eastern parts of Biosphere Reserve) and Western - melkosopochnik (Southern part of Biosphere Reserve) districts. According to zonal features the territory of Biosphere Reserve lies in 3 subzones of steppe zone: in subzone of moderately dry steppes on dark-chestnut soils, subzone of dry steppes on chestnut soil and subzone of desertified steppes on light-chestnut soils.

4.2
Be of significance for biological diversity conservation

The territory of Biosphere Reserve presents a unique complex of biodiversity of Kazakhstan dry steppe, which is not observed out of the limits of the Republic. Flora of higher plants in Biosphere Reserve is represented by 511 species from 270 genera and 70 families, the base of floristic diversity is created by angiosperm plants (404 species of dicots and 105 species of monocots). Massive (dominant and subdominant) species form 16.6% (85 species from 25 families) from the whole flora, and rare species – 9% (46 species), 5 of them (*Tulipa schrenki, T. patens, Adonis wolgensis, Pulsatilla flavescens, P. patens*) are listed in the Red Data Book. Floristic relicts include 4 species (*Nitraria schoberi, Marsilea strigosa, Nymphaea candida, Nuphar lutea*), endemics are represented by 7 endemic and 3 subendemic species.

Fauna of vertebrate animals is represented by 422 species, the majority of them are birds (347 species). The territory of Biosphere Reserve is habitat for 11 endemic and 22 relict vertebrate species, as well as for 67 species from the Red Data Book of Kazakhstan and IUCN, and only from birds globally important species include Dalmatian Pelican, White-headed Duck, Lesser White-fronted Goose, Red-breasted Goose, Gyrfalcon, Demoiselle Crane, Little Bustard, Great Bustard, White-tailed Eagle, Golden Eagle, Imperial Eagle, Steppe Eagle, Pallid Harrier and other birds. The territory of Biosphere Reserve is habitat for the largest in Asia waterbirds' complex, which counts 112 species. The largest stop of migrating birds happens here twice a year. Total one-time number of nesting waterbirds reaches 500,000 specimens. Birds from the huge territory – Northern and Central Kazakhstan, Western and Eastern Siberia – gather for summer molt.

The Reserve is very important for conservation of Central Kazakhstan Saiga population, which was a commercial species in 1970-80s and rapidly decreased in numbers at the end of XXth century. Biosphere Reserve is of huge importance for conservation of species diversity of raw materials' plants. So, more than 220 medicinal plants, 98 nectariferous and 48 dying plants are recorded here. Almost half of local flora is fodder plants (231 species).

4.3 Approaches to sustainable development on a regional scale

Productive landscapes are convenient from cattle breeding point of view, as well as fishery and hunting. At the same time, some parts of Biosphere Reserve need rehabilitation of abandoned lands. In regional scale the experience of ecological tourism development on the territory of Biosphere Reserve may be successfully used at other sites. In the present time 15 pilot projects are realized at the territory of Korgalzhyn Biosphere Reserve, they are dedicated mostly to introduction of the best practices in agriculture (sustainable management of pastures), as well as ecotourism development – 5 projects. A project on milk products processing is realized, as well as introduction of the best fishing practices, creation of pond farm and a project in hunting area; one of the project is aimed to demonstrate the alternative energy sources.

4.4

Appropriate size to serve the three functions of biosphere reserves

Total area of the territory of Korgalzhyn Biosphere Reserve is 1,603,171 ha. The main core zone (territory of Korgalzhyn State Nature Reserve) is 543,171 ha, buffer zone is 90,000 ha (a 2-km stripe around the State Nature Reserve), development zone – about 970,000 ha.

4.5
Appropriate zonation

a) a legally constituted core area or areas devoted to long term protection, according to the conservation objectives of the biosphere reserve, and of sufficient size to meet these objectives

The main zone of Biosphere Reserve is strictly protected zone of Korgalzhyn State Nature Reserve, which represents natural complex of fresh and saline water reservoirs with their coastal territories. According to Article 39 Chapter 7 of the Law of RK «On specially protected natural territories», State Nature Reserve is a specially protected natural territory with the status of nature protective and scientific institution, its activities' goal is in conservation and research of natural processes on its territory, objects of plant and animal world, separate species and communities of plants and animals, typical and unique ecological systems and their rehabilitation. At specially designated areas that don't include especially valuable ecological systems and objects it is permitted (according to the order established by authorized body) to create excursion paths and routes for regulated ecological tourism (Article 42). Korgalzhyn State Nature Reserve corresponds to the highest category (A1) of nature territories of IUCN. The area of the main nature reserve zone of Korgalzhyn Biosphere Reserve is 534,171 ha.

b) a buffer zone or zones clearly identified and surrounding or contiguous to the core area or areas, where only activities compatible with the conservation objectives can take place...

Buffer zone of Biosphere Reserve is protected zone of State Nature Reserve and consists of 2-km stripe along the state nature reserve's perimeter. According to Article 43 of Law of RK «On specially protected natural territories» protected zones are created for the protection from unfavourable external influences around specially protected natural territories, with prohibition of any activity in the limits of these zones that would negatively influence the condition and restoration of ecosystems of given territories. At the territory of Biosphere Reserve the lands of buffer zone are not confiscated from the main land users, they are mostly formed of the lands of agricultural use and are owned by agricultural organizations and private bodies. Economic activity in separate areas of protected zone (haymaking, cattle pasture) is carried out in accordance with governmental authority (Forestry and Hunting Committee of the Ministry of Agriculture of RK) and under the control of administration of State Nature Reserve. Activities of ecological education, recreation, ecotourism are carried out at the territory of the buffer zone of Biosphere Reserve, as well as scientific research. The area of protected zone is 90,000 ha.

c) an outer transition area where sustainable resource management practices are promoted and developed

Transition area of Korgalzhyn Biosphere Reserve is located on the territory of three administrative regions (rayon) and two districts (oblast): Korgalzhyn and Egindykol (Akmola district) and Nura region (Karaganda district). This zone includes lands of 19 rural districts; its total approximate area is about 970,000 ha. This zone contains 19 forestries and 10 fishing ponds in long-term possession of 15 land users.

The territory of transition area of Biosphere Reserve is used for hayfields, fallow lands, pastures, numerous wetlands and villages. It represents mainly settled and developed areas. It is important to organize restoration of renewable resources at these territories. First of all it concerns the rehabilitation of abandoned fallow lands and organization of sustainable fishery and hunting.

4.6 Organizational arrangements for the involvement of public authorities and local communities

In order to attract the corresponding partners Coordinational Council of Korgalzhyn Biosphere Reserve was created, including representatives of State Nature Reserve, land users, local authorities and non-governmental organizations. Besides, before that there were Territorial Council of Management of Wetland Resources of Tengiz-Korgalzhyn Territory (in the limits of the GEF/UNDP Wetlands Project, 2004 – August 2011), and extended Scientific and Technical Board of Korgalzhyn State Nature Reserve.

4.7
Mechanisms for implementation

a) mechanisms to manage human use and activities in the buffer zone or zones

According to the legislation of RK, the management of economic activity at separate areas of protected zone (haymaking, cattle pasture) is conducted by agreement with governmental authority (Forestry and Hunting Committee) and under the control of administration of State Nature Reserve, all controversial issues are solved at the sessions of Coordinational Council of Biosphere Reserve. Agreements with land users about collaborative activities on the lands of protected zone were signed during preparation of the Resolution on protected zone of Korgalzhyn State Nature Reserve. Private lands of buffer zone are not confiscated from land users; this zone consists of agricultural lands administered by agricultural organizations.

b) a management plan or policy for the area as a biosphere reserve

At the present time there is a Management Plan for Korgalzhyn State Nature Reserve, which describes management of the main and buffer zone of Biosphere Reserve. Land users have their own management plans, which are in accordance with State Nature Reserve's Management Plan. So, simple combination of all these plans is in fact Overall Integrated Management Plan of the whole territory of Biosphere Reserve. A special management plan of Biosphere Reserve including transition area is not created yet, because at this stage of Biosphere Reserve development there is no need in it. All controversial issues are discussed at the sessions of Coordinational Council of Biosphere Reserve.

c) a designated authority or mechanism to implement this policy or plan

Management of Biosphere Reserve is conducted through Coordinational Council of Korgalzhyn Biosphere Reserve, created in 2011. Before that the territory was managed by Territorial Council of Management of Wetland Resources of Tengiz-Korgalzhyn Territory and extended Scientific and Technical Board of Korgalzhyn State Nature Reserve (from 2008 to August 2011). Coordinational Council is a collegial public body and is created with the goal of introduction of effective management and sustainable use of Biosphere Reserve's resources, introduction of alternative activities, resource-conserving and resource-renewing technologies. Coordinational Council of Biosphere Reserve, with members from governmental agencies (territorial management of forestry and hunting, district territories management of fishery, “Astana su” state republican enterprise), State Nature Reserve, city administration (Akimat)(department of land resources, department of agriculture, etc.), local NGOs and land users, is also important in promoting collaboration and solving controversial issues between all stakeholders.

d) programmes for research, monitoring, education and training

Currently on the territory of Biosphere Reserve a program of *Monitoring of fauna and flora condition, as well as ecosystem's condition* is carried out. The goal of this monitoring is to obtain regular objective data on the condition of plants and animals on the territory of Biosphere Reserve, and also on the condition of their habitat. Based on the data of monitoring it is necessary to conduct current evaluation of population and ecosystems' condition, effectiveness of Biosphere Reserve's functioning, and also development of measures for emergencies and unfavourable situations prevention (termination). Avian countings of population of large waterbirds (Swans, Flamingos, Pelicans, etc.) and Wild Boar are carried out in the limits of monitoring.

Besides, there is current research at State Nature Reserve dedicated to 5 scientific topics: «Passerines of Korgalzhyn Nature Reserve» (fauna, biology, population number), «Rare, disappearing and globally important bird species of Korgalzhyn Nature Reserve and adjacent territories», «Characteristics of ichthyofauna of lakes of Korgalzhyn State Nature Reserve», «Anseriformes of Korgalzhyn Nature Reserve» (species composition, biology, character of residence), «Nature Chronicles». Also in the nearest future it is planned to conduct research of populations' condition of rare and Red Data Book species – Saiga, Bobak Marmot, White-headed Duck, Demoiselle Crane and Common Crane, as well as Gyrfalcon, Black-winged Pratincole, Black-tailed Godwit and Eurasian Curlew.

The work on ecological education is carried out in visit center (Korgalzhyn village) on the base of Korgalzhyn State Nature Reserve. It is conducted by the department of ecological education of Nature Reserve. The goal of this work is to form ecological competence of the people, their understanding of the key role of the protected territory, importance of unique nature conservation, public support, and raising patriotism and responsibility for the environment and, as the result, decrease of anthropogenic press from local people on region's biodiversity.

5 Endorsements

5.1 Signed by the authority in charge of the management of the core area

Full name : Mr. Murat Aytzhanov

Title : Director of the Korgalzhyn State Strict Nature Reserve

Date: 22.08.2011

5.2 Signed by the authority in charge of the management of the buffer zone

Full name : Mr. Murat Aytzhanov

Title : Director of the Korgalzhyn State Strict Nature Reserve

Date: 22.08.2011

Signed by the authority in charge of the management of the buffer zone

Full name: Mr. Sultan Kasenov

Title: Governor of Korgalzhyn District, Akmola Province

Date: 22.08.2011

Full name: Mr. Bulat Sultanov

Title : Governor of Egindykol District, Akmola Province

Date: 23.08.2011

Full name : Mr. Serik Shaydarov

Title : Governor of Nura District, Karaganda Province

Date: Date: 23.08.2011

5.3 Signed by the National administration responsible for the management of the core area and the buffer zone

Full name : Erlan Nysanbaev

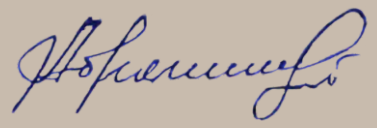
Title : Chairman of the Forestry and Hunting Committee
Ministry of Agriculture of the Republic of Kazakhstan

Date: 22.08.2011

5.4 Signed by the representative of the communities located in the transition area

Full name: Mr. Saruar Abraev

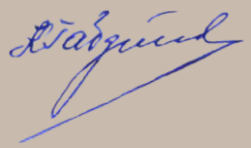
Title: The Chairman, Society of Hunters and Fishermen for Korgalzhyn District



Date: 23.08.2011

Full name: Mr. Talgat Ashimov

Title: Mayor of Korgalzhyn Rural County



Date: 23.08.2011

Full name: Mr. Kayrat Baymukhanov

Title: Mayor of Kyzylsay Rural County

Date: 23.08.2011

Full name: Mr. Islam Mamraimov

Title: Mayor of Amangeldy Rural County

Date: 23.08.2011

5.5 Signed on behalf of the MAB National Committee

Full name: Dr. Roman Jashenko

Title: Chairman for the Kazakhstan National Committee for the MAB Programme

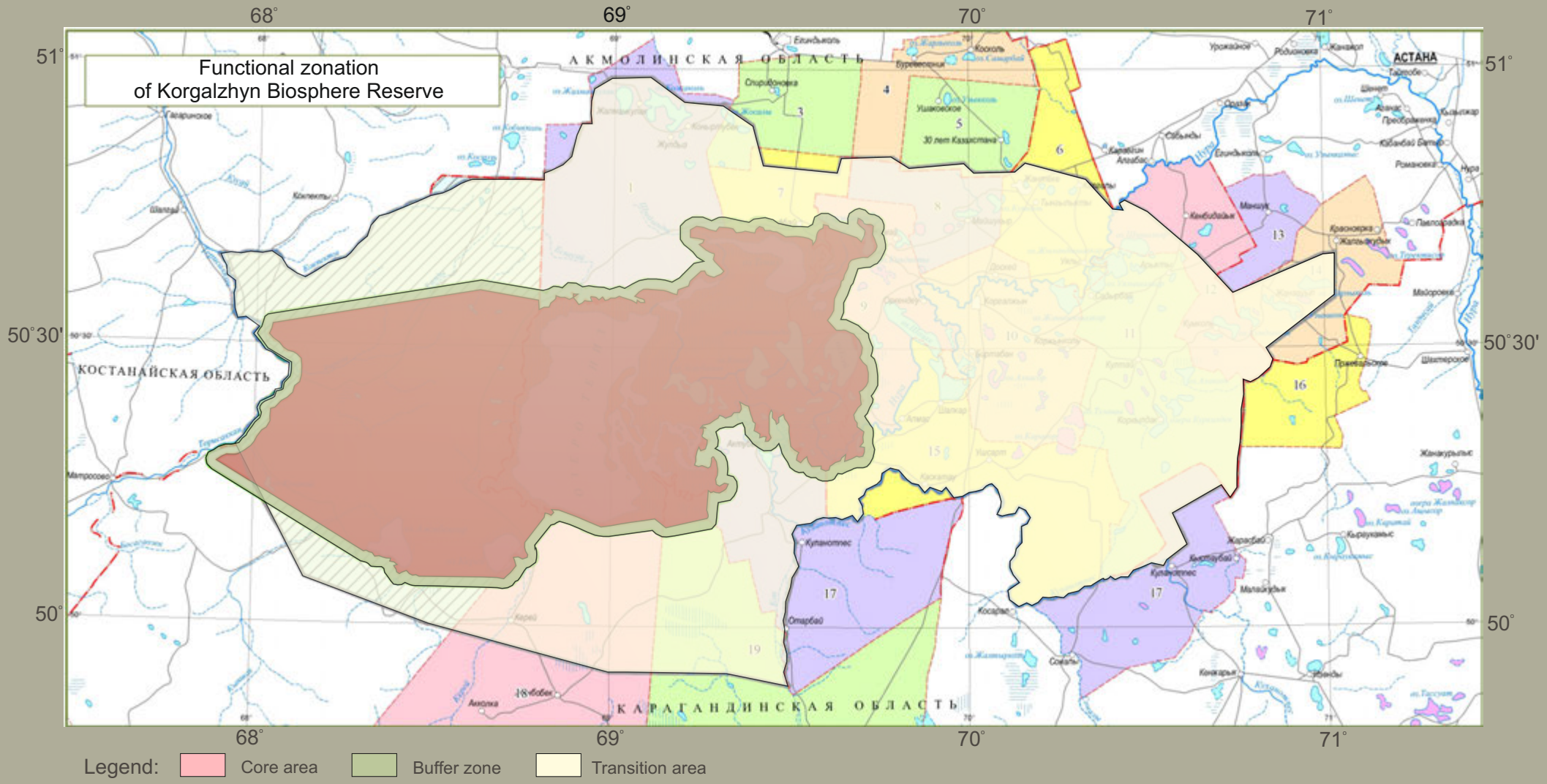
Date: 25.08.2011

PART II : DESCRIPTION

6 Location
(Latitude and Longitude)

Latitude
50º 05' N

Longitude
69º 12' E



North limit - 50º 59′N

South limit - 49º 54′N

West limit - 67º 53′E

East limit - 71º 01′E

7 Area

7.1 Size of terrestrial Core Area

543 171 ha

7.2 Size of terrestrial Buffer Zone

90 000 ha

7.3 Size of terrestrial Transition Area

970 000 ha

7.4 Brief rationale of this zonation

Kazakhstan land legislation defines zoning of territories as identification of the lands and their purpose and usage regime. Purpose of the territory is the main (primary) activity type, which the territory is dedicated for. Functional zones' identification in Korgalzhyn Biosphere Reserve was conducted with goal of conservation of unique natural types of dry steppe and intrazonal ecosystems of central part of Eurasian steppe zone, as well as with the goal of decrease of negative anthropogenic influence on nature condition with provision of conditions for stable social-economic development of the territory without infringement of the rights and freedoms of local people.

The factors taken into consideration during zoning were, first of all, modern condition and importance of natural components of the territory (water, soils, flora, fauna, ecosystems, etc.), and, second of all, modern and potential land usage for social-economic development of the territory (economic activities of local people, recreational use of the land, etc.). In order to study these topics a field biologic-geographic and social-economic research was carried out in 2004-2010. Besides, the information on economic activity of local people was obtained from the governmental agency on land development, including soil, geobotanical maps and maps of land usage.

In the result of this work 3 functional zones were identified for Korgalzhyn Biosphere Reserve, including 5 subzones in transition area:

1. Reserve's core zone. This territory includes the zone of nature reserve's regime of Korgalzhyn State Nature Reserve, which prohibits any economic activity and provides strict protection regime.

2. Buffer zone. This is a stripe of land (2 km), which embraces the territory of reserve's core zone. According to Kazakhstan's legislation, this territory is protected zone of Korgalzhyn State Nature Reserve and is designed for the protection of Nature Reserve's core from unfavourable external influence. The territory of buffer zone of Biosphere Reserve permits only activities of ecological education, recreation, ecotourism, and scientific research. Any limited economic activity in some areas of buffer zone (haymaking, cattle pasture) is carried out only by agreement with governmental authority (Forestry and Hunting Committee) and under the control of administration of Korgalzhyn State Nature Reserve.

3. Transition area (zone of regulated land use). Transition area represents lands settled and developed a long time ago for hayfields, fallow lands, pastures, numerous wetlands and villages. Depending on functional purpose this zone is subdivided into 5 subzones:

- - subzone of ecologically safe land management and traditional cattle breeding;
- - subzone of restoration of pasture ecosystem and mobile cattle breeding;
- - subzone of distant-nomadic cattle breeding;
- - subzone of hunting;
- - subzone of fishing.

8 Biogeographical region

Korgalzhyn Biosphere Reserve is situated in central part of Eurasian steppe zone in the limits of Aral-Irtysh water divide – the largest undrained area of the world covering the internal space of Asia. According to the scheme of landscape regioning the territory of Biosphere Reserve is located in the limits of Tengiz province of Central-Kazakhstan physical-geographical country. According to botanic-geographical division Biosphere Reserve is situated in Europe-Asian steppe district, Zavolzhsko-Kazakhstan province, Central-Kazakhstan steppe subprovince, Northern and Eastern parts of the territory are in Priishimskaya, and Southern – in Western-melkosopochnik area. The territory represents characteristic Kazakhstan plains with unique steppe lakes.

9 Land use history

Human activity in nature reserve's area began in Paleolith more than 100,000 years ago. Neanderthals (Mousterian culture) practiced hunting, fishing, and gathering of plant food. Cattle breeging and primitive agriculture began here in Neolith about 8,000-3,000 years BC. In Bronze Age in late II – early I millennium BC the tribes inhabiting steppe Kazakhstan create original Andronovo culture. Under the influence of climate change to aridness nomadic herding appears at the huge territories. During the 1st millennium BC and first half of 1st millennium AD Kazakhstan steppes are intruded by Issedonians – nomading Saks-Usuns tribes, who brought pasture extensive cattle breeding here for a long time.

In the first half of 19th century Northern Kokchetav Kyrgyzs and Southern Kyrgyzs from far Syr-Darya shores visited summer pastures. Tengiz steppes began to be intensively inhabited only from the middle of 19th century. Tribal villages of Argyns, Kipchaks and Naimans stayed on the shores of fresh lakes for the winter. Local lands are not suitable for cultivation, and nevertheless local tribes used agriculture with irrigation ditches taken from Karakalpaks and Tashkents; this agriculture type was then forgotten. Nomads' settlement in combination with mass migration of Central Russian peasants in the end of 19th century and new forms of economic activities had a great influence on the landscape and animal world. Separate peasant farms of only Northern region's part practiced agriculture on the territory of proposed Biosphere Reserve. In 1928 only 6,349 ha of land were used for sowing.

In 20th century anthropogenic influence on the nature not only increased, but began to have a negative character. From 1928 peasants started uniting in collective farms (kolkhoz), the first of which was organized in Zhanteke village. In 1930s region's area used for plantation was already 22,908 ha. During the time of virgin land development in Kazakhstan (1954-1959) a global destruction of steppes had occurred. In 1956 plantation area was 315,100 ha. Intensive ploughing was accompanied by population growth, arable areas and cattle number increase. Steppes were dissected by hundreds of roads, lakes turned to areas of hunting, reed collection, etc. But these processes almost did not touch the territory of Korgalzhyn State Nature Reserve - the main zone of Biosphere Reserve. There were no settlements Western of Tengiz lake, excluding winter villages of local people. This allowed saving original conditions of wild nature in a quite spacious territory.

10 Human population

10.1 Core area

About 10-30 nature protectionists seasonally (staff of Reserve)

10.2 Buffer zone

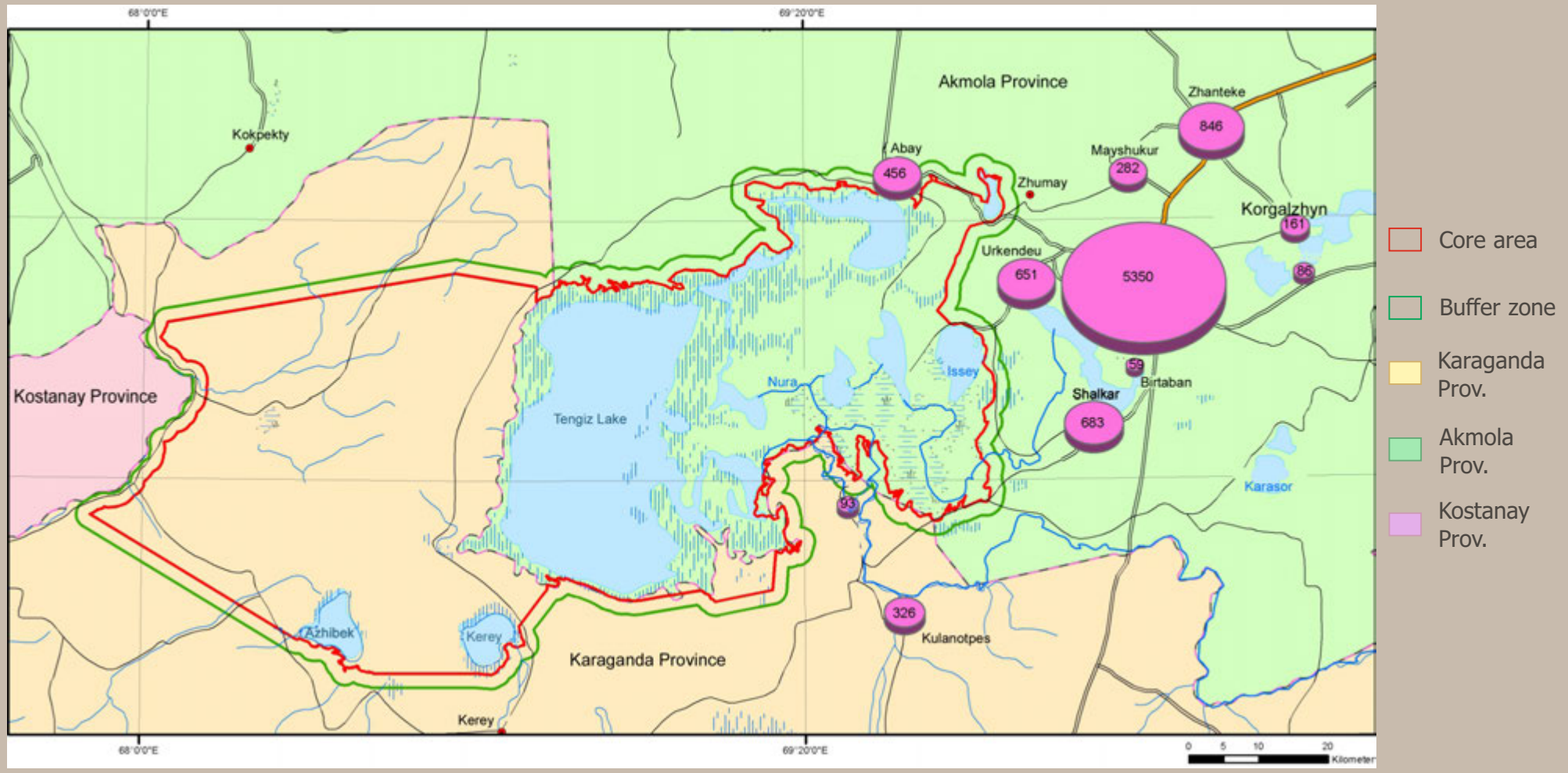
About 500 people permanently in Abay and Nygman villages

10.3 Transition area

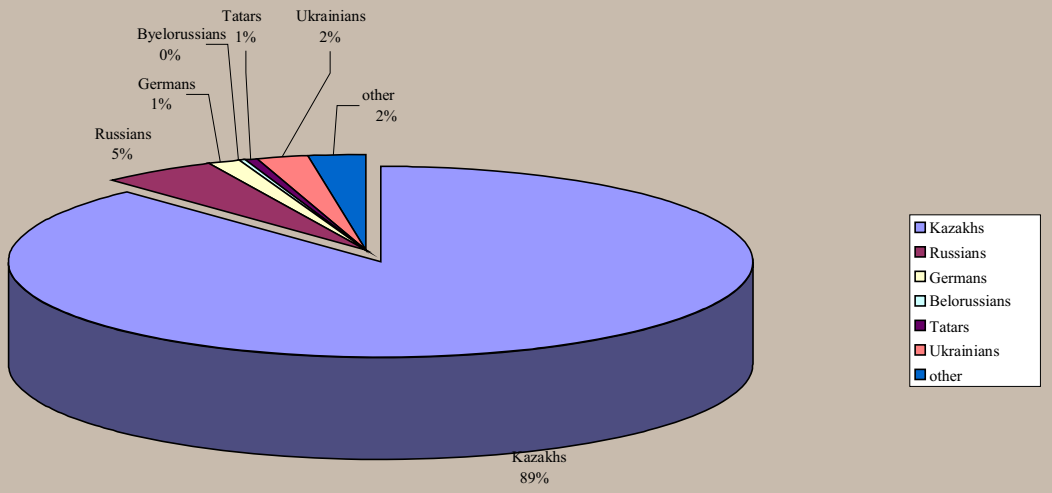
About 12 000 people permanently

10.4 Brief description of local communities

Korgalzhyn Biosphere Reserve is situated on the territory of three administrative regions: Korgalzhyn of Akmola district, Egindykol of Akmola district and Nura of Karaganda district. According to the data of 2009, the largest population is in Korgalzhyn village – 3,886 peope, Arykty village – 1,120 people, Sabyndy village – 1,100 people. Population density is approximately 1.2 people in 1 square kilometer.



