Application dossier for UNESCO Global Geoparks

Format of e-file: Application dossier max. 50 pages (excluding annexes), max. 5MB by email, 50MB by weblink (e.g. Dropbox, WeTransfer etc.). Do not send a paper dossier.

Timescale: Applications are only accepted annually between 1 October and 30 November.

Before any formal application, any aspiring UNESCO Global Geopark must submit an expression of interest, before the 1st of July, via the official channel as defined by your National Commission for UNESCO or government body in charge of relations with UNESCO, involving, if applicable, your National Geoparks Committee.
Once ready, your comprehensive and carefully formatted application dossier must be submitted through the same official channel.

The application dossier must precisely follow the format and topics below, highlighting strong and weak points and will be studied by an independent group of experts verifying the UNESCO Global Geopark project through a desktop study. The topics will demonstrate whether the applying area is already a de facto functioning Geopark fulfilling the criteria to become a UNESCO Global Geopark, and whether or not an examination mission should be carried out. If the application dossier is considered to be complete and ready for assessment, the UNESCO Global Geoparks Council will approve an evaluation mission to the applying area. The application dossier must demonstrate that the area has already been functioning as a de facto Global Geopark for at least one year. Do not send entire brochures, publications, leaflets, etc., these should be provided only to field evaluators on site.

A – Identification of the Area
1. Name of the proposed Geopark

Geopark Mangistau

2. Location of the proposed Geopark (please make use of the standard UN geographical maps and the geographic coordinates longitude and latitude)
UN Map of Northern Eurasia
Geographic coordinates of the proposed Geopark by its junction points are:

Point 1 - 44°38'42" N and 50°19'11" E;
Point 2 - 44°33'17" N and 51°14'11" E;
Point 3 - 44°41'46" N and 51°17'23" E;
Point 4 - 44°41'18" N and 52°24'36" E;
Point 5 - 44°06'33" N and 52°23'48" E;
Point 6 - 44°06'60" N and 50°52'19" E;
Point 7 - 44°23'03" N and 50°14'48" E

3. Surface area, physical and human geography characteristics of the proposed Geopark

The total area of the proposed Geopark Mangistau is 8,9 000 km².

Physical geography.

Mangystau means “the land of thousands winter huts”. Mangystau Geopark is situated in the west of the Republic of Kazakhstan in an arid zone it occupies the territory on the shore of the Caspian sea, embracing part of the Mangystau peninsula and Tupkaragan peninsula. The largest part of the territory is occupied by deserts and semi-deserts, interrupted by solonchaks and takyrs with wormwood vegetation and sparse bushes. There are no permanent rivers on the territory and the whole Mangistau region suffers from a deficit of water resources. The desert climate prompts the formation of a typical desert relief, with markedly pronounced erosional and aeolian processes. The relief of the territory varies considerably. The Pre-Caspian depression occupies the north-west of Mangistau region. The majority part of the plain is below ocean level (from 0 to -28 m), but towards the north-east and east it rises a little (from 0 to 100
In the east the Pre-Caspian depression borders the remnants of the Ustirt northern escarpment with absolute elevation mark up to 152 m in the south-east it is abuts with the Ustirt western escarpment, which is composed of monadnocks more than 200 m high and in the south it borders the Mangystau upland. The southern part of the depression adjoins the Mangystau peninsula. The relief of this part of the territory is complex and contrasting along the boundaries of the oblast and Mangystau plateau there are some drainless solonchak depressions, the floors of which are considerably below sea level: Karakiya (-132 m), Kauyndy (-57 m) and Karynzharyk (-52 m). From the north-west to the south-east of the Mangystau upland there are three prominences they are the ridges of the western and eastern Karatau and Karataushyk. North and south of the western Karatau run ridges, formed of limestones, called the northern and southern Aktau (Aktau means “white mountains” and Karatau - “black mountains”) their altitude is no more than 500 m above sea level. Parallel to the Karatau range extend the cuesta ridges of the north and south Aktay, confined to the mega-anticlinal limbs and composed of Danian limestones. Their steep slopes rise 100-200 m above the pre-Karatau valleys. Gentle slopes (10-12°) of the same dip give way in the southern Aktau to the Mangystau upland, while in the northern Aktau they fall towards the marine plains of the Bozashchy peninsula. The Karatau’s tectonic ridgy relief as well as the spur-dome-like and small cuesta hills formed by selective denudation east of Karatau, are characteristic of hummocky topography. The Mangystau tow mountains have a lot of picturesque examples of desert weathering. Gigantic (up to 5.5 m) ball-like concretions made of Albian-Cenomanian sandy deposits, “air castles”, fantastically deflated exposures of chalk, “mushroom rocks”, columns, etc. can be seen there. Among the accumulative types of relief in lowland Mangystau one aeolian one predominates in the outcrops of sandy chalk rocks. Low-ridgy, isolated rare barckhan dunes cover hundreds of square kilometres south-east of the Karatau range. Inclined and concave deluvial-proluvial surfaces with sors in the hollows are widespread. The major part of the plain area is composed of sediments from marine encroachments of the ancient Caspian sea that created an original marine plain. Across vast territories of the region the relief has been transformed by desert agents, especially by the wind. Aeolian forms of relief such as the sandy massifs of Kyzylkum, Sum, Karynzharyk, etc., are widespread on the territory of Mangystau region. A specific feature of the Mangystau plain is non-draining depressions with precipitous rims 100-150 m deep their areas range from 10 to 200 km². They are situated in two sublatitudinal rows, parallel to the main geological structures of the platform’s cover.
and often coincide with local anticlines. There is good reason to believe that tectonic jointing of armed limestones contributes to the development of karst processes and the subsequent deepening and expansion of basins caused by desert denudation, resulting in the formation of depressions.

