IUCN Conservation Outlook Assessment 2017 **(archived)**
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Please note: this is an archived Conservation Outlook Assessment for Saryarka – Steppe and Lakes of Northern Kazakhstan. To access the most up-to-date Conservation Outlook Assessment for this site, please visit https://www.worldheritageoutlook.iucn.org.

Saryarka – Steppe and Lakes of Northern Kazakhstan

SITE INFORMATION

Country:
Kazakhstan
Inscribed in: 2008
Criteria:
(ix) (x)

Site description:
Saryarka - Steppe and Lakes of Northern Kazakhstan comprises two protected areas: Naurzum State Nature Reserve and Korgalzhyn State Nature Reserve totalling 450,344 ha. It features wetlands of outstanding importance for migratory water birds, including globally threatened species, among them the extremely rare Siberian white crane, the Dalmatian pelican, Pallas's fish eagle, to name but a few. These wetlands are key stopover points and crossroads on the Central Asian flyway of birds from Africa, Europe and South Asia to their breeding places in Western and Eastern Siberia. The 200,000 ha Central Asian steppe areas included in the property provide a valuable refuge for over half the species of the region's steppe flora, a number of threatened bird species and the critically endangered Saiga antelope, formerly an abundant species much reduced by poaching. The property includes two groups of fresh and salt water lakes situated on a watershed between rivers flowing north to the Arctic and south into the Aral-Irtysh basin. © UNESCO

SUMMARY

2017 Conservation Outlook

Good with some concerns

Effective management of the two component reserves of the site, recent extensions of these protected areas and the overall good state of its ecosystems and biota provide a good basis for a positive conservation outlook for this site. The values of the site remain well preserved. The data on Saiga population are currently indicating a fast restoration following the 2015 mass die-off and data on some migratory endangered species, such as the white-headed duck (Oxyura leucocephala), show a positive trend in their global population. There are currently no confirmed high or very high threats to the site's values and two main issues that used to affect the site in the past (decreasing water level of freshwater lakes and water pollution, particularly with mercury) seem to have been addressed. Poaching and legal hunting remain a high threat and will require additional efforts in order to control them effectively. Funding, however, remains insufficient, particularly since some of the component protected areas (although not the World Heritage site) have been significantly enlarged recently. There is some concern regarding staffing needs and the potential conflict of interest in the current legal management structure with the two component reserves which make up the property reporting to the Forestry and Hunting Committee under the Ministry of Agriculture since the reorganization of ministries in 2014.

Current state and trend of VALUES

Low Concern
Trend: Improving

The data on Saiga population are currently indicating fast restoration following the 2015 mass die-off. The state of the steppe and forest ecosystems of the site appears satisfactory and has benefited from the recent extension of the Korgalzhyn State Nature Reserve. Similarly measures undertaken to increase the water level and reduce water pollution, have helped improve the state of the site's lake and wetland ecosystems. Water level is being monitored and water

quality is regularly checked. The state of the site’s flora and fauna is regularly being monitored and is of low concern and stable. Some data on the migratory endangered species, like the white-headed duck (Oxyura leucocephala), show positive trend in their global population.

Overall THREATS

High Threat

There are currently no confirmed very high threats to the site’s values and two main issues that used to affect the site in the past (decreasing water level of freshwater lakes and water pollution, particularly with mercury) seem to have been addressed. Additional current threats originate from the incident in 2015 of mass die-off of Saiga and poaching and legal hunting. These two threats are high for the population of Betpak Dala Saiga (90% lost) and the total Kazakhstan population of Saiga. Close monitoring, investigation and reporting of these threats is quite crucial. Climate change as the main potential threat to the site and its potential effects on the site’s values need further research, monitoring and analysis. Fires as the potential threat has to be closely monitored, reported and analyzed on an annual basis. The agricultural development of the adjacent region to the west of the property hasneeds to be moniteored and analyzed on regular basis in connection with the major site values.

Overall PROTECTION and MANAGEMENT

Mostly Effective

Protection and management of the site are mostly effective, and some management areas are highly effective. The component protected areas receive support both from the relevant governmental bodies, as well as international organizations, such as UNDP, and projects many of which have also helped improve engagement of local communities. Funding, however, remains insufficient, particularly since some of the component protected areas (although not the World Heritage site) have been significantly enlarged recently. There is some concern in the staff needs and the potential conflict of interest in the current legal management structure with the two component reserves which make up the property reporting to the Forestry and Hunting Committee under the Ministry of Agriculture since the reorganization of ministries in 2014.

FULL ASSESSMENT

Description of values

Values

World Heritage values

▶ **Processes sustaining steppe and forest**
Criterion:(ix)

The property contains over 200,000 ha of Central Asian steppe, with its associated biological and ecological processes (such as succession and seasonality), more than half of which is pristine, and which is part of the temperate grassland biome (Rachkovskaya and Bragina, 2012, SoOUV, 2008). Valuable parts of natural Pontian steppe types (Udvary Biogeographical Province No. 2.29.11) with Fescue and Feather-grasses as predominant species, which is considered as an endangered biome, are covered by the site. Both component reserves of the site are complementary in terms of the ecosystem values represented, with Naurzum State Nature Reserve having five distinct terrestrial biomes including dry and semi-arid sandy scrub steppe, boreal forest, meadows and halophytic ecosystems, and the terrestrial part of Korgalzhyn State Nature Reserve being dominated by halophytic and hyper-halophytic systems (UNEP-WCMC, 2011). The site presents a unique natural phenomenon of deep penetration of pine forests in the steppe and semi-desert zone. Thus these forests are very important for the conservation of populations of rare predatory birds (Saryarka, Nomination Dossier, UNESCO).