According to ethnic composition the majority of the people inhabiting Biosphere Reserve's territory is of indigenous ethnos, other nations are less represented: Kazakhs – 89%, Russians – 5%, Ukranians – 2%, Tatars and Germans – 1% each, others – 2% . Number of women is higher than men: there are 6,719 women and 5,992 men. The main part of the citizens is people from 16 to 57 (women) and from 16 to 62 (men). This age forms working-age population.



Population's migration is the same everywhere. In all settlements net migration is negative: from 0 to -200 of emigrants for 1000 people in one year. The highest indices are registered in Kenbidaik and Amangeldy rural districts.

The leading role in local economy belongs to agricultural production. Total area of agricultural land is 543,967 ha. The main part of these lands is occupied by arable lands (47.68%), and pastures (49.39%), relatively small percent is given to hayfields (2.94%). The main direction of cultivation is cereal production, up to 97% of all plantation area is given to it. In some rural districts arable lands prevail over pastures: in Amangeldy rural district arable lands occupy 21,786 ha, pastures – 38,418 ha, in Kyzylsay – arable lands occupy 27,277 ha and pastures – 17,076 ha, in Kenbidaik – arable lands occupy 27,188 ha, pastures – 7,376 ha, and in Zhalmankulak – arable lands occupy 41,328 ha, and pastures – 30,969 ha.

Livestock and its productivity increase are observed on the territory of Biosphere Reserve. According to data of 2010, in all farm categories more than 14,000 cattle, about 12,000 sheep and goats, about 6,000 horses, 1,200 pigs and more than 27,000 birds are present.

10.5 Name of nearest major town

Astana – capital of the Republic of Kazakhstan (120 km from Korgalzhyn village, 60 km from North-Eastern border of Biosphere Reserve).

10.6 Cultural significance

In archaeologic relation this territory is not deeply researched. Nevertheless, numerous burial places (ancient mausoleums, mounds, mazars) are found here. Among those a special historical popularity belongs to Botogay (Bytygay) mausoleum (X-XII centuries), as well as Kanykey (XVI-XVII centuries), Aliptomara (XIX century), Bespakyr (XIX century) mazars. Each of these religious constructions obviously has its own history, its legend.

There are also known sites of Neolitic – “Abai-1” and “Abai-2” – located on the right shore of Nura river at Doskey village of Korgalzhyn region (researched by Petropavlovskaya archaeologic expedition). Besides these, there are other sites of Neolitic: “Kurgaldzhino-1”, “Kurgaldzhino-2”, “Kurgaldzhino-3”, “Kurgaldzhino-4”, “Kurgaldzhino-5”, situated on the left shore of Nura river at Korgalzhyn regional center (researched by Petropavlovskaya archaeologic expedition).

In 1955 Akmola archaeologic expedition under the guidance of K.A.Akishev studied mounds on the Southern shore of Uyalyshalkar and Zhanybekshalkar lakes and stretching for 3 km from Sadyrbay village. An interesting archaeologic finding is an ancient irrigational system, which is located at the mouth of Nura river South-Eastern from Korgalzhyn lake. It was researched by Central-Kazakhstan archaeologic expedition under the guidance of A.Kh.Margulan in 1947.

11 Physical Characteristics

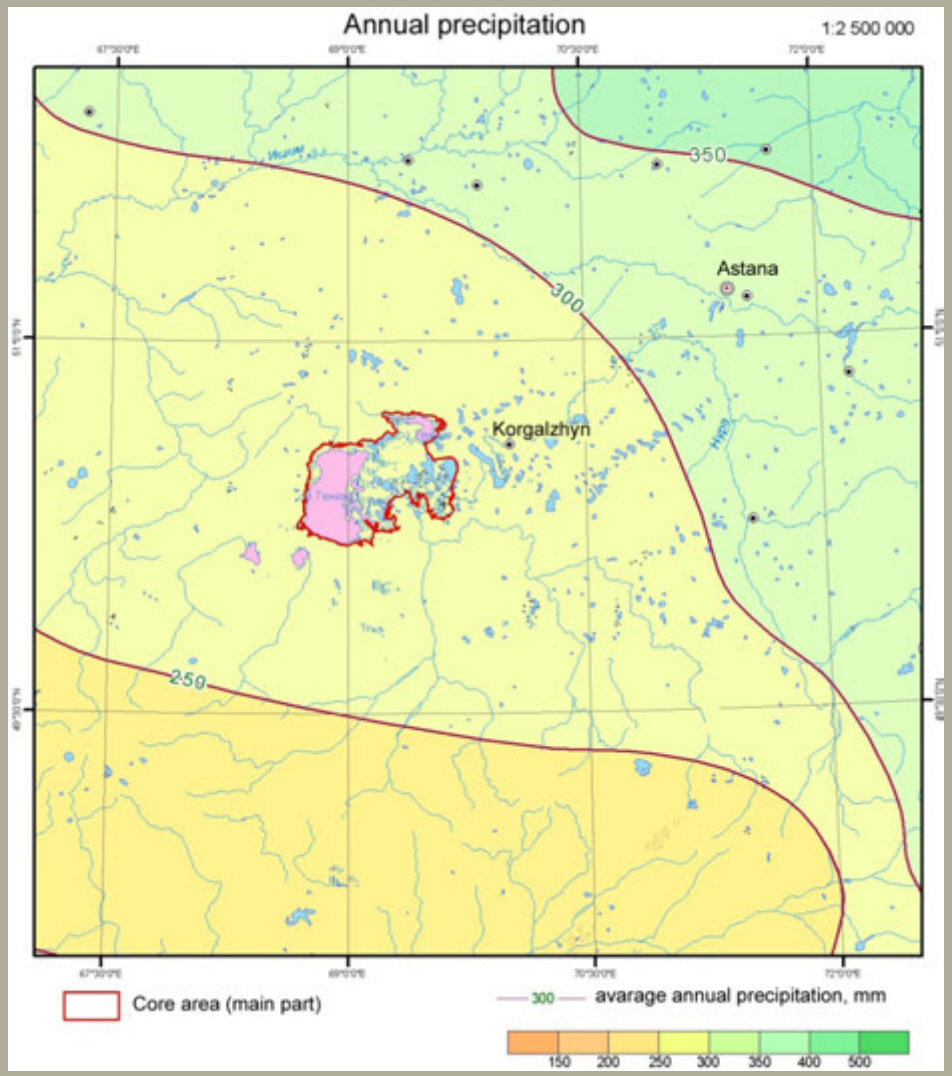
11.1 General description of site characteristics and topography

Eastern part of the territory is located in Nura and Kulanutpes river basins. Besides Nura lake system (Uyalyshalkar, Shalkar-Birtaban, Korgalzhyn lake systems), Zhumai-Maishukur and Zharlykol-Karasor lake systems are also situated on this territory in ancient drainage gullies. In central part of Biosphere Reserve there is a huge saline lake – Tengiz, and in South – large Kypshak and Kirey saline lakes. Several isolated fresh lakes are located in North part of the territory. There are large areas of virgin steppe Western from Tengiz lake in plains and melkosopochnik.

In whole, Biosphere Reserve's territory is situated in dry steppes zone and is occupied by diverse terrestrial and aquatic ecosystems. The territory is characterized by elevated plains, interhill plains, petrophyte melkosopochnik steppes, lake depressions and low plains, and flat and wavy lake-alluvial plains. Central territory of Tengiz-Korgalzhyn large lake depressions and low plains is occupied by saline meadows, solonchak, solonetz and vast wetlands.

11.2.1 Highest elevation above sea level: 427 metres

11.2.2 Lowest elevation above sea level: 285 metres



11.3 Climate

The change of hydrothermal regime, annual precipitation decrease and positive air temperature increase is observed at the territory of Biosphere Reserve from North to South. Climate is extremely continental, caused by inter-continental location of the region. Hot dry summer is changed by cold winter with relatively small amount of snow. The climate is characterized by aridity and harsh fluctuations of annual, monthly and daily air temperatures; droughts, dust storms, hot dry winds are registered in summer, and snow storms and blizzards – in winter.

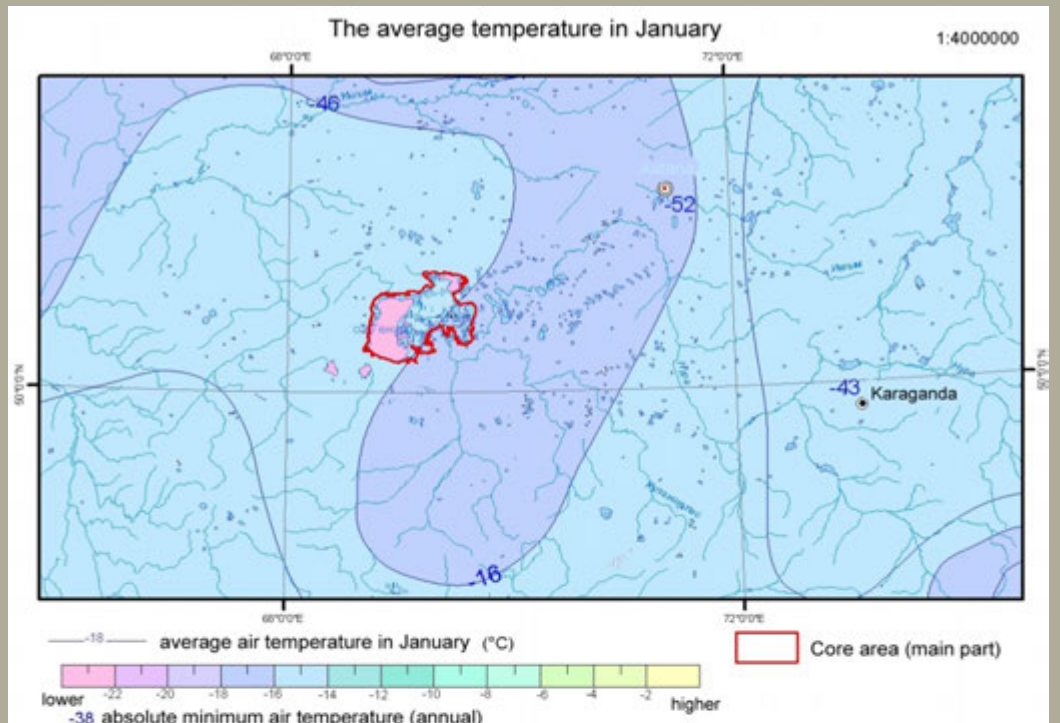
Total annual radiation is 100-120 kcal/cm^2, and radiational balance – 40-50 kcal/cm^2. Sum of annual positive temperatures above 10º varies from 2300º-2400º in North to 2500º-2600º in South. Absolute temperature minimum reaches -45º C, and maximum - + 41,5ºC.

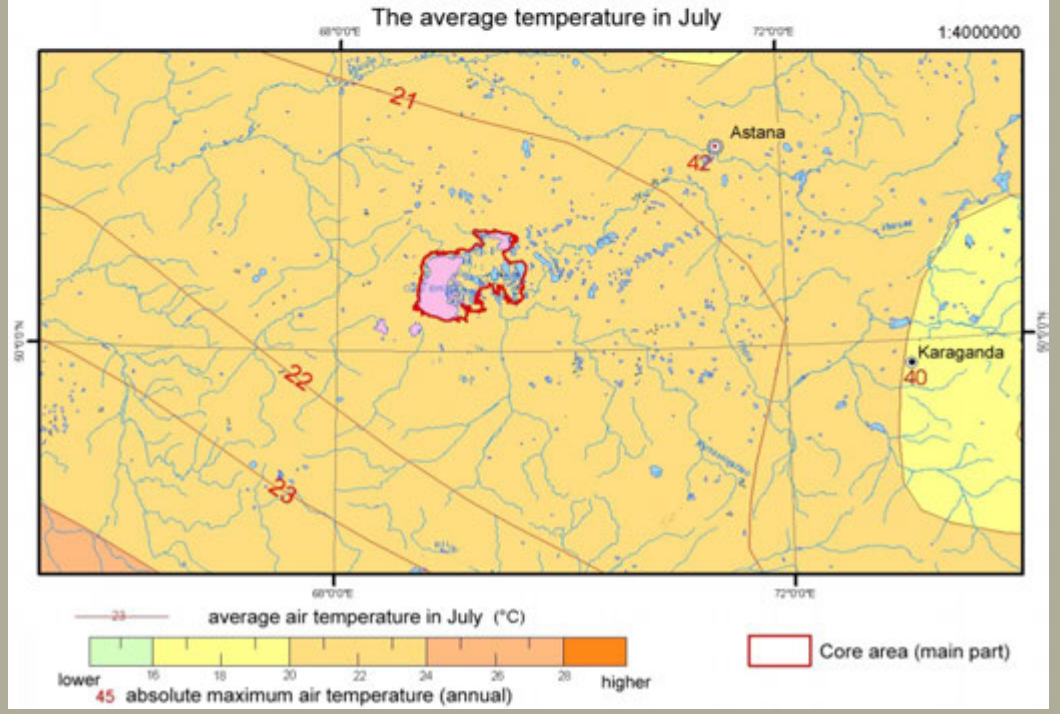
Winter is long and often with little snow. Duration of the period with stable snow cover is 140-150 days. Average height of snow cover is 20-25 cm. Distribution on the surface is not even. Snow concentrated in relief depressions, and elevated areas are

usually slightly covered by snow. Soil is freezed on the depth of 1 m. Spring is short (1-1.5 months), but there may be late frosts.

Summer is moderately hot, although there may be surface frosts even in June. In case of high temperatures and low relative air humidity there are droughts, their number is 30-40% according to many years of observations. Autumn is short and rainy with quick air temperature decrease and early frost.

Climate aridity is intensified by strong and frequent winds. Prevailing wind directions are South-Western and Western – they form 30% of the total number. Winds of these directions are the fastest – up to 30 m/s; they are usual in spring and autumn.





11.3.1 Average temperature of the warmest month: +20.9 °C

11.3.2 Average temperature of the coldest month: -17.0 °C

11.3.3 Mean annual precipitation: 250-290 mm, recorded at an elevation of 380 metres

Annual precipitation quantity in North in moderately dry steppes is 290-250 mm, and in South in desertified steppes is less than 200 mm. Maximal quantity of precipitations is observed in summer in form of showers and strong rains. Precipitations are not even, there may be dry years and years with relatively high humidity.

11.3.4 Meteorological stations and when climatic data have been recorded:

a) **manually**: Korgalzhyn Village, from 1965 till 2009

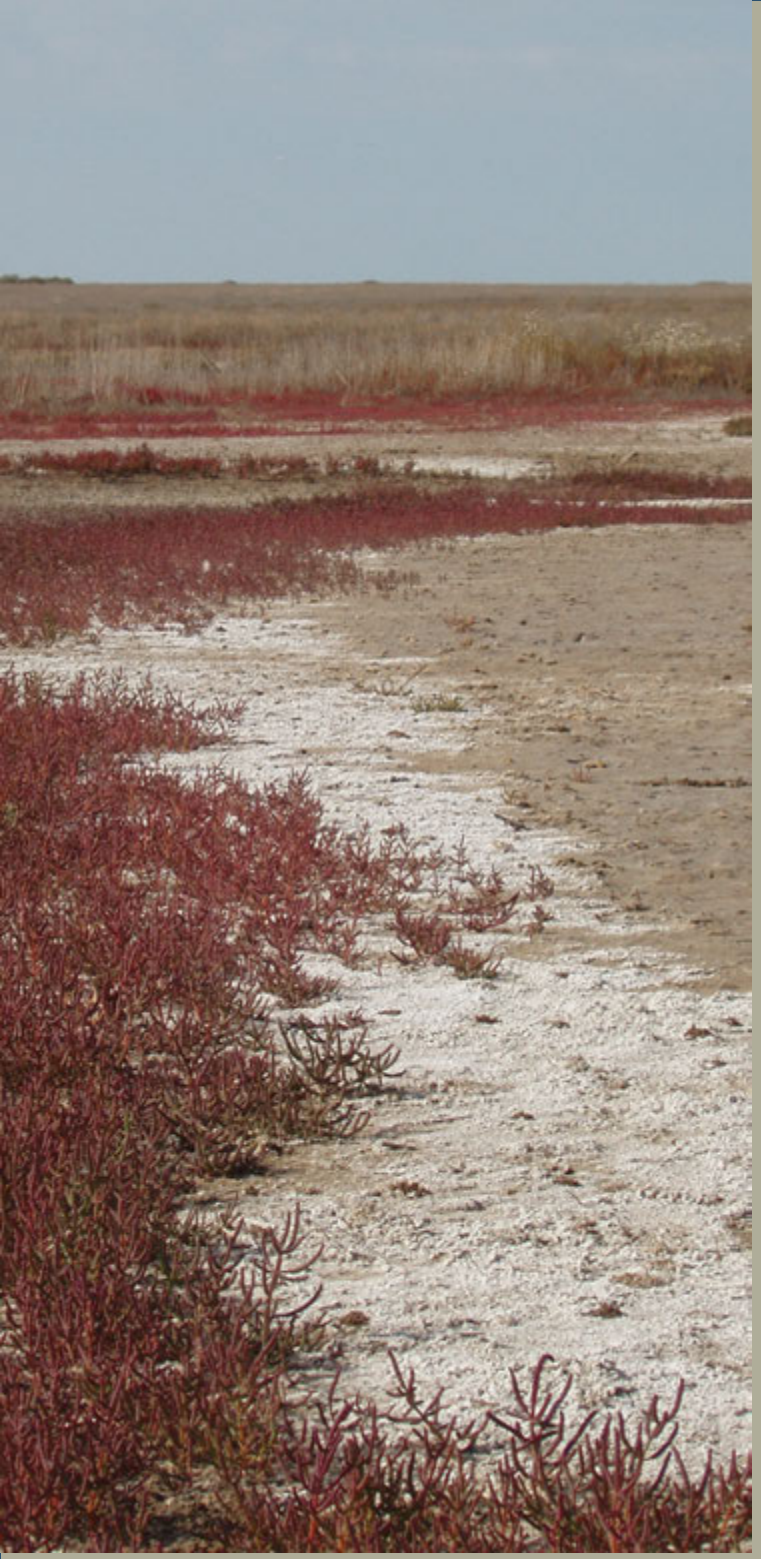
b) **automatically**: Karazhar inspection post, since 2009 and Korgalzhyn Village, since 2009

c) **Name and location of stations**:

Zhanbek Village, from 1955 till 1965,

Korgalzhyn, in Korgalzhyn Village, from 1965 till 2009 manually, since 2009 automatically

Karazhar, in inspection post near the coast of Karazhar Lake, since 2008 automatically

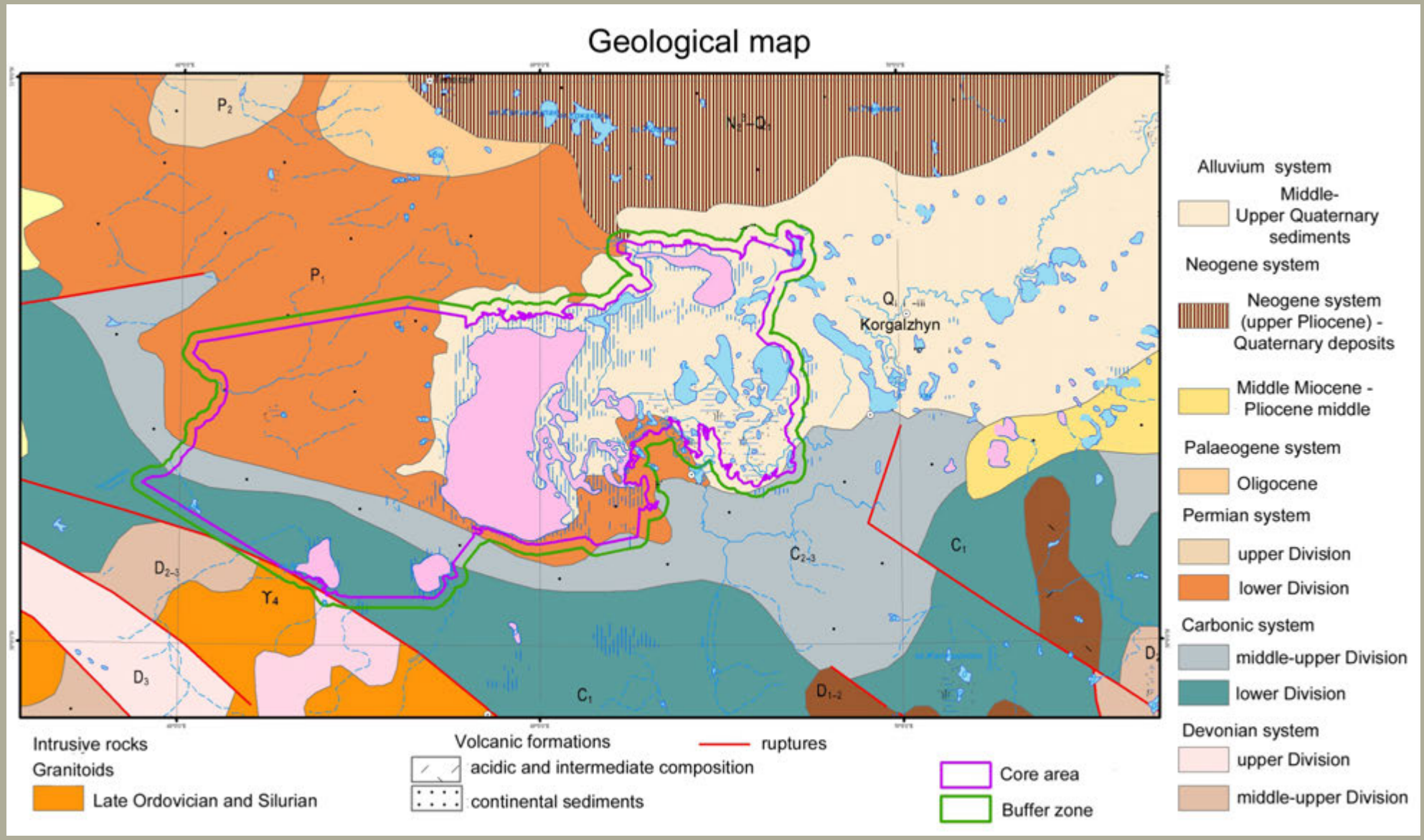


11.4 Geology, geomorphology, soils

Geology. The territory is situated in the Southern part of Tengiz depression, which is in the limits of Western edge of Kazakh folded country. Geologic history of the given territory may be presented as follows. Ancient stage of folding – Caledonian – finished in middle Silurian, and the last – Variscian – in late Palaeozoic. Starting from before Palaeozoic, considerable part of Kazakhstan's territory was covered by sea with big amount of islands of mostly volcanic origin. All this period is characterized by intensive volcanic activity and accumulating deposits of volcanic origin. Meso-Cainozoic platform stage is characterized by arc movements of Palaeozoic base, which covered large territories and were accompanied by fractures.

Palaeozoic deposits are very widely distributed on all the territory of the site, because the main processes of surface forming happened at this period, and its structural tectonic peculiarities and geologic structure were formed; their further changes were not considerable. Homogenous sea level was the same till middle Palaeozoic, but from the middle of Palaeozoic the sea started rapidly becoming shallow, and island area increased; largest islands were located in Yermentau mountains area and in Tengiz lake region, where Tengiz-Sarysu plate were formed. In the future earth area increased due to territory's elevation. All these elevations were accompanied by intensive volcanic activity, which gradually finishes to middle Devonian. This period is characterized by decrease of the territory, sea is increased again, and Tengiz depression yield is formed. In Carbonian sea starts decreasing again, resulting in wide lowlands creation in low Carbonian with favourable conditions for coal accumulation. In higher Palaeozoic region's territory is almost completely free from the sea, and continental deposits start accumulating. In the end of Palaeozoic volcanic activity is weakened and the territory is considerably dried, resulting in favourable conditions for continental weathering with main role of

physical decay in the conditionsof dry and hot climate. All of the above promoted territory's flattening. Palaeozoic weathering crust is formed at that time. Palaeozoic deposits of the territory are mainly consisted of marine sedimentary deposits (limestone, marl, clay slate).



During all *Mesozoic* there are continental conditions. The territory at that time represented typical peneplain, which is conserved to the present time with not considerable levelling. To higher Mesozoic and lower Cainozois the weathering crust is considerably broken and changed. Especially intensive rupture was registered in the beginning of tertial time, when during Kazakh craton arc elevation the ancient weathering crust is broken and thin sand-clay redeposited products (quartz sands, kaolin clays with lenses of sandy leguminous ironstone and multi-colored clay). At this time continental sediments are accumulated and only in some parts marine facies (Palaeogene clays of tertial period) are widely developed at the edges of bottom plains.

Tertial deposits are represented by marine and continental facies. Hypsiferous clays are the most distributed deposits of the tertial time, they are layered with sands, conglomerates, dolomites and dolomitized marls. The most powerful tertial deposits are also recorded in Tengiz depression, where they are represented by different clays, sands and pebbles. Gray and brown clays are widely spread.

Quarternary deposits are very spread on the territory. This is mostly covering loams, in some places characterized by big power (15-25 m) and high carbonaceousness (Northern and South-Eastern areas). Quarternary deposits are not very powerful at the most part of the territory. By their origin they are deluvial-proluvial, alluvial and form water-divide spaces, hills' trails, river and lake terraces, river flood-lands.

In geological profiles of Tengiz depression there are several structural stages. The base of rock foundation is formed by *pre-Palaeozoic and low-Palaeozoic* structural stages –sandstone, dolomite and limestone conglomerates outcrops. *Cainozoic* structural stage is characterized by domination of lake-alluvial layers of Neogene and early Pleistocene. They are topped by quarternary leoss-like loam covers. Neogene – early Pleistocene accumulative level is prevailing in the relief. It is formed by ancient lake and lake-alluvial deposits.

Relief. The territory occupies Tengiz depression and surrounding plains, plateau and melkosopochnik. There are several different morphogenetic relief types presented at the territory.

Melkosopochnik prevails in Western, Southern and South-Eastern parts of the territory. They are formed by Palaeozoic rock (sandstone, slate, limestone, marl) and quarternary eluvial-deluvial formations. According to relief forms there are hilly, ridgy melkosopochnik. Melkosopochniks are alternated with spacious *interhill deluvial-proluvial and proluvial-deluvial plains.* They are mounting plains underlaid by dense rocks and covered by carbonate clays and loess-loamy cover.

One of characteristic relief elements in Northern and South-Eastern part of the territory is *plateau and elevated plains.* They are formed by deluvial-proluvial, homogenous yellow-brown carbonate clays and hard loams, covered by quarternary loess-like loams. Sloped plains (plateau slopes) are characterized by close clay underlaying and low power coat of quarternary loams.

Lake-alluvial, flat and wavy plains prevail in vast spaces in Eastern part of the territory. They are formed by deposits of different mechanic composition (sandy loams, loams, clays). Stretched ridges are spread among wavy plains; they represent ancient dunes formed mostly by sandy loams. Lake-alluvial plains occupy all water-divide space between two ancient drainage gullies of Nura river. Gullies are directed from South-West to North-East and are formed by lake-alluvial, sand-clay deposits. In the limits of ancient gullies there are numerous saline, saltish and fresh lakes. The region is drained by low stream of Nura river, flowing in Northern wide and flat gully with numerous lakes of different mineralization.