In the walls of all the depressions and Mangystau border scarps steep slopes karst-erosional ravines, collapses and landslides are common. On the coast limestone karst grottoes, overhangs and caves are widely met. On the Tupkaragan peninsula in karst holes small lakes and streams of fresh water are formed exotic valleys of Tamshaly and Sauyr, which are attractive for tourists.

**Human geography**

The aspiring geopark occupies two districts – part of Mangistau district and part of Tupkaragan district.

Tupkaragan district is located in the north-western coastal area of Mangystau region. Tupkaragan district was formed in 1992 and covers an area of 852.8 thousand hectares. The district’s administrative centre is Fort-Shevchenko city. There is a motor road for communication between the regional centre and other districts. As of 11 January 2010 the population size of the district amounted to 178 000 people (or 4% of the total population of the region) and compared with 1 January 1990 had increased by almost 18.6%. Some 27.9% of the district’s population are classified as urban. Large settlements include Fort-Shevchenko city, Bautino township Akshukyr and Taushyk. Settlements of the district are 100% provided with natural gas and drinking water; there are medical and educational institutions.

In earlier times livestock farming, extraction of construction materials and fisheries were developed in Tupkaragan district. Activation of development by the large foreign company ‘AGIP KCO’ and other service enterprises in the area of the Bautino port in connection with the development of the Caspian shelf have prompted the development of productive capacity and improved the city's economy.

The production of construction materials is also developing, and opencast mines for the production of limestone building blocks are operating in the district. During the period from 2004 to 2009 the volume of industrial production increased 18-fold, from 90 to 1 652.6 million tenge.