▶ **Lake and wetland ecosystems**
Criterion:(ix)

About half of the territory of the site is covered by a system of fresh and salt

water lakes located on major flyways of water birds. Being at the cross roads of Central-Asian and Siberian-South-European flyways of migranting birds the lakes are of high significance (Saryarka, Nomination Dossier, UNESCO).

The succession and seasonal dynamics of the hydrology, chemistry and biology of the lakes, with the diverse flora and fauna of the wetlands have evolved through complex wetting and drying cycles, and are of global significance and scientific interest (SoOUV, 2008). The freshwater and lake ecosystems represent a gradient of salinity from poor freshwater to hypersaline systems (UNEP-WCMC, 2011). Both component sites contain Wetlands of International Importance under the Ramsar Convention (Wetlands International, 2012).

► Bird migration

Criterion:(ix)

The wetlands of Korgalzhyn and Naurzum State Nature Reserves are key stopover points and crossroads on the Central Asian migratory bird flyways and are of outstanding importance for migratory waterbirds on their way from Africa, Europe and South Asia to their breeding places in Western and Eastern Siberia (Schielzeth et al., 2008, SoOUV, 2008). Together with their breeding birds, they have the highest abundances of moulting and resting waterbirds in Asia. 15 million waterbirds pass through the Korgalzhyn-Tengiz lakes each year (UNEP-WCMC, 2011).

► Exceptional diversity of flora

Criterion:(x)

The steppe and lake habitats of Korgalzhyn and Naurzum State Nature Reserves sustain a diverse range of Central Asian flora. The site's steppe areas provide a valuable refuge for over half the species of the region's steppe flora (WHC, 2008). There are nearly 770 plant species recorded in the reserves, including many typical steppe species (e.g. representatives of the genera Stipa, Festuca, Helichrysum, Artemisia, Silene) and halophytes (e.g. Artemisia spp.). Naurzum State Nature Reserve also has forest assemblages dominated by Pine (Pinus sylvestris) and birch (Betula pendula, Betula pubescens and Betuala lkirghisorum) and meadow communities. There are several endangered species, which inhabit the site, among which Tulipa

schrenkii and Betula kirghisorum (The Red Data Book of the Kazakh SSR, 1981-1996). Both component reserves are also rich in aquatic flora, which is often dominated by Reed Phragmitisaustralis, Cat-tail (Typha angustifoli)a and Club-rush (Scirpus lacustris) (UNEP-WCMC, 2011).

► Exceptional diversity of Central Asian fauna

Criterion:(x)

Korgalzhyn and Naurzum State Nature Reserves sustain a diverse range of Central Asian fauna, including 341 species of birds (112 breeding and 239 migratory/vagrant), 53 species of mammals, 10 of herpetofauna, 16 of fish and over 1,000 of invertebrates (UNEP-WCMC, 2011). They support vast numbers of migratory and resident birds, their most important biodiversity value, including substantial populations of many globally threatened species (SoOUV, 2008). The latter include Lesser White-fronted Goose Ansererytrhopus (VU), Red-breasted Goose Brantaruficollis (EN), Dalmatian Pelican Pelecanus crispus (VU), Sociable Lapwing Vanellus gregarius (CR), and the breeding White-headed Duck Oxyura leucocephala, Saker Falcon, Falco cherrug (EN), Eastern Imperial Eagle Aquila heliaca (VU), and Siberian Crane Leucogeranus leucogeranus (CR) (BirdLife International, 2012a, b, IUCN, 2012). The Korgalzhyn-Tengiz lakes provide feeding grounds for up to 15-16 million birds, including flocks of up to 2.5 million geese. They also support up to 350,000 nesting waterfowl, while the Naurzum lakes support up to 500,000 nesting waterfowl. The site is the northernmost breeding area of Pink Flamingos (Dybas, 2008). The site's steppe areas provide a valuable refuge for a number of threatened animal species. Rare animal species of the Pontian steppe ecosystem listed on the IUCN Red List spend parts or all their live cycle within the site, e.g. Great Bustard (Otis tarda, VU), Sociable Plover (Chettusia gregaria, CR), Imperial Eagle (Aquila heliaca, VU), Pallid Harrier (Circus macrourus, LR), Little Bustard (Tetrax tetrax, LR), Steppe pica (Ochotona pusilla, VU), Boback Marmot (Marmota bobak, LR) and Corsax Fox (Vulpes corsac, VU). For the critically endagered migratoriy Saiga Antelope (Saiga tatarica, CR) the proposed site is an important place during their seasonal migrations. Saiga have some calving grounds within the site, known to be most sensitive as this is the only time in their live cycle when this antelope is not migrating (Saryarka, Nomination Dossier, UNESCO). At Naurzum State Nature Reserve there are also numerous species of the forest belt, for which the area forms the southern distribution limit (UNEP-WCMC,

2011).

Assessment information

Threats

Current Threats

High Threat

There are currently no confirmed very high threats to the site's values and two main issues that used to affect the site in the past (decreasing water level of freshwater lakes and water pollution, particularly with mercury) seem to have been addressed. Additional current threats originate from the incident in 2015 of mass die-off of Saiga and poaching and legal hunting. These two threats are high for the population of Betpak Dala Saiga (90% lost) and the total Kazakhstan population of Saiga. Close monitoring, investigation and reporting of these threat is crucial.