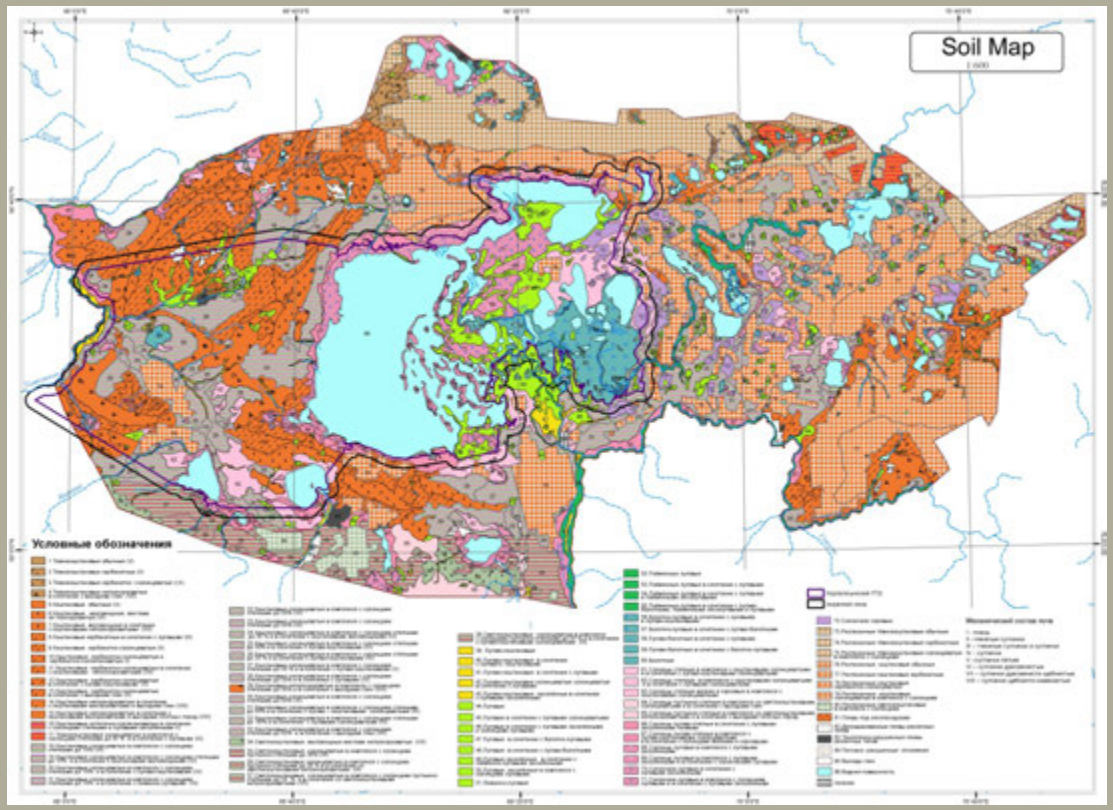
Large lakes (Korgalzhyn, Tengiz) are surrounded by accumulative lake terraces. Modern lake deposits form first and second terraces of Tengiz lake, beach ridges and lake bottoms.

Alluvial river plains with terraces complex are definite at Nura, Terisakkan, Kypshak, Kirey and Kulanotpes rivers. There are two types of flood-land morpho-structures. One of them is formed at narrow valley parts, where flood-land terrace elevates above low-water's edge for 3-4 m, another is formed at valley widening sites with flood-land of not higher than 1.5-2 m. Low flood-lands are characteristic for Nura river lower reaches.

Soils. The territory is situated in dry steppes zone. From North to South zonal automorphous dark-chestnut, chestnut and light-chestnut soils change each other. The largest areas are occupied by chestnut soils. Automorphous soils occupy dominating part of the territory and are formed in heterogenous relief conditions (plains, plateau and melkosopochnik). Along with differences in orography the territory is also different in diversity of soil-forming and underlying rocks, which defines morphological and physic-chemical properties of automorphous soils' genus subdivision.

Dark chestnut soils occupy Northernmost positions on the territory. Among them the most prevailing soil genera are carbonate and carbonate-solonetz. They occupy high plains and plateau, formed by heavy loess-like loams. Inconsiderable place is usually occupied by common (normal) soil genera, formed on lightly loamy and sandy loamy deposits. In the present time they are almost completely used (for hayfields and fallow lands).

Chestnut soils are most widely distributed in the limits of the territory. Chestnut solonetz soils have the most wide distribution. They are formed in low flat and ridgy plains, and in interhill plains. Carbonate and carbonate-solonetzic chestnut soils are registered in large massifs in North, North-West and West of the territory. Massifs of these soils are formed in high plains and plateau, formed by loess-like, heavy loams. These soils are almost completely used (for hayfields and fallow lands). Chestnut underdeveloped and not completely developed soils are formed in melkosopochnik, formed by rocks of different petrographic composition and are spread mainly in the Western part of the territory.



Light-chestnut soils are spread in the limits of desert-steppe subzone, which stretches in South-Western part of the territory in form of not wide stripe.

Central part of Project's territory is occupied by Tengiz-Korgalzhyn lake depression. Intrazonal, mainly semi-hydromorphous and hydromorphous soils formed in the condition of additional humidification, are mostly spread in its limits. These soils are represented mainly by meadow-chestnut and meadow soils, formed in depressions due to additional surface or ground humidification.

12 Biological characteristics

12.1 First type of habitat: Distribution:

Aquatic ecosystem of salt lakes
Regional

12.1.1 Characteristic species

From higher plants only *Ruppia martina* grows at shallow waters; its seeds are very important as birds' food. A big role in birds' food is played by numerous seeds of near-water plants, brought to Tengiz lake by rivers. Islands and coasts are characterized by annual-saltwort and halophyte-subshrub vegetation (*Salicornia europaea*, *Suaeda acominata*, *Halocnemum strobilaceum*).

Zooplankton is extremely important, especially *Artemia salina* – the main food of Flamingo. Zoobenthos contains Diptera larvae and pupae: armed fly, hoverfly, shore flies, chironomid larvae, mollusca, etc. Poor zooplankton and zoobenthos composition is explained by high water salinity.

Birds, inhabiting saline lake islands, include Flamingo (*Phoenicopterus roseus*), Pallas's Gull (*Larus ichthyaetus*) – species listed in the Red Data Book. Many waterbirds nest, feed and molt on saline lakes. Those are Gulls: Herring Gull (*Larus argentatus*) and Slender-billed Gull (*L. genei*). Waders are numerous, including Avocet (*Recurvirostra avocetta*), Kentish Plover (*Charadrius alexandrinus*) and Little Ringed Plover (*Charadrius dubius*), etc. Ducks - Red-crested Pochard (*Netta rufina*), Ruddy Shelduck (*Tadorna ferruginea*), Common Shelduck (*Tadorna tadorna*) – feed and rest on the open water surface.

12.1.2 Important natural processes

There are cyclic natural fluctuations of water reservoirs level. According to A.V.Shnitnikov (1950), the full cycle takes 30-50 years. During high water cycle the level in Tengiz reaches up to 6 m (1993-1995) and higher. In low water years the level of Tengiz lake was 2.5 m in 1934, and only 1.25 m in 1982. Many years of water increase and decrease cycles lead to cyclic salinity change, and result in cyclicity of waterbirds: during the years with suitable salinity a good food base (different crustaceans and water insects) is developed attracting huge aggregations of birds. So, in late 1970-80s observers of Tengiz lake counted up to 30,000-50,000 Flamingo, up to 250,000-400,000 Shelducks, hundreds of thousand of waders.

12.1.3 Main human impacts

Hydrologic regime of Tengiz lake depends on Kulanutpes and Nura river drainage. A danger for biotope may be caused by breaking of nature reserve's retaining dams, leading to Tengiz lake water level increase and desalination. In this case egg layings are flooded, and desalination breaks trophic connections and decreases quantitative composition of zooplankton. On the other hand, in dry years the lake may become shallow, leading to fodder base change for waterbirds.

12.1.4 Relevant management practices

Nature reserve regime

12.2 First type of habitat: Aquatic ecosystem in freshwater and brackish lakes

Distribution: Regional

12.2.1 Characteristic species

Higher vegetation is represented by reed (*Phragmites australis*) and reed – motley-grass, macereed (*Typha angustifolia*) and cane (*Scirpus lacustris*) associations, sometimes with bladderwort (*Utricularia vulgaris*), underwater meadows – with pondweed (*Potamogeton crispus*, *P. pectinatum*).

Zooplakton: rotifers, crustaceans, insect larvae. Most numerous insects, characteristic for fresh water reservoirs, are flies, especially from Dolichopodidae family. Mosquitos (Culicidae), horseflies (Tabanidae), dragonflies (Odonata), dance flies (Empididae), bugs (Gerridae, Notonectidae).

Ichthyofauna is represented by 14 species: Northern Pike (*Esox lucius*), Goldfish and Crucian Carp (*Carrasius auratus*, *C. carrasius*), Common Roach (*Rutilus rutilus*), Ide (*Leuciscus idus*), etc. There are only two species of amphibians: Moor Frog (*Rana arvalis*) and European Green Toad (*Bufo viridis*).

In summer fresh lakes are places for nesting, feeding, rest and molt of Geese and Ducks. In spring and autumn many waterbirds rest and feed here during migration. Nesting species include such birds as Mute Swan (*Cygnus olor*), Whooper Swan (*Cygnus cygnus*), Greylag Goose (*Anser anser*), Eurasian Coot (*Fulica atra*), Grey Heron (*Ardea cinerea*), Great Egret (*Egretta alba*), Dalmatian Pelican (*Pelecanus crispus*), etc. Ducks are numerous: Mallard (*Anas platyrhynchos*), Northern Shoveller (*A. clypeata*), Red-crested Pochard (*Netta rufina*), White-headed Duck (*Oxyura leucocephala*), etc. Waders: Common Stilt (*Himantopus himantopus*), Common Redshank (*Tringa totanus*). Terns: Common Tern (*Sterna hirundo*), Little Tern (*S. albifrons*). Gulls: Common Gull (*Larus canus*) and Black-headed Gull (*L. ridibundus*). Passerines (Passeriformes) are numerous in reed thickets. Predatory birds: Western Marsh-harrier (*Circus aeruginosus*).

Mammals include Muskrat (*Ondatra zibethicus*) and European Water Vole (*Arvicola terrestris*), in reeds one may record Wild Boar (*Sus scrofa*), European Badger (*Meles meles*), Red Fox (*Vulpes vulpes*), Grey Wolf (*Canis lupus*), etc.

12.2.2 Important natural processes

Reeds of the lakes often burn after thunderstorms, and these fires are especially dangerous in spring, because they harm wild animals, and first of all, their offspring. Population number of Muskrats, mice-like rodents, Foxes varies in wide limits as the result of bacterial diseases (tularemia, rabies, etc.). Waterbirds' death is observed from time to time. Snow storms and dust storms caused by winds with speed of up to 30 m/s, hailstorms, storms, harsh temperature decrease in spring, etc., have limited impact on natural objects.

12.2.3 Main human impacts

Not regulated water regime in water reservoirs. One of the most important anthropogenic factors. Nura river is the main water source for lake water system (Korgalzhyn, Uyaly and Birtaban-Shalkar lake systems). Due to considerable fluctuations of water level in the river, and resulting from regulating river bed and keeping water in reservoirs the lakes periodically overflow and dry out, negatively influencing the condition of the main waterbird habitats. In order to provide optimal water level at Korgalzhyn lake (core zone) artificial dams were created, but due to imperfections of their construction they break quite often (mainly in spring). This is the reason of catastrophic birds nests and other species' habitat flooding or, on the contrary, considerable wetland areas drying out.

Anthropogenic pollution of water reservoirs. In the present time there is an unfavourable situation in Nura river basin caused by river water pollution by heavy metals, oil products and other chemicals (particularly by waste waters of “Karbid” company in Temirtau city). Every year technogenic silts go down the stream from Temirtau city and spread by flooding waters for many kilometers. The research of mercury methyl presence in predatory fish tissues showed possible migration of those silts to fish habitats in Korgalzhyn lakes.

Fires. Fires at the transition zone of Biosphere Reserve occury periodically caused by hunters and fishermen's carelessness, and also because local people burn old grass.

Unsustainable use of biological resources. Village people sometimes practice poaching – fishing or, in less extent, hunting waterbirds.

Overfishing at fishing ponds. Besides fishing, carried out by local people, there is commercial fishing at all fish ponds (Uyaly and Birtaban-Shalkar lake systems). Overfishing is observed quite often. Instead of 2-3 fishing teams there may be 5-6 at one lake and fishing is often conducted without proper control. Besides, some water reservoirs are exploited continuously throughout the year (for example, Birtaban-Shalkar lakes). The same situation is true for Nura, Kulanutpes, Terisakkan rivers, which are often partitioned by fishing nets. To the present date only Nature Reserve's lakes are rich in fish, the rest of water reservoirs lack fish resources.

12.2.4 Relevant management practices

Korgalzhyn lakes – nature reserve regime. Birtaban-Shalkar and Uyaly lakes – fishing reservoirs with commercial fishing.

12.3 First type of habitat: Dry steppes
Distribution: Regional

Represented by moderately dry steppes on dark-chestnut soils (Northern and North-Estern parts of Biosphere Reserve), dry steppes on chestnut soils (majority of the territory), desertified steppes on light-chestnut soils (not large Southern part of the territory).

12.3.1 Characteristic species

The vegetation is represented by xerophyte – motley-grass – *Festuca* – *Stipa* (*Stipa lessingiana*, *Festuca sulcata*, *Galatella tatarica*, *Tanacetum achillefolium*), *Psathyrostactachys* – *Festuca* – *Artemisia* (*Stipa capillata*, *Festuca sulcata*, *Artemisia marshalliana*) associations in combination with shrubs (*Spirea hypericifolia*). At desert-steppe areas – *Festuca* – *Stipa* – *Artemisia* (*Artemisia gracilescens*, *Stipa lessingiana*, *Festuca sulcata*), *Stipa lessingiana* – *Spirea hypericifolia* with shrubs (*Galatella tatarica*, *Spirea hypericifolia*) associations.

Insects are represented by ants (Formicidae), locusts (Acrididae), grasshoppers (Tettigoniidae), ticks (Ixodidae), beetles (Coleoptera); also there are spiders (Arachnoidae). Species composition of reptiles: Sand Lizard (*Lacerata agilis*), Steppe viper (*Vipera ursini*), Steppe Runner (*Eremias arguta*), Dione Ratsnake (*Elaphe dione*).

Birds are numerous, but most important species are those listed in the Red Data Book: Demoiselle Crane (*Anthropoides virgo*), Steppe Eagle (*Aquila nipalensis*), Great Bustard (*Otis tarda*), Little Bustard (*Tetrax tetrax*), Sociable Lapwing (*Vanellus gregarius*). Most vulnerable to human activity are Demoiselle Crane and Great Bustard. Sociable Lapwing may inhabit fallow lands and pastures, as well as virgin steppe. Among predatory birds the following species are recorded: Long-legged Buzzard (*Buteo rufinus*), Lesser Kestrel (*Falco naumanni*), Pallid Harrier (*Circus macrourus*), Steppe Eagle (*Aquila nipalensis*), etc. Larks are represented by endemic species: Black Lark (*Melanocorypha yeltoniensis*), White-winged Lark (*M. leucoptera*), etc. Steppe is inhabited by diving ducks - Ruddy Shelduck (*Tadorna ferruginea*), Common Shelduck (*T. tadorna*). Common Quail (*Coturnix coturnix*) and Eurasian Curlew (*Numenius arquata*) are common.

Mammals: Bobak Marmot (*Marmota bobac*), Saiga (*Saiga tatarica*), Grey Wolf (*Canis lupus*), Red Fox (*Vulpes vulpes*), Corsac Fox (*V. corsac*), Steppe Polecat (*Mustela eversmanni*), Least Weasel (*M. nivalis*), Stoat (*M. erminea*), Badger (*Meles meles*). Rodents: Djungarian hamster (*Phodopus sungorus*), Gray Dwarf Hamster (*Cricetulus migratorius*), Eversmann's Hamster (*Alloicricetulus everismanni*), Little Ground Squirrel (*Spermophilus pigmaeus*), Northern Mole Vole (*Ellobius talpinus*), jerboas (*Allactaga major*, *A. elater*), Common Vole (*Microtus arvalis*), etc. Lagomorphs: Mountain Hare (*Lepus timidus*) and European hare (*L. europaeus*), and also insectivores – Long-eared Hedgehog (*Erinaceus auritus*).

12.3.2 Important natural processes

Steppe fires caused by thunderstorms.

12.3.3 Main human impacts

Agricultural (land ploughing). During virgin and fallow land development (1954-1960) of Northern regions of Kazakhstan new agrotechnical methods and cultivation techniques adopted in other Republics were used (deep dumping soil ploughing, repeatedly treated fallow lands, early seeds plantation). Besides, soil-destructing equipment was used everywhere: disk hoeing plough, plows, seeding-machines. This resulted in negative ecological consequences: wind erosion, also facilitated by natural factors (open areas, frequent dry periods, increased wind activity, weak anti-erosion resistance of light soils, etc.). Soil degradation of arable lands also happen due to water erosion. Anthropogenic changes mentioned above are also characteristic for ploughed and fallow lands of the territory. Land ploughing means complete destruction of natural vegetation cover and takes place in Northern, Eastern and South-Eastern parts of the Project's territory. Part of the lands are not used for arable lands at present time and were transformed into fallow lands, where vegetation rehabilitation processes take place.

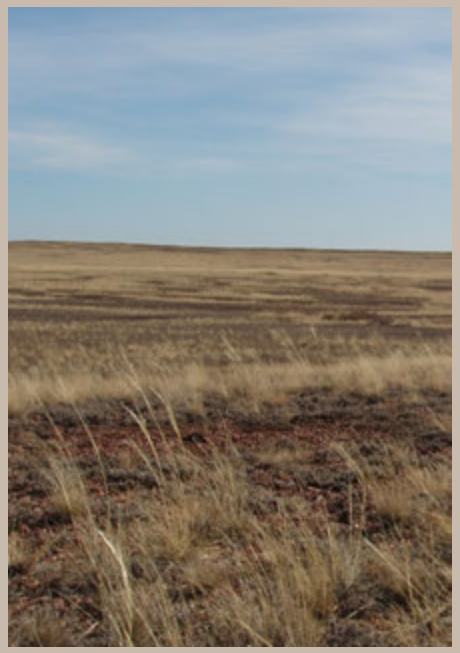
Cattle breeding (pasture influence on pasture lands). It is noteworthy that modern methods of distant pasture cattle breeding often lead to pasture overload in one area and underload of all pasture resources at the others. In Eastern part of the territory overpasture is observed. Overpasture and complete destruction of vegetation are observed around all settlements, and at cattle staying sites. Pastures in Eastern part are characterized by infestation, which is expressed in increased abundance of *Artemisia austriaca.*

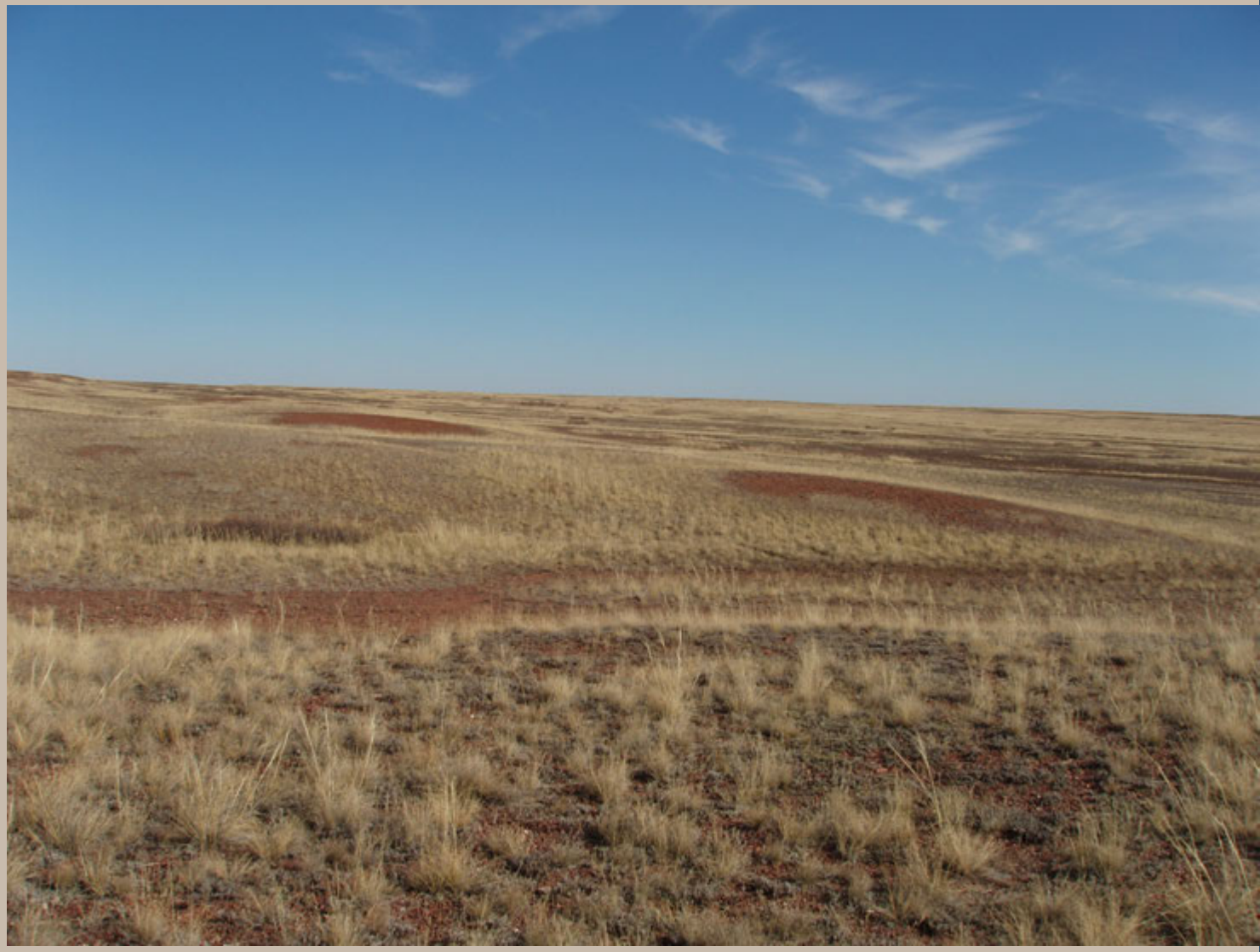
Fires have primary importance for steppe ecosystems. All steppes of Biosphere Reserve were influenced by fires. Some meadows, especially located far from settlements, were mowed before but are not used now. Old grass cover depresses plants and makes their species composition poor. Badly irrigated meadows become steppified and are overgrown with *Artemisia.* Those meadows are burnt out in order to clean them from dry grass and *Artemisia.*

Plants collection. There is a lot of valuable food, medicinal and ornamental plants, registered at the territory, but only some of them are collected by local people and tourists. Among ornamental plants most popular for collection include spring plants – both species of Tulips, Fritillary, Pasqueflower. Shrenk's Tulip (listed in the Red Data Book of Kazakhstan) is especially attractive and is almost absent around the settlements. Medicinal plants are not extensively used by local people due to traditions and poor knowledge of flora.

12.3.4 Relevant management practices

Steppe systems in core zone – nature reserve regime
Steppe systems in development zone – cultivation and cattle breeding.





13 Conservation function

13.1 Contribution to the conservation of landscape and ecosystem biodiversity

Most valuable and important habitats for rare and threatened animal species on the territory of proposed Reserve are reed thickets, shallow areas of lakes, meadows and shrub thickets along the rivers. These ecosystems are characterized by biggest species diversity and presence of many rare and endemic species. Very important for biodiversity conservation ecosystems of the given territory also include virgin steppes, among which there are steppe formation characteristic only for Kazakhstan region of Eurasia with original flora (*Stipa, Tulipa, Adonis*) and fauna (Saiga, Bobak Marmot, Sociable Lapwing, Black Lark, Little Bustard, Great Bustard). Melkosopochnik ecosystems (Western and South-Western parts of Biosphere territory) also play a big role in rare species conservation. Those are the territories of the main core (of Korgalzhyn Nature Reserve).

Outside the main core territory Zhumay-Maishukur lakes are important; they are aggregation sites of thousands of Sandpipers, and a colony of Black-headed Gulls, Slender-billed Gulls and other Gulls is situated there. These lakes are most important for conservation of White-headed Duck – rare species, population of which reaches up to 3,000 specimens in some years at these water reservoirs.

Uyalyshalkar, Birtaban-Shalkar, Zharlykol-Karasor lake systems are important in summer and autumn as resting site of Geese (from 50,000 to 100,000 birds), Cranes (up to 5,000), feeding site of Dalmatian Pelican (up to 1,200 specimens), Swans (up to 4,000).

13.2 Conservation of species biodiversity

Plants. Two species are listed in the Red Data Book of Kazakhstan: *Tulipa schrenkii* and *Tulipa patens*. These are ornamental plants with decreasing population number and they need regular control of population's condition. *Tulipa schrenkii* plays a great role as a reserve material of the selection fund. *Seseli eriocarpum* is endemic of Kazakh melkosopochnik, *Serratula dissecta* and *Serratula kirghisorum* are characteristic for Southern steppes of Central Kazakhstan, *Allium flavescens* is an ornamental species distributed only in Western part of Central Kazakhstan, and *Fritillaria meleagroides* is an ornamental species with decreasing population number. The list of rare species in need of protection also includes *Nymphaea candida, Nuphar lutea, Marsilea strigosa*, and also species endemic mainly for Central Kazakhstan - *Astragalus kasachstanicus*, *Zygophyllum subtrijugum, Brachanthemum kasakhorum*.

Insects. 1 species, listed in the Red Data Book of IUCN: Small Emperor Moth (*Saturnia pavonia* L). Four rare species are listed in the Red Data Book of Kazakhstan: *Anax imperator* Leach, *Bolivaria brachyptera* Pallas, *Scolia hirta* Schrenk and *Sago pedo* Pallas.

Reptilia. Steppe Viper (*Vipera ursinii)*, included in IUCN lists.

Birds. 41 species are listed in the Red Data Book of Kazakhstan and 26 in IUCN list. Up to 10% of Dalmatian Pelican (*Pelecanus crispus*) world population and 10-20% of White-headed Duck (*Oxiura leucocephala*) – species listed in IUCN Redlist and Red Data Book of Kazakhstan – concentrate at the lakes of Biosphere Reserve. Up to 50,000 Flamingos are registered at Tengiz lake – their Northernmost nesting site. This territory is habitat for rare steppe wader – Sociable Lapwing (*Vanellus gregarius*). Species listed in the Red Data Book of Kazakhstan are quite common: Eurasian Crane (*Grus grus*) in aggregations of up to 3,000 specimens and Demoiselle Crane (*Anthropoides virgo*) in aggregations of up to 5,000 birds. Little Bustard (*Tetrax tetrax*) may be recorded more often.

Mammals. Five mammal species are listed in the Redlist of IUCN: Saiga (*Saiga tatarica*), Bobak Marmot (*Marmota bobac*), Southern Birch Mouse (*Sicista subtilis*), Grey Dwarf Hamster (*Cricetulus migratorius*), Steppe Pika (*Ochotona pusilla*). Saiga conservation is of special importance. In 2002 this species was rated as «endangered to extinction» due to catastrophic population decrease, although in the last 3-4 years Central Kazakhstan population number continues increasing.

