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# Ecological tourism in "Altyn-Emel" National park

(Kazakhstan)

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# Imprint

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# About

Alyona Kaptyonkina is a junior researcher from Kazakhstan. She holds a master's degree in natural sciences from Karaganda State University (Kazakhstan) and a bachelor's degree in pedagogy in biology (Kazakhstan). Alyona participated in a 5-month exchange program (2018-2019) with Babes Bolyai University (Romania) in the Department of Public Health.

During her studies, she enjoyed volunteering to learn new information, enrich her background and gain new experiences and knowledge. She has been a member of the Association for the Conservation of Biodiversity of Kazakhstan (ACBK) since 2016. Alyona has been a member of the ACBK Council since 2019. She has been actively collaborating with the ACBK on winter and autumn bird monitoring for almost five years. Alyona also worked as an assistant on bird watching tours for foreigners. Alyona has worked as a biology teacher at a state school and as a junior researcher in various scientific projects in Kazakhstan.

Now she works as a junior researcher in the Laboratory of Ornithology and Herpetology of the Institute of Zoology of the Ministry of Education and Science of the Republic of Kazakhstan.

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# Preface

The subject of this project is ecotourism in «Altyn-Emel» National park of Kazakhstan. The main purposes of the project are: to learn the European experience of ecotourism organizations; to visit National Parks in Europe (Germany); to learn european experience in ecotourism sphere; to create recommendations and useful materials for the protected area in Kazakhstan.

For achieving these goals, I studied the literature sources about the worldwide ecotourism, collected the full information about «Altyn-Emel» National park, created different booklets for historians, birdwatchers, and ordinary tourists.

Tourism in National parks has been an important and actual topic for many years and even decades. The history of relationships between protected areas and tourist is very old.

Protected areas need tourism, and tourism needs protected areas. Though the relationship is complex and sometimes adversarial, tourism is always a critical component to consider in the establishment and management of protected areas.

**Keywords:** protected areas; Kazakhstan; Altyn-Emel; National park; ecological tourism; tourism;flora of Kazakhstan; fauna of Kazakhstan

# CONTENT

# 1. Physical-geographical data

## 1.1 Kazakhstan

Kazakhstan is a large country, which located in Central Asia (with 4% of the country in Eastern Europe). The Kazakhstan lies right in between Europe and Asia, between 45° and 87° of East longitude, 40° and 55° of North latitude. It stretches from the east of the Caspian Sea and Volga plains to the mountanious Altay. With an area of about 2,724,900 square kilometers, Kazakhstan is more than twice the combined size of the other four Central Asian states. The country borders Turkmenistan, Uzbekistan, and Kyrgyzstan to the south; Russia to the north; Russia and the Caspian Sea to the west; and China (Figure 1).


**Figure 1.** Map of Kazakhstan

The relief of Kazakhstan is distinguished by diversity, uniqueness of both individual forms and morphogenetic types in within the morphostructures of the Caspian Lowland of the East European Plain, the plains and plateaus of Turan, the southern margin West Siberian Plain, Kazakh Uplands and mountain systems of Altai, Saur, Tarbagatai, Zhetysu (Dzungarian) Alatau, Northern and Western Tien Shan. The relief clearly shows 3 main tiers: flat (Russian, Turan and West Siberian plates), hilly (Kazakh shield) and mountainous (epiplatform orogenic belt). The mountain layer is most differentiated in height and consists of the following types and subtypes of relief: tectonic-erosion highlands, middle mountains, low mountains, foothills; accumulative plains of foothill, intermountain and intramountain depressions (lacustrine, alluvial, lacustrine-alluvial, glacial, fluvioglacial, eolian) [3].

Kazakhstan has an extreme continental climate. It is characterized by irregular distribution of precipitation in its different regions. Summers are hot and winters are cold. Winter in the north of the country is long and cold – in some years the temperatures reached - 52°C (Nur-Sultan), but there are also thaws up to 5°C. The shortest season in the north is spring, which lasts 1.5 months, while summer lasts 3 months and winter extends from October to April. Snow primarily falls in November but can continue through April.

Due to its great distance from the ocean, Kazakhstan has a highly continental climate and large intraday and annual fluctuations in temperature. Precipitation is low throughout the year, with average monthly levels of between 14 millimeters (mm) and 30 mm, although flooding can occur during spring due to increased rain and the thawing of winter snow [4].

## 1.2 Almaty region

Almaty region borders on the following regions of Kazakhstan: Zhambyl region in the west, Karaganda region in the northwest (the water border runs along Lake Balkhash), East Kazakhstan region is located in the northeast.

In the east, the region borders with China, in the south with the Republic of Kyrgyzstan. The region has a rather complex geographical characteristic and a very diverse relief.

The northwestern part is a semi-desert plain, in which the Taukum, Belsekseul, Moyinkum sand massifs are distinguished. The relief is slightly inclined towards Lake Balkhash and cut by the ancient channels of the rivers Ili, Karatal, Aksu, Koksu, Lepsy, Ayagoz, the most significant of which is Bakanas. Two separate massifs - in the south and east - stretch mountain ranges: Zailiysky Alatau and Dzhungarsky Alatau (Tian Shan mountain system). At the junction of their gradually lowering slopes, the middle channel of the Ili River is located.

**Figure 2.** Almaty region on the map.

The soil and vegetation cover is very diverse. In the flat part - semi-desert and desert, wormwood-saltwort vegetation with thickets of saxaul; in spring, ephemera and ephemeroids are characteristic on clay brown soils. There are salt marshes. On the swampy coast of Balkhash, in the delta and the Ili valley, there are thickets of reeds, meadow and halophyte vegetation, partly tugai forests of willow and shrubs on alluvial-meadow soils and solonchaks.