Livestock farming is represented by camel, horse and sheep breeding. Steps are being taken to restore marine fisheries, and
promote the development of the fisheries sector. From 2004 gross agricultural output increased three-fold and in 2009 amounted to 376.9 million tenge or 12.9% of the regional total. Agricultural lands are used as grazing lands. The district's share of the total regional livestock population is as follows: cattle, 15.2%; camels, 11.9%; sheep and goats, 9.0% and horses, 13.5%. In Taushyk there is organized processing of camel's milk. Some 713 thousand hectares or 79% of the 852.8 thousand hectares of lands in Tupkaragan district are occupied in agricultural production; the remainder is almost evenly divided between other categories. Eleven small industrial and eight agricultural enterprises are active in the district. They are small enterprises, providing services for repair, maintenance, mining production and fishing crews. Of the 7 700 people engaged in different areas of the economy in the district 4 600 people (31.6%), the major part, are employed in industry and construction, 28.6% (2 200 people) in the service sector and in agriculture, hunting, forestry, fisheries and fish farming - 900 people (11.7%). The average wage of people in the district amounts to 56.5 thousand tenge, that is two times lower than the regional average and 16.4% lower than the national rate. Moreover, the average wage in the agricultural sector is 39.3 thousand tenge, whereas in the industrial sector it is 63.4 thousand tenge or 38% higher. The development of Fort-Shevchenko city - which is regarded as a promising industrial and service centre with specializations in transportation and servicing, the construction industry, fisheries and agro-industry - is stipulated in the strategic plan for the region's development. The district is unique in its collection of natural and historical-archaeological objects (145) which hold prospects for the development of tourism and recreation areas. These are, for example, the Saura, Kariybas and Tobeshik fortresses; the medieval ancient cities of Ketikkala and Karakabak and the underground mosque of Shakpak-ata. The Zhyygylgan chasm is a giant basin, the edge of which is an almost a perfect circle with a diameter of not less than 10 km, located on the shore of the Caspian Sea, washing the extensive Tupkaragan plateau. Here in ancient times there was subsidence of a vast area of chalk with a thickness of 30 m as a result of seismic processes. The area of subsidence was more than 10 km. The total difference in altitude of the chasm to the sea coast is 180 m.

4. Organization in charge and management structure (description, function and organogram) of the proposed Geopark
State Enterprise "Tourism Authority of Mangistau region" is the management body of aspiring Geopark Mangistau.

1. General Information

1. The state institution "Tourism Authority of Mangistau region" is a state body that exercises leadership in the field of tourist activities.
2. The state institution "Tourism Authority of Mangistau region" carries out its activities in accordance with the Constitution and laws of the Republic of Kazakhstan, acts of the President, the Government of the Republic of Kazakhstan, other regulatory legal acts, and this Regulation.
3. The state institution "Tourism Authority of Mangistau region" is a legal entity in the organizational and legal form of the state institution, has a stamp and stamps with its name in the state language, forms of the established sample, and also in accordance with the legislation of the Republic of Kazakhstan accounts in the treasury bodies.
4. State institution "Tourism Authority of Mangistau region" enters into civil-law relations on its own behalf.
5. The state institution "Tourism Authority of Mangistau region" has the right to act as a party to civil legal relations on behalf of akimat of Mangistau region, if it is authorized to do so in accordance with the law.
6. The state institution "Tourism Department of Mangistau region" on issues of its competence, in accordance with the procedure established by legislation, makes decisions, issued by the orders of the head of the state institution "Tourism Department of Mangistau region" and other acts stipulated by the legislation of the Republic of Kazakhstan.
7. The structure and staffing limit of the state institution "Tourism Management of Mangistau region" are approved in accordance with the current legislation.
8. Location of the legal entity: Republic of Kazakhstan, Mangistau region, 130000, Aktau city, 14 microdistrict, house 1.
9. Full name of the state body: Tourism Authority of Mangistau region
10. The founder of the state institution "Tourism Management of Mangistau region" is akimat of Mangistau region.
11. This Regulation is a constituent document of the state institution "Tourism Management of Mangistau region".
12. Financing of the activity of the state institution "Tourism Department of Mangistau region" is carried out from the regional budget.
13. The state institution "Tourism Authority of Mangistau region" is prohibited from entering into contractual relations with business entities for the performance of duties that are functions of the state institution "Tourism Management of Mangistau region". If the state institution "Tourism Authority of Mangistau region" has been granted legislative acts with the right to carry out income-generating activities, then the revenues received from such activities are channeled to the revenue of the regional budget.

14. The regime of work is determined by the state institution "Tourism Department of Mangistau region" independently in accordance with the requirements of the current legislation of the Republic of Kazakhstan.

2. Mission, main tasks, functions, rights and responsibilities of the Tourism Department of Mangistau region

15. The mission of the state institution "Tourism Management of Mangistau region" is the development of a highly efficient and competitive tourism industry for stable employment growth, income of the region and the population.

16. The main tasks of the state institution "Tourism Management of Mangistau region" are:

1) ensuring the development of tourism activities;
2) ensuring the improvement of the quality of tourist services;
3) promotion of the tourist product of Mangistau region.
4) perform other duties falling within the competence of the state institution "Tourism Management of Mangistau region".