Species Red-List of animals of Korgalzhyn Biosphere Reserve

№	Latin name	English Common name	Russian Common Name	Red Data Book of Kazakhstan	IUCN Red List
			OSTEICHTHYES - FISHES		
1	*Cyprinus carpio*	Common Carp	карп (сазан)	-	DD
			REPTILIA - REPTILES		
2	*Vipera ursinii*	Meadow Viper (Orsnini's Viper)	степная гадюка	-	EN A1c+2c
			AVES - BIRDS		
3	*Phalacrocorax pygmeus*	Pygmy Cormorant	малый баклан	-	NT
4	*Pelecanus onocrotalus*	Great White Pelican	розовый пеликан	1	-
5	*Pelecanus crispus*	Dalmatian Pelican	кудрявый пеликан	2	VU A2c+3c
6	*Egretta garzetta*	Little Egret	малая белая цапля	3	-
7	*Ciconia nigra*	Black Stork	чёрный аист	3	-
8	*Plegadis falcinellus*	Glossy Ibis	каравайка	2	-
9	*Platalea leucorodia*	Eurasian Spoonbill	колпица	2	-
10	*Phoenicopterus ruber*	Greater Flamingo	фламинго	2	-
11	*Cygnus columbianus bewickii*	Bewick`s Swan	малый лебедь	5	-
12	*Cygnus cygnus*	Whooper Swan	лебедь-кликун	2	-
13	*Anser erythropus*	Lesser White-fronted Goose	пискулька	1	VU A2bcd+3bcd
14	*Branta ruficollis*	Red-breasted Goose	краснозобая казарка	2	VU B2ab(iii)
15	*Aythya nyroca*	Ferruginous Duck	белоглазая чернеть	3	NT
16	*Melanitta fusca*	Velvet Scoter	чёрный турпан	3	-
17	*Oxyura leucocephala*	White-headed Duck	савка	1	EN A2bcde

18	*Haliaeetus leucoryphus*	Pallas`s Fish Eagle	орлан-долгохвост	1	VU C1
19	*Haliaeetus albicilla*	White-tailed Eagle	орлан-белохвост	2	NT
20	*Aegypius monachus*	Eurasian Black Vulture	бурый гриф	-	NT
21	*Circaetus gallicus*	Short-toed Eagle	змееяд	2	-
22	*Circus macrourus*	Pallid Harrier	степной лунь	-	NT
23	*Aquila clanga*	Greater Spotted Eagle	большой подорлик	-	VU C1
24	*Aquila nipalensis*	Steppe Eagle	степной орел	5	-
25	*Aquila heliaca*	Imperial Eagle	орел-могильник	3	VU C1
26	*Aquila chrysaetos*	Golden Eagle	беркут	3	-
27	*Hieraaetus pennatus*	Booted Eagle	орел-карлик	3	-
28	*Pandion haliaetus*	Osprey	скопа	1	-
29	*Falco naumanni*	Lesser Kestrel	степная пустельга	-	VU A2bce+3bce
30	*Falco peregrinus*	Peregrine	сапсан	1	-
31	*Falco cherrug*	Saker Falcon	балобан	1	EN A2bcd+3bcd
32	*Falco rusticolus*	Gyrfalcon	кречет	3	-
33	*Crex crex*	Corn Crake	коростель	-	NT
34	*Grus grus*	Common Crane	серый журавль	3	-
35	*Grus leucogeranus*	Siberian Crane	стерх	1	CR A3cde
36	*Anthropoides virgo*	Demoiselle Crane	журавль-красавка	5	-
37	*Tetrax tetrax*	Little Bustard	стрепет	2	NT
38	*Chlamydotis undulata*	Houbara Bustard	джек	2	VU A2bcd+3bcd
39	*Otis tarda*	Great Bustard	дрофа	1	VU A3c
40	*Glareola nordmanni*	Black-winged Pratincole	тиркушка степная	-	DD
41	*Vanellus gregarius*	Sociable Lapwing	кречетка	1	CR A3bc
42	*Limnodromus semipalmatus*	Asian Dowitcher	бекасовидный веретенник	4	NT

43	*Numenius tenuirostris*	Slender-billed Curlew	малый кроншнеп	1	CR C2a(ii); D
44	*Larus ichthyaetus*	Pallas's Gull	хохотун черноголовый	2	-
45	*Pterocles orientalis*	Black-bellied Sandgrouse	чернобрюхий рябок	3	-
46	*Pterocles alchata*	Pin-tailed Sandgrouse	белобрюхий рябок	3	-
47	*Syrrhaptes paradoxus*	Pallas`s Sandgrouse	саджа	4	-
48	*Bubo bubo*	Eurasian Eagle Owl	филин	2	-
49	*Emberiza aureola*	Yellow-breasted Bunting	овсянка-дубровник	-	NT
		MAMMALIA - Mammals			
50	*Myotis dasycneme*	Pond Bat	ночница усатая	-	VU A2c
51	*Saiga tatarica*	Saiga Antelope	сайга	-	CR A2a
52	*Marmota bobac*	Bobak Marmot	сурок-байбак	-	LR/cd
53	*Sicista subtilis*	Southern Birch Mouse	мышовка степная	-	LR/nt
54	*Cricetulus migratorius*	Grey Hamster	хомячок серый	-	LR/nt
55	*Ochotona pusilla*	Steppe Pika	пищуха степная	-	VU A1cd, C2a

Red Data Book of Kazakhstan (2010)

Categories: 1 – critically endangered; 2 - endangered; 3 - rare;
4 – data deficient; 5 – reared.

IUCN: Red List of Threatened Species (2000)

Categories: CR – critically endangered; EN – endangered; VU – vulnerable;
LR – lower risk; DD – data deficient; NT - Near Threatened.

13.3 Conservation of genetic biodiversity

The territory of Biosphere Reserve plays an important role in regional genetic biodiversity conservation. Many valuable species are under strict protection in the main zone of the Reserve, and nature protection inspectors control commercial species in transition zones. Vast majority of higher plants has valuable properties. There are 350 species used as raw material (fodder, medicinal, nectariferous, food, ornamental, dying, aromatic) growing on this area which is 68% of all floristic diversity.

Resource Plant Groups

Type	The group of resource plant	Number of species
	Medicinal	220
	Fodder	231
	Food	87
	Honey	98
	Toxic	42
	Insecticidal	26
	Ornamental	94
Technical	Aromatic	29
	Fatty Oil	17
	Tanning	19
	Dyeing	48
	Fiber	7
	Spinning	16
	Brush	5
	Stuffing and packing	5
	Pulp and paper	12
	Fuel and woody	10
	Sodium-containing	19
Ecological	Soil protection	13
	Water Purifiers	8

The group of fodder plants is the most numerous group of raw material plants. According to method of their using for agrucultural animals fodder species are divided into pasture, haymaking and silo. The most valuable pasture and hayfield species consist of representative of *Poaceae* (*Agropyron, Festuca, Poa, Phragmites,* etc.), *Fabaceae* (*Alfalfa, Astragalus, Melilotus, Vicia cracca*), *Chenopodiaceae* (*Kochia prostrata, Camphorosma, Petrosimonia triandra,* etc.). *Phragmites, Glycyrrhiza uralensis, Bolboschoenus,* etc. are most perspective as silo.

The group of medicinal plants (officially permitted to use in Kazakhstan) includes 20 species: *Althaea officinalis, Helichrysum arenarium, Rhamnus cathartica, Arctium tomentosum, Taraxacum officinale, Tanacetum vulgare*, etc.

Food plants group is quite representative but not very popular at the present time. There are a lot of edible plants on the territory, but they are almost not used by local people. They are valuable primarily as a reserve fund to be used in extreme conditions. There is only one exclusion for blackberry which is very popular among local people. *Nitraria schoberi*a and *N. sibirica* are not well known, although their berries are edible (for example, in Mongolia these berries are highly valued).

There are many economically valuable species among animals. So, among invertebrates great economical importance belongs to *Artemia salina* (Branchiopoda), used as food for fish. About half of fish species inhabiting water reservoirs of the territory are commercial and serve as an economic resource. There are 17 species, such as Pike, Carp, Crucian Carp, Gold Carp, Pike-perch, Bream and Tench. Noteworthy species of insects is *Porphyrophora polonica* (Coccoidea, Margarodidae), which is a source of valuable natural dye – carmin.

Korgalzhyn region lakes are the main producers of commercial fish for Akmola region population, this is why fishing crews continuously work at the lakes of Biosphere Reserve's transition zone. There are 5 crews at lakes of Birtaban-Shalkar system, and 3 – at lakes of Uyaly system. Fishing (including not counted fishing) serves as an income source for considerable part of local people.

Mammal species with economic importance include Marmot, Muskrat and Fox. In the last years the demand for the fur decreased, but before that those were the main fur species. Fur hunters are mostly local, but, unfortunately, part of them practice illegal hunt.

It is necessary to notice Saiga and Wild Boar as objects for genetic diversity conservation. Saiga was very numerous in the region even 15-20 years ago. In 1980s almost all local people practiced Saiga poaching, killing it for food, although there were hunting crews, usually consisting of visiting hunters. Several Wild Boars were shot with licence each year in hunting farms of the transition zone, although cases of poaching are also registered.

In previous years local people hunted waterbirds (Geese, Ducks); fowl's meat was used for food. In the present time only small part of local people practice hunting due to high expenses needed for it (very expensive ammunition, gas, high tour expenses, etc.). Hunters come mainly from Astana and Karaganda cities.

14 Development function

14.1 Potential for fostering economic and human development

Lands of Biosphere Reserve's transition zone are most suitable for cattle breeding development, and for fishing and hunting. But due to anthropogenic impact some part of these lands is degraded or lost its original value to the present date. This is why Biosphere Reserve's organization at that territory will allow conducting effective activities for fallow land restoration and nature resources use control. Besides, complex biodiversity conservation of the territory, and particularly wetlands as migrating birds' habitat, is tightly connected to the development of social-economic potential.

Preliminary research in the limits of GEF/UNDP Project on wetlands conservation of Kazakhstan showed that environmental degradation leads to dicrease of local people' s standard of living and income. Three main threats were identified for Biosphere Reserve's territory:

1) unsustainable use of water resources,

2) unsustainable use of biological resources (unsustainable fishing and hunting, unsustainable forestry),

3) uncontrolled visits («wild tourism»).

The conception of Biosphere Reserve is aimed to improve life conditions of local people with simultaneous decrease of pressure on natural ecosystems by introducing alternative economic activity types which are not harmful for biodiversity. Biosphere Reserve's conditions give an opportunity to demonstrate practices of existing and potential biodiversity threats termination or decrease. These approaches may then be used in other regions with similar conditions.

Nowadays 15 pilot projects are realized on the territory of Korgalzhyn Biosphere Reserve. They are aimed to introduce best practices in agriculture: sustainable pasture management – 5 projects, ecotourism development – 5 projects. One of the projects is dedicated to milk production processing, others – to fishing and hunting farms creation. One project is aimed to demonstrate alternative power sources.

14.2 If tourism is a major activity: how many visitors? is there a trend towards increasing numbers of visitors?

In the present time tourism is not the main activity of Biosphere Reserve. But, taking into consideration region's unique biodiversity, including wetlands of international importance, Kazakhstan's capital – Astana – proximity, it may be stated that Biosphere Reserve has big potential for ecological tourism development.

There is experience of work with tourists on the territory of Biosphere Reserve, including tourists from abroad. According to the Law «On specially protected natural territories» and with goal to further develop excursion-educational activity and ecological tourism of Biosphere Reserve's buffer zone three ecological routes were developed covering the most interesting sites at the border of the main zone. NGO Rodnik developed 3 more eco-routes outside of the main zone's territory.

Number of tourists visiting Biosphere Reserve's territory in 2004-2009

Target groups	2005	2006	2007	2008	2009
Foreigners	82	10	158	170	
Students and tourists	350	337	214	243	
Adults	1013	1017	2987	2763	
Fishermen in the winter	635	459	481	630	
Total	**2080**	**1892**	**3840**	**3806**	**6200**

14.2.1 Type of tourism

Tourism types practiced at the territory:

1) **Ecological tourism**:

· *Birdwatchers*. Groups of tourists from abroad coming to see only birds of the given territory. Has its peculiarities and specific demands for tour conduction.

· *Scientific tourism* – especially on the territory of the main and buffer zones, because only here natural ecosystems, flora and fauna objects, typical for the given natural zone as well as rare, are conserved in their original condition. Those are scientific staff of institutions and international nature conservation organizations' representatives.

· *Educational tourism*. Organized excursions for familiarization with Biosphere Reserve's nature. Is often organized in universities, schools, companies.

· *Familiarization tourism* – Kazakhstan's capital proximity, where international companies' headquarters, embassies and consulates are situated, provides many foreigners who are interested in natural and cultural heritage of Kazakhstan, its people, traditions, etc.

2) **Recreational tourism** – spending leisure time at open air, one-day picnic trips, family leisure, camping, often combined with amateur fishing. Routes developed on the territory of Biosphere Reserve: a) 4 ecoroutes for vehicles; b) 1 – by horse; c) 1 – walking.

14.2.2 Tourist facilities

1. Visit center (transition zone, Korgalzhyn village)
2. Five guest houses (transition zone, Korgalzhyn village, Sadyrbay village)
3. Guest complex (buffer zone, built by Akmola-tourist company)
4. Observation site for birdwatching (buffer zone, near Karazhar cordone)
5. Three ecological routes (buffer zone)
6. Three ecological routes (transition zone)
7. Beach with small shop (transition zone, Birtaban Lake)

14.2.3 Indicate positive and negative impacts of tourism at present or foreseen

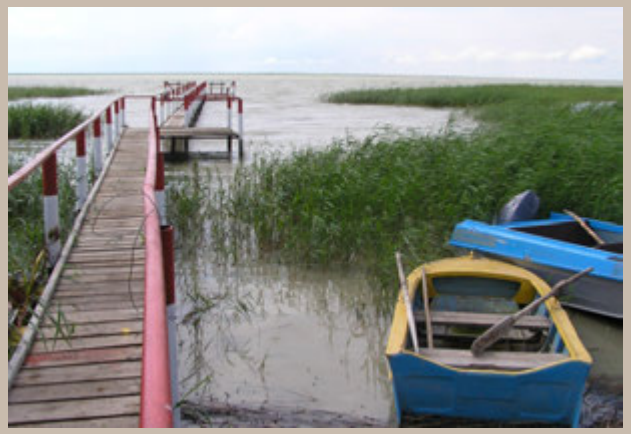
According to Article 42 of the Law «On specially protected natural territories», “Excursion paths and routes for regulated ecological tourism may be created in order, established by competent authority, in state nature reserve at specially dedicated sites which do not include especially valuable ecological systems and objects”.

Main core zone and buffer zone of Biosphere Reserve. Until middle 1990s nature reserves were almost completely cloesd for visits, and the question of ecological tourism development opportunities in nature reserve territories is still discussed. In this relation big importance belongs to educational tourism – Visit center and specific routes on Nature Reserve's territory. Capital's proximity, international importance of State Nature Reserve (there are lots of people wishing to visit this region) leads to rapid increase of tourists in spring and summer, which is quite problematic for Nature Reserve. Besides pressure increase on the territory, there is a lack of qualified guides, information for the tourists, educational and promotional materials, including materials in English. Unfortunately, Korgalzhyn State Nature Reserve's staff doesn't have economic incentives for ecological tourism development since all payment for visiting the territory and Visit-center go to Republican budget.

Transition zone (development zone). It is extremely important to provide conditions for ecotourism development in Biosphere Reserve's transition zone in order to decrease the pressure on the main and buffer zones, especially because there are many things to show. In the recent time many tourists prefer ecological routes located out of the two main zones' territory after coming to Visit-center. Direct benefit from ecotourism development comes to guest houses owners (there are 5 registered businessmen and 5 businessmen without governmental registration). Local owners of cars with good knowledge of the territory are used for providing transportational services. Tourists buy souvenirs handmade by local people. For an additional fee it is possible to organize small ethnographic performance of local people.

14.3 Benefits of economic activities to local people

Besides direct economic activity, related to nature resources use at Biosphere Reserve's territory (cattle breeding, hunting, fishing and plant growing), local people receive sufficient benefit from ecological tourism development. In the future it will lead to overall improvement of local infrastructure level (building high-quality houses, roads, electronic communication means, etc.).



15 Logistic support function

15.1 Research and monitoring

15.1.1 Past and planned research and monitoring programme

In the limits of GEF/UNDP Wetlands Conservation Project complex scientific research was conducted in 2004-2010. This research allowed widening of Biosphere Reserve's main zone territory. Besides, the scientific research served as a basis for zoning of proposed Biosphere Reserve's territory as the result of analysis of natural environment and social-economic condition.

Social-economic scientific research allowed defining modern development level of the main economic sectors and their current and potential influence on natural complexes of Biosphere Reserve's territory. The Program of local population's living condition improvement was developed; it is based on introduction of alternative types of economic activity which do not harm biodiversity. This Program, as well as conducted seminars and meetings with local people, rural authorities (Akimat) representatives, businessmen, specially protected natural territories staff and other stakeholders, identified alternative activities' types which could decrease their impact on territory's natural resources.

Programs on monitoring environmental condition, developed in 2006-2007, allow regular and systemic monitoring of territory's core zone, as well as other Biospher Reserve's zones. Besides, the Concept of ecotourism development and Concept of sustainable fishing on the territory of Biosphere Reserve were also developed in 2006-2007.

15.1.2 Brief description of past research and monitoring activities

Abiotic research and monitoring

Meteorolocial and hydrological observations were carried out in Korgalzhyn State Nature Reserve based on the data of meteorological stations (see part 11.3.4) and hydrological station of Akmola Center of Hydrometeorology and Environmental Monitoring. Data was analyzed and included in annual volumes of «Nature Chronicles» since1974.

Biotic research and monitoring

Monitoring and observations were carried out in the limits of annual «Nature Chronicles» according to standard unified program. Key indices for evaluation of natural objects conservation condition include:

1. Waterbird fauna condition.
2. Population number of background and rare protected animal species (mammals, birds, fishes).
3. Population condition of the main fish species.
4. Hydrocoenoses condition of protected lakes.
5. Phenologic dates of seasonal events in animal and plant life.
6. Species composition and vegetation associations' structure.

Monitoring research was conducted based on approved perspective and annual thematic plans of research works and the following administrative measures of natural objects observation:

1. Observations for «Nature Chronicles» program
2. Waterbirds population countings on the routes and from permanent observation sites.
3. Wild Boar population countings.
4. Avian countings of large waterbirds and large mammals (1976-1992).
5. Annual phenologic observations of animals and plants.

Small mammals population counting and their population condition observations were carried out by Akmola Regional Sanitary – Epidemiologic Station from 1975 to 1998.

Socio-economic research

Social-economic research was regularly conducted by competent governmental local authorities (Executive Committees – in Soviet time, and Akimats – at present time) and corresponding governmental scientific organizations of Kazakhstan, and also were carried out in 2004-2011 in the limits of GEF/UNDP Wetlands Project.

15.1.3 Brief description of on-going research and monitoring activities

Abiotic research and monitoring

In 2004-2011 complex research of water level and chemical composition in reservoirs and water courses, and flow rate in water courses was carried out, the condition of retaining-regulating construction of the given territory was studied. Sites of hydrometric stations were chosen for Project's territory lakes and rivers water regime monitoring. Bathymetric measurements of Biosphere Reserve's lakes were taken. Anthropogenic impact on river drainage in Nura river basin was analyzed for all observation period. Korgalzhyn and Tengiz lakes water balance modeling was carried out, optimal level regimes were defined and recommendations for drainage regulation were given. Water consumption in Nura river basin was analyzed in different economy sectors, including agriculture, the list of the main pollutants was compiled. Recommendations on retaining-regulating hydrotechnical constructions improvement, river drainage regulating, water regime observation network location were given.

In 2007 Habitat Monitoring Program was elaborated, and methodic guidelines on Habitat System Monitoring Program (water bodies monitoring) for Tengiz-Korgalzhyn lake system was prepared and approved. Three-party Agreement was signed, stating collaboration between UNDP, Ministry of Agriculture of Kazakhstan and Ministry of Environmental Protection of Kazakhstan in combined activities of system monitoring program. Executive of water habitat system monitoring is the Center of hydrometeorological monitoring of Astana and Korgalzhyn Nature Reserve.

Biotic research and monitoring

Scientific research of Biosphere Reserve's territory is carried out according to perspective thematic plan. Works on 7 scientific themes are conducted on Nature Reserve's territory since 2010. Since 1974 there is an annual publication of Nature Reserve – «Nature Chronicles». There are annual birds countings – in spring and in autumn, winter mammal counting. In 2008-2011 large mammals and large waterbirds were counted in the limits of GEF/UNDP Wetlands Project.

In 2004-2011 large-scale complex geobotanic, floristic and faunistic research was carried out on the territory of Biosphere Reserve. Specialists of academic institutes – Institutes of Zoology, Geography, Botany and Phytointroduction – and other scientific and project institutions of Kazakhstan participated in field research and data analysis. The research was conducted using modern equipment and methods, including remote sensing and GIS-technologies. The research resulted in objective evaluation of water and land habitat condition, existing types of aquatic and terrestrial ecosystems, and plants and animals inhabiting them with borders of their distribution area, residency character, main biodiversity threats, and recommendations on those threats' elimination or improvement were given. Primary attention in the research was given to rare, endemic and unique species.

These studies served as a base for Biodiversity Components Monitoring Program development. Taking into consideration specialists' recommendations, monitoring species groups, monitoring sites and routes, and observation dates were identified. Monitoring species list contained key species (rare, endemic), background (dominating, most often observed) and indicator (easy to identify, quickly reacting to habitat change). Unified cards were created, describing sample sites' and routes' condition, unified basic indicator indices, registered during animal and plant observation. Methods of counting and observations were also unified.

For local-level monitoring methodic recommendations on biodiversity components' monitoring and habitat systemic monitoring were elaborated in order to help staff of specially protected nature territories. In early July, 2007 Korgalzhyn Nature Reserve staff with participation of invited experts successfully tested the given program; as the result it was decided to take it as a basis for long-term monitoring. Since 2008 monitoring observations of animals and plants are carried out by Nature Reserve's staff with annual analysis of data obtained in monitoring research. Besides, automated system of scientific data processing is developed and introduced. It allows quick searching of the needed observation card, entered in the system, preliminary analysis of all collected data, summary tables compilation. It is a good instrument of biodiversity evaluation.

Since 2004 to present time «Sociable Lapwing» Project is carried out on the territory of Biosphere Reserve with support of Birdlife International and NGO Association of Conservation of Biodiversity of Kazakhstan. International team was involved in detail research work in Tengiz-Korgalzhyn region for several years to collect information on Sociable Lapwing – the species listed in IUCN lists and Red Data Book of Kazakhstan (species distribution, nests survival, reasons of egg layings loss, fledgeling survival and habitat use).

Socio-economic research

In 2004 a group of sociologists conducted socio-ecologic-economic research in rural settlements of Biosphere Reserve's territory. Modern social-economic situation in the region concerning demography and migration, agriculture, industry, fishing and hunting industries, social infrastructure was reviewed and evaluated. Proposals on territory's zoning, sustainable economic development zone development, and territory's development perspectives were expressed.

Every year Akimat staff collects data – indices of social-economic development, which are entered in automated data base.

15.1.4 Brief description of planned research and monitoring activities

Abiotic research and monitoring

Korgalzhyn State Nature Reserve staff will regularly conduct habitat monitoring observations on the territory of core and buffer zone, in accordance with elaborated Program. Besides, hydro station is functioning at Karazhar cordone. Kazakhstan State Meteorological Agency «Kazgidromet» will conduct quarterly water quality monitoring of Biosphere Reserve's water reservoirs in transition developmental zone, and also support work of hydro station on Nura river in Korgalzhyn village.

Biotic research and monitoring

Korgalzhyn State Nature Reserve's staff will carry out regular monitoring observation of biodiversity components on core and buffer zones' territory, in accordance with elaborated Program. Also, according to developed Action Plans of ecosystems and fauna and flora species management, there are annual research and monitoring of Bobak Marmot, rare birds populations, plants, birds and mammals of aquatic and terrestrial ecosystems. Saiga monitoring will also be continued on the territory of Biosphere Reserve in the limits of GEF/UNDP Steppe Ecosystems Conservation Project. Besides, there may be scientific research related to the work of other scientific institutions.

Socio-economic research

Once in 10 years sociologists from governmental organizations will conduct social-economic research in rural settlements of Biosphere Reserve's territory with current social-economic situation evaluation. Every year local Akimat staff collects data on social-economic development with further submission to automated data base.

15.1.5 Estimated number of national scientists participating in research:

on permanent basis: 16
on occasional basis: 20-25

15.1.6 Estimated number of foreign scientists participating in research:

on permanent basis: 0 on occasional basis: 5-6

15.1.7 Estimated number of masters and/or doctoral theses carried out each year:

5-7

15.1.8 Research station within the proposed Biosphere Reserve:

[2] = permanent [3] = temporary

15.1.9 Permanent research stations outside the proposed Biosphere Reserve:

Eurasian University named after L. Gumilev, Astana, approximately 100 km
University named after N. Nazarbaev, Astana, approximately 100 km
Agricultural University, Astana, approximately 100 km

15.1.10 Permanent monitoring plots

In 2007 Habitat and Biodiversity Components Monitoring Programs were developed for Biosphere Reserve and Korgalzhyn Nature Reserve. According to them, monitoring observations are carried out on specially selected monitoring sites and routes. Goal: to collect regular objective data on the condition of most important biodiversity components of the territory and their habitat (quality and level regime of water reservoirs). Objectives:

Local – 1) based on monitoring data – evaluation of populations and ecosystems condition, specially protected natural territory's functioning effectivenes, measures to prevent (eliminate) emergencies and adverse events; 2) distribution of information about monitoring results among other specially protected natural territories and all interested structures.

Regional – national program of Environment and Biodiversity Conservation realization

Global – international obligations fulfillment, stated in the Convention on Biological Diversity (Article 7), Ramsar and Bonn Conventions.

Hydrochemical monitoring

1. Monthly monitoring – water sample collection from gauges on Nura river.
2. Quarterly monitoring – is conducted in the main hydrological cycles and includes water sample collection from Nura river and lakes of research territory by Kazgidromet specialists. In Korgalzhyn State Nature Reserve the samples are collected by specially trained Nature Reserve's employee.
3. Periodical – once in three years expedition monitoring on Nature Reserve's lakes and lakes of potential Reserve, also covering distant sites, to track changes in qualitative characteristics for many years.

Biodiversity components monitoring

Aquatic and terrestrial ecosystems are monitored annually from April to September, regularly according to the dates given in Methodic Guidelines. Monitoring of animals inhabiting aquatic and terrestrial ecosystems is also conducted annually, regularly from March to October, some species are monitored all year round, according to the dates given in Methodic Guidelines.

15.1.11 Research facilities of research stations

In order to realize scientific activity, Biosphere Reserve possesses:

1. Scientific station (in the main building of Nature Reserve)
2. Automated meteostation at Karazhar and Korgalzhyn cordones.
3. Hydrostation at Sultankeldy lake
4. Observation site for birdwatching
5. Monitoring sites and routes
6. Vehicle (1 car «UAZ-452», 1 car «VAZ», 1 snowmobile «Rys»)
7. GPS-11 devices.
8. Communication means (mobile Kenwood)
9. Optical devices: 2 microscopes, 7 binoculars, 4 optical tubes, 9 night vision devices
10. Laboratory equipment (furniture, chemical reagents, instruments, electronic scales, etc.)
11. Field equipment (scientific – traps, bird nets, entomological killing jars, etc.; household – tents, sleeping bags, etc.)
12. Computers, programs, developed automated data base system
13. Scientific library
14. Internet connection

15.1.12 Other facilities

Facilities for lodging or temporary residence of specially protected natural territories' staff and visiting scientists are available in the main core zone at Karazhar and Razvedka cordones.

15.1.13 Does the proposed biosphere reserve have an Internet connection?

Internet connection is established in Korgalzhyn Nature Reserve.

15.2 Environmental education and public awareness

The goal of ecological education in Biosphere Reserve is to build ecological knowledge of the people, understanding protected area's key role, importance of unique nature conservation, public support increase, and also raising patriotism and responsibility for the environment and, as the result, pressing decrease on region's biodiversity from local people.