## 1.3 “Altyn-Emel” National park

National natural park in the valley of the Ili River in the Almaty region of Kazakhstan. It occupies a territory bounded from the south by the Ili River and the Kapshagay Reservoir, from the north by the western spurs of the Dzungarian Alatau - the mountains of Sholak, Matai Altynnemel and Koyandytau, from the east by the low mountains of Aktau.

Altyn-Emel Park was organized on April 10, 1996 with an area of 209,553 hectares.

The total area of the park is currently 307,653.35 thousand hectares. The territory of the park includes mountainous, sandy-desert, rubble-clay-desert landscape complexes.

It consists of two main parts - a plain that adjoins the right bank of the Ili River and a mountainous one - the spurs of the Dzungarian Alatau and the macro slope of the Altynemel ridge. On the plains there are small island mountain ranges. Carboniferous deposits (300 million years) were found on the territory of the park, which are mainly represented by volcanic rocks, Permian and Carboniferous

deposits, and the most ancient deposits are Silurian. The park's mountains are mostly made up of Paleozoic rocks that are 200 to 400 million years old.

The climate of the park is sharply continental. The climate of Altyn-Emel is Humid continental climate, warm summer (Köppen climate classification (Dfb)). This climate is characterized by large seasonal temperature differentials and a warm summer (at least four months averaging over 10° C, but no month averaging over 22° C). The park is in the Tian Shan foothill arid steppe ecoregion.

# 2. Ecological tourism

## 2.1 Sustainable tourism in protected area

Tourism is a popular sphere in different coutries now. More and more people every year can afford a trip (except of COVID-19 pandemic situation). Tourism is one of the world's fastest growing industries (https://www.unwto.org/why-tourism) and an important source of foreign exchange and employment, while being closely linked to the social, economic, and environmental well-being of many countries, especially developing countries.

The World Tourism Organization defines sustainable tourism as “tourism that takes full account of its current and future economic, social and environmental impacts, addressing the needs of visitors, the industry, the environment and host communities".

Based on General assembly resolution 70/193, 2017 was declared as the International Year of Sustainable Tourism for Development [5] it means, that topic of Sustainable Tourism is important and urgent.

Protected areas are very attractive settings for the growing demand for outdoor, appreciative activities in natural environments [1]. Many people are interested in traveling to National parks. People want to get closer to nature, learn more about the nature of their native country (or other countries), explore the animal and plant world.

Protected areas are a key component of any global conservation strategy. Tourism provides a crucial and unique way of fostering visitors’ connection with protected area values, making it a potentially positive force for conservation.

Protected area tourism’s economic benefits — which depend on beautiful natural areas, healthy wildlife and nature, and authentic cultures - can also be a powerful argument for conservation. Tourism in protected areas is a major part of the global tourism industry - an industry whose scale and impacts are enormous. Such a high volume of visitors implies certain needs for fundamental infrastructure and requirements for employment and human services, all of which have ramifications for the economy, society, culture and the environment [6].

Relationships between protected areas and tourism is complex and sometimes adversarial, tourism is always a critical component to consider in the establishment and management of protected areas.

Protected area managers and the private sector need to deliver quality visitor services. The challenges for managers include ensuring they have service quality goals, programmes to deliver high quality service and monitoring programmes in place. Importantly these sophisticated consumers recognise quality service and are willing to pay handsomely for it.

Tourism in protected areas has benefits and costs. These effects interact often in complex ways. It is the responsibility of the protected area planner to maximise benefits while minimising costs. While this document does not provide a detailed analysis of all tourism impacts, the following sections identify the main costs

and benefits [1]. Protected areas are established primarily to preserve some type of biophysical process or condition such as a wildlife population, habitat, natural landscape, or cultural heritage such as a community’s cultural tradition. Tourists visit these protected areas to understand and appreciate the values for which the area was established and to gain personal benefits. Tourism planning and development aims to take advantage of the interest shown by tourists so as to: enhance economic opportunities, protect the natural and cultural heritage, and advance the quality of life of all concerned.

Potential benefits of tourism in protected areas: increases jobs for local residents; increases income; stimulates new tourism enterprises, and stimulates and diversifies the local economy; encourages local manufacture of goods; improves living standards; enables employees to learn new skills; increases funding for protected areas and local communities; protecting natural and cultural heritage; protects ecological processes and watersheds; protects, conserves and values cultural and built heritage resources; transmits conservation values, through education and interpretation; supports research and development of good environmental practices and management systems to influence the operation of travel and tourism businesses, as well as visitor behaviour at destinations; improves local facilities, transportation and communications; supports environmental education for visitors and locals; increases the education level of local people; encourages people to learn the languages and cultures of foreign tourists; encourages local people to value their local culture and environments.

Tourism based on protected areas can be a key factor in supporting the conservation of the natural and cultural heritage. It can generate the funds through entrance and service fees, local taxes and in many other ways that can be used directly to help meet or offset the costs of conservation, maintaining cultural traditions and providing education. Indirectly, by demonstrating the economic value that protected area tourism can bring to a country or a region, it can build public and political support for conservation of natural heritage.