Tourism Authority of Mangistau region receives funding from the government.
Organogram of Tourism Authority of Mangistau region

Head of Tourism Authority
Mr. Ermakovsky Urkak

Secretary
Ms. Zhagnagulyova Akhmy

Deputy Head
Ms. Qurinta Qurinta

Head of Department
Tourism
Ms. Zhanynyeva Zhanynyeva

Inspector on records
management and IRS
Ms. Sydykuly, Gulshat

Inspector on
administration
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B – Geological Heritage

B 1. General geological description of the proposed Geopark

The territory of the proposed Mangistau geopark covers three geomorphological areas:
1) Mountainous Mangistau (low-hill terrain: western and eastern Karatau ridges, Karataushik and small ridges of northern Aktau: Akmaya, Myrzatay, Emby and Kaushe);
2) Dissected plateaus (the Tubkaragan Peninsula and the north-western part of the Southern (Steppe) Mangistau Plateau);
3) Low-land plains (southern part of the Bozashchy Peninsula).
The rocks of Paleozoic and Mesozoic-Cenozoic eras are forming the geological structure of the Mangistau site territory: Perm, Triassic, Jurassic, Chalk, Paleogene, Neogene and Quaternary. All the geological eras are represented by sedimentary formations, including coal bearing and oil-and-gas bearing formations.
The "Karatau complex", Permian and Triassic rocks of the Mangistau region are exposed within the ranges of the western, eastern Karatau and Karataushy, where they form the nuclear part of the anticlinal folds. The poorly defined formations of the lower and upper Cretaceous (K1-2) create low-lying parts of the relief around these mountain structures. Deposits of the Upper Cretaceous and Paleogene (Paleocene-Lower Eocene) are exposed on the slopes of the mountains and the watershed surface. In addition, the Lower and Upper Cretaceous deposits are exposed in the anticlinal structures of the Khanga-Baba and Tubezhik valleys on the Tubkaragan Peninsula. The deposits of Oligocene and Neogene are widely distributed on the Tubkaragan Plateau and the Southern Plateau of Mangistau.

The sections of all stratigraphic subdivisions are characterized practically to some extent by organic fossils: ammonoids, belemnites, bivalves, sea urchins, pelecypods, oysters, fish, teeth of sharks, microfauna, etc. The most interesting among the ancient rocks are the Jurassic deposits. On the one hand, they are oil and gas bearing facies, on the other hand they are well-faunistically substantiated.

The stratigraphic study of the Jurassic deposits has an important scientific and practical significance. This is explained by the fact that most of the open oil deposits in the Mangystau Peninsula are confined to the Jurassic deposits. 13 productive horizons have been identified to the present time. For the first time S.N. Alekseichik (1936, 1941) substantiated the genetic relationship of oil deposits with Jurassic strata. Currently, the geophysical studies, confirmed by drilling wells, established the spread of Jurassic deposits almost throughout the Caspian depression, the plateau of Mangistau and Northern Ustirt. The most complete and representative are the sections of the Jurassic deposits in the East Karatau (Karadiyormen and Sarydiyormen mountains), where the Jurassic support section was proposed (Fazylov B., 2005). The sections of the Bazarlinsky suite and the Callovian stage are particularly exposed here, and the productive oil and gas bearing horizons are confined.

Geomorphologically, the Tubkaragan Peninsula in whole is a structural surface (tableplate), gently sloping from the center to the north and south. The durable meoetic and pontic limestones of the Sarmatian serve as an armor for the plateau. The plateau descends rather steep cliffs to the sea, layered Neogene and Oligocene rocks. In the cliffs one can observe landslides, which
in the relief form pseudotraces, landslide circuses, ridges, hills, and sometimes a disorderly heap of huge blocks of limestones and marls. Below the landslide slope along the entire coast of the Tubkaragan Peninsula, there are abrasion-accumulative sea terraces corresponding to the Baku, Khvalynian and Novocaspian transgressions of the Caspian Sea. Khvalynsky terraces are distributed along the entire coast. All these terraces are accumulative.