Biosphere Reserve's territory is known in the whole world for a long time with its unique wetlands, and its international importance grows each year. This is why it is especially important that people living in the given region were ecologically competent, knew and loved their region's nature, were patriotic and could actively participate in nature protective activities. Besides, there are wetlands near Korgalzhyn State Nature Reserve, which are not protected by Government but have a great importance for animal and plant world of the region; they are under strong anthropogenic influence from local people. This is why one of priority objectives is to improve ecological competence level – it will promote understanding of biodiversity conservation importance.

The work on ecologic education in Nature Reserve is carried out based on the «Regulation of scientific – educational work and ecological tourism in Korgalzhyn State Nature Reserve Governmental Institution». The work is conducted according to annual plan of cultural – educational activities, which is developed in the beginning of each year and is approved by Nature Reserve's administration. There is Department of Ecological Education in Nature Reserve for organization and conduction of these activities. The staff of the Department consists of 5 people: Department chief, 2 specialists of ecological education, excursion guide, Visit-center chief. Cultural – educational work is partly carried out by staff from Department of Science, Information and Monitoring.

Besides Nature Reserve staff, ecological education work of Biosphere Reserve's population is carried out by NGO Rodnik and GEF/UNDP Wetlands Project (from 2004 till 2011).

15.2.1 Environmental education and public awareness activities, indicating the target groups:

It is necessary to promote Biosphere Reserve's wetland importance in educational programs, as well as in general public and target groups.

1. **Ecologic events and activities** (schoolchildren, local people). Every year Korgalzhyn State Nature Reserve and NGO Rodnik celebrate Parks' March, Wetland Day, Birds Day, Earth Day in schools of Biosphere Reserve territory. In 2006, 2009-2011 Korgalzhyn State Nature Reserve, NGO Rodnik and Akimat (local authorities) carried out «Flamingo» festival for the first time. Now people plan to celebrate it every year.

2. **Ecologic excursions and ecotourism**. Excursions to Visit-center of Biosphere Reserve (schoolchildren, students, local adults, domestic and foreign tourists, etc.) are conducted since May, 2009. There are 3 ecological routes on the territory of Korgalzhyn State Nature Reserve and 3 routes out of its territory.

3. **Work with mass media**. Local population is quite aware of Korgalzhyn region and its unique nature. Mass media – newspapers, magazines, radio and television – show their interest in this territory for many years. Staff of Scientific Department and Department of Ecological Education regularly publish popular science articles in local and Republican editions.

4. **Cinema- and videoproduction**. There were 2 popular science films about Korgalzhyn State Nature Reserve created in previous years (Kaztelefilm, Telefilm of USSR), then in 1990s foreign cameramen from Germany - Mathias Frode and Tobias Mennle - shot 2 more popular science films. Finally, in 2008 in the limits of GEF/UNDP Wetlands Project «Gold Media» telestudio created film named «The secrets of Nature Reserve land – Tengiz-Korgalzhyn lake system» and 3 videoclips dedicated to nature protection.

5. **Public associations creation** (ecoclubs, schoolchildren). In 2007-2008 two ecological clubs were created in school-gymnasium of Korgalzhyn village and in school of Shalkar village. Children actively participate in all nature protective activities. In 2008 a special ecological camp was conducted for them on the territory of Korgalzhyn State Nature Reserve. Six children from Korgalzhyn village Ecoclub went on training seminar of excursion guides preparation and now participate in excursions in Visit-center of Nature Reserve.

6. **Advertising and publishing activity**. There are information boards and boards with nature protection materials set on the territory. Also the following materials were developed and sent to school libraries (booklets were spread among local people):

- Collection of practical methods of ecological education for schools in Korgalzhyn region
- Maps of the territory «Tengiz-Korgalzhyn lake system»
- Ecological ABC-book for schoolchildren of the first grade
- Booklets about wetlands
- Booklets about biodiversity of Tengiz region
- Booklet about opisthorchiasis prevention
- «Park March» booklet
- «Kazakhstan – historical cradle for Tulips» booklet
- «Open the amazing world of birds» guide
- «Water world» guide
- «Plant world» guide
- Information boards about wetlands (for 5 schools)
- Calendars (annually)

Also several scientific editions were published, including:

- «Proceedings of Korgalzhyn State Nature Reserve», dedicated to 40-anniversary of this specially protected natural territory,
- Monography «Tengiz-Korgalzhyn lake system»
- Atlas of key animal and plant species
- List of biodiversity supported by Project's territory
- «Combined analysis of water condition of three project territories»

Several booklets about biodiversity of Nature Reserve were published by Korgalzhyn State Nature Reserve, and about tourism on the territory – NGO Rodnik.

15.2.2 Facilities for environmental education and public awareness activities

1. Visit-center. Visit-center of Nature Reserve was opened in May, 2009. It plays a big role in propaganda and raising awareness of people about the importance of Biosphere Reserve's wetland conservation. Visit-center is like a card of Biosphere Reserve, a place where visitor may collect all existing information on the given unique territory. Visit-center is aimed to become ecological – educational center not only for local people, but also for guests from the whole country and foreigners. Visit-center not only organizes excursions, but also shows popular science films about region's nature. Ecologic lessons for schoolchildren are conducted in children's room.

2. At the present time there are 6 active ecological routes on the territory of Biosphere Reserve. Three of them are on the territory of Korgalzhyn Nature Reserve (car, walking and horse routes) and three car routes are located out of its borders (their development and service is carried out by NGO Rodnik). On walking ecological route (main core zone) there is an observation site for birdwatching, where tourist can easily observe birds' diversity using optical tubes.

15.3 Specialist training

In recent years in the limits of GEF/UNDP Wetlands Project with assistance of «Zapovedniki» Ecocenter (Russia), «Tabigat alemi» Training Center, NGO Rodnik, etc. a big work was carried out in training of specially protected natural territory staff, representatives of local population (farmers, hunters, fishermen, guest house owners, etc.) and local-scale decision-makers. Educational seminars and trainings, work trips for experience exchange were conducted on local, regional and international (Russia, Belorussia, England, Austria, India, China) levels.

Nature Reserve's staff development. For the period of 2004-2009 staff of specially protected natural territory took part in 22 trainings, seminars, work trips. Professional training was aimed to develop management capacity, work effectiveness in all departments. Themes include problems of management and protection, specially protected natural territories legislation, scientific research and monitoring conduction, ecological education and tourism. Topics of special interest for Nature Reserve's staff were taken into consideration while making the programs. They include:

5 seminars for scientific departments, including one international held in Belorussia.
6 seminars for security staff, including one in Russia.
5 seminars for ecological education department, including one in Russia.
1 seminar and 2 experience exchange trips for specially protected natural territory's administration (Austria, India).
2 general seminars on program education, work with automated meteostation.

Every year scientific department conducts seminars for inspectors about material collection for Nature Chronicles, and mammals and birds counting methods.

Student education. Till 1990s biological students from Kazakh, Ukrainian and Russian universities came to have practice on the territory of Nature Reserve on a regular basis. In the recent time, unfortunately, only foreign students (mostly biologists, ecologists and sociologists) have an opportunity to come to Kazakhstan for «material collection». In 2008-2009 in the limits of GEF/UNDP Wetlands Project 8 biological and ecological students had an opportunity to come to Korgalzhyn Nature Reserve to have practice. Scientific department staff dedicated 15 full days to students' education. Also in the last 3 years there were students-trainees (their future speciality is tourism) who worked in ecological education department on a voluntary basis.

Korgalzhyn State Nature Reserve is the base for practice of Astana universities students (faculties of ecology and tourism).

A big work with students is conducted by ACBK (Association of Conservation of Biodiversity of Kazakhstan). In the present time 5 universities and 2 pedagogical institutes signed a collaboration Agreement with ACBK. Universities promote participation of their students in trainings, projects and field research conducted by ACBK. In last years there were annual one-week trainings «Wild animals population number estimation: introduction into methods of birds' research and counting» for student birdwatcher clubs, held in Karazhar cordone of Korgalzhyn Nature Reserve. About 20 students from different cities of Kazakhstan take part in these trainings every year.

Professional training and seminars for managers and resource planners. Several seminars and experience exchange trips were organized in the last 5 years. Specially protected natural territory's administration, representatives of Forestry and Hunting Committee and Ministry of Agriculture had a chance to get acquainted with peculiarities of nature protection activities in protected natural territories of Germany, India, Austria and Belorussia.

Education of local people. Seminars and trainings for local people about alternative activities were conducted in the limits of the project. Special attention was drawn to educational seminars for farmers, fishermen, hunters, housewives, and guesthouses' owners. Seminars on business plans and grant proposals compilation were conducted for all interested groups.

Farmers' education. Several seminars for farmers were conducted in 2005-2009 in the limits of GEF/UNDP Wetlands Project, including seminar on sustainable agriculture development in 2007. In 2006 a trip to Shetskiy district (Kazakhstan) was organized for 5 farmers and agriculture department representative in 2006. Its goal was in experience exchange with farmers working on pasture and haymaking lands' improvement. Another trip was organized for 3 farmers; they went to China to exchange experience in sustainable management of fishing ponds. In 2009 a two-day seminar «Organic agriculture» for Korgalzhyn district farmers was conducted in collaboration with Ecological Culture Integration Fund.

Education of hunting and fishing farms' representatives. Educational seminars on legislation and sustainable management of fishery and hunting were conducted for representatives of hunting and fishing organizations, located on the territory of Biosphere Reserve. These seminars resulted in Resolutions developed by participants, containing suggestions for hunting and fishing management in Kazakhstan.

Education of housewives. A seminar dedicated to felt products manufacturing was conducted in Shalkar village of Korgalzhyn region in 2006, aiming to introduce alternative activity. Nineteen women were taught to make felt products, five of them were included in the data base of Kazakhstan's craftspeople by SANZh research center. Now seminar participants make and sell their products. Then in 2007 another seminar – dedicated to felt products' quality improvement – was conducted at the same place. One more seminar was dedicated to home-made cheese production using new Swiss technology. Target groups consisted of women from Zhanteke, Kargaly, Orkendeu and Korgalzhyn villages.

School teachers. In 2007 an educational program of specialized course on wetlands conservation was elaborated. In schools of Kazakhstan all courses dedicated to environment are quite general and often are not related to local nature. This is why a special course was prepared for 5-8 grades' schoolchildren based on the materials about local nature. Besides, a seminar for teachers who were to work on this program was conducted, all schools were supplied with teaching aids and Program. At the present time the Program on wetlands is introduced in 10 schools of Korgalzhyn region.

The following teaching materials were prepared to help teachers: «Open the amazing world of birds», «Plant world» and «Water world» guides. A seminar with teachers dedicated to use of these materials in their work was conducted in 2010 in the limits of the Project. In the last years all school libraries of the territory were supplied with:

- Collection of practical methods of ecological education for schools in Korgalzhyn region
- Maps of the territory «Tengiz-Korgalzhyn lake system»
- Monography «Tengiz-Korgalzhyn lake system»
- Atlas of key species
- Ecological ABC-book for schoolchildren of the first grade
- List of supported biodiversity (higher plants and vertebrate animals)
- Booklets about wetlands
- Booklets about biodiversity of Tengiz region
- «Open the amazing world of birds» guide
- «Water world» guide
- «Plant world» guide
- Information boards about wetlands (for 5 schools)
- Atlas of wetlands of Kazakhstan, etc.

15.4 Potential to contribute to the World Network of Biosphere Reserves

Korgalzhyn Biosphere Reserve is nominated as first and now the only reserve of this type, so collaboration among biospere reserves at national level is impossible for now. However, Korgalzhyn has very tight scientific and organizational bonds with other 9 state nature reserves, which may achieve biosphere reserve status in the future. At regional level collaboration is possible with 4 already existing UNESCO biosphere reserves, such as Sary-Chelek and Issyk-Kul in Kyrgyzstan, Repetek in Turkmenistan and Chatkal in Uzbekistan. In 2010 administrations of these reserves participated in a work meeting in Almaty and discussed collaboration opportunities at regional level, as well as possibility of inclusion into East-Asia Biosphere Reserves Network. This meeting was organized by UNESCO Cluster Office staff in Almaty. It is planned to establish collaboration contacts with closest biosphere reserves of Russia.

15.4.1 Collaboration with existing biosphere reserves at the national level

In Kazakhstan there are no biosphere reserves recognized by UNESCO yet. At the present time Korgalzhyn actively collaborates with 9 state nature reserves of Kazakhstan. The experience of the first biosphere reserve creation in Kazakhstan will be replicated among all potential candidates through direct contacts between administrations and scientific departments of nature reserves and with assistance of planned seminar.

15.4.2 Collaboration with existing biosphere reserves at the regional level

In the present time no collaboration agreements are signed between Korgalzhyn Biosphere Reserve and other biosphere reserves at the regional level, although there are plans of its inclusion into East-Asia Biosphere Reserves Network. Transboundary biosphere reserve's organization is impossible in this case, because Korgalzhyn is located in central part of Kazakhstan and does not have common borders with other specially protected natural territories.

15.4.3 Collaboration with existing biosphere reserves in thematic networks at the regional or international levels

Korgalzhyn Biosphere Reserve plans to establish collaboration with all steppe biosphere reserves of Eurasia for exchange of scientific information and experience, and collaborative activities' organization. The territory of Korgalzhyn is situated at the crossroads of Central-Asian – Indian and Siberian – East-African birds' migration routes, so Biosphere Reserve plans to establish work contacts with all biosphere reserves located on these migration ways which also are sites of migrating birds'

15.4.4 Collaboration with existing biosphere reserves at the international level

Collaboration with existing biosphere reserves at the international level is not established yet. Biosphere Reserve plans to carry out collaborative scientific research of birds' migration with other biosphere reserves connected by migrating bird species in Asia and Africa, and, possibly, in Europe (there were cases when birds ringed in Kazakhstan were caught in Africa and then in Europe).

16 Uses and activities

16.1 Core Area

16.1.1 Uses and activities occurring within the core area

According to legislation of Kazakhstan, the main zone of proposed Biosphere Reserve is nature reserve zone, so all activities are strictly defined according to Article 40 Chapter 7 of the Law «On specially protected natural territories»:

1. Land and aviational works for forest and steppe fires prevention and extinguishing is permitted on the territory of state nature reserves.

2. Physical bodies' presence on the territory of state nature reserve are permitted only in the presence of permitting documents, excluding state nature reserve's staff and governmental officials in charge of state nature reserves.

3. For access to areas, worshiped by religion followers (pilgrimage sites) and situated on nature reserve's territory or out of its limits, state nature reserve's administration in agreement with corresponding religious association may permit free of charge group visit to these areas accompanied by state nature reserve's inspectors using the roads which go through nature reserve's territory.

According to Article 42 Chapter 7 of the Law «On specially protected natural territories» excursion paths and routes for regulated ecological tourism creation is permitted at specially designated areas which do not include especially valuable ecological systems and objects in the order established by the authorized body.

16.1.2 Possible adverse effects on the core area of uses or activities occurring within or outside the core area

Big damage of Biosphere Reserve's main zone biodiversity (and Korgalzhyn region fauna at all) is caused by spring floods, particularly volley discharge of floodwater by Sabundy hydropower (located outside Biosphere Reserve's territory). It usually happens in late May – early June. It is a real disaster for the majority of waterbirds: thousands of nests die. Since 2007 there is an agreement between this hydropower (Astana Su state enterprise) and Korgalzhyn State Nature Reserve about gradual water discharge.

Sometimes steppe fires appear on main zone's territory, mainly from thunderstorms, but sometimes fire starts on adjacent territory by hunters and fishermen's fault, and also from local people burning old grass. Spring fires are dangerous at reed lakes, they harm wild animals, especially their offspring. Every year Korgalzhyn State Nature Reserve staff and Fire Prevention Office of Korgalzhyn village compile collaborative activities plan for steppe fires extinguishing. Nature Reserve's staff promptly responds to fire appearance. There is big experience in steppe fires extinguishing technique, so necessary equipment and staff are quickly mobilized. Cordones are supplied with stationary radio transmitters, staff – with mobile radio transmitters, making connection with nature reserve's administration and between cordones quite easy. Besides, every cordone is equipped with fire extinguishing boards with fire extinguishing equipment. In 2009 Nature Reserve bought 8 backpack fire extinguishers. Also for fires prevention special boards were prepared and installed; they are warning about harmful effect of fires to biodiversity. Special booklets “Fire use restriction” in Russian and Kazakh were spread among farmers.

16.2 Buffer zone

16.2.1 Main land uses and economic activities in the buffer zone

Biosphere Reserve's buffer zone is actually protected zone of Korgalzhyn State Nature Reserve, so according to Article 42 Chapter 7 of the Law «On specially protected natural territories» all activities are strictly regulated. Different forms of economic activity may be carried out on the territory of state nature reserves' protected zones if they don't negatively influence the condition of nature reserve's ecological systems:

1) forestry activity;

2) traditional landuse, including cattle pasture and haymaking, as well as other activity in the limits of long-term biodiversity conservation and invulnarability;

3) tourism and recreational activity;

4) mineral waters, balneologic and climatic resources use;

5) commercial and sport fishing;

6) land and aviational works on forest and steppe fires extinguishing;

7) disturbed lands recultivation;

8) forest and other vegetation associations restoration;

9) wild animals' habitat and population restoration;

10) use of land areas for tourist sites development, nurseries for artificial reproduction, plantation of endemic, rare and disappearing plant and animal species, and service buildings (cordones) construction for state natural reserve's staff, providing them with service land plots.

16.2.2 Possible adverse effects on the buffer zone of uses or activities occurring within or outside the buffer zone

People from the villages adjacent to the buffer zone sometimes practice poaching – fishing and, to a smaller extent, waterfowl hunt. Main and buffer zones' large area and distance of many parts (especially newly added territory Western of Tengiz lake) do not allow their proper protection. In order to solve this problem 2 living wagons for security service inspectors were purchased and installed in Western part of Biosphere Reserve's main zone in 2010. This area's protection is performed in shifts.

As in the main zone, a lot of harm is caused by spring floods and periodic fires, appearing from thunderstorms and hunters/fishermen from adjacent transition zone's territory, as well as from local people burning old grass.

16.3 Transition area

Transition zone (development, collaboration zone) of Korgalzhyn Biosphere Reserve is situated on the territory of three administrative districts and two provinces, its total approximate area is about 970,000 ha. The whole territory of this zone is represented mainly by regions inhabited and developed long ago and is used for arable lands, fallow lands, pastures, wetlands and villages. Lands of Biosphere Reserve's transition zone are most suitable for cattle breeding development, as well as for fishing and hunting farms, although some part of these lands lost its original value to the present date.

Biosphere Reserve's conception is aimed to improve living conditions of local people with anthropogenic press decrease on natural ecosystems due to alternative economic activities introduction which do not harm the biodiversity. In the conditions of Biosphere Reserve it becomes possible to demonstrate practices for existing and potential biodiversity threats elimination or decrease on the given territory. These practices may then be used in the given or other regions with similar conditions. This is why the main short-term and long-term goal of Biosphere Reserve is decrease of the main threats which in the last 20 years led to local population living standards' decrease and income source reduction: 1) unsustainable use of water resources, 2) unsustainable use of biological resources (unsustainable fishing, hunting and agriculture).

16.3.1 Main land uses and major economic activities in the transition area

Transition zone (collaboration zone, zone of regulated nature use) is the land offered for agricultural, fishing and hunting use. Historically this land's specialization was agriculture, because the conditions here are favourable for industrial development. But total degradation of agricultural lands and forage lands' low productivity are the main constraints of social-economic development. It is perspective to restore fallow lands of transition zone as forage lands, and improve existing hayfields and pastures for sustainable development of mobile cattle breeding (meat production, horse breeding).

Agricultural and reserve lands are represented by arable lands, fallow lands and hayfield – pasture lands. Plants growing is not the main activity for local people due to lands' low fertility; in the last 5 years average yield is 6-7 centners per hectare. Arable lands occupy 121,167 ha of 381,806 ha of all agricultural lands. Since 1999 the area of cultivated land inconsiderably grew from 65,000 ha to 80,000 ha. The region is a zone of risky agriculture.

In **cattle breeding** area a tendency of cattle population and meat production growth is observed in the last several years. The number of cattle in the region in all farm categories (according to 2005) is 13,300 heads, sheep – 7,600, horses – 5,000, pigs – 665 and birds – 24,600. Of present livestock 99% of the cattle is owned by local people and farms. This is the main activity of local people due to high prices for meat production and high demand for sheep and horse production at internal market of Kazakhstan, and also because of many centuries of experience in sheep and horses breeding in extreme conditions of year-round pasture. In the transition zone there also are 19 hunting farms, and 10 fishing reservoirs owned by 15 nature users on a long-term basis.

In **fishing** part of Biosphere Reserve's reservoirs is owned by 10 nature users who perform commercial fishing. Average annual commercial fish catch is 519 tons, but only 178 tons are registered by nature users, the other 341 tons are not registered. The main reason for fishing poaching is low income of local people living near the lakes. Every year governmental decrees state limits for fish catch based on the documents submitted by regional department of fish inspection. Due to increasing demand for fish production it is necessary to organize measures for fish resources restoration and sustainable development. Biosphere Reserve allows successful addressing of these problems in the frames of its Coordination Council.

Hunting. In hunting farms of Tengiz-Korgalzhyn territory there are agricultural lands (arable and fallow lands), steppe lands (pastures, hayfields) and wetlands. Local people achieve inconsiderable income from hunting farms. The reasons include: uncontrolled hunting (weak normative documentation for withdrawn game animals counting procedures), lack of necessary number of hunting inspectors in hunting farms, lack of sufficient number of paid sites of temporary accommodation for hunters visiting hunting farm for a long term. In the present time paid sites for hunters' temporary accommodation are created, necessary staff is being employed, and normative documentation stating withdrawn game animals counting procedures is being introduced.

A new activity type – **ecological tourism** – is successfully developing in the last 20 years. In the last 10 years there already are several ecological routes in the buffer zone for popular science excursion, at the present time the routes are developed with inclusion of transition zone's interesting sites. The longest tourist visits to these two zones are counted for 18 people for 3-5 days. Taking into consideration small groups, daily recreational load is not more than 25 people. Routes use field roads of public use in the protected zone, stopping and camping sites are defined. Groups are accompanied by Nature Reserve's Security Service state inspectors on a mandatory basis.

16.3.2 Possible adverse effects of uses or activities on the transition area

Big number of cattle increases pressure on pasture natural ecosystems. Absence of local processing industry, rapid increase of transport rates and lack of sufficient number of agriculture machinery for hay and forage production by local people retains rapid development of milk and meat production. In the present time local people are forced to purchase hay and forage for part-time farming at very high prices. Uncontrolled use of wild fauna species for hunting may undermine this activity type for local people in the future. Increasing demand for fishing production increases pressure on water ecosystems and requires urgent measures for restoration and sustainable development of fishing resources, as well as development perspectives definition of this activity type. Negative influence on transition zone is possible in the future due to tourists number increase.



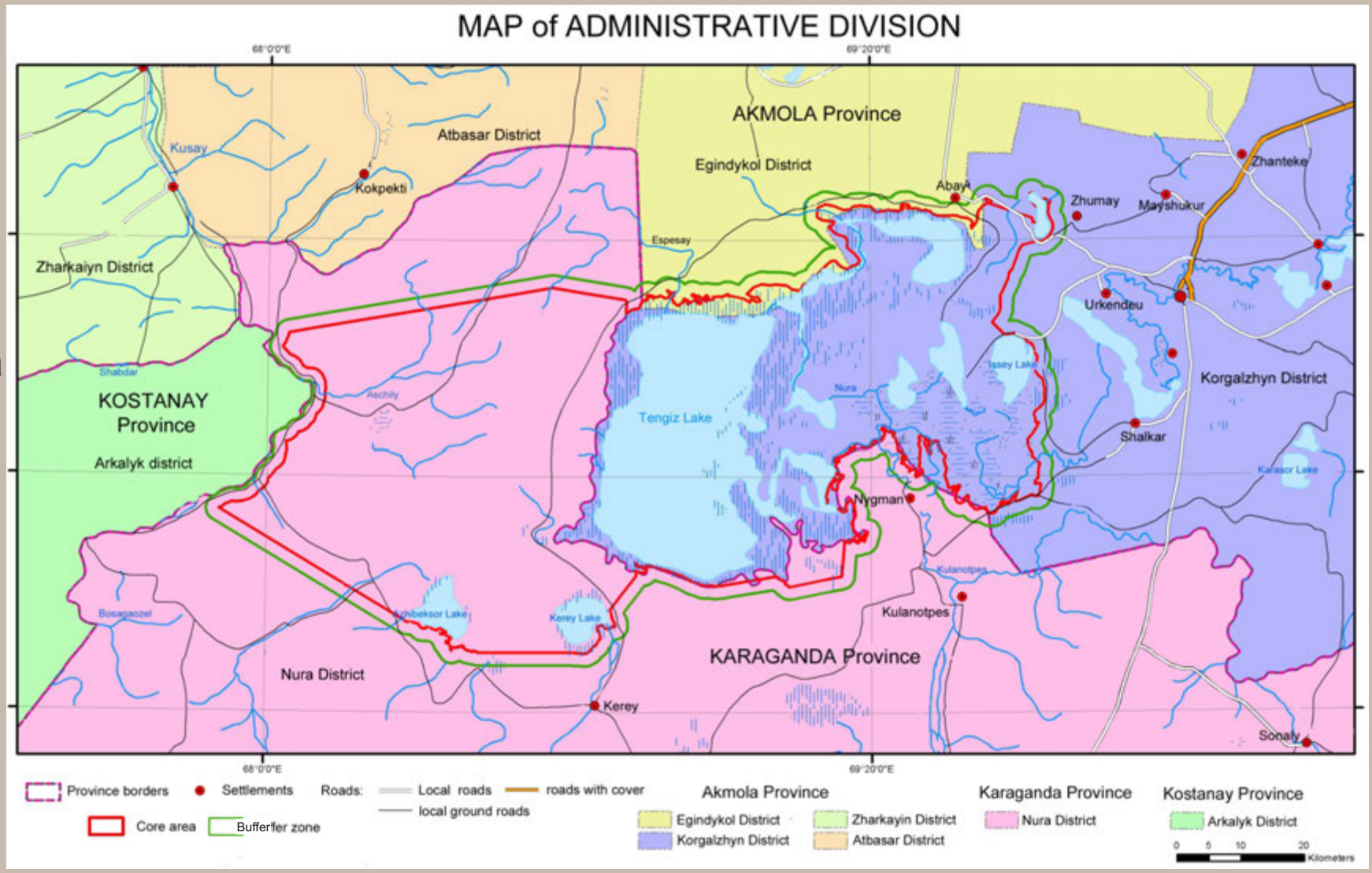
17 Institutional aspects

17.1 State, province, region or other administrative units

Country: Kazakhstan

Provinces: Akmola and Karaganda

Districts: Korgalzhyn, Egindykol and Nura



17.2 Units of the proposed Biosphere Reserve

1. Core zone – territory of Korgalzhyn State Nature Reserve.

2. Buffer zone – two-kilometer land stripe embracing the main Biosphere Reserve's zone along its perimeter. Buffer zone includes nature reserve's protection zone's lands and consists of agriculture lands and reserve lands. Part of agriculture lands are used by farmers for pasture and hayfield by agreement with governmental authorized body and under the control of Korgalzhyn State Nature Reserve's administration.

3. Transition developmental zone. Agricultural lands, lands of governmental reserve, settlements lands.

17.2.1 Are these units contiguous or are they separate?

Korgalzhyn Biosphere Reserve is not a cluster biosphere reserve and is represented by one single territory.

17.3 Protection regime of the core area and of the buffer zone

17.3.1 Core area

The core zone of Biosphere Reserve is the territory of Korgalzhyn State Nature Reserve. Nature Reserve corresponds to category 1A of IUCN protected territories. According to Article 40, Chapter 7 of the Law «On specially protected natural territories» strict nature reserve protection regime is established on the territory of state nature reserve. In March, 2003 a new Provision (Charter) of Korgalzhyn State Nature Reserve came into effect, approved by Decree № 42 of the Forest, Fishing and Hunting Committee of the Ministry of Natural Resources and Environmental Protection from March 21, 2003. In the present time the area of Korgalzhyn State Nature Reserve is 543,171 ha. The last area increase from 258,963 ha to 543,171 ha was performed by Governmental Decree № 1183 from December 18, 2008 on Korgalzhyn State Nature Reserve expansion.