But there are some negative sides, which can affect on protected areas. Negative effects can and do result from tourist visitation, but many of them can be competently managed and alleviated. Protected area stakeholders are in the position of gauging both the positive and negative effects of tourism, determining how acceptable the negative effects are, and suggesting how they can be managed. The costs of tourism are of three kinds: financial and economic, socio-cultural and environmental.

Tourism, like many other forms of development, will always produce environmental impacts, even at low levels of intensity, and despite the best efforts of protected area managers. Such impacts occur both at the site level, and over larger areas. Because tourism in protected areas is drawn to environments which are inherently sensitive, it is vital that the impacts be assessed as accurately as possible beforehand to establish if they are acceptable. (However, in assessing these, it

is important to consider what environmental impacts would have occurred if the park, and its tourism industry, were to be replaced by some other land use, such as agriculture, forestry, mining or urbanisation) [7].

Negative impacts of human use on the environment: trail creation; crowding; human waste problems; wildlife disturbance, habituation, or impact; water pollution (physical or biological); cultural vandalism; visual and noise impacts; overfishing, undersized fishing; impacts on vegetation; damage to sand dunes/reefs; damage to archaeological sites; taking souvenirs (flora, fauna, etc).

## 2.2 Principles of ecological tourism

Ecotourism principles are:

- Minimize physical, social, behavioral, and psychological impacts;

- Build environmental and cultural awareness and respect;

- Provide positive experiences for both visitors and hosts;

- Provide direct financial benefits for conservation;

- Generate financial benefits for both local people and private industry;

- Deliver memorable interpretative experiences to visitors that help raise sensitivity to host countries’ political, environmental, and social climates;

- Design, construct and operate low-impact facilities;

- Recognize the rights and spiritual beliefs of the Indigenous People in your community and work in partnership with them to create empowerment [8].

## 2.3 Printed material for tourists

The average level of formal educational attainment is rising globally, for both males and females. Literacy is increasing too, particularly in less developed countries. Higher education levels are strongly correlated with demand for outdoor recreation activities, and lead to changes in the patterns of recreation and tourism

Tourism of this kind requires explanatory materials (e.g. guides, booklets), interpretive facilities (e.g. in visitor centres) and interpretive guiding (e.g. ecotours). It increases the expectations of service quality in protected areas, and raises political pressure for greater protection of cultural and natural heritage. It can also help generate a greater personal commitment to park protection - something that protected area managers should foster and tap into [1].

Tourist information has been shown to have an important influence on the choice of vacation destinations. A lot of articles studies brochures, their significance as image generators, and their influence on the selection of destinations. Travel brochures are promotional documents that advertise specific destinations, tours, vacation packages, or exotic locations. Proper brochure marketing can help National parks and travel agencies build relationships, drive more traffic and bookings and tell meaningful stories.

The main purpose of working out a brochure or booklet is to present the

information about the tourism product and services. Thus, an effective travel brochure should attract the visitors. “Since tourism is an intangible product which cannot be pretested by the prospective consumer prior to the purchase, the brochure becomes the important channel of informing a customer about the product and also motivating him to buy the product” [9, 247].

Brochures and booklets are important for promoting the product when customers receive the necessary information very easily. Everything can be already ready for tourists.

# 3. Flora and fauna of the national park

## 3.1 List of birds

The National Natural Park "Altyn-Emel" is the largest reserve of biodiversity in Kazakhstan and a standing geological and paleontological museum in the open air [10].

The annotated list of birds today is 298 species, two thirds of which nest in the park, and 28 species noted here are listed in the Red Book of the Republic of Kazakhstan. They are: *Pelecanus onocrotalus, Pelecanus crispus, Platalea leucorodia, Ciconia nigra, Cygnus cygnus, Aythya nyroca, Oxyura leucocephala, Pandion haliaetus, Circaetus gallicus, Aquila nipalensis, Aquila heliaca, Aquila chrysaetus, Haliaeetus albicilla, Gypaetus barbatus, Neophron percnopterus, Gyps himalayensis, Falco cherrug, Falco peregrinus, Grus grus, Anthropoides virgo, Otis tarda, Tetrax tetrax, Chlamydotis undulata macqueenii, Chettusia gregaria, Pterocles orientalis, Syrrhaptes paradoxus, Columba eversmanni, Bubo bubo* [11].

The following is a list of rare and endangered bird species nesting in the national park:

*Ciconia nigra* - black stork. Occupies mountains of Tien Shan, Dzhungar Alatau, Tarbagatay, Saur, Monrak, Southwest Altai, Kalbinskiy Altai and Kazakh Uplands. Rare breeds in Tentek river delta and in Charyn river valley. Rare breeding migrant. Inhabits mountains with meadows near the shallow water (not far than 10-15 km from nest), rarely human visited. In spring arrives in the end of February – early March in southern areas, in the end of March – mid-April in northern ones, and in highlands of Western Altai in early May only. Late migrants observed up to early June. Pairs nest separately. Birds with sticks in bills were observed at Western Altai in end of April – early May [12].

*Circaetus gallicus* - short-toed snake eagle is a medium-sized bird of prey in the family Accipitridae, which also includes many other diurnal raptors such as kites, buzzards and harriers. Rare breeding migrant, but quite common in some areas. Inhabits the low xerophytic mountains and foothills of the main Tien Shan ridges; the river valleys with scattered trees; the sandy and clay deserts with low and sparse grass. In southern mountains it nests up to 2500 m (Chatkal ridge), but the hunting bird was recorded at 3300 m [13].