▶ Water Pollution

Low Threat
Inside site, scattered(5-15%)

The Nura River transports industrial, agricultural and urban pollution from industrial and urban centres upstream (including the city of Astana) into the site (Ullrich et al., 2007, World Bank, 2012). The 6-year long World Bank funded project (Clean River) has helped significantly reduce the amount of mercury entering Nura river which was proven by a reduction in mercury found in fish.
(http//www.cleanriver.kz/).
The water quality together with benthos and plankton measures are checked on a biannual basis by Kazhydromet and reports are available online (https://kazhydromet.kz/upload/pdf/ru_1500294723.pdf). According to the last report the traces of mercury in the water of Nura river are far below the threshold (Kazhydromet Reports, 2015; 2016).

► Livestock Farming / Grazing

Very Low Threat
Outside site

Grazing and haymaking takes place in only the buffer zone of the site, and is regulated in a way that it does not interfere with breeding birds or values of the site (UNEP-WCMC, 2011). Grazing areas have been set aside in the Karaganda area (15.000 ha) and in the south of the Kustanai region. Grazing and haymaking has remained at the same level and has not affected the site's values (Consultation with Nature Reserve staff, 2017).

► Dams/ Water Management or Use

Low Threat
Inside site, widespread(15-50%)

The water level of Tengiz Lake and other freshwater lakes depends on the natural cycle of desiccation and re-flooding on the one hand, and water allocation from key tributaries including the Nura River on the other hand (IUCN, 2008). On a smaller scale, it is driven by the management of dams and sluices around and inside the site. In 2012 reconstruction of 3 dams – Ablayskaya (river Nura), Tabtsekskaya (Con and Kulanaptes Rievers) and Kushulekskaya (Noor) was completed. This should have improved fresh water balance significantly (IUCN Consultation, 2013).

These 2 dams have been in operation sice and are mantained by Kazvodkhoz. Every season they are affected by the natural wave erosion and are restored with some ground, which is out-washed during the season. They are quite crucial for the fresh-water levels of the lakes within the property (Consultation with Nature Reserve staff, 2017).

► Hunting (commercial/subsistence)

High Threat
Inside site, scattered(5-15%)

Poaching levels are reportedly low and restricted to the southern part of the Korgalzhyn State Nature Reserve. Legal hunting on waterbirds in several legal hunting areas outside the site may have an impact on the abundances of migratory waterbirds inside it, including threatened species. This is

assessed as a low threat because only a few species are concerned. Mammal poaching appears to be at a relative modest level; however, concerns remain about the Saiga which are poached for their horns, which are sold to China for traditional medicine (IUCN Consultation, 2013). The poaching of Saiga is increasing according to the official government data of Kazakhstan: 108 cases were registered in 2015 compared to 79 in 2014. However, the real statistics is hard to obtain due to insufficient reported data. According to media reports, the police reported that in these 108 cases the number of horns confiscated was more than 3000, which makes at least 1500 animals (Liter Newspaper (2015). According to information from the China border point, 5300 horns were confiscated in 2015 (2650 animals) (Z365info (2015). This indicates serious impact of poaching and its increasging trend on Saiga population, despite the fact that legal measures are being toughened. However, these numbers are available for the whole country only.

► Other Ecosystem Modifications

High Threat
Outside site

BetpakDala population of Saiga had lost almost 90% of animals during one month in May 2015 in the biggest calving aggregation in the south of Kostanay oblast – down to 36200 animals (leaving 108,300 in total population in 2015 out of 256,000 in 2014). Several investigations have been started to solve this question and have identified the bacterium Pasteurella multocida as the causative agent of haemorrhagic septicaemia, which led to the death of the animals. This specific type of Pasteurella bacterium has been previously described to cause mortality in wild and domestic animals but never had such high level of mortality. This makes this a unique and unprecedented biological event. National and International parties have been involved in the investigation of this matter: an expert mission supported by the Convention on Migratory Species (CMS), the Altyn Dala Conservation Initiative, the Ministry of Agriculture of Kazakhstan, Veterinary experts from the RVC, FAO, and RIBSP (ACBK, Saiga News).
Based on aerial surveys in 2017 the number of Saiga has increased by 40.9% compared to 2016 and reached 152,000 animals (Forestry and Hunting Committee of Ministry of Agriculture of Republic of Kazakhstan (2017).

Potential Threats

Low Threat

Climate change as the main potential threat to the site and its potential effects on the site's values need further research, monitoring and analysis. Fires as the potential threat has to be closely monitored, reported and analyzed on an annual basis. The agricultural development of the adjacent region to the west of the property needs to be monitored and analysed on regular basis in connection with the major site values.

► Temperature extremes

Low Threat
Inside site, throughout(>50%)
Outside site

Climate change is likely to affect the hydrological regime, ecosystem functioning and biodiversity of the site in the medium and long term, and its potential extent and impact on the property's values should be studied further.