The relief, both of Mountainous Mangistau and Stepnoy, began to form in post-pontical time, that is, after the final withdrawal of the entire territory from under the level of sea waters. Neogene transgressions, the Sarmatian is the last one, almost completely leveled the existing pre-Neogene relief. The relics of the relief of this time are some vertices of Karatau ridge (Besshoks, Otpan), which were islands of the Neogene sea. In the ensuing continental period, the exogenous factors played the main role in the relief’s formation, especially erosion processes. At this time, there were consistent gullies, their location obviously, was predetermined by the tectonic faults. Gradually capturing a larger area, ravines opened Neogene armor and exposed the rocks of Permo-Triassic, Jurassic, Lower, Upper Cretaceous and Paleogene. In the Jurassic and Lower Cretaceous loose rocks a highly branched network of subsequent ravines was formed, eventually leading to the formation of longitudinal valleys, later to even more developed by deflation processes. In addition to the ravines, the relief of the valleys is complicated by small dining remains armored by Neogene limestones. A strip of gully-relief relief of heavily indented ravines form stunning landscapes and tourists from all over the world come to enjoy the magnificence and charm of these landscapes. Furthermore the region is also known by its unique geological world scale event to the space disaster - iridium anomaly (Aksyirtau mountain is located north-east from Shetpe village).

A very important global event occurred at the boundary between the Cretaceous and the Paleogene, which is simultaneously regarded as the boundary of the Mesozoic and the Cenozoic Era (66 million years ago), a large asteroid collided with the Earth in the area of the Gulf of Mexico. The consequences of this collision are well represented in many marine sediments around the globe, including some sections of Mangystau and Ustirt. It was here for the first time in the USSR that the famous iridium horizon was discovered - a layer exceptionally rich in iridium, many meteorites are saturated with it. A sudden ecological catastrophe was disastrous for many organisms, especially dinosaurs. In the marine environment of the Cretaceous Mangistau period, dinosaurs did not live, however the main witness of the global catastrophe is well represented here - the iridium anomaly.
The most interesting geological objects to visit, both for specialists and tourists:

I. Tubkaragan Peninsula - Cape Zhygylgan karst holes in the tracts of Tamshyly and Saur.

II. Low-hill terrain - picturesque gorges along the Koshak and Sarytash bays: Karakabak, Shuldor, Kumak apa, Akespe ravine (white mountains), Myrzatai ridges, Akmany, Mount Unogoz (abundance of organic remains)

III. Mangistau Plateau - Samal, Akmysh, Torish picturesque gorges (giant sandstone concretions), Kapamsay canyon, Sherkala mountains, Ayakty, Kokala (ancient weathering crust), Karadiyormen-Sarydiyormen mountains (Jurassic sedimentary section), Aksyrtau mountain (iridium anomaly)

IV. Sacred places - Sultan Epe, Shakpak ata
B 2. Listing and description of geological sites within the proposed Geopark

1. Saura Geosite

Saura Geosite is located in the southern part of the Tubkaragan Peninsula, which is a structural surface, gently sloping from the center to the north and south. On this site the most lowered part of the Tubkaragan plateau. This is due to the development of loose limestone shells, which are more easily amenable to denudation processes. A beautiful canyon of spherical shape with steep rocks, in the depths of which there is a freshwater lake - a place of rest for the local population.

1. Pic 1.1 Saura Geosite

The Saura tract is located within the Saurin syncline, which separates the main Tubkaragan uplift of the northwest strike
from the structures of the South Mangystau zone. The northern wing of the progiba is steep, the southern one is sloping. The canyon formation is connected with karst processes widely developed in the region. On the territory of the geotope Saur, Neogene-Quaternary deposits are distinguished. Species forming sheer rocks are composed of Neogene sediments (N13-N21). Deposits are represented by a thick stratum of detritus detritus oolitic, organogenic, often sandy light gray, brownish-gray, brown interbedded with white, grayish-white marls, brown clays. At the base there are gray, greenish-gray calcareous clays. The surface of limestone-shells is dense and loose with abundant fauna of bivalve mollusks, oysters, sea urchins are often found.