*Platalea leucorodia* - Eurasian spoonbill. Rare breeding migrant. Inhabits reed-rich steppe lakes, river channels overgrown with trees, bushes, nearby shallow water. In spring appears early, in mid-March, but usually in April. Migration finishes in mid-May. Migrates in flocks, flying by a slash. Breeds in colonies of up to 75 pairs, sometimes together with Grey Herons, Great Egrets and Cormorants. Nest is built by both partners in the reed-beds from the reed stems; or in bushes and trees (willow) at a height of 2-7 m, from the dry twigs with a certain number of the reed stems and leaves [12].

*Aquila heliaca* - eastern imperial eagle. is a large bird of prey that breeds in southeastern Europe and extensively through West and Central Asia. Most populations are migratory and winter in northeastern Africa, the Middle East and South and East Asia. Like all eagles, the

eastern imperial eagle is a member of the family Accipitridae. Furthermore, its well feathered legs mark it as a member of the subfamily Aquilinae. It is a large, dark-colored eagle, with a resemblance to other members of the genus Aquila but it is usually the darkest species in its range. This is an opportunistic predator that mostly selects smallish mammals as prey but also a fairly large proportion of birds, reptile and other prey types, including carrion. *Aquila heliaca* - most of the meetings are timed to the districts of Kokterek, Uzunbulak, Zhuzasu, Mynbulak, Bostan, Sholak. Under the Uzunbulak gorge in the flat part, a pair of birds annually nest and breed in the old cemetery, in connection with which there is always a local eagle population here (In National Park) [10].

*Aquila chrysaetos* – golden eagle. Frequent golden eagle sightings were recorded in the areas of the Bolshoy Kalkan, Mynbulak mountains, Matai, Sholak, Sarybastau, Kokterek. The flat part under the Matai mountains, tracts Mynbulak also serves as a hunting ground for golden eagles. There are few wild animals in the mountains of the Big Kalkan

– the object of feeding the golden eagle, but its nesting is possible here. Sholak, Sarybastau and Kokterek border on the protected area, there is no gazelle here, but there are cattle – the object of golden eagle extraction [10].

*Gypaetus barbatus* - bearded vulture. is a very large bird of prey and the only member of the genus *Gypaetus*. The population of this species continues to decline. In 2004, it was classified by the IUCN Red List as least concern; since 2014, it is listed as near threatened. The birds are widely distributed in the central part of the National park.

*Pterocles orientalis* - black-bellied sandgrouse. This gregarious species breeds on dry open plains and similar habitats, but unlike the pin-tailed sandgrouse, it avoids areas completely lacking in vegetation. Its nest is a ground scrape into which three greenish eggs with cryptic markings are laid. Both sexes incubate, but only the male brings water. Birds are registered in the rounds of Bostan, Kokterek, Kuyuktuma. These are flat areas with watering holes. The average number of birds was recorded in the districts of Zhantogai, Sulymatai, Sasykkol, and Kzylauyz [10].

*Bubo bubo* - Eurasian eagle-owl. is a species of eagle-owl that resides in much of Eurasia. It is one of the largest species of owl, and females can grow to a total length of 75 cm (30 in), with a wingspan of 188 cm (6 ft 2 in), with males being slightly smaller. Two encounters of this bird have been recorded only in the area of Bolshaya Kalkan [11].

*Otis tarda* - The great bustard. is a Bird in the bustard family, the only member of the genus Otis. It breeds in open grasslands and farmland from northern Morocco, South and Central Europe, to temperate Central and East Asia. European populations are mainly resident, but Asian populations migrate farther south in winter [14].

*Haliaeetus albicilla* - White-tailed Sea-Eagle. White-tailed Eagle is rare breeding migrant. Inhabits the riparian woods, the small woods of steppe zone near the fish-abundant lakes with reed thickets. Appears in the end of February or in March, latest birds flying in northern direction were

observed in early April. Breeds in separate pairs at least 1-2 km apart. Nest is built in tree (asiatic poplar, russian olive, larch) at 3-12 m above the ground; nest is constructed from the thick twigs and is lined with dry grass, and often with fresh twigs with leaves [13]. The white-tailed eagle lives in the Bolshaya Kalkan area, bordering the tugai river Ile. These are quite suitable habitats for the eagle, since there are nesting areas (tugai trees) and feeding areas (fish in the river Or) [10].

## 3.2 List of amphibians

The amphibian fauna is represented by 5 species:

*Caudata. Ranodon sibiricus* (Kessler, 1866) - Semirechensk Salamander. *Ranodon sibiricus* likely to meet in small mountain rivers or streams with a muddy bottom at heights of 1800-2200 m [14]. It is listed in the Red Book of the Republic of Kazakhstan (2010) in category II (a species with a declining range and population), as well as in the IUCN Red List in the category "endangered".

*Anura Rafinesque*, 1815. Green toad – *Bufotes viridis* (Laurenti, 1768). It is found in diverse places of the semi-desert zone of the National park, during the breeding season it is concentrated at artesian wells, wells and other water sources [11].

Xinjang toad – *Bufotes pewzowi* (Bedriaga, 1898). It inhabits diverse biotopes of deserts and semi-deserts, during the breeding season it occurs at the spills of artesian wells, large puddles and other standing water sources. It is listed in the Red Book of Kazakhstan as a poorly studied species in category II [17,18].

Lake frog – *Pelophylax ridibundus* (Pallas, 1771). It is noted in standing reservoirs formed by self-emptying wells, as well as along the Ili River [11].

Central Asian frog – *Rana asiatica Bedriaga,* 1898. Information on oral reports of meetings from the eastern tip of the Kapchagai military storage [11].