The main title documents are Certificate of state registration of Korgalzhyn State Nature Reserve # 123-1902-09-ГУ, issued by Ministry of Justice of Kazakhstan and Provisions of state institution Korgalzhyn State Nature Reserve from March 21, 2003, and also State Act of land plot possession (cadastre number of land plot 01-008-019-001), issued by Akim of Korgalzhyn district of Akmola province of the Republic of Kazakhstan from May 12, 2004 (№ 164p) giving the permanent right of use of land plot with area of 258,963 ha with borders according to Land use plan, Government Decree № 1183 from December 18, 2008 about expansion of Korgalzhyn State Nature Reserve.

17.3.2 Buffer zone

Biosphere Reserve's buffer zone corresponds to nature reserve's protection zone (two-kilometer stripe along nature reserve's perimeter). According to Article 42 Chapter 7 of the Law «On specially protected natural territories» a special protection regime is established in protection zone of state nature reserve, permitting different forms of economic activity on this territory which do not negatively influence the condition of nature reserve's ecological systems. A 2-km buffer zone was first established around the nature reserve in April, 1974 by the Decree of Executive Committee of the Tselinograd oblast Soviet of Workers' Deputies «On establishment of the boundaries and regime of the buffer zone of Korgalzhyn State Nature Reserve».

Besides the Law of Kazakhstan «On specially protected natural territories» the main title documents regulating management problems of Biosphere Reserve's buffer zone (besides Certificate of state registration, Provisions on Korgalzhyn State Nature Reserve and State act on land plot possession, see 17.3.1) is Decree №36/03 of Karaganda district Akimat «On protected zone establishment of state institution «Korgalzhyn State Nature Reserve» on the territory of Karaganda district» from December 6, 2010.

17.4 Land use regulations or agreements applicable to the transition area

All lands of transition zone are administered by local regional Akimats. Besides, all private and state land users have their own state acts of land plots possession. Legal entities also have Certificates of state registration and Charters, regulating all activities of these organizations.

17.5 Land tenure of each zone

17.5.1 Core area

Core zone's territory is in state possession (national property) and administered by authorized state body – Forestry and Hunting Committee of Ministry of Agriculture of Kazakhstan. Main zone territory is managed by Korgalzhyn State Nature Reserve.

17.5.2 Buffer zone

Buffer zone lands are national (state) property and consist of agriculture and reserve lands. Agricultural lands are used by farmers. Inconsiderable part of buffer zone is in private possession of peasant farms (about 5%), but land use for pasture and hayfields is controlled by nature reserve's administration. Buffer zone is administered by authorized state body – Forestry and Hunting Committee of Ministry of Agriculture of Kazakhstan. As a whole the territory of buffer zone is controlled by Korgalzhyn State Nature Reserve.

17.5.3 Transition area

The territory of transition zone is divided between different owners. Most part of the lands is state property and is administered by district/regional Akimats (more than 50% of Biosphere Reserve), including lands of state reserve, agricultural lands, settlements and governmental institutions. The rest of the territory is owned by private organizations – joint-stock companies and limited liability companies (about 30% of the territory), and peasant farms (more than 20% of Biosphere Reserve's territory). Local authorities play considerable role in activity coordination of different state and private organizations in the limits of administrative unit, in collaborative operational plans on bioresources conservation, fire prevention and emergencies and in ecological education of population.

17.5.4 Foreseen changes in land tenure

No special programs on state lands privatization or private lands deprivatization are foreseen in the nearest 10 years. Last big expansion of Korgalzhyn State Nature Reserve's territory was already performed two years ago, so no changes in state nature reserve's territory are planned for the nearest 5-10 years.

17.6 Management plan or policy and mechanisms for implementation

In the present time Integrated Management Plan of Biosphere reserve represents simple composition of Management Plan of Korgalzhyn State Nature Reserve which is directed for the main and buffer zones of Biosphere Reserve development, and management plans of other nature users. Special Management Plan for Biosphere Reserve territory is not developed, there is no need for it at the present stage of Biosphere Reserve’s development. Nature users of protected and transition zones have their own management plans and all controversial issues are solved at the Coordinational Council of Biosphere Reserve sessions.

Generally, management of Biosphere Reserve is conducted through Coordinational Council of Korgalzhyn Biosphere Reserve, which is a coordinational management organ created to promote sustainable resources use policy, provide collaboration and overcome contradiction between state nature reserve and local people.

17.6.1 How the local communities have been associated with the nomination process

During the last three years the idea of Biosphere Reserve organization is often discussed between Korgalzhyn State Reserve administration, Akimats, local nature users and people. The main topics of this discussion are the following: how with biosphere reserve organization influence biological resources conservation and use, local regions' economic potential and educational level increase, and how will local population participate in Biosphere Reserve's management and nature protection initiatives. To the present date local people see Biosphere Reserve only as a mechanism to overcome conflicts between nature reserve and nature users. Unfortunately, local population still does not understand Biosphere Reserve as a mechanism for living standards increase due to natural environment sustainable management.

The idea was created by nature reserve's staff, managers and executives of GEF/UNDP Wetlands Project, scientists of Kazakhstan scientific research institutes. These ideas were discussed at different work meetings, seminars, ecological festivals with participation of local people and at specialized scientific conferences in 2008-2011. Final decision of nomination preparation was announced at regional scientific-practical conference of UNESCO in Almaty in May, 2010 at the meeting of MAB national committee's representatives, chiefs of nature reserves – potential biosphere reserves.

17.6.2 Main features of management plan or land use policy

The main long-term goal of Korgalzhyn Biosphere Reserve is integrated sustainable management of the territory, providing typical and unique ecosystems and biological diversity conservation with simultaneous development of local social-economic potential leading to local people's living standards increase. Short-term goal of Biosphere Reserve is conservation of typical, rare and unique natural complexes with entire set of their components in natural condition, as well as organization of territory management mechanisms allowing prevention of natural resources depletion and support their sustainable use by local people.

Population of Tengiz-Korgalzhyn lake system sees the necessity of nature riches' conservation for future generations. But according to the views of the majority of local people, it must be done by someone else – government, akimat at all levels, etc. This is why one of Biosphere Reserve's objectives is ecological education of local people, raising the responsibility for nature environment conservation. Nature reserve regime, established more than 40 years ago, formed special attitude and respect to nature reserve in local people's mind, although consumerism concerning nature reserve's resources is still observed. Small conflicts between local people and nature reserve existed from the moment of its organization. Biosphere Reserve creation will allow solving these conflicts and attracting local people to conscious and responsible nature resources management. Generally, biosphere reserve conception development will help local people increase their ecological competence level, arouse responsibility to the descendants for biodiversity conservation, establish ecologically-friendly methods of local natural resources use, and allow nature reserve staff finding more effective biodiversity conservation mechanisms of wetlands and variety of typical and unique ecosystems in dry steppe zone of central part of Eurasia, and also increase international importance of this territory in global aspect.

17.6.3 The designated authority or coordination mechanisms to implement this plan

Authorized management coordination organ of biosphere reserve is *Coordinational Council of Korgalzhyn Biosphere Reserve.* This organ is coordinational collegial public body and is created for introduction of effective management and sustainable resource use policies, introduction of alternative acitivity types, resource-conserving and resource-renewable technologies. Coordinational Council consists of representatives from Korgalzhyn State Nature Reserve, local nature users and public organizations, 3 regional administrations (Akimats), regional territorial Department of Forestry and Hunting, Astana Su state enterprise (Kenbidaik hydropower), district territorial Department of Fishing, regional associations of hunters and fishermen.

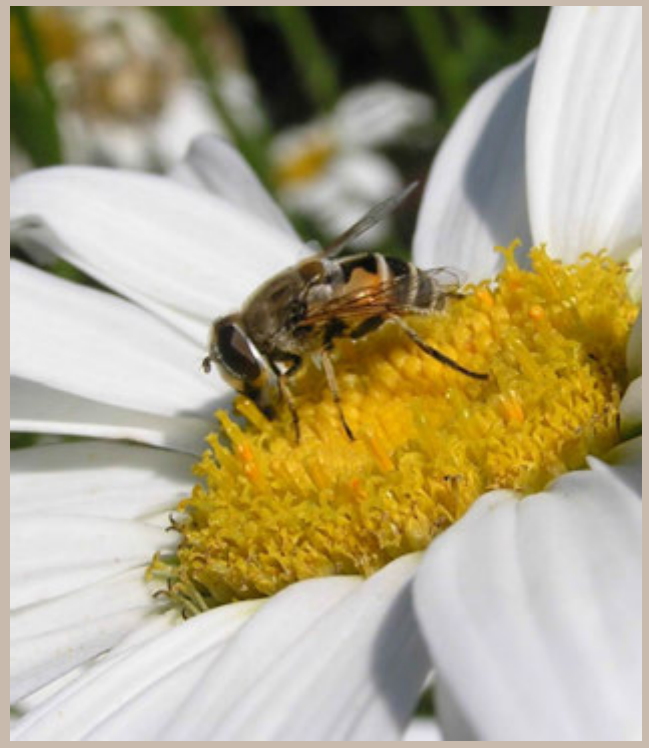
Coordinational Council was organized in 2011 on the basis of *Territorial Council of Wetland Resources Management of Tengiz-Korgalzhyn Territory* (created in the limits of GEF/UNDP Wetlands Project, worked from 2008 to 2011) and extended *Scientific – Technical Council of Nature Reserve*, which managed the territory from 2008 to 2011. Territorial Council consisted mostly of local authorities and state agencies representatives, and Scientific-Technical Council of nature reserve consisted of nature reserve's administration, local non-governmental organizations and land users. Then the present Coordinational Council was created for more effective collaboration between state bodies, local authorities, nature reserve and local people.

17.6.4 The means of application of the management plan

In the present time all questions concerning Biosphere Reserve management are solved at Coordinational Council sessions. Its sessions are used for addressing the problems of development and whole territory's management, biodiversity conservation and conflicts between nature users and nature reserve's administration. Council decisions are mandatory for all local organizations and private land users. Direct cooperation agreements between land owners and resource users were not practiced yet. Based on many centuries of community traditions and deep psychology of local population in the present time the fact of private land user (local citizen) membership in Coordinational Council implies loyal attitude to him and mandatory response to his decision.

17.6.5 How the local communities participate in the formulation and the implementation of the management plan

Local societies and private land users are represented in both Councils through their elected authorities representatives (in Territorial Council), local NGO or directly as its members (in Scientific-Technical Council). All Councils members have equal rights in decision-making voting.



17.6.6 The year of start of implementation of the management plan or policy

2010 is the year of Biosphere Reserve policy realization, after official decision announcement of its organization.

17.7 Financial source and yearly budget

(The only yet) financial source of Biosphere Reserve is state (national) budget (through Korgalzhyn State Nature Reserve). Approximate annual budget in Kazakhstan tenge is about 50,000,000 tenge.

Besides, 260,019,739 tenge from republican (national) budget and GEF/UNDP Project were spent in 2007-2011 for main and buffer Biosphere Reserve's zones development (infrastructure, nature reserve staff educaton, construction, equipment, etc.).

17.8 Authority(ies) in charge

17.8.1 The proposed biosphere reserve as a whole

Name: Korgalzhyn State Nature Reserve

Name the State administration to which this authority reports: The Forestry and Hunting Committee, Ministry of Agriculture of Republic of Kazakhstan

17.8.2 The core area

Name: Korgalzhyn State Nature Reserve

Legal powers: All necessary legal powers for supporting strict nature reserve regime in accordance with Article 40 Chapter 7 of Law «On specially protected natural territories».

17.8.3 The buffer zone

Name: Korgalzhyn State Nature Reserve
Akimat of Korgalzhyn district, Akmola Province
Akimat of Egendykol district, Akmola Province
Akimat of Nura district Karaganda Province

Legal powers: Main legal powers for administration: Korgalzhyn State Nature Reserve.

Legal powers for limited economic activity by agreement with Forestry and Hunting Committee of Ministry of Agriculture of Kazakhstan and under control of Korgalzhyn State Nature Reserve: Akimat of Korgalzhyn district of Akmola Province, Akimat of Egendykol district of Akmola Province, Akimat of Nura district of Karaganda Province.

18 Special designation

(Yes) UNESCO World Heritage Site

"STEPPE AND LAKES OF NORTHERN KAZAKHSTAN"
Korgalzhyn State Nature Reserve is one of the clusters
2008

(Yes) RAMSAR Wetland Convention Site

Korgalzhyn State Nature Reserve
October, 1976

(Yes) "LIVING LAKES" International Network

Korgalzhyn State Nature Reserve, member
June, 2000

(Yes) Important Bird Area

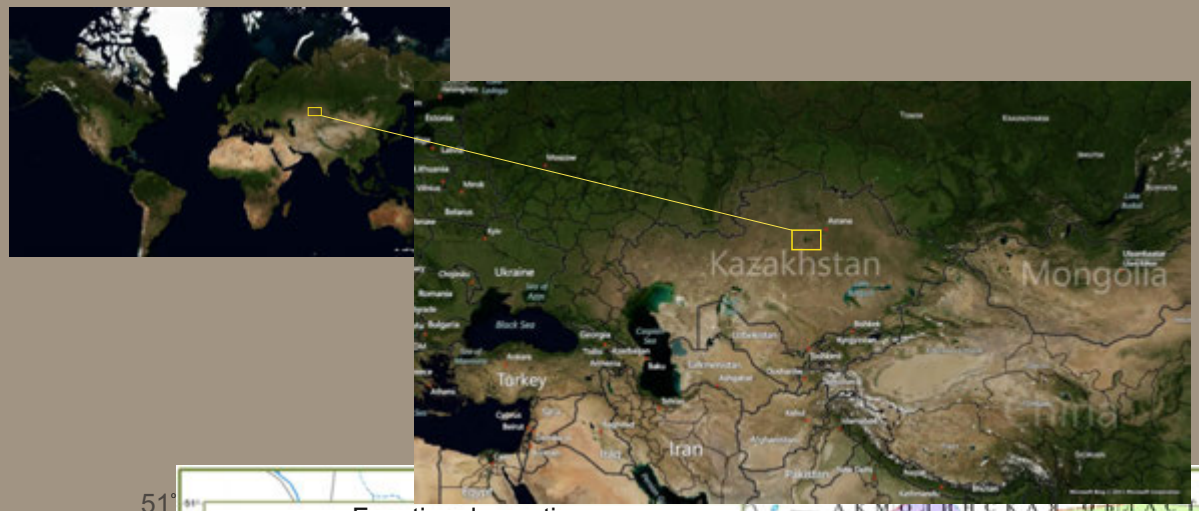
Korgalzhyn State Nature Reserve, member
2007

(Yes) Long term monitoring site

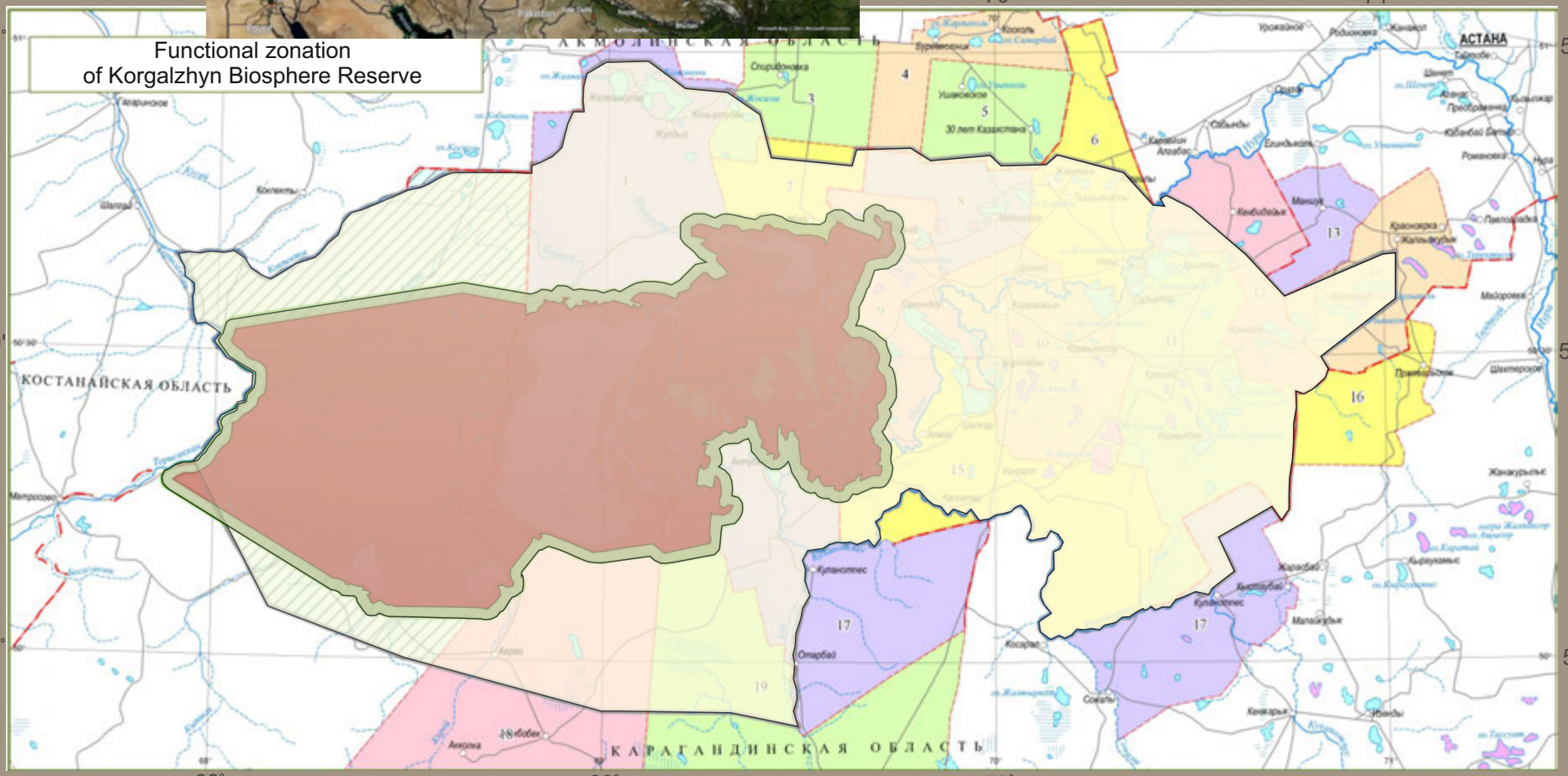
Regular observations of Tengiz-Korgalzhyn lake system dynamics, vegetation productivity and condition at monitoring sites, bird and mammal rare and model species population condition and numbers, as well as anthropogenic influence (fires, different violations of nature protection regime) registration are conducted on the territory of Korgalzhyn State Nature Reserve from 1974.

19 Supporting documents

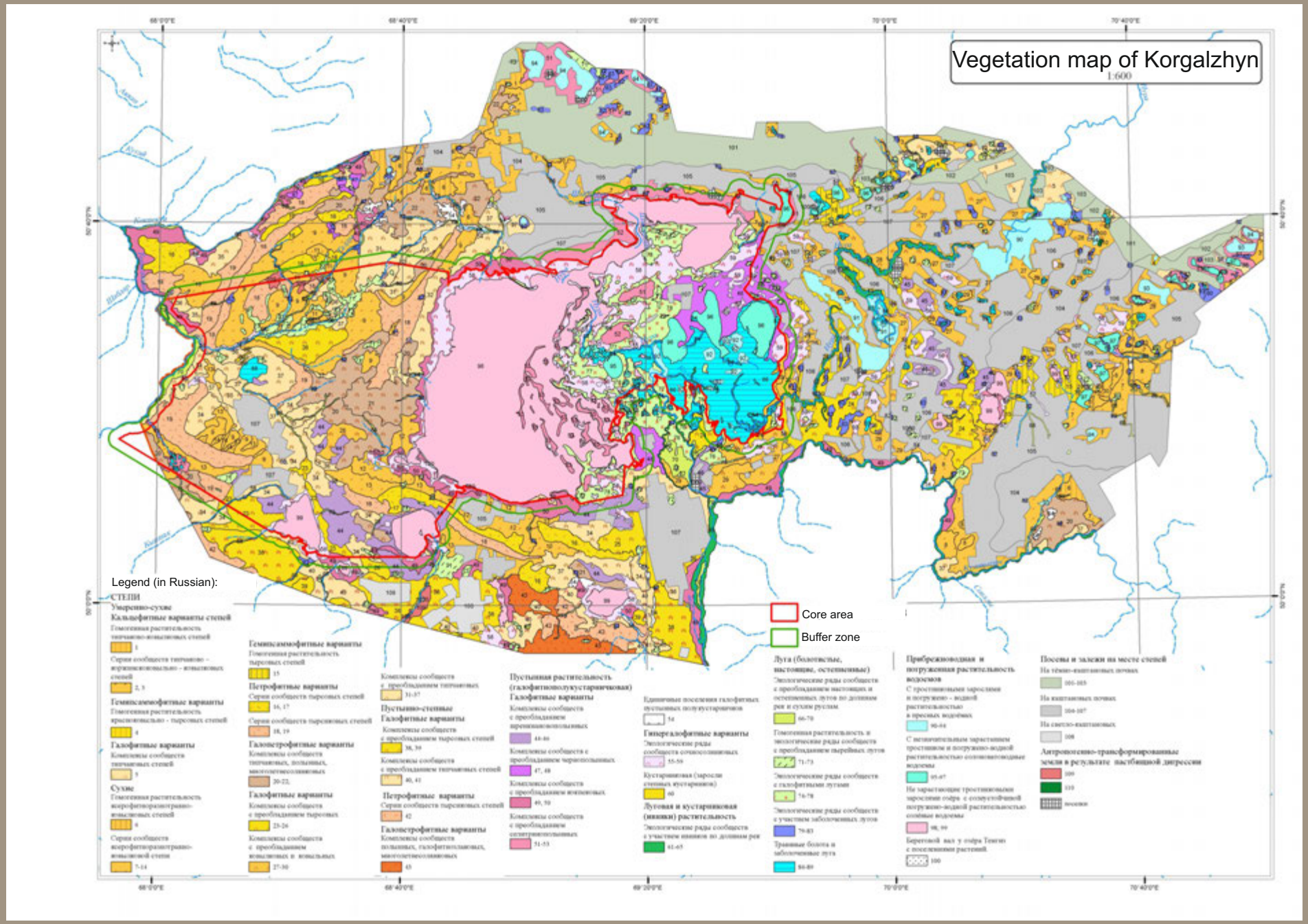
General location and Biosphere Reserve zonation map



Functional zonation
of Korgalzhyn Biosphere Reserve



Vegetation map of Biosphere Reserve



List of legal documents

1. The Law of the Republic of Kazakhstan "On specially protected natural territories" # 175-III ЗРК at 07 July 2006 (with amendments of 19.03.2010);
2. The Certificate of the state registration of State Nature Reserve # 123-1902-09-ГУ, issued by the Ministry of Justice of Kazakhstan
3. Regulations of state institution “Korgalzhyn State Nature Reserve” of the Forestry and Hunting Committee under the Ministry of Agriculture of the Republic of Kazakhstan at 21 March 2003

List of land use and management plans

1. Act on the right of permanent land use (cadastral number of land # 01-008-019-001), issued by the Governor of Korgalzhyn district of Akmola Oblast, Kazakhstan at 12 May 2004 №164р on the right of permanent use of land area of 258 963 ha within the boundaries of land according to land-use plan.
2. Resolution of Government of Kazakhstan # 1183 at 18 December 2008 on the land expansion of Korgalzhyn State Nature Reserve.
3. Resolution №36/03 of Governor of Karaganda Province “Mode and order of nature use in the protected-buffer zone of the Korgalzhyn State Nature Reserve” at 6 December 2010.
4. Resolution №36/03 of Governor of Karaganda Province “On establishing the protected-buffer zone of the Korgalzhyn State Nature Reserve on the territory of Karaganda Province” at 6 December 2010.
5. Management Plan for the Korgalzhyn State Nature Reserve. Approved by Order № 338 of Forestry and Hunting Committee of the Ministry of Agriculture of Kazakhstan at 27 November 2007.