Below are photos of different types of lithological rocks characterizing the territory of the geotope (Fig. 1.2-1.3)
2. Tamshyly Geosite

1. The territory of the Tamshyly geotope is located opposite Mangystau Bay, in the area of Cape Green in the northern part of the Tubkaragan Peninsula, which is a structural surface, gently sloping from the center to the north and south.

The Tamshyly gorge is a deep canyon ravine, the depth of which reaches 120 m. It is a kind of oasis in the gorge that cut through the plateau on the Tupkaragan peninsula, more than eleven km in the meridional direction.

The formation of such a decrease in the relief is most likely due to karst phenomena widely manifested in the Cretaceous sediments (K2), represented by carbonate rocks. At the base of the grotto, a pack of terrigenous rocks is exposed, represented by a thin alternation of silty clay, siltstones, greenish-gray, dark gray with sand interlayers, possibly of Oligocene age.
The reservoir slope is represented by Neogene deposits with limestones-shells of the upper Miocene-Pliocene, Pontian stage. On them, a horizon of cross-bedded light-brown calcareous sandstones of the lower Neogene lies transgressively with an angular unconformity up to 15 °, which gradually upwards along the section are replaced by carbonate deposits: light gray fine -plated, thin-layered limestones, sections of the clayed up to leafy differences. Limestones are cavernous, patches thin-layered, in the upper part white massive.

Fig. 2.3 Contact of Paleogene-Neogene deposits
3. **Zhygylgan Geosite**

1. The territory of the Zhygylgan Geosite is located in the most northeastern part of the Tubkaragan peninsula on Cape Zhygylgan.

![Image of Zhygylgan basin]

Pic 3.1. Zhygylgan basin

The basin of Zhygylgan represents a karst dip, which is of great interest primarily because of its origin: how this huge stone circus was formed, filled with a heap of rocks, which causes various associations in the imagination of people - one resembling the ruins of castles, the circus arena, the other - the fortress walls of a huge ruined city, quarries.
But there is a completely scientific explanation. A consequence of this failure could serve as large karst cavities in the underlying rocks associated with the dissolution of the natural waters of the rocks, as well as subsequent new tectonic manifestations that led to the overturning of the beds and the formation of a landslide, which is clearly noted in the central part of the dip. The landslide is clearly later than the collapse of a whole block of the earth's crust, caused by more modern tectonic manifestations. The Karst fault is composed of deposits of the Paleogene-Neogene (Sarmatian) (§3-N1). The reservoir slope is represented by Neogene deposits with limestones-shells of the upper Miocene-Pliocene, Pontian stage. Here is the location of small whales from the genus Pachyacanthus andrusovi Dombr.

Below are photos of different types of lithological rocks characterizing the territory of the geotope (Figures 3.2-3.3)

![Fig. 3.2](image1.png)

Fig. 3.2. Clear interbedding of thick- and thin-slate brown, grayish-brown sand-like organogenic limestones with marls slab clay and sandy brick color.

![Fig. 3.3](image2.png)

Fig. 3.3. Interlayering of yellowish-brown, light-greenish marls, dense organo-genic limestones, in the upper part of cavernous
4. Sultan Epe Geosite

1. The territory of Sultan Epe Geosite is located in the north-eastern part of the Tubkaragan Peninsula opposite the Sarytash Bay.

Pic 3.1. Sultan Epe Gorge

Gorge Sultan Epe - coastal canyon, open to the Gulf of Sarytash. Intensive manifestation of denudation and erosion processes caused the formation of a very deep ravine. A small river flows along the bottom of the canyon, the slopes are covered with trees of dendritic vegetation. This oasis has attracted a man since ancient times. Judging by the remains of numerous parking lots, the sides of the canyon were inhabited since the end of the Stone Age. In the VIII-IX centuries, here there is a small fortified settlement and a fortress, guarding an important ascent to the plateau from the side of the Sartash bay. In addition, the canyon is famous for the underground mosque and the tomb of Sufi Sultan-epe, considered the patron saint of
fishermen and travelers. The steep slopes of the canyon are composed of deposits of the Upper Paleogene-Lower Neogene. Paleogene here is represented by green and yellowish-gray quartz-glaucolite sandstones with interbeds of manganese concretions, ends with gypsiferous brownish-green clays with imprints of fish scales and rare shells of pelecypods and gastropods. Neogene deposits deposit the slopes of the cliffs and occur on the underlying rocks sharply transgressively. Presented are the patch of pebbles and gravels cemented with calcareous cement, replaced by sandstones with interlayers of loose shells, light-yellow bugs, often acquiring an oolitic structure. The entire stratum of these rocks contains abundant fauna of bivalve molluscs, bryozoans, crinoids, gastropods, oysters, and a lot of shells.