► Fire/ Fire Suppression

Low Threat
Inside site, widespread(15-50%)
Outside site

Due to the quite enduring dry and hot season the steppe fires are a common threat in this area with potential to affect vast territory. However, as these are regular events here, the steppe steppe flora and fauna had developed some mechanisms of self-regeneration. Fires can impose a more serious threat if they happen in the nesting season, probability of which is quite low, as this is not the hottest and driest season yet. The reporting of fires has to be done on a regular basis (Consultation with nature reserve staff, 2017).
In 2015 there were 5 fires on the territory of Naurzum Reserve covering the area of 23359.5 ha, 23345.7 ha of which are non-forest and 13.8 ha are forest land. The damage totalled KZT 3,602 ths. (~USD 10,900) (Naurzum Annual Report, 2015).

► Crops

Low Threat
Outside site

Abandoned scarcely populated areas on the west of the property have started being developed for the last 2-3 years by the expansion of big agro-industry companies and foreign investors. The area is exposed to a lot of changes – new settlements appears, cattle breeding firms are built, hunting farms are revived. Area becomes more and more populated (Korgalzhyn Annual Report, 2016).

Protection and management

Assessing Protection and Management

► Relationships with local people

Mostly Effective

The core areas of both component reserves of the site are uninhabited. There is some natural resource use by local people in the buffer zone, which appears not to create major conflicts. The component protected areas have run a number of projects to engage local communities into sustainable resource use in the surroundings, such as traditional agriculture, development of nature-based tourism programmes for visitors. In 2012 the Korgalzhyn State Nature Reserve has become part of the MAB network of biosphere reserves.

In order to attract partners, the Coordination Council of Korgalzhyn Biosphere Reserve was created, including representatives of State Nature Reserve, land users, local authorities and non-governmental organizations. Prior to that, the Territorial Council of Management of Wetland Resources of Tengiz-Korgalzhyn Territory (was in operation in the framework of the GEF/UNDP Wetlands Project, 2004 – August 2011) (IUCN Consultation, 2017).
As a result of GEF project 6 tourist routes were created in Naurzum and 2 outside of it, 3 visit centres were built and several collaboration agreements with local tourist firms were signed (Consultation with nature reserve staff,

2017).

► Legal framework

Some Concern

In accordance with the Law of Kazakhstan of Protected Areas (1997), the land of the site is fully State-owned. The property consists of two legally established State Nature Reserves (SNR), which correspond to IUCN PA Category 1a. Each of the component protected areas has been legally established by a Government Decree (Government of the Republic of Kazakhstan, 2007).
Naurzum SNR was first established in 1931 whereas Korgalzhyn SNR was first established in 1968. The legal protection has been judged to be adequate (IUCN, 2008).
According to the legislation of the Republic of Kazakhstan, the management of economic activity defined zones of a protected area (haymaking, cattle pasture) is conducted by agreement with governmental authority (Forestry and Hunting Committee) and under the control of the administration of State Nature Reserve.

► Enforcement

Mostly Effective

Enforcement is adequate overall although reportedly there have been intrusions into Korgalzhyn SNR by poachers.
Both Reserves report to the Forestry and Hunting Committee, which reports to The Ministry of Agriculture. Before 2014, Ministry of the Environmental Protection and Water Resources was responsible for their management, but in 2014 its functions were split into two new Ministries – Ministry of Energy and Ministry of Agriculture (Ministry of Agriculture of the RK (2017)). That had an impact on the level of nature conservation status of protected areas in the country and in some instances created conflict of interests.

► Integration into regional and national planning systems

Mostly Effective

According to the nomination document, there are no specific local development plans relevant to the site but its component reserves are mentioned in relevant national documents including the National Action Plan

for Nature Protection in the frame of the
State Programme 2030, and the national Strategies for Biodiversity Conservation (1999) and protected areas system development from 2006 till 2008 (Government of the Republic of Kazakhstan, 2007). No conflicts between conservation objectives and the local/national planning framework are documented.
Altyn-Dala Nature Initiative was initiated in 2007 with the participation of such National and International parties as: The Forestry and Hunting Committee, Okhotzoopron, Institute of Zoology RK, GEF/UNDP wetlands project, RSPB, FZS, WWF. The major goal of this high-scale (60 ml.ha) partnership programme is conservation of animal flagship species of steppe and semi-steppe biotopes and improvement of nature conservation territories network in Central Kazakhstan (ACBK, 2017).

► Management system

Mostly Effective

Both State Nature Reserves have separate administrations reporting to the Forestry and Hunting Committee at the Ministry for Agriculture of Kazakhstan, including ranger services. Each reserve has a three-year management plan focusing particularly on protection, research and monitoring, education, interpretation and tourism, and expert training, as well as annual work plans. There is also a joint management plan for the entire property, but it is unclear how this relates to the individual PA management plans (Government of the Republic of Kazakhstan, 2007). The management system of the site is considered adequate (IUCN, 2008). Some specific projects for flagship species of birds or mammals activities are undertaken jointly by fromof both reserves (Consultation with nature reserve staff, 2017).

► Management effectiveness

Mostly Effective

No formal management effectiveness assessment of the component reserves of the property has been published. Both SNRs have existed for a long time (Nuarzum since 1931 and Korgalzhyn since 1968) with a well established and reportedly overall effective administration, but monitoring and interpretation management could benefit from some improvement (IUCN, 2008). The

situation has not changed since 2014.

▶ Implementation of Committee decisions and recommendations

Highly Effective

The only relevant Committee decision is Decision 32 COM 8B.8, which encouraged the State Party to consider further extensions of the property (WHC, 2008). This is underway, with the inclusion of the natural steppes west of Tengiz into Korgalzhyn State Nature Reserve (but not the World Heritage Site) in 2008. In 2012 the Sarykopa Lake became part of the Altyn Dala Nature Reserve (IUCN Consultation, 2013) located to the West of Lake Tengiz.