Red-List of species of Korgalzhyn Biosphere Reserve

OSTEICHTHYES - FISHES

Cyprinus carpio Common Carp (IUCN)

REPTILIA - REPTILES

Vipera ursinii Meadow Viper (IUCN)

AVES - BIRDS

Phalacrocorax pygmeus Pygmy Cormorant (IUCN)

Pelecanus onocrotalus Great White Pelican ((KZ))

Pelecanus crispus Dalmatian Pelican (IUCN, KZ)

Egretta garzetta Little Egret (KZ)

Ciconia nigra Black Stork (KZ)

Plegadis falcinellus Glossy Ibis (KZ)

Platalea leucorodia Eurasian Spoonbill (KZ)

Phoenicopterus ruber Greater Flamingo (KZ)

Cygnus columbianus bewickii Bewick`s Swan (KZ)

Cygnus cygnus Whooper Swan (KZ)

Anser erythropus Lesser White-fronted Goose (IUCN, KZ)

Branta ruficollis Red-breasted Goose (IUCN, KZ)

Aythya nyroca Ferruginous Duck (IUCN, KZ)

Melanitta fusca Velvet Scoter (KZ)

Oxyura leucocephala White-headed Duck (IUCN, KZ)

Haliaeetus leucoryphus Pallas`s Fish Eagle (IUCN, KZ)

Haliaeetus albicilla White-tailed Eagle (IUCN, KZ)

Aegypius monachus Eurasian Black Vulture (IUCN)

Circaetus gallicus Short-toed Eagle (KZ)

Circus macrourus Pallid Harrier (IUCN)

Aquila clanga Greater Spotted Eagle (IUCN)

Aquila nipalensis Steppe Eagle (KZ)

Aquila heliaca Imperial Eagle (IUCN, KZ)

Aquila chrysaetos Golden Eagle (KZ)

Hieraaetus pennatus Booted Eagle (KZ)

Pandion haliaetus Osprey (KZ)

Falco naumanni Lesser Kestrel (IUCN)

Falco peregrinus Peregrine (KZ)

Falco cherrug Saker Falcon (IUCN, KZ)

Falco rusticolus Gyrfalcon (KZ)

Crex crex Corn Crake (IUCN)

Grus grus Common Crane (KZ)

Grus leucogeranus Siberian Crane (IUCN, KZ)

Anthropoides virgo Demoiselle Crane (KZ)

Tetrax tetrax Little Bustard (IUCN, KZ)

Chlamydotis undulata Houbara Bustard (IUCN, KZ)

Otis tarda Great Bustard (IUCN, KZ)

Glareola nordmanni Black-winged Pratincole (IUCN)

Vanellus gregarius Sociable Lapwing (IUCN, KZ)

Limnodromus semipalmatus Asian Dowitcher (IUCN, KZ)

Numenius tenuirostris Slender-billed Curlew (IUCN, KZ)

Larus ichthyaetus Pallas's Gull (KZ)

Pterocles orientalis Black-bellied Sandgrouse (KZ)

Pterocles alchata Pin-tailed Sandgrouse (KZ)

Syrrhaptes paradoxus Pallas`s Sandgrouse (KZ)

Bubo bubo Eurasian Eagle Owl (KZ)

Emberiza aureola Yellow-breasted Bunting (IUCN, KZ)

MAMMALIA - Mammals

Myotis dasycneme Pond Bat (IUCN)

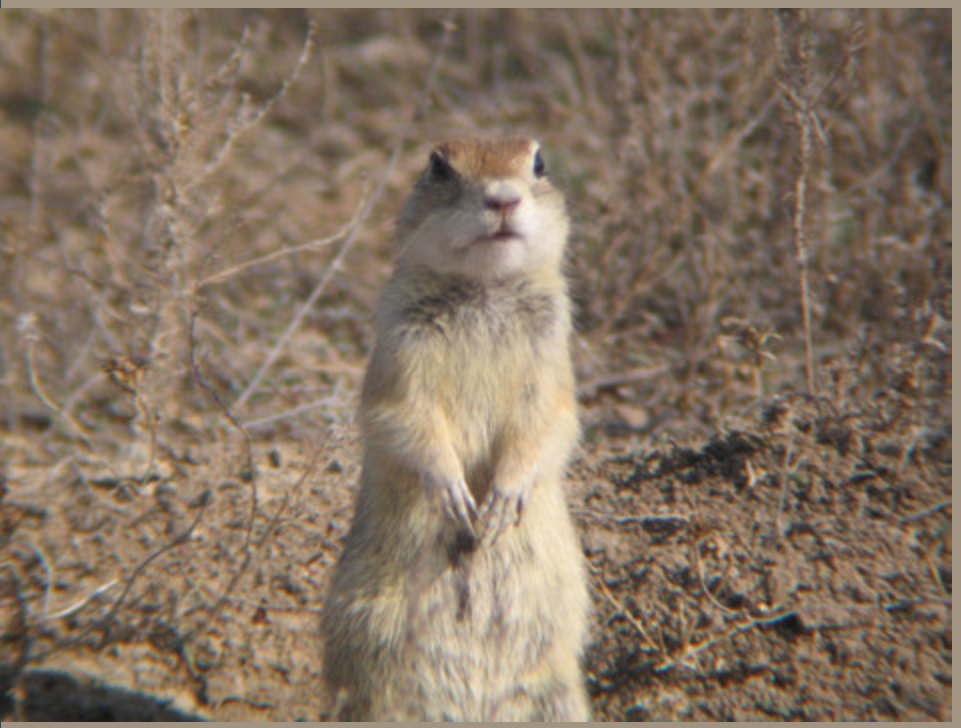
Saiga tatarica Saiga Antelope (IUCN)

Marmota bobac Bobak Marmot (IUCN)

Sicista subtilis Southern Birch Mouse (IUCN)

Cricetulus migratorius Grey Hamster (IUCN)

Ochotona pusilla Steppe Pika (IUCN)



List of endemic and relic species of Korghalzhyn Biosphere Reserve

ENDEMICS

Mammalia - MAMMALS

Ochotona pusilla Steppe Pika
Endemic of Kazakhstan Table Land

Spermophilus pugmaes Little Souslik
Endemic of Desert zone of Kazakhstan

Spermophilus fulvus Large-toothed Souslik
Endemic of Desert zone of Kazakhstan

Lagurus lagurus Steppe Lemming
Endemic of Steppe zone of Kazakhstan

Sicista subtilis Southern Birch Mouse
Endemic of Kazakhstan Table Land

Cricetus cricetus Common Hamster
Endemic of Steppe zone of Kazakhstan

Saiga tatarica Saiga Antelope
Endemic of Desert zone of Kazakhstan

Aves - Birds

Vanellus gregarious Sociable Lapwing
Endemic of Steppe zone of North Eurasia

Melanocorypha yeltoniensis Black Lark
Endemic of Steppe zone of North Eurasia

Melanocorypha leucoptera White- winged Lark
Endemic of Steppe zone of North Eurasia

RELIC

Mammalia - Mammals

Hemiechinus auritus Long-eared Hedgehog
Relic of Pleistocene

Ochotona pusilla Steppe Pika
Relic of Pleistocene

Spermophilus pugmaes Little Souslik
Relic of Pleistocene

Spermophilus fulvus Large-toothed Souslik
Relic of Pleistocene

Allactaga major Great Jerboa
Relic of Pleistocene

Allactaga elater Five-toed Jerboa
Relic of Pleistocene

Cricetulus eversmanni Eversmann's Hamster
Relic of Pleistocene

Vulpes corsac Corsac Fox
Relic of Pleistocene

Saiga tatarica Saiga Antelope
Relic of Pleistocene

Aves - Birds

Phoenicopterus ruber Greater Flamingo
Relic of the Tertiary period

Charadrius alexsandrinus Kentish Plover
Relic of the Tertiary period

Charadrius asiaticus Caspian Plover
Relic of the Tertiary period

Larus genei Slender-billed Gull
Relic of the Tertiary period

Larus ichthtyaetus Pallas' Gull
Relic of the Tertiary period

Gelochelidon nilotica Gull-billed Tern
Relic of the Tertiary period

Sterna caspia Caspian Tern
Relic of the Tertiary period

List of economically important plant species of Korgalzhyn Biosphere Reserve

#	Russian Common name	Scientific Name
Fodder Plants:		
1.	Житняк гребневидный	*Agropyron pectinatum*
2.	Полевица гигантская	*Agrostis gigantea*
3.	Пырей ползучий	*Elytrigia repens*
4.	Типчак	*Festuca valesiaca*
5.	Тонконог тонкий	*Koeleria cristat*a
6.	Тростник обыкновенный	*Phragmites australis*
7.	Бескильница длинночешуйная	*Puccinellia dolicholepis*
8.	Кострец безостый	*Zerna inermis*
9.	Мятлик узколистный	*Poa angustifolia*
10.	Мятлик луковичный	*Poa bulbosa*
11.	Мятлик болотный	*Poa palustris*
12.	Мятлик луговой	*Poa pratensis*
13.	Клубнекамыш морской	*Bolboschoenus maritimus*
14.	Осока черноколосая	*Carex melanostachya*
15.	Осока ранняя	*Carex praecox*
16.	Астрагал большеног	*Astragalus macropus*
17.	Солодка уральская	*Glycyrrhiza uralensis*
18.	Люцерна серповидная	*Medicago falcata*
19.	Кохия простертая	*Kochia prostrata*
20.	Камфоросма лессинга	*Camphorosma lessingii*
21.	Петросимония трехтычинковая	*Petrosimonia triandra*
22.	Полынь лерховская	*Artemisia lerchiana*
23.	Полынь маршалловская	*Artemisia marchalliana*
24.	Полынь селитряная	*Artemisia nitrosa*
25.	Полынь малоцветковая	*Artemisia pauciflora*
26.	Полынь шренковская	*Artemisia schrenkiana*
27.	Полынь лессинговидная	*Artemisia sublessingiana*
Food plants:		
1.	Лебеда копьевидная	*Atriplex hastata*
2.	Клубнекамыш морской	*Bolboschoenus maritimus*
3.	Сусак зонтичный	*Bitomus umbellatus*
4.	Марь белая	*Chenopodium album*
5.	Марь городская	*Chenopodium urbicum*
6.	Солодка уральская	*Glycyrrhiza uralensis*
7.	Хультемия персидская	*Hulthemia persica*
8.	Латук дикий	*Lactuca serriola*
9.	Клоповник широколистный	*Lepidium latifolium*
10.	Щавель курчавый	*Rumex crispus*
11.	Рогоз узколистный	*Typha angustifolia*
Medicinal Plants:		
1.	Тысячелистник благородный	*Achillea nobilis*
2.	Хвойник двухколосковый	*Ephedra distachya*
3.	Ферула джунгарская	*Ferula soongarica*
4.	Солодка уральская	*Glycyrrhiza uralensis*
5.	Кермек гмелина	*Limonium gmelinii*
6.	Подорожник большой	*Plantago major*
7.	Щавель курчавый	*Rumex crispus*
8.	Крестовник якова	*Senecio jacobaea*
9.	Термопсис ланцетный	*Thermopsis lanceolata*
10.	Тимьян маршалловский	*Thymus marschallianus*
11.	Крапива двудомная	*Urtica dioica*
12.	Чабрец	*Thymus marschallianus*
Noxious plants:		
1.	Дескурайния софия	*Descurainia sophia*
2.	Ферула джунгарская	*Ferula soongarica*
3.	Качим метелчатый	*Gypsophila paniculata*
4.	Крестовник якова	*Senecio jacobaea*
5.	Термопсис ланцетный	*Thermopsis lanceolata*
Honey Plants:		
1.	Василек скабиоза	*Centaurea scabiosa*
2.	Подмаренник русский	*Galium ruthenicum*
3.	Люцерна серповидная	*Medicago falcata*

#	Russian Common name	Scientific Name
4.	Мята полевая	*Mentha arvensis*
5.	Зопник клубненосный	*Phlomoides tuberosa*
6.	Шалфей степной	*Salvia stepposa*
7.	Тимьян маршалловский	*Thymus marschallianus*

Vitamin plants:

1.	Хвойник двухколосковый	*Ephedra distachya*
2.	Полынь кустарниковая	*Artemisia procera*
3.	Люцерна серповидная	*Medicago falcata*
4.	Шалфей степной	*Salvia stepposa*

Ether-and fatty-oil plants:

1.	Полынь австрийская	*Artemisia austriaca*
2.	Полынь лерховская	*Artemisia lerchiana*
3.	Полынь эстрагон	*Artemisia dracunculus*
4.	Полынь холодная	*Artemisia frigida*
5.	Полынь малоцветковая	*Artemisia pauciflora*
6.	Полынь понтийская	*Artemisia pontica*
7.	Полынь сиверсовская	*Artemisia sieversiana*
8.	Ферула каспийская	*Ferula caspica*
9.	Поручейник сизаровидный	*Sium sisaroideum*
10.	Мята полевая	*Mentha arvensis*
11.	Тимьян маршалловский	*Thymus marschallianus*
12.	Дурнишник обыкновенный	*Xanthium strumarium*

Tanning plants:

1.	Ива трехтычинковая	*Salix triandra*
2.	Щавель курчавый	*Rumex crispus*
3.	Кермек каспийский	*Limonium caspium*
4.	Кермек золотистый	*Limonium chrysocomum*
5.	Кермек гмелина	*Limonium gmelinii*
6.	Кермек полукустарниковый	*Limonium suffruticosum*

#	Russian Common name	Scientific Name

Industrial plants:

1.	Кокпек	*Atriplex cana*
2.	Лебеда копьевидная	*Atriplex hastata*
3.	Лебеда татарская	*Atriplex tatarica*
4.	Сусак зонтичный	*Butomus umbellatus*
5.	Солодка уральская	*Glycyrrhiza uralensis*
6.	Поташник олиственный	*Kalidium foliatum*
7.	Тростник	*Phragmites australis*
8.	Рогоз узколистный	*Typha angustifolia*
9.	Чий блестящий	*Achnatherum splendens*
10.	Вейник наземный	*Calamagrostis epigeios*
11.	Ива трехтычинковая	*Salix triandra*
12.	Камыш озерный	*Scirpus lacustris*
13.	Табернемонтана	*Scirpus tabernaemontani*

Ornamental plants:

1.	Рябчик малый	*Fritillaria meleagroides*
2.	Тюльпан поникающий	*Tulipa patens*
3.	Тюльпан шренка	*Tulipa schrenkii*
4.	Василек скабиоза	*Centaurea scabiosa*
5.	Качим метелчатый	*Gypsophila paniculata*
6.	Хультемия персидская	*Hulthemia persica*
7.	Ива трехтычинковая	*Salix triandra*
8.	Коровяк фиолетовый	*Verbascum phoeniceum*

List of economically important animal species of Korghalzhyn Biosphere Reserve

#	Russian Common name	Scientific Name

Fishes

About half of living in the Biosphere Reserve 17 species of fish are harvested and represent a significant economic resource. It is known that main commercial fish resources sold in Akmola province are concentrated in the lakes of Korgalzhyn region. Constant fishing and sale of fish is an important resource for livelihoods of local people.

Harvested species :

1.	Щука	*Esox lucius*
2.	Карп	*Cyprinus carpio*
3.	Карась золотой	*Carassius carassius*
4.	Карась серебряный	*Carassius auratus*
5.	Судак	*Stizostedion lucioperca*
6.	Лещ	*Abramis brama*
7.	Линь	*Tinca tinca*

Birds

1.	Чернозобая гагара	*Branta bernicla*
2.	Серый гусь	*Anser anser*
3.	Гуменник	*Anser fabalis*
4.	Белолобый гусь	*Anser albifrons*
5.	Огарь	*Tadorna ferruginea*
6.	Пеганка	*Tadorna tadorna*
7.	Кряква	*Anas platyrhinchos*
8.	Чирок-свистунок	*Anas crecca*
9.	Чирок-трескунок	*Anas querquedula*
10.	Серая утка	*Anas strepera*
11.	Свиязь	*Anas penelope*
12.	Шилохвость	*Anas acuta*
13.	Широконоска	*Anas clypeata*
14.	Красноносый нырок	*Netta rufina*
15.	Красноголовый нырок	*Aythya ferina*
16.	Хохлатая чернеть	*Aythia fuligula*
17.	Гоголь	*Bucephala clangula*
18.	Луток	*Mergus albellus*
19.	Длинноносый крохаль	*Mergus serrator*
20.	Большой крохаль	*Mergus merganser*

#	Russian Common name	Scientific Name
21.	Белая куропатка	*Lagopus lagopus*
22.	Серая куропатка	*Perdix perdix*
23.	Перепел	*Coturnix coturnix*
24.	Пастушок	*Rallus aquaticus*
25.	Коростель	*Crex crex*
26.	Лысуха	*Fulica atra*
27.	Большая горлица	*Streptopelia orientalis*
28.	Турухтан	*Phylomachus pugnax*
29.	Большой кроншнеп	*Numenius arquata*
30.	Средний кроншнеп	*Numenius phaeopus*
31.	Большой веретенник	*Limosa limosa*

Mammals

1.	Сурок-байбак	*Marmota bobac*
2.	Ондатра	*Ondatra zibethica*
3.	Лисица	*Vulpes vulpes*
4.	Корсак	*Vulpes corsac*
5.	Хорь степной	*Mustela eversmanni*
6.	Горностай	*Mustela erminea*
7.	Барсук	*Meles meles*
8.	Заяц-беляк	*Lepus timidus*
9.	Заяц-русак	*Lepus europaeus*
10.	Кабан	*Sus scrofa*

The species lists of flora and fauna of the core area of Korgalzhyn Biosphere Reserve are available at website “Protected areas of Central Asia” by links:

List of vascular plants - http://iucnca.net/inforeserve1123
List of lichens - http://iucnca.net/inforeserve1124
List of macromycetes - http://iucnca.net/inforeserve1125
List of beetles - http://iucnca.net/inforeserve1126
List of some butterflies - http://iucnca.net/inforeserve1127
List of dragonflies - http://iucnca.net/inforeserve1128
List of vertebrates - http://iucnca.net/inforeserve1129

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20 Addresses

20.1 Contact addresses of the proposed biosphere reserve

Name: Korgalzhyn Biosphere Reserve
Street or P.O. Box: 30/1 Aubakirova Str.
City with postal code: Korghalzhyn Village, Korgakzhyn District, Akmola Province, 021300
Country: Kazakhstan
Telephone: (+7 716) 372 16 50 or +7 701 467 71 40
Telefax (or telex): (+7 716) 372 13 01
E-mail: korgbiosphere@mail.kz

20.2 Administering entity of the core area

Name: Korgalzhyn State Nature Reserve
Street or P.O. Box: 20 MadinStr.
City with postal code: Korghalzhyn Village, Korgakzhyn District, Akmola Province, 021300
Country: Kazakhstan
Telephone: (+7 716) 372 16 50 or +7 701 467 71 40
Telefax (or telex): (+7 716) 372 13 01
E-mail: olga.koshkina@mail.ru
Веб-сайт: http://iucnca.net/reserve113

20.3 Administering entity of the buffer zone

Name: Korgalzhyn State Nature Reserve
Street or P.O. Box: 20 MadinStr.
City with postal code: Korghalzhyn Village, Korgakzhyn District, Akmola Province, 021300
Country: Kazakhstan
Telephone: (+7 716) 372 16 50 or +7 701 467 71 40
Telefax (or telex): (+7 716) 372 13 01
E-mail: olga.koshkina@mail.ru

Annex

Annex to Biosphere Reserve Nomination Form
MABnet Directory of Biosphere Reserves
Biosphere Reserve Description

Administrative details

Country: Kazakhstan
Name of BR: Korgalzhyn
Administrative authorities: Korgalzhyn State Nature Reserve
Name Contact: Coodination Council
Contact address: 20 MadinStr., Korghalzhyn Village, Korgakzhyn District, Akmola Province, 021300, Kazakhstan

General description

The territory of Biosphere Reserve is located in dry steppe zone and is occupied by diverse terrestrial and aquatic ecosystems. Territory is characterized by elevated plains, interhill plains, melkosopochnik petrophyte steppes, lake bottoms and low plains, and flat and wavy lake-alluvial plains. Central territory of Tengiz-Korgalzhyn large lake depressions and low plains is occupied by saline meadows, solonchak, solonetz and spacious wetlands. Eastern part of the territory is located in Nura and Kulanutpes river basins. Besides Nura lake system (Uyalyshalkar, Shalkar-Birtaban, Korgalzhyn lake systems) in ancient gullies of this territory there also are Zhumay-Maishukur and Zharlykol-Karasor lake systems. Huge Tengiz saline lake is situated in central part of Biosphere Reserve, and large saline lakes Kypshak and Kirey – in South. Several isolated fresh lakes are located in Northern part of the territory. Large areas of virging steppe are situated Western from Teniz lake in plains and melkosopochnik.

Human population of proposed biosphere reserve: Core area – no population, about 10-30 nature protectionists working inside core area simultaneously (staff of Korgalzhyn State Nature Reserve), buffer zone - about 500 people (Abay and Nygman villages), transition Area - about 12,000 people.

Units of the proposed biosphere reserve: Korgalzhyn Biosphere Reserve is not cluster reserve and is represented by one single territory.

1. Main zone – territory of Korgalzhyn State Nature Reserve. Zone's area at the present time is 543,171 ha. Last area expansion from 258,963 ha to 543,171 ha was performed by Governmental Decree № 1183 from December 18, 2008.

2. Buffer zone – two-kilometer land stripe, embracing Biosphere Reserve's main zone's perimeter. Buffer zone includes lands of nature reserve protection zone and consists of agricultural and reserve lands. Part of agricultural lands is used by farmers for pasture and haymaking by agreement with governmental authority and under the control of Korgalzhyn State Nature Reserve administration.

3. Transition development zone. Lands of agricultural use, lands of governmental reserve, lands of settlements. All lands of transition zone are administered by local regional Akimats. Besides, all private and state land users have their own Certificates of land plot possession.

Major ecosystem type
Reed thickets, lakes' shallow waters, meadows and shrub thickets along rivers, and virgin steppe ecosystems.

Major habitats & land cover types
Aquatic ecosystem of saline lakes (Regional), Aquatic ecosystem of freshand saltish lakes (Regional); dry steppe (Regional).

Location (latitude & longitude): N 50º 05′/ E 69º 12′ 09,11", north border - N 50º 59′, south - N 49º 54′, west - E 67º 53′ and east - 71º 01′.

Area (ha).Total*:* 1 603 171 ha

Core area*(s):* 543 171 ha

Buffer zone*(s):* 90 000 ha

Transition area*(s) (when given):* 970 000 ha

Different existing zonation: (7.4)

Altitudinal range *(*metres above sea level): from 285 m to 427 m.

Research and monitoring

Complex research of water level and chemical composition in water reservoirs and streams, water consumption in watercourses was conducted in 2004-2011. «Nature Chronicles» is prepared, spring and autumn birds' countings, winter mammals counting are carried out every year since 1974. In 2004-2011 complex geobotanic, floristic and faunistic research was carried out on the territory with participation of specialists from academic institutes of Kazakhstan. These researches served as a basis for Biodiversity Components Monitoring Program development. In 2004 a group of sociologists prepared a review and gave an evaluation of modern social-economic situation in the region concerning demography and migration, agriculture, industry, fishery, hunting industry, social infrastructure; also recommendations on territory's zoning and sustainable economic development zone's development were given.

Specific variables

Abiotic

Abiotic factors	X	Heavy metals	X
Acidic deposition/Atmospheric factors		Hydrology	X
Air quality		Indicators	X
Air temperature	X	Meteorology	X
Climate, climatology	X	Modeling	
Contaminants	X	Monitoring/methodologies	X
Drought	X	Nutrients	
Erosion		Physical oceanography	
Geology	X	Pollution, pollutants	X
Geomorphology	X	Siltation/sedimentation	X
Geophysics		Soil	X
Glaciology		Speleology	
Global change		Topography	X
Groundwater		Toxicology	X
Habitat issues	X	UV radiation	

Specific variables

Biodiversity

Afforestation/Reforestation		Evapotranspiration		Pests/Diseases	
Algae	X	Evolutionary studies/Palaeoecology		Phenology	X
Alien and/or invasive species	X	Fauna	X	Phytosociology/Succession	X
Amphibians	X	Fires/fire ecology	X	Plankton	X
Arid and semi-arid systems	X	Fishes	X	Plants	X
Autoecology		Flora	X	Polar systems	
Beach/soft bottom systems	X	Forest systems		Pollination	
Benthos	X	Freshwater systems	X	Population genetics/dynamics	X
Biodiversity aspects	X	Fungi	X	Productivity	X
Biogeography	X	Genetic resources	X	Rare/Endangered species	X
Biology	X	Genetically modified organisms		Reptiles	X
Biotechnology		Home gardens		Restoration/Rehabilitation	X
Birds	X	Indicators	X	Species (re) introduction	X
Boreal forest systems		Invertebrates	X	Species inventorying	X
Breeding		Island systems/studies		Sub-tropical and temperate rainforest systems	
Coastal/marine systems	X	Lagoon systems			
Community studies	X	Lichens	X	Taxonomy	X
Conservation	X	Mammals	X	Temperate forest systems	
Coral reefs		Mangrove systems		Temperate grassland systems	X
Degraded areas	X	Mediterranean type systems		Tropical dry forest systems	
Desertification		Microorganisms		Tropical grassland and savannah systems	
Dune systems		Migrating populations	X	Tropical humid forest systems	
Ecology	X	Modeling		Tundra systems	
Ecosystem assessment	X	Monitoring/methodologies	X	Vegetation studies	X
Ecosystem functioning/structure	X	Mountain and highland systems		Volcanic/Geothermal systems	
Ecotones	X	Natural and other resources		Wetland systems	X
Endemic species	X	Natural medicinal products		Wildlife	X
Ethology	X	Perturbations and resilience			

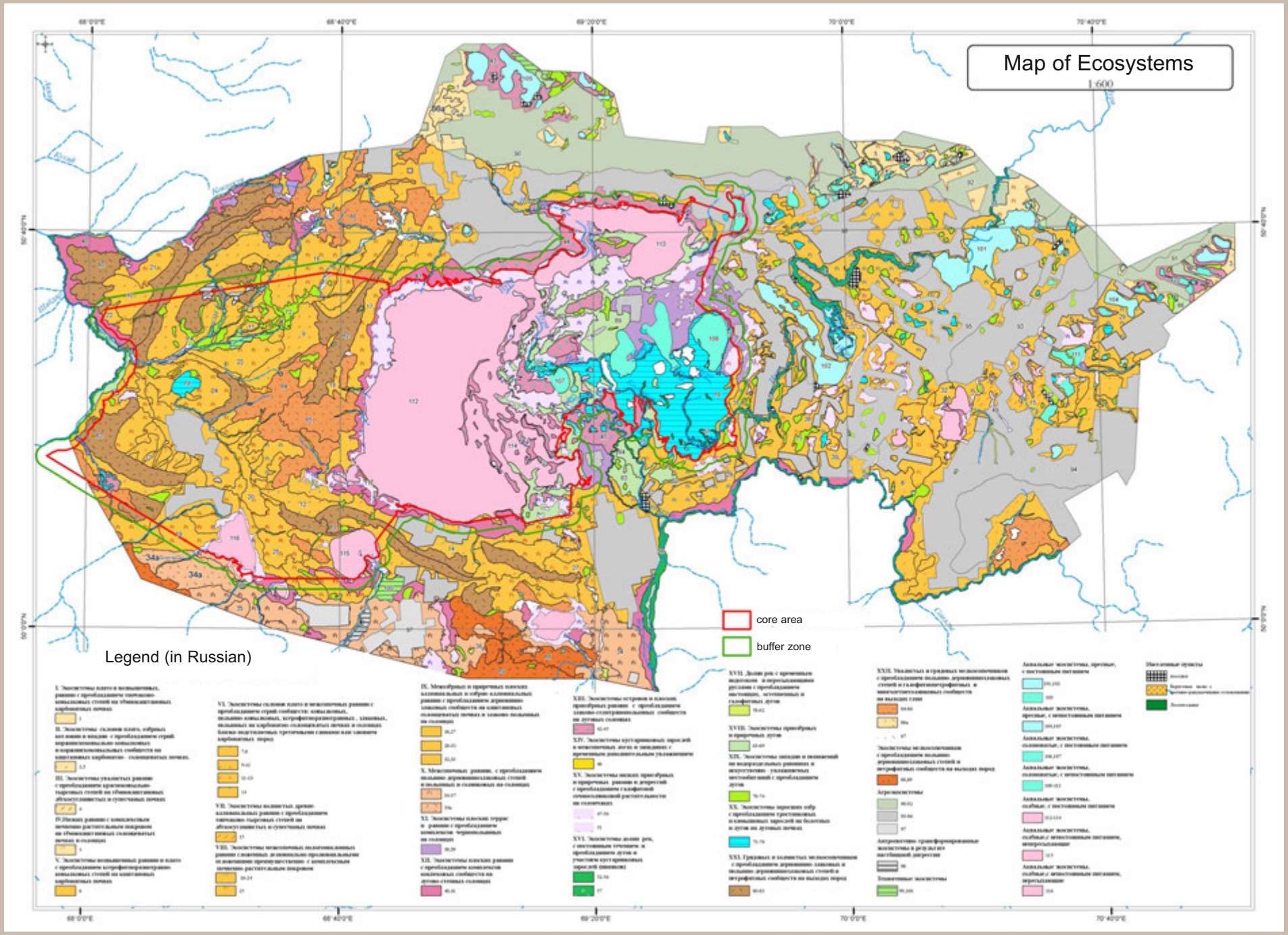
Socio-economic

Agriculture/Other production systems	X
Agroforestry	
Anthropological studies	X
Aquaculture	
Archaeology	X
Bioprospecting	
Capacity building	X
Cottage (home-based) industry	
Cultural aspects	X
Demography	X
Economic studies	X
Economically important species	X
Energy production systems	
Ethnology/traditional practices/knowledge	X
Firewood cutting	
Fishery	X
Forestry	
Human health	
Human migration	X
Hunting	X
Indicators	X
Indicators of sustainability	X
Indigenous people's issues	
Industry	
Livelihood measures	X
Livestock and related impacts	X
Local participation	X
Micro-credits	
Mining	
Modeling	
Monitoring/methodologies	X
Natural hazards	
Non-timber forest products	
Pastoralism	X
People-Nature relations	X
Poverty	
Quality economies/marketing	
Recreation	X
Resource use	X
Role of women	
Sacred sites	
Small business initiatives	
Social/Socio-economic aspects	X
Stakeholders' interests	X
Tourism	X
Transports	