## 3.3 List of reptiles

The fauna of reptiles is represented by 25 species, of which one species of turtle, 16 species of lizards, 8 species snake.

*Testudines Batsch, 1788*. Central Asian turtle – Agrionemys horsfieldii (Gray, 1844). A find from the village of Sholak is known, but in small isolated desert areas preserved along the valley from the foot of the village. Sholak in the west to the Moinkum peninsula (right bank of the Khorgos River) in the east, no turtle was found (Bondarenko, Dujsebayeva, 2012). The Central Asian turtle is included in Annex II of the Convention on International Trade in Species of Wild Flora and Fauna (CITES). It is listed in the IUCN Red List in the "vulnerable" category [19].

Squamata Oppel, 1811. Sauria Maccartnay, 1822.

*Mediodactylus russowii* (Strauch, 1887) - Transcaspian Bent-Toed Gecko. It lives in the crevices of the rocks of the lower part of the gorges of the Sholak Mountains, Degeres, Katutau. There is also a meeting on the turangs in the groves [20].

*Teratoscincus scincus* (Schlegel, 1858) - Turkestan Plate-tailed Gecko. He lives in the scattered forests of the eastern part of

the park, stretching along the floodplain of the river. Or on the Singing Dune [11].

*Alsophylax pipiens* (Pallas, 1814) - Caspian Straight-fingered Gecko. It is found in the floodplain forest of the Ili River, where it lives on the trunks of old turang, as well as along the foothills of xerophytic mountains in stone scree, human buildings [11].

*Ph. helioscopus* (Pallas, 1771) - Sunwatcher toad-headed agama. Shiro ko is a widespread species on the territory of the national park. It mainly inhabits gravelly foothill plains [11].

*Ablepharus deserti* (Strauch, 1876) - Desert Lidless Skink. They lives on the rocky slopes of the Sholak Mountains [21].

*Eremias arguta* (Pallas, 1773). The Inhabitant clay-gravelly foothills, widely distributed in the Konyrolenskaya valley at altitudes of 1000-1500 m [16].

*Serpentes* (Linnaeus, 1758).

*Eryx tataricus* (Lichtenstein, 1823). A numerous snake inhabiting a variety of biotopes – clay and gravelly deserts, goes to sandy biotopes, as well as vegetable gardens and the vicinity of cordons. Like the rest of the species of the family Boidae, it is listed in the second appendix of CITES [22].

*Psammophis lineolatus* (Brandt, 1838). The usual species of the deserts of the National Park [22].

*Gloydius halys* (Pallas, 1776). In the park, it is found mainly in the foothills of Shellac, Altyn-Emel on slopes with rare shrubs, rock formations and scree [11].

## 3.4 List of plants

According to the results of field studies, the flora of the SNNP "Altyn-Emel" consists of 864 species of vascular plants, 28 of which are listed in the Red Kazakhstan book.

These species have different ecological time, population size and role in the structure of vegetation, live in different parts of the Park. In addition to rare and endangered species, endemic plants are widely represented, inherent only in the territory of the national Park and the area of its location.

About some rare plants Altyn-Emel National Park and adjacent territories:

Eremurus robustus Regel – (F. Asphodelaceae).

The mountain-Middle Asian-Dzungaro-Pamir Alai species, the extreme northeastern limit of which runs in the southern horns of the Dzungarian Alatau. V.P. Goloskokov (1984) indicates the only location of this very rare, in his opinion, species in a very small area – in the Kyzyl gorge in the Chulak mountains, and the nearest point of germination – The Sogetian Mountains in the Trans-Ili Alatau.

*Iridodictyum kolpakowskianum* (Regel) Rodionenko – (F.*Iridaceae*). It is listed in the Red Book of Kazakhstan (2014) as a species with a shrinking range and population. Due to the early and short period of vegetation, its distribution has not been studied enough. The range of the species is the Western Tien Shan, Karatau, the Chu–Ili Mountains, the Trans-Ili Alatau, east of the Ili River was not

previously known. The plant was first collected on May 25, 2001 at two points in the Arkharly and Altyn-Emel mountains (Ivashchenko, Layman, Ishkov, 2002). On the gentle northern microslope of the Arkharly pass (1180 m), more than 10 individuals in the composition of the grassy steppe with a predominance of fescue and dense thickets of Spiraea hypericifolia. After 10 years, this find was confirmed by other botanists (Veselova et al., 2011).

*Tulipa brachystemon* Regel - (Family *Liliaceae*). A wider endemic of the Dzungarian Alatau, living on the slopes of various exposures (northern, eastern and western), from gentle areas to 20-450 steepness.

It occurs sporadically on the territory of the national park and its immediate environs, in separate isolated populations, the number of which reaches a thousand or more individuals, and the areas of sites occupied by them range from 500-1000 m2. According to our data, the species is common in the mountains Chulak, Katutau, valleys of the Kugala river, on the Altyn-Emel pass [11].

# 4. Printed materials

To simplify the work of the national park staff, the rules of conduct in the national park have been translated into English and are presented below.