▶ Boundaries

Highly Effective

This is a serial site consisting of two component nature reserves with a buffer zone of at least 2 km around each of them. The boundaries are well-marked on the ground and were considered adequate at the time of inscription (IUCN, 2008). Korgalshyn SNR (but not the World Heritage site) has since been extended by 284,224 ha to the west, bringing its overall area to 543,171 ha. This extension was already considered and supported by the 2008 IUCN evaluation mission. In addition, the Altyn Dala State Nature Reservation created in 2012 included the territory of the Sarykopa Zakaznik providing it with a higher level of protection. This area was originally envisaged as a part of the World Heritage site but excluded because of the then insufficient protection status (IUCN, 2008). No other changes of the territories in both Reserves were recorded (Consultation with nature reserve staff, 2017).

▶ Sustainable finance

Mostly Effective

The 2005 budgets for Korgalzhyn SNR and Naurzum SNR were in the order of USD 380,000 and 300,000, respectively, and were mainly sourced from the national budget. This was a dramatic increase compared to previous years. In addition to this budget, there has been relatively strong project funding from GEF/UNDP, GEF/UNEP and a number of conservation NGOs (Government of the Republic of Kazakhstan, 2007). However, more funding is needed for effective management of the significantly enlarged area. Based on the last

Annual Report for Naurzum SNR the annual budget for 2016 was approx. USD 311,000, which indicates that the State budgets have not changed much since 2005 in dollar terms, while had increased in KZT after considerable KZT 85% devaluation in 2014. Numerous projects with interntional organizations had fuelled the Reserves with some equipment, knowledge and infrastructure. However, both Reserves state in their Annual Reports that increase in the permanent staff, number of cordons and vehicles are needed for more efficient coverage of the territory (Annual Reports, 2015-2016).

► Staff training and development

Some Concern

Both component SNRs of the property are staffed with 44 people in Naurzum and 51 people in Korgalzhyn SNR. Korgalzhyn Reserve states that they need to hire additional 33 people to cover the current objectives of the expanded in 2008 territory coverage of the Reserve. Staff are trained annually in subjects relevant to conservation, research, legislation, monitoring, interpretation, fire safety, local public relations and tourism management, etc. (Annual Reports, 2015-2016). In 2015 Naurzum staff had a 42 hours intensive training with attestation process and a separate 8 hours field training. However, there is reportedly room for improved interpretation skills and scientific capacity among the property’s staff. Also there is a need in the additional technical IT-literate staff units and staff trained to work with GIS data and databases analyses (Annual Reports, 2015-2016).

► Sustainable use

Mostly Effective

There is only very limited sustainable use of some natural resources (e.g. fish) by rangers inside the State Nature Reserves (Government of the Republic of Kazakhstan, 2007), and some hay farming in the buffer zone. These are considered well managed and not a threat to the site’s values (UNEP-WCMC, 2011). Same trend applies to the present time, 2017. Regular annual fishery melioration measures in the lakes of Korgalzhyn are sanctioned based on the Biological Justification Report to prevent mass suffocation die-offs of fish in winter period. It is done in a form of ice fishing according to quotas closely monitored by the Reserve (Annual Reports, 2015-

2016).

► Education and interpretation programs

Mostly Effective

Both component reserves of the site have websites providing some basic information (Forest and Hunting Committee of Ministry of Agriculture of Republic of Kazakhstan 2012a, b). Based on the visitor centres/museums in each SNR, there are regular school visits (UNEP-WCMC, 2011) and the reserves have also collaborated with local schools on some environmental educational programmes. New visitors' centres have recently been built. Both component reserves of the site have websites providing some basic information (Forestry and Hunting Committee of Ministry of Agriculture of Republic of Kazakhstan 2012a, b). Based on the visitor centres/museums in each SNR, there are regular school visits (UNEP-WCMC, 2011) and the reserves have also collaborated with local schools on some environmental educational programmes. New visitors' centres have recently been built. Ecological education departments are formed in both Reserves and are responsible for planning and execution of the educational activities. The programme is developed for 5 years. Visitor center accounts for around 3000 visitors a year with approx. 250 excursions, 50 out of which are from schools in Korgalzhyn. Also the staff travels to the nearby schools and settlements with presentations and open lessons on nature conservation covering approx. 1000 attendees yearly. Ecological weekends are organized for the local population to involve and educate on the nature conservation local concerns. Field practice for the students of the Eurasian University named after Gumilev had been organized on the basis of cordons. Numerous exhibitions, festivals (Flamingo), open day activities (crafting, cheesmaking, etc.) are organized and participation in local and international seminars and roundtables is carried out on a regular basis. The annual State Programme March of Parks covers around 12,000 participants in each Reserve.

► Tourism and visitation management

Mostly Effective

Both SNRs have museums/visitor centres, and the one of Korgalzhyn SNR has been modernized with the support of GEF/UNDP. There are also some visitor trails, but in general visitor numbers are low (a few hundred to Naurzum and

1,000-2,000 to Korgalzhyn in the early 2000s) and tourism is not a major field of activity of the reserves (Government of the Republic of Kazakhstan, 2007). This is changing, however, and visitor management might become one of the key management areas. A new visitor centre was built in Korgalzhyn SNR in 2009 and in 2013 a new centre was built in Naurzum with an aim of not only attracting more tourists, but also providing employment opportunities for local people.