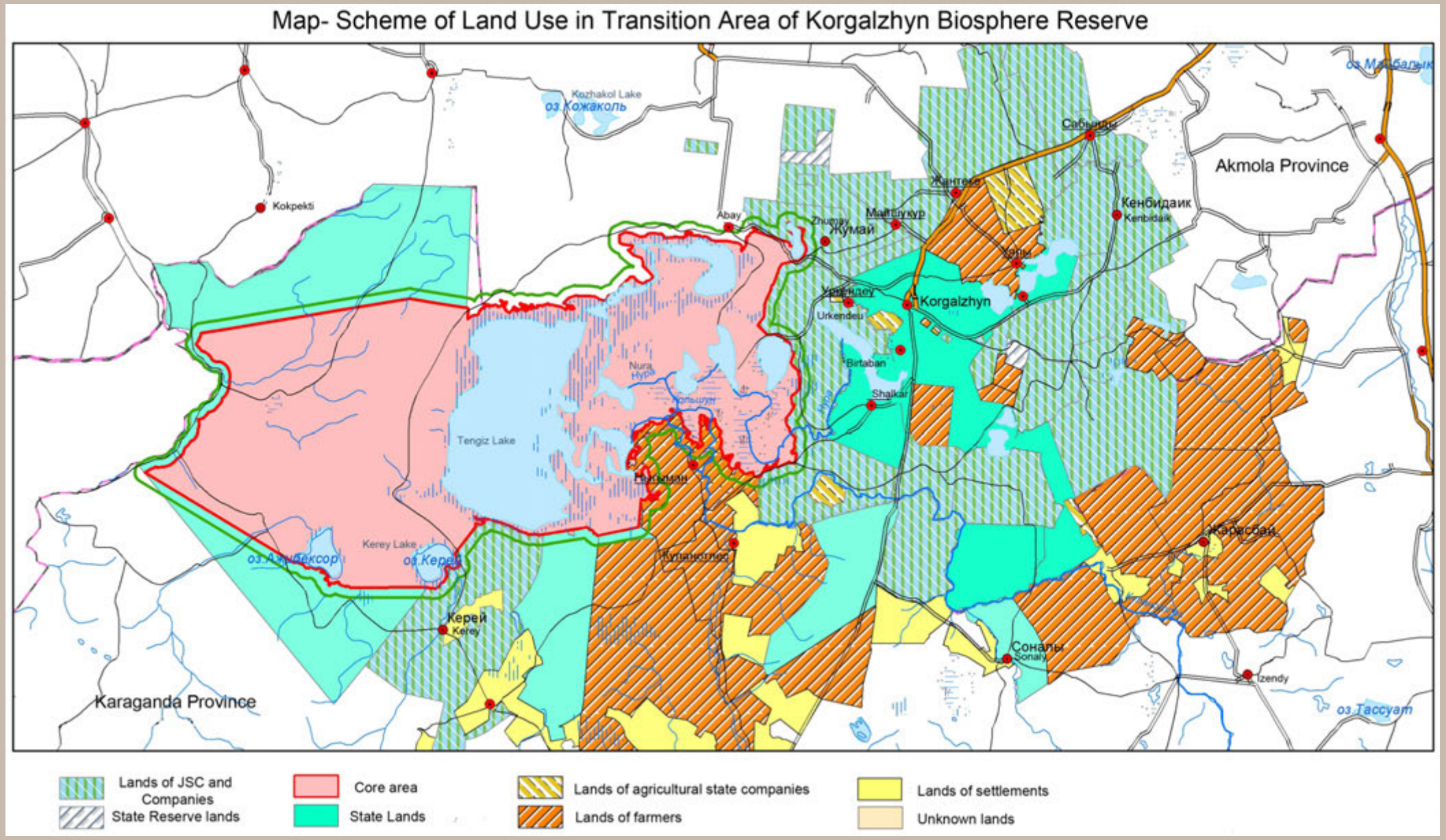
Integrated monitoring

Biogeochemical studies	X
Carrying capacity	
Conflict analysis/resolution	
Ecosystem approach	X
Education and public awareness	X
Environmental changes	
Geographic Information System (GIS)	X
Impact and risk studies	X
Indicators	X
Indicators of environmental quality	X
Infrastructure development	X
Institutional and legal aspects	
Integrated studies	X
Interdisciplinary studies	X
Land tenure	X
Land use/Land cover	X
Landscape inventorying/monitoring	X
Management issues	X
Mapping	X
Modeling	
Monitoring/methodologies	X
Planning and zoning measures	X
Policy issues	
Remote sensing	X
Rural systems	X
Sustainable development/use	X
Transboundary issues/measures	
Urban systems	
Watershed studies/monitoring	

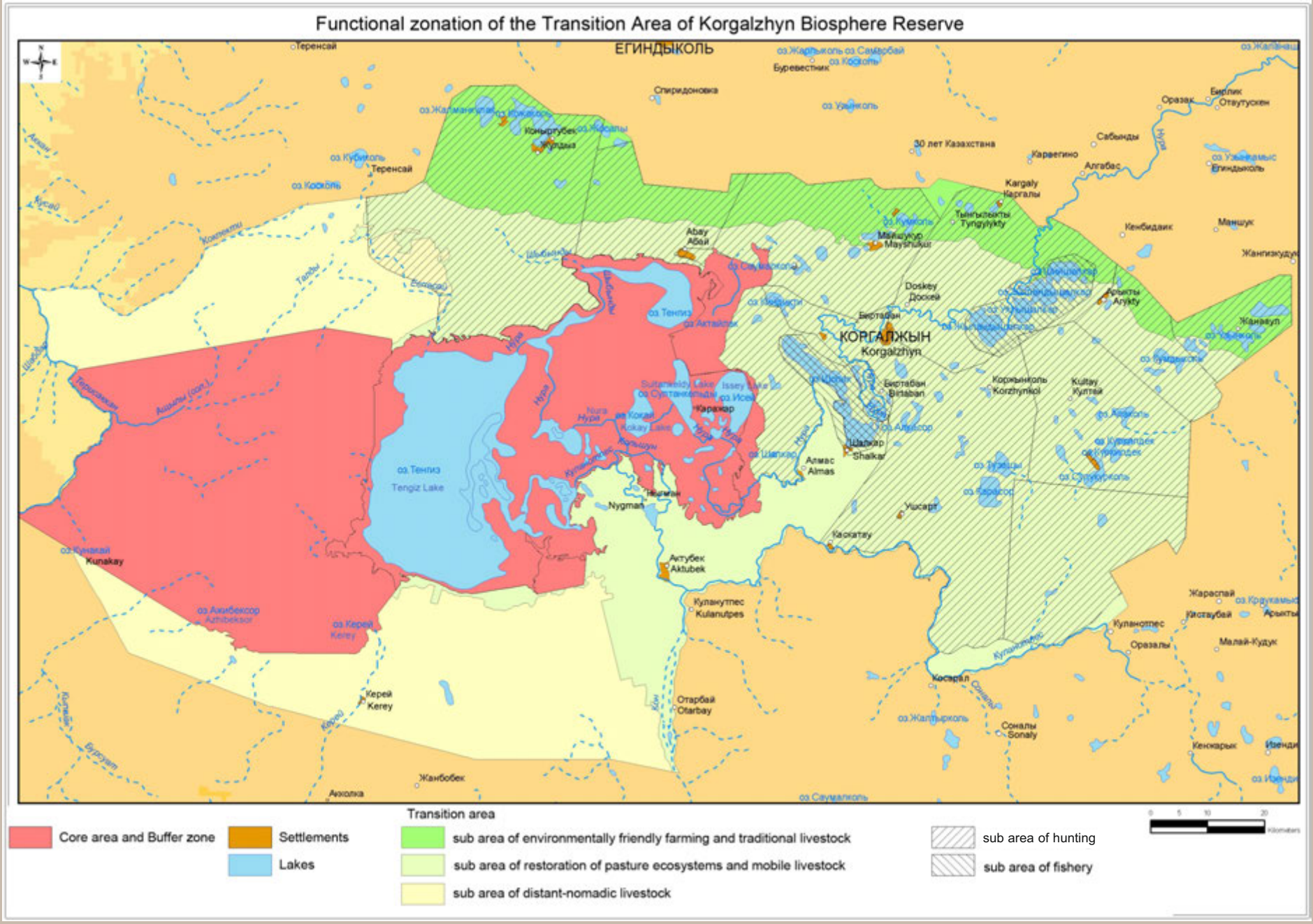
Map of Ecosystems of Korgalzhyn Biosphere Reserve



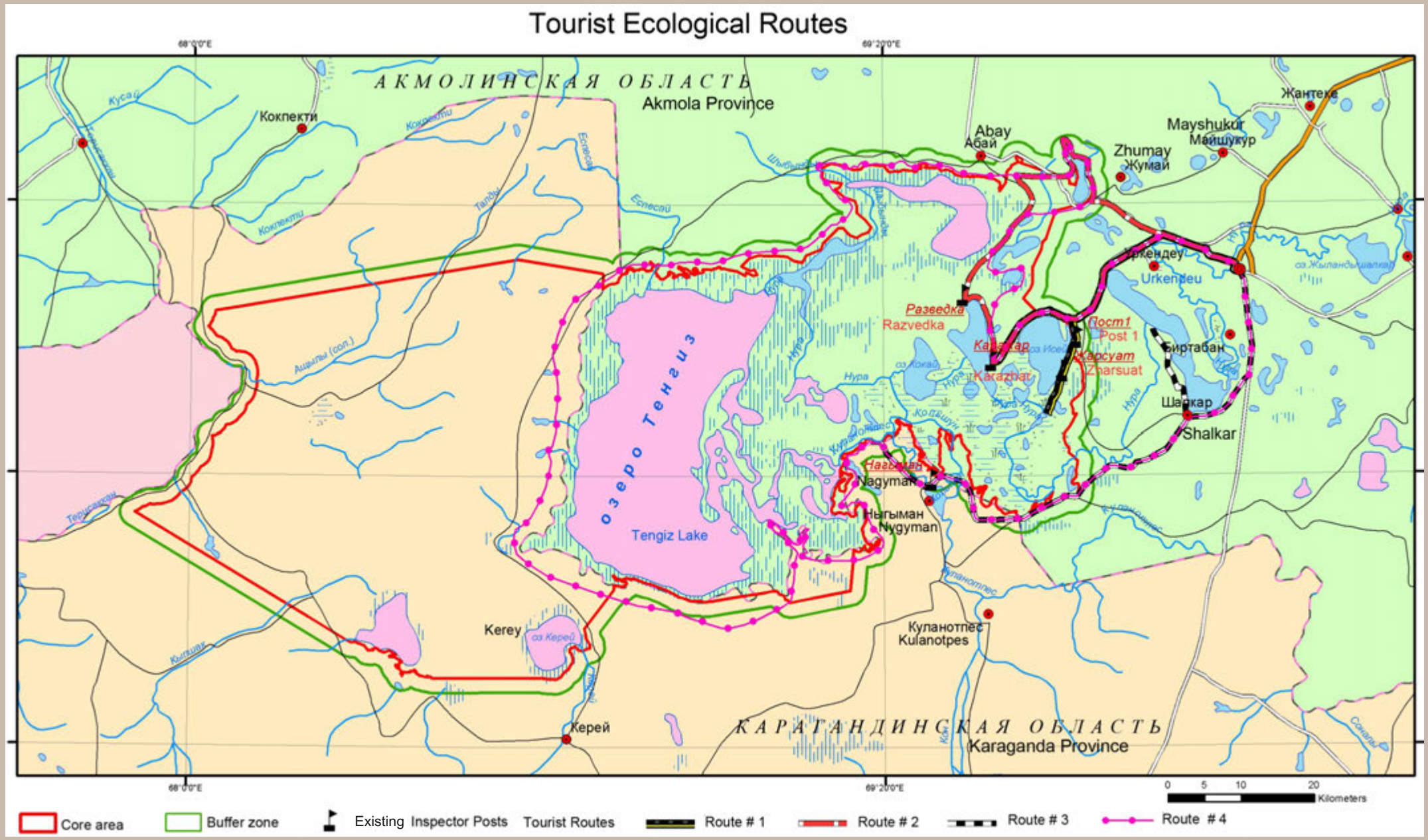
Land Use around Korgalzhyn Biosphere Reserve



Transition area zonation in Korgalzhyn Biosphere Reserve



Current tourist routes in Korgalzhyn Biosphere Reserve



Some Legal Documents

МИНИСТЕРСТВО ЮСТИЦИИ РЕСПУБЛИКИ КАЗАХСТАН

Управление юстиции Коргалжынского района

СВИДЕТЕЛЬСТВО

О ГОСУДАРСТВЕННОЙ ПЕРЕРЕГИСТРАЦИИ ЮРИДИЧЕСКОГО ЛИЦА

№123-1902-09-ГУ
регистрационный номер

030740005000
бизнес-идентификационный номер

с.Коргалжын «03»июля 2003г

Наименование юридического лица:
Государственное учреждение: «Коргалжынский государственный природный заповедник» Комитета лесного и охотничьего хозяйства Министерства сельского хозяйства Республики Казахстан

Местонахождение юридического лица:
Республика Казахстан, Акмолинская область, Коргалжынский район, село Коргалжын

Дата первичной регистрации:30.04.1999г

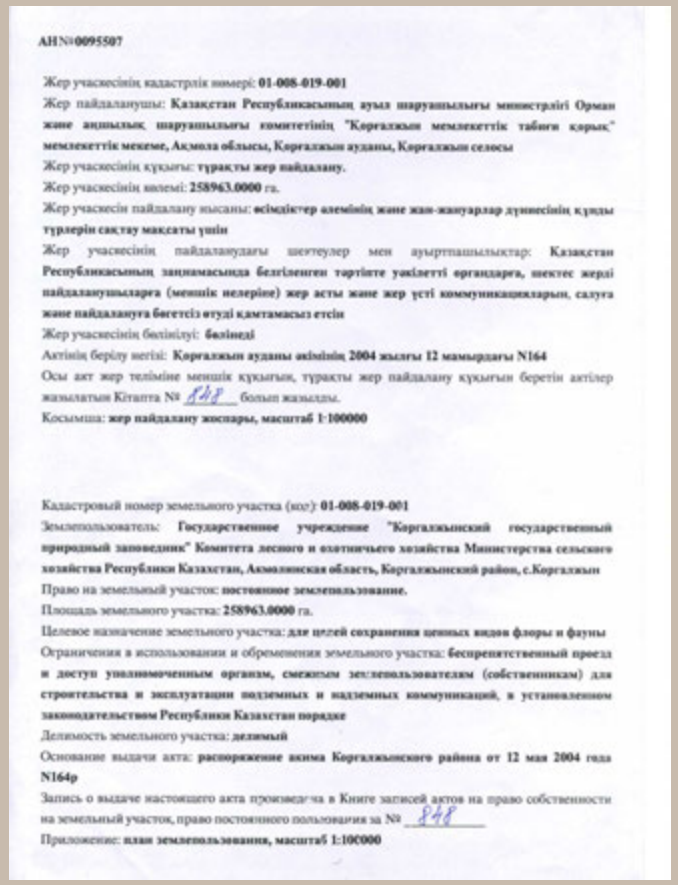
Дата внесения изменений:07.04.2009г.

СВИДЕТЕЛЬСТВО ДАЕТ ПРАВО ОСУЩЕСТВЛЯТЬ ДЕЯТЕЛЬНОСТЬ В СООТВЕТСТВИИ С УЧРЕДИТЕЛЬНЫМИ ДОКУМЕНТАМИ В РАМКАХ ЗАКОНОДАТЕЛЬСТВА РЕСПУБЛИКИ КАЗАХСТАН

Начальник С.М.Саутова

Серия В № 0286725

The Certificate of the state registration of State Nature Reserve



АН№0095507

Жер учаскесінің кадастрлік нөмері: **01-008-019-001**
Жер пайдаланушы: **Қазақстан Республикасының ауыл шаруашылығы министрлігі Орман және аңшылық шаруашылығы комитетінің "Коргалжын мемлекеттік табиғи қорық" мемлекеттік мекеме, Ақмола облысы, Коргалжын ауданы, Коргалжын селосы**
Жер учаскесінің құқығы: **тұрақты жер пайдалану.**
Жер учаскесінің көлемі: **258963.0000** га.
Жер учаскесін пайдалану нысаны: **өсімдіктер әлемінің және жан-жануарлар дүниесінің құнды түрлерін сақтау мақсаты үшін**
Жер учаскесінің пайдаланудағы шектеулер мен ауыртпашылықтар: **Қазақстан Республикасының заңнамасында белгіленген тәртіпте уәкілетті органдарға, шектес жерді пайдаланушыларға (меншік иелеріне) жер асты және жер үсті коммуникацияларын, салуға және пайдалануға бөгетсіз өтуді қамтамасыз етсін**
Жер учаскесінің бөлінуі: **бөлінеді**
Актінің берілу негізі: **Коргалжын ауданы әкімінің 2004 жылғы 12 мамырдағы N164**
Осы акт жер теліміне меншік құқығын, тұрақты жер пайдалану құқығын беретін актілер жазылатын Кітапта № 848 болып жазылды.
Қосымша: **жер пайдалану жоспары, масштаб 1:100000**

Кадастровый номер земельного участка (кад): **01-008-019-001**
Землепользователь: **Государственное учреждение "Коргалжынский государственный природный заповедник" Комитета лесного и охотничьего хозяйства Министерства сельского хозяйства Республики Казахстан, Акмолинская область, Коргалжынский район, с.Коргалжын**
Право на земельный участок: **постоянное землепользование.**
Площадь земельного участка: **258963.0000** га.
Целевое назначение земельного участка: **для целей сохранения ценных видов флоры и фауны**
Ограничения в использовании и обременения земельного участка: **беспрепятственный проезд и доступ уполномоченным органам, смежным землепользователям (собственникам) для строительства и эксплуатации подземных и надземных коммуникаций, в установленном законодательством Республики Казахстан порядке**
Делимость земельного участка: **делимый**
Основание выдачи акта: **распоряжение акима Коргалжынского района от 12 мая 2004 года N164р**
Запись о выдаче настоящего акта произведена в Книге записей актов на право собственности на земельный участок, право постоянного пользования за № 848
Приложение: **план землепользования, масштаб 1:100000**

АН N0095507

Жер учаскесінің жоспары
План земельного участка

Учаскенің орналасқан жері: **Ақмола облысы, Коргалжын ауданы, Коргалжын кентінен батысқа қарай 60 км. шақырымда**
Местоположение участка: **Акмолинская область, Коргалжынский район, в 60 км. западнее п.Коргалжын**

Шекаралардың шектеуі: Описание смежеств:

А -дан	Б -ға дейін -	Егіндікөл ауылдық жері	от А до Б -	земли Егиндыкольского района
Б -дан	В -ға дейін -	"Алба - 6" ЖШС жері	от Б до В -	земли ТОО "Алба - 6"
В -дан	Г -ға дейін -	Коргалжын ауылдық бөлігінің жері	от В до Г -	земли запаса Коргалжынского района
Г -дан	Д -ға дейін -	"Алба - 6" ЖШС жері	от Г до Д -	земли ТОО "Алба - 6"
Д -дан	Е -ға дейін -	Аппиевка ауылдық округінің жері	от Д до Е -	земли Аппиевского сельского округа
Е -дан	Ж -ға дейін -	"Коргалжын" ЖШС жері	от Е до Ж -	земли ПОО "Коргалжын"
Ж -дан	А -ға дейін -	Қарағанды облысының жері	от Ж до А -	земли Карагандинской области

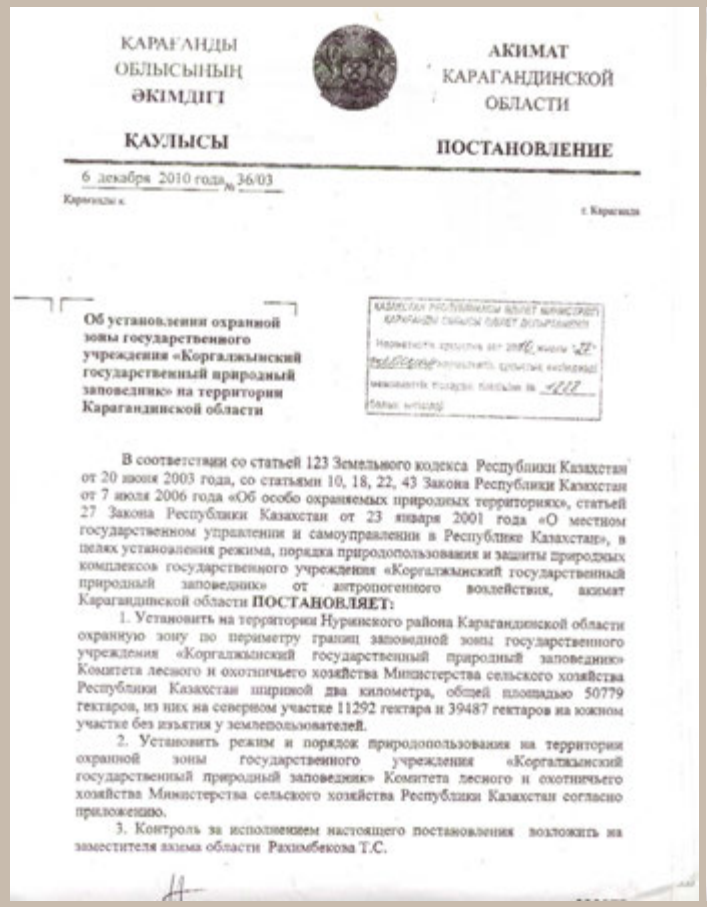
МАСШТАБ 1:500000

М.О.
М.П.

жер ресурстарын басқару жөніндегі комитетінің төрағасы
Председатель комитета по управлению земельными ресурсами

«22» декабря 2004 г.

Act on the right of permanent land use at 12 May 2004
for Korgalzhyn State Nature Reserve



КАРАҒАНДЫ ОБЛЫСЫНЫҢ ӘКІМДІГІ

АКИМАТ КАРАГАНДИНСКОЙ ОБЛАСТИ

ҚАУЛЫСЫ

ПОСТАНОВЛЕНИЕ

6 декабря 2010 года № 36/03

г. Караганда

Об установлении охранной зоны государственного учреждения «Коргалжынский государственный природный заповедник» на территории Карагандинской области

В соответствии со статьей 123 Земельного кодекса Республики Казахстан от 20 июня 2003 года, со статьями 10, 18, 22, 43 Закона Республики Казахстан от 7 июля 2006 года «Об особо охраняемых природных территориях», статьей 27 Закона Республики Казахстан от 23 января 2001 года «О местном государственном управлении и самоуправлении в Республике Казахстан», в целях установления режима, порядка природопользования и защиты природных комплексов государственного учреждения «Коргалжынский государственный природный заповедник» от антропогенного воздействия, акимат Карагандинской области **ПОСТАНОВЛЯЕТ:**

1. Установить на территории Нуринского района Карагандинской области охранную зону по периметру границ заповедной зоны государственного учреждения «Коргалжынский государственный природный заповедник» Комитета лесного и охотничьего хозяйства Министерства сельского хозяйства Республики Казахстан шириной два километра, общей площадью 50779 гектаров, из них на северном участке 11292 гектара и 39487 гектаров на южном участке без изъятия у землепользователей.

2. Установить режим и порядок природопользования на территории охранной зоны государственного учреждения «Коргалжынский государственный природный заповедник» Комитета лесного и охотничьего хозяйства Министерства сельского хозяйства Республики Казахстан согласно приложению.

3. Контроль за исполнением настоящего постановления возложить на заместителя акима области Рахимбекова Т.С.

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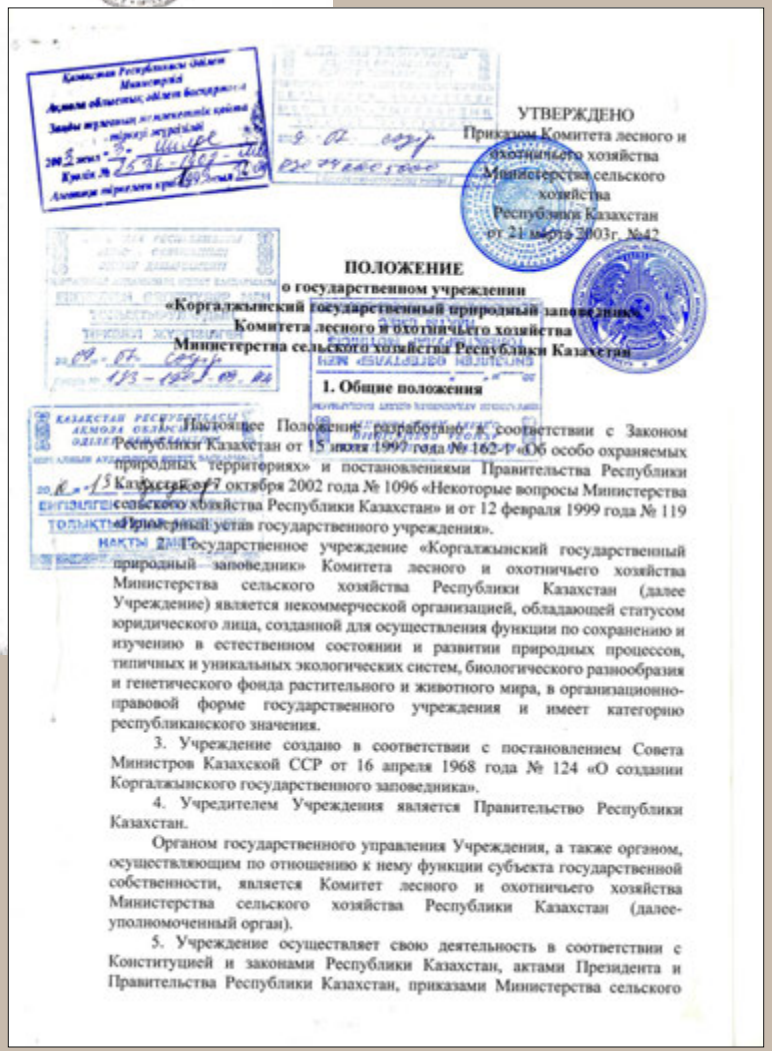
4. Настоящее постановление вводится в действие по истечении десяти календарных дней после дня его первого официального опубликования.

Аким Карагандинской области С. Ахметов

Resolution №36/03 Governor of Karaganda Province “On establishing the protected-buffer zone of the Korgalzhyn State Nature Reserve on the territory of Karaganda Province” at 6 December 2010.



УТВЕРЖДЕНО
Приказом Комитета лесного и охотничьего хозяйства Министерства сельского хозяйства Республики Казахстан
от 21 марта 2003г. №42

ПОЛОЖЕНИЕ
о государственном учреждении
«Коргалжынский государственный природный заповедник»
Комитета лесного и охотничьего хозяйства
Министерства сельского хозяйства Республики Казахстан

1. Общие положения

Настоящее Положение разработано в соответствии с Законом Республики Казахстан от 15 июня 1997 года № 162-1 «Об особо охраняемых природных территориях» и постановлениями Правительства Республики Казахстан от 7 октября 2002 года № 1096 «Некоторые вопросы Министерства сельского хозяйства Республики Казахстан» и от 12 февраля 1999 года № 119 «О Типовом уставе государственного учреждения».

2. Государственное учреждение «Коргалжынский государственный природный заповедник» Комитета лесного и охотничьего хозяйства Министерства сельского хозяйства Республики Казахстан (далее Учреждение) является некоммерческой организацией, обладающей статусом юридического лица, созданной для осуществления функции по сохранению и изучению в естественном состоянии и развитии природных процессов, типичных и уникальных экологических систем, биологического разнообразия и генетического фонда растительного и животного мира, в организационно-правовой форме государственного учреждения и имеет категорию республиканского значения.

3. Учреждение создано в соответствии с постановлением Совета Министров Казахской ССР от 16 апреля 1968 года № 124 «О создании Коргалжынского государственного заповедника».

4. Учредителем Учреждения является Правительство Республики Казахстан.

Органом государственного управления Учреждения, а также органом, осуществляющим по отношению к нему функции субъекта государственной собственности, является Комитет лесного и охотничьего хозяйства Министерства сельского хозяйства Республики Казахстан (далее-уполномоченный орган).

5. Учреждение осуществляет свою деятельность в соответствии с Конституцией и законами Республики Казахстан, актами Президента и Правительства Республики Казахстан, приказами Министерства сельского

Statutes of the State organization “Korgalzhyn State Nature Reserve” at 21 March 2003

Contents

PART I : SUMMARY

PART II : DESCRIPTION

Special thanks to administration and staff of Korgalzhyn State Nature Reserve,
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and Kazakhstan National Commission of UNESCO for the kind and friendly support.

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