On the territory of the protected natural areas, it is allowed:

For individuals, when visiting the territory of a nature conservation organization, depending on the type of protected areas and the established legal regime of protection, allowed:

1. Movement by mechanized and horse-drawn transport along public roads and excursion routes, along unpaved forest and field roads of protected areas, parking in specially equipped places, except for areas with a special protection regime;

2. Conducting organized excursions and hiking trips, previously agreed with the administration of the nature conservation organization along established tourist routes and trails, accompanied by guides or guides-inspectors of protected areas;

3. Recreational harvest of wild fruits, berries, mushrooms, medicinal herbs, haymaking, firewood harvesting and other types of traditional nature use in specially designated areas, except for areas of reserve;

4. Conducting sports and environmental education events, tourist gatherings in coordination with the administration of the environmental institution;

5. Conducting professional and amateur photo and video shooting;

6. Conducting trainings;

7. Herbarium collection, selection of soil samples for educational purposes, except for areas with a except for areas of reserve.

On the territory of a protected area, it is NOT ALLOWED:

1. Being in a protected area without a supporting document on payment for the use of a protected area;

2. Exit and passage off public roads or special excursion trails and tourist routes, unpaved forest and field roads of protected areas;

3. Parking of vehicles outside the designated places;

4. Parking and washing of vehicles on the banks of reservoirs, washing dishes, washing clothes, bathing pets;

5. The presence of motor yachts, boats, motorboats, scooters, ATVs on reservoirs, with the exception of motor swimming vehicles used by the state rangers of Protected areas;

6. Making bonfires, installing barbecues, cooking fires outside specially installed and equipped places;

7. Arrangement of parking lots, installation of tents outside the places established for these purposes;

8. Fishing with nets and other prohibited tools and means;

9. Taking out of wild animals without appropriate permission;

10. Scaring and feeding wild animals;

11. Destruction of nests, burrows, dens and anthills;

12. Cutting down, breaking and damaging trees and shrubs, harvesting twigs for brooms and brooms for household needs;

13. Destruction and damage of monuments of nature, history, culture and archeology;

14. Collection and excavation of wild plants and medicinal raw materials outside of permitted collection sites;

15. Collecting wild fruits, mushrooms and berries outside specially designated areas;

16. Breaking and spoiling of visual materials (stands, panels, info-boards, signs and others);

17. Drawing and carving on buildings, trees, stones and rocks;

18. Unauthorized grazing, haymaking, timber harvesting and other illegal forest use;

19. Throwing domestic wastes;

20. Making of noise and other acoustic effects on the environment, according to the standards of the Republic of Kazakhstan;

21. Other activities that disturb the natural development and conservation of objects of the state nature reserve fund and natural complexes.

These rules were issued in the form of a poster and a booklet. Options for the design of printed material are presented in Appendix 1.

Several booklets were also prepared for the national park in two versions: in Russian and English. They are: Booklet of natural places (Appendix 2), booklet of historical places (Appendix 3).

# 5. Conclusion

As a research result, in the process of doing this work, I studied such a global topic as eco-tourism. A topic that is so limitless, but it is simply impossible to study it completely. Since new methods of developing sustainable tourism are constantly appearing, new data, statistics and new examples from other developed and developing countries.

Partly, I was able to study the experience of developing tourism in European countries, as well as visit a Jasmund National park in Germany. That was a colossal experience for me.

I can draw the following conclusions that there are still noticeable differences in the national parks of Germany (Europe) and Kazakhstan. This can be seen in the way the national park looks, what infrastructure is inside the park, and how the work in the national park is organized.

Of course, this still depends on the standard of living in the country as a whole and on many other reasons that underlie the construction of a policy for the development of specially protected areas. This is what our state is currently working on.

Gradually gaining new knowledge and experience, we already know how to improve the existence of our protected areas and preserve them not only for future generations, but also for the animals and plants, for whose protected area is home.

I collected versatile material about the national park "Altyn-Emel", negotiations were held with a representative of the national park. Also prepared printed material, such as posters, booklets, to attract new tourists to the national park.

It cannot be said that the work is finished. We need to continue collecting material, conducting monitoring, studying the national park, studying the flora and fauna of the park, developing tourism and attracting conscious tourists. But this work should already be carried out jointly with the staff of this national park.

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REFERENCES

1. Eagles, Paul F.J., McCool, Stephen F. and Haynes, Christopher D.A. (2002). Sustainable Tourism in Protected Areas: Guidelines for Planning and Management. IUCN Gland, Switzerland and Cambridge, UK. xv + 183pp.

2. Chupakhin V.M. Physical geography of Kazakhstan. Alma-Ata: Mektep, 1968. - 260 p. (In Russian)

3. Vilesov, A.A.Naumenko, L.K.Veselova, B.Zh.Aubekerov. Physical geography of Kazakhstan / E.N. Textbook. - Almaty: Kazak university, 2009. - 362 p. (In Russian)

6. Yu-Fai Leung, Anna Spenceley, Glen Hvenegaard, and Ralf Buckley, Volume editors Craig Groves, Series editor. Tourism and visitor management in protected areas. Guidelines for sustainability. IUCN, 2018.

7. UNWTO Tourism Highlights 2017 Edition.

8. Megan Wood. Book: Ecotourism: principles, practices and policies for sustainability. 2002 UNEP.

9. International Tourism Management by A. K. Bhatia. 2006.

10. Abayev A., Khabibrakhmanov R., Kydyrov T.N. Rare and endangered birds of the Altyn-Emel National Park: Species composition, abundance and assessment of the state of populations. The International Scientific and Practical Conference «Actual problems of sustainable development in forestry complex» dedicated to the 70th anniversary of higher forest education in Kazakhstan. Almaty. 2018.