Both reserves have expanded and increased their touristic activities putting more focus on their development in the last several years.
Korgalzhyn Reserve receives more than 5000 visitors a year visiting 3 main trails with new viewing and overnight stay decks, providing 7 guesthouses for tourists. There are regular tours from ACBK, which became the Reserve partner on tourism as well. The information on the tours is avertised on the local touristic website: www.korg-tur.kz. A 3D promo tour video on the Reserve is also available at http://www.fsbk.kz. The Reserve’s own website is currently being developed. Around 50 popular publications are published yearly to promote the conservation activities of the Reserve. Naurzum Reserve has 6 eco-touristic trails which had 186 visits in 2016 (Annual Reports, 2015-2016).

► Monitoring

Highly Effective

There is some annual monitoring on the basis of the Chronicles of Nature (UNEP-WCMC, 2011), and using a standardized set of six indicators (Government of the Republic of Kazakhstan, 2007).
New monitoring systems were established in the framework of a GEF-funded project which included also provision of necessary equipment (IUCN Consultation, 2013).

Both Reserves have Science, Information and Monitoring Departments, which plan their research and monitoring works on a 5-year basis with annual reporting. The themes of the research and monitoring are listed in the below section of Research. The seasonal monitoring on bird migration has been conducted for many years on a regular basis. Seasonal monitoring onf waterfowl birds, muskrat, marmot, badger, Saiga, fox, boar and others is conducted annually. Monitoring of flora and vegetation cover is conducted

regularly in Naurzum Reserve (Annual Reports, 2015-2016).

► Research

Highly Effective

Naurzum SNR has produced ca. 600 reports and publications, mainly in the fields of zoology/ornithology, limnology, and forest soil ecology. A recent summary is provided by Rachkovskaya and Bragina (2012). Korgalzhyn SNR has produced ca. 300 reports and publications, mainly on limnology and ichthyology as well as soil and vegetation ecology (UNEP-WCMC, 2012). However, only a few of the existing publications are available in English, with a Web of Knowledge search for the property and its component PAs yielding little more than 20 hits (WoK, 2012). Additional research projects are underway. There are also research plans/strategies in both component reserves.

Research and monitoring topics in Korgalzhyn Reserve for 2016-2020 (Annual Report, 2016):
1) Ecology of main fish species in the lakes.
2) Monitoring of Anseriform birds.
3) Ecology on dendrophilic Passerines birds in steppe ecosystems.
4) Sandpiper: ecology, distribution, population.
5) Monitoring onf vegetation cover regeneration on the new covered territory.
6) Mammals monitoring and factors influencing their population numbers.
7) The Chronicles of Nature.
Research and monitoring topics in Naurzum Reserve (Annual Report, 2015):
1) The Chronicles of Nature.
2) Biodiversity of flora and vegetation cover monitoring.
3) Natural regeneration of Pinus sylvestris.
4) Role of the Reserve in conservation of rare birds of the North-Turgai Region.
5) The current state of Steppe marmot population.
6) Waterfowl birds monitoring.

Annual Reports for each reserve are provided to the Forestry and Hunting Committee on a regular basis.
Every year several articles are published in scientific journals on the findings from the long-term research and monitoring in the Reserve and also 10-15

publications are made to promote nature conservation in local magazines and newspapers for each Reserve.

Overall assessment of protection and management

Mostly Effective

Protection and management of the site are mostly effective, and some management areas are highly effective. The component protected areas receive support both from the relevant governmental bodies, as well as international organizations, such as UNDP, and projects many of which have also helped improve engagement of local communities. Funding, however, remains insufficient, particularly since some of the component protected areas (although not the World Heritage site) have been significantly enlarged recently. There is some concern in the staff needs and the potential conflict of interest in the current legal management structure with the two component reserves which make up the property reporting to the Forestry and Hunting Committee under the Ministry of Agriculture since the reorganization of ministries in 2014.

► Assessment of the effectiveness of protection and management in addressing threats outside the site

Some Concern

The main external threats to the values of the site are related to the quantity and quality of the water supply to it. Development of adjacent territories, poaching and hunting, fires, and other possible factors may affect the values of the site. Since the two components of the site are managed separately and connectivity between them is insufficient, there is some concern about the effectiveness of the existing management regime to address the existing threats.

► Best practice examples

The comprehensive response of the State Party to suggestions to extend the protection regime to areas adjacent to the originally nominated property is an example of proactive conservation planning and should be applied in other sites as well.

State and trend of values

Assessing the current state and trend of values

World Heritage values

▶ **Processes sustaining steppe and forest**

Low Concern
Trend:Improving

The state of the steppe and forest ecosystems appears satisfactory (IUCN, 2008), and has benefited from the recent extension of the Korgalzhyn State Nature Reserve to the West. However, fires along roads and tracks have caused some damage to these values of the site in recent years.
Special theme of the Korgalzhyn Reserve is on “Monitoring of vegetation cover regeneration on the new covered territory”, which studies researchstudies the natural process of steppe regeneration after the area territoryarea got conservation status. Research is also ongoing in Naurzum concerning “Biodiversity of flora and vegetation cover monitoring” and ”Natural regeneration of Pinus sylvestris” (Annual Reports, 2015-2016).

▶ **Lake and wetland ecosystems**

Good
Trend:Improving

The freshwater lakes of the site, including Lake Tengiz, experienced a notable if moderate drop in water level in the past. However, in 2012 reconstruction of 2 dams – Ablayskaya (river Nura), Tabyakskaya (Con and Kulanaptes Rievers) was completed. This should have improved fresh water balance significantly (IUCN Consultation, 2013). Water pollution has also significantly reduced thanks to a number of measures. . The dams ensured the sufficient fresh water level in the lake system of the Korgalzyn Reserve. In 2015 the water level was abnormally high and it washed out parts of the dams, which were recovered later on. Regular measurements of water quality together with some biological parameters are collected to monitor and report any changes (Consultation with Nature Reserve staff, 2017).

► Bird migration

Low Concern
Trend:Stable

The general conservation status of migrating birds at Korgalzhyn SNR was considered favourable in 2008. However, outside the reserve hunting, fishing and power line casualties may impair the conservation status of migratory birds, and should be monitored more carefully in the future (Schielzeth et al., 2008, BirdLife International, 2012a).
At the end of 2015 monitoring data for migrating waterfowl birds 400,000 individuals which is significantly less than in 2014 (1 mln). This can be due to a change in the migration routes caused by weather and wetlands conditions seasonal fluctuation (ACBK). In autumn 2016 a record number of white-headed duck (Oxyura leucocephala, EN) of 20.000 individuals was registered in the wetlands of Korgalzhyn and adjacent territories. It is more than projected global population, which was considered to be 16,000, and the ornithologists believe that they counted only part of the migrating flock (ACBK News).
Specific data on each migrating species is collected and recorded in the regular monitoring tables of the Reserves.

► Exceptional diversity of flora

Low Concern
Trend:Stable

Similar to the conservation state of the steppe and forest ecosystems that they compose, the state of terrestrial flora of the site was judged good in 2008 (IUCN, 2008). Regular monitoring of the unique steppe ecosystems and flora conditions, as well as the flagship species like Pinus sylvestris regeneration is being conducted (Annual Report, 2016-2017).

► Exceptional diversity of Central Asian fauna

Low Concern
Trend:Improving

The Betpak-Dala Saiga population, to which the animals within the site belong, has been increasing for at least 15years and numbered 110.000 animals in 2012 (Saiga News, issue 15, 2012). In 2014 the population of

Saiga reached 134,000 animals. However, the mass die-offs of Saiga in 2015 wiped off almost 90% of Betpak-Dala population (Saiga News, 2015). However, the spring 2017 monitoring of Saiga in the Korgalzyn Reserve accounted 1620 animals, which is higher than expected and extrapolates to 8000, which indicates considerable improvement in population (Consulation with Korgalzhyn Reserve staff, 2017).
The 2016 aerial survey estimates the total Saiga population of Kazakhstan at 108.300 animals, including 36.200 in Betpakdala, 70200 in Ural, 1900 in Ustyurt (ACBK, 2017).

According to the press release of the Ministry of Agriculture the population of Saiga has icreased 41% in 2017 compared to 2016 and composed 152,000 animals (http://ratel.kz/raw/populjatsija_sajgi_vyrosla).

Summary of the Values

► **Assessment of the current state and trend of World Heritage values**

Low Concern

Trend: Improving

The data on Saiga population are currently indicating fast restoration following the 2015 mass die-off. The state of the steppe and forest ecosystems of the site appears satisfactory and has benefited from the recent extension of the Korgalzhyn State Nature Reserve. Similarly measures undertaken to increase the water level and reduce water pollution, have helped improve the state of the site’s lake and wetland ecosystems. Water level is being monitored and water quality is regularly checked. The state of the site’s flora and fauna is regularly being monitored and is of low concern and stable. Some data on the migratory endangered species, like the white-headed duck (Oxyura leucocephala), show positive trend in their global population.

Additional information

Benefits

Understanding Benefits

► Importance for research

The site has already contributed significantly to the overall scientific understanding of bird migration and Eurasian steppe ecosystems (UNEP-WCMC, 2011, Rachkovskaya and Bragina, 2012, Schielzeth et al. 2008). It adds to the knowledge of the natural steppe and Pinus forest regeneration, provides further understanding onf the ecology of some mammal species like Saiga, on species natural habitats of endangered species and other topics (Annual Reports, 2015-2016). This benefit could be maintained and developed further.

► Contribution to education

The administration of the property has started concerted efforts to develop its interpretative and educational capacities (Government of the Republic of Kazakhstan, 2007). Based on the visitor centres/museums in each SNR, there are regular school visits (UNEP-WCMC, 2011) and the reserves have also collaborated with local schools on some environmental educational programmes. New visitors' centres have recently been built.
Special departments of the reserve are focused on educational and touristic activities. There are several ecological routes to increase public's awareness of natural diversity. Numerous publications in popular media are issued each year. Presentations and open lessons are given in local schools. Summer practice for University students is organized in the reserve. Seminars, roundtables and meetings are organized with local stakeholders to discuss significant issues on nature conservation. The State initiated "March of Parks" program covers all Reserves in the country for nature conservation promotion purposes (Annual Reports, 2015-2016).