11. Proceedings of Altyn-Emel state national nature park / Compiled by V.A. Kovshar. – Issue 2. – Almaty, 2016. 256 p.

12. Gavrilov E. I., Gavrilov A. E. "The Birds of Kazakhstan". Almaty, 2005. E.I. (In Russian)

13. V.K.Ryabitsev. "Birds of the Urals, the Urals and Western Siberia". Ekaterinburg. Publishing House of the Ural University, 2000. (In Russian)

14. Akhmetov H.A., Baynataev O.A. Biological diversity of the National Park "Altyn-Emel". – Almaty: RIC Asia, 2005. – 160 p. (In Russian)

15. E.I. Gavrilov. "Fauna and distribution of birds of Kazakhstan". Almaty, 1999. (In Russian)

16. Bruschko Z.K., Hermann, H.-J., Nabrajeva, S. P., Utjeshov, V. K. Seltene Schwanzlurche der Sowjetunion. VII. Der Sibirische Froschzahnmolch, Ranodon sibiricus//Elaphe 1989. Vol. 11, № 1. P. 7–11.

17. Borkin L.J., Eremchenko V.K., Helfenberger N., Panfilov A.M., and J.M. Rosanov. On the distribution of the diploid, triploid and tetraploid Green Toads (Bufo viridis complex) in South–Eastern Kazakhstan//Russian Journal of Herpetology. 2001. Vol. 8, №1. P. 45–53.

18. Duisebayeva T.N. About Xinjang Toad (Bufo pewzowi Bedriaga, 1898) in Kazakhstan//Selevinia. 2008. C. 100–107. (In Russian)

19. D. A. Bondarenko, T. N. Dujsebayeva. Central asian turtle, *Agrionemys Horsfieldii* (Gray, 1844), in Kazakhstan (its distribution, habitat division, and population density).

20. Dujsebayeva, T. N. (ed.) (2010) Short review of last changes in the checklist of amphibians and reptiles of Kazakhstan. In: Dujsebayeva, T. N. (ed.) Herpetological Researches in Kazakhstan and adjacent countries [in Russian].: Almaty: ACBK - KBCU, 260 pp. (p. 37-52; [ISBN 978-601-278-294-3] - via Catalogue of Life.

21. Dujsebayeva T.N. About the desert lidless skink Ablepharus deserti in Kazakhstan and parapatry of A. Deserti and asymblepharus alaicus (Reptilia: Scincidae) / Proceedings of the Zoological Institute of the Russian Academy of Sciences. Volume 319, No. 2, 2015, pp. 282-303.

22. T. N. Dujsebayeva, M. A. Chirikova, Z. K. Brushko. The herpetofauna of the Altyn-Emel National Park: a modern list of species and prospects for further research. Ili Valley: biodiversity, historical and cultural objects, rational use of natural resources. Almaty, 2006. Issue. 6. pp. 49-53

# Appendix 1.

## a) English version

# Appendix 1.

## b) Russian version


# Appendix 2.

## a) Booklet of natural places in English.


240 hectares
The Singing Dunes
Dunes appeared on the open rocky plain between the mountains Big and Small Kalkan.
The history of the origin of sand dunes associated with the wind .
Strong wind and sand movement on the slopes causes a buzz inside the dunes, similar to the sound of the jet engine.
The South dune, with a height of 150 m and North about 100 meters.
700 year-old willow
Willow grows on one of the tracts named Koshantau.
The tree is considered sacred and according to legend, its damage brings death.
According to legend, in the 12th century under this willow rested formidable Genghis Khan with his army during the campaign in Central Asia.
Aktau mountains
This is the bottom of the ancient sea that once filled the Ili basin.
The height of the deposits reaches 1000 m. The total area of the outcrop is about 10 km².
Aktau mountains are one of the largest paleontological sites with deposits of the Cenozoic era.

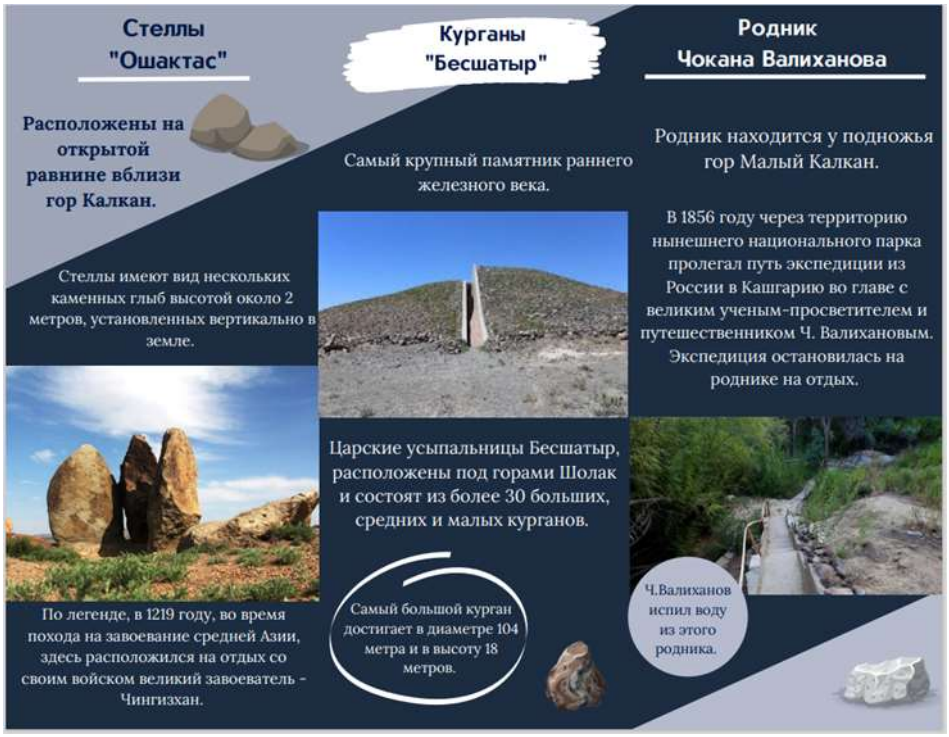
# Appendix 2.