► Outdoor recreation and tourism

Nature based tourism is practiced at a very moderate intensity on the property (IUCN, 2008). If developed in a responsible way, the site may offer a unique opportunity to experience a relatively undisturbed wilderness and the extraordinary avifauna of the property, particularly during migration seasons. This might also contribute significantly to income generation for its

component PAs.
Both reserves have expanded and increased their tourism activities putting more focus on their development in the last several years. The special ecological routes have been developed, guest houses have been built, and collaboration with local tourism agencies has been ongoing. There is a room for development of national and international scale tourism to these unique places. Some income had been already generated out of tourism activities and added value to the Reserves' budgets (Annual Reports, 2015-2016).

► Sacred natural sites or landscapes

The Great Kazakh Steppe – or Uly Dala (Ken Dala) how the Kazakh People call the land of their origin and centuries history. Steppe was everything for the nomad people – good and bad. It was part of their nature, heart, blood. The unity of horizon-less steppe land and the sky was the symbol of the unity of the Universe. Kazakh yurta in the steppe was the centre of the universe. The smell of sagebrush, waves of feather grass fields, dust from the horse trampling and the falcon in the blue sky is what is inherited in the soul of each Kazakh. Steppe has the transcendent significance that puts people in touch with a deeper reality greater than themselves.

► Sacred or symbolic plants or animals

The property provides natural habitat for two endangered species that are symbols of Kazakstan and are depicted on the major country symbol the Golden Eagle (Aquila chrysaetos) and the Steppe Eagle (Aquila nipalensis). For nomad people the Eagle was the symbol of freedom and fidelity, self-dignity and courage, power and purity of mind (Official Site of the President of the RK (2017). Also two species of skylarks (Melanocorypha yeltoniensis, Melanocorypha leucoptera) are inherent part of the Kazakh steppe. Saiga is an old nomad of the territory that neighboured Kazakh people since the old times.

► Soil stabilisation

In 50-th of XX century the vast territory of virgin Eurasian steppe on Kazakhstan territory was ploughed, which led to extensive soil degradation and loss of humus. Due to the dry climate conditions the regeneration of natural steppe vegetation and soil cover is a long process. The property

covers parts of the steppe, some of which are virgin and some are in the process of recovery (Abylkhozhin Zh.B., 2017).

► Provision of jobs

Two natural Reserves of the territory have the official staff and provide jobs to the local population. Development of eco-tourism makes a positive impact on this area as well.

► Tourism-related income

Developing area of eco-tourism has a good potential to contribute to the budget of the Reserves (Annual Reports, 2015-2016).

Summary of benefits

Because of its extraordinary conservation values and strict protection regime, the main benefits of the property are related to its nature conservation values and its role in knowledge generation. It covers the original Kazakh land – Uly dala – Great Steppe and provides habitat for some symbolic animals for the People. The soil regeneration of the steppe is also an important benefit.
It also provides a sizeable number of jobs in an otherwise rather poor area. At the same time, the property has rich potential to maximize its socio-economic benefits in terms of education and experiencing nature, tourism and the overall socio-economic development of this relatively poor region of Kazakhstan.

Projects

Compilation of active conservation projects

№	Organization/ individuals	Project duration	Brief description of Active Projects
1	Association for the Conservation of Biodiversity of Kazakhstan		Altyn Dala Conservation Initiative, including activities aimed at Saiga conservation near the property and connected to the upgrading of the Zarykopa Zakaznik, in line with recommendations of IUCN (2007)

№	Organization/ individuals	Project duration	Brief description of Active Projects
2	The World Bank	To: 2011	Cleanup of mercury contaminated sediments around the Nura River
3	Naurzum NGO		Support of management and research at Naurzum SNR
4	Kazhydromet, Karaganda	From: 2012	Monitoring of WB Nura River Mercury cleanup project
5	UNDP		Several projects
6	RK/GEF/UNDP	To: 2013	Conservation and Sustainable Development of Steppe Ecosystems Altyn-Dala State Nature Reservation
7	UNEP/GEF	To: 2009	Development of a Wetland Site and Flyway Network for Conservation of the Siberian Crane and Other Migratory Waterbirds in Asia
8	ACBK Saiga 2007 -2017	To: 2017	Saiga monitoring: annual aerial syrveys, satellite tagging, monitoring during breeding season.
9	RK/ENRC Group	From: 2014 To: 2015	Development of the management and monitoring system of hunting and rare waterfowl birds populations in Kazakhstan.
10	ACBK/ Conservation Leadership Programme(CLP), Ornithological Society of the Middle East, the Caucasus and Central Asia(OSME)	From: 2013 To: 2015	Monitoring of the key population territories of Oxyura leucocephala
11	Microbiology and Virology Institute	From: 2015 To: 2016	Research on collection of biological material of some specieis of waterfowl birds
12	KazNIIRH	From: 2015 To: 2016	Scientific research on the wetlands of the Korgalzhyn Reserve as a basis for the meliorative and scientific research fishing.
13	ACBK/Darwin Initiative/ Swarovski Optics	To: 2015	Conservation of Vanellus gregarious – unique and globally endangered steppe species
14	ACBK	From: 2009 To: 2013	Conservation and sustainable development of steppe ecosystems

№	Organization/ individuals	Project duration	Brief description of Active Projects
15	ACBK/ Sibecocenter	From: 2017	Steppe Eagle population number counting

Compilation of potential site needs

№	Site need title	Brief description of potential site needs	Support needed for following years
1	N.A.	Feasibility study aimed at determining carrying capacities and action plans for sustainable tourism development at both component PAs	
2	N.A.	Development/upgrading of monitoring programmes for the site’s values, including hydrology and flora and fauna	

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