## b) Booklet of natural places in Russian.


Площадь 240 га
Горы Актау
Дно древнего моря, некогда заполнявшего Илийскую котловину.
Высота отложений достигает 1000 м. Общая площадь обнажения около 50 кв/км.
Это одно из самых крупных палеонтологических местонахождений с отложениями кайнозойской эры.
Поющий бархан
Бархан возник на открытой каменистой равнине между горами Большой и Малый Калкан. История происхождения барханов связано с ветром.
Сильный ветер и движение песка на склонах вызывает внутри барханов гул, похожий на звук двигателя реактивного самолета.
Южный бархан высотой 150 м, северный 100 м.
Ива- долгожитель
На урочище Косбастау, недалеко от радоновых источников растет 700-летняя ива.
Дерево считается священным и его порча по преданию приносит смерть.
По легенде, в XII веке под этой ивой отдыхал Чингиз-хан со своим войском .

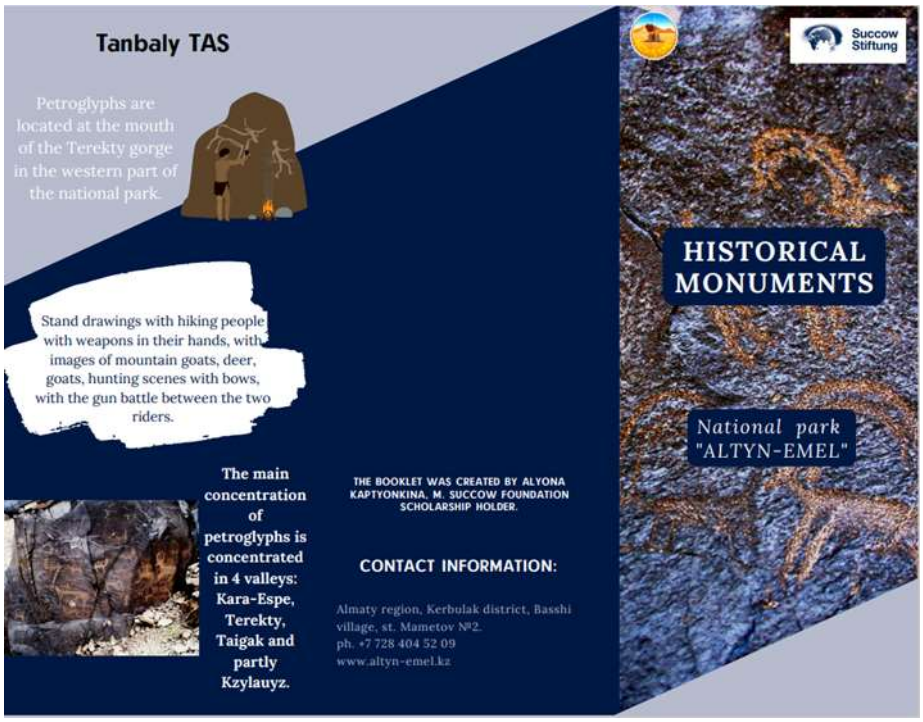
# Appendix 3.

## a) Booklet of historical places in Russian


Стеллы
"Ошактас"
Расположены на открытой равнине вблизи гор Калкан.
Стеллы имеют вид нескольких каменных глыб высотой около 2 метров, установленных вертикально в земле.
По легенде, в 1219 году, во время похода на завоевание средней Азии, здесь расположился на отдых со своим войском великий завоеватель - Чингизхан.
Курганы
"Бесшатыр"
Самый крупный памятник раннего железного века.
Царские усыпальницы Бесшатыр, расположены под горами Шолак и состоят из более 30 больших, средних и малых курганов.
Самый большой курган достигает в диаметре 104 метра и в высоту 18 метров.
Родник
Чокана Валиханова
Родник находится у подножья гор Малый Калкан.
В 1856 году через территорию нынешнего национального парка пролегал путь экспедиции из России в Кашгарию во главе с великим ученым-просветителем и путешественником Ч. Валихановым. Экспедиция остановилась на роднике на отдых.
Ч.Валиханов испил воду из этого родника.

# Appendix 3.

## b) Booklet of historical places in English




Stella "Oshaktas"
Located on the open plain of Kalkan mountains.
Steles have the form of several blocks of stone height of about 2 meters, installed vertically in the ground.
According to legend, in 1219, during the campaign to conquer Central Asia, the great Mongolian conqueror Genghis Khan was located here on vacation with his army.
"Besshatyr" Mounds
The largest monument of the early iron age is the Royal tombs Besshatyr.
Besshatyr located under the mountains Sholak and consisting of more than 30 large, medium and small mounds.
The largest mound reached a diameter of 104 meters and a height of 18 meters.
Wellspring of Chokan Valikhanov
The wellspring is located at the foot of the Small Kalkan mountains.
In 1856 the way of expedition from Russia to far Kashgar led by the great scientist-educator and traveler Chokan Valikhanov passed through the territory of the present national park. The expedition stopped at a wellspring to rest.
Ch. Valikhanov drank water from this wellspring.