5. Kapamsay Geosite

The territory of the geotope Kapamsay is located in the north-west of the Mangystau plateau opposite the Sarytash Bay.
A deep canyon ravine is in a picturesque gorge. Steep slopes present peculiar cornices with rather steep walls and niches, at the bottom of the gorge are the dried up river bed and a green grove with huge centuries-old trees. Attracts tourists also an abundance of flints on the surface. As you know, silicon is good at disinfecting water. In the rocks there are organic remains, represented by bivalves, bryozoans, algæ, sea urchins. On the gorge there is a strongly ragged gully-girder system, a disorderly heap of huge blocks of limestones and marls. The slopes are composed of deposits of the Paleogene-Lower Neogene. Paleogene is represented by massive chalk-like marls, white writing chalk, limestone. In the upper part of the slopes there is interlacing of thin-clayed sandy and argillaceous limestones of grayish-white color, often cloddy, marls of dense, often cavernous. Among the lumpy limestones there is an abundance of small calcareous-clayey nodules. The slopes are dense, limestone-shells of the Neogene.
Figure 5.2. Cornices and niches on the steep slopes of the gorge

Fig. 5.3. In the channel of a periodically drying up river - a green oasis
6. Shakpak-ata Geosite and religious site

The multi-chamber rock carved in the rock is visited not only by pilgrims, but also by all who are interested in the history of Mangistau. Relief ridge. The rocks are soft, easily amenable to mechanical influences.

The rocky outcrops of almost horizontally deposited deposits of the upper Cretaceous K2 and the Paleogene are $\text{1-2}$ (the age of the rocks is about 72-47 million years ago).
Below, massive white, light-gray chalk-like marls and limestones forming plumes, in them interlayers of siliceous opalaceous nodules, higher in the section are yellowish-brown, light yellow sandy moss-covered cavernous limestones, brown variegated limestones. Arm the surface of limestone-shells with an abundance of sandy-argillaceous concretions. In the cliffs in the upper part of the slopes there are numerous large niches of the most diverse form, which gives the outcrops an unusually attractive and fascinating appearance.

In limestones an abundant fauna of bivalves, brachiopods, sea urchins, belemnites, corals, bryozoans, abundance of fragments of inoceramium (ammonites).
The territory of Torysh Geosite is located in the Northern part of Karatau valley of the Mountainous Mangistau (low mountains), to the northeast of the village Taushyk.

Ball concretions, which are one of the recognized tourism brands of Mangystau, form entire fields in the Torysh tract - this
place is called the valley of spheroid concretions.

Sandy concretions are confined to the clayey-sandy thickness of the Lower Cretaceous of the Albian stage (K1al), developed in the "Kara-Tatau" valley. Along with them, there are layers of nodules of phosphorites everywhere. Nodules are found both in the form of a regular globular shape, discoid, and the most varied and bizarre contours, often reaching gigantic dimensions up to 3-5 meters in diameter.

There are many theories and assumptions about the origin of these formations, sometimes the most fantastic ones. But one of the scientifically valid theories is the formation as a result of chemical deposition of matter. Any formation, for example, fossilized remains, accumulations of other minerals, carbonaceous matter, etc., can serve as the nucleus of a "seed" around which silica, calcite and other substances, in this case sand material, precipitate. This accumulation takes place in a concentric direction, and the shape of the formations depends on the permeability of the rocks. If the rock shows the same permeability in all directions, then the formations will have a regular rounded shape, if in two directions - they will have the shape of a disk, in the case of uneven permeability very fancy shapes will be formed.

The formation of concretion can also occur as a result of the diffusion contraction of the chemical substances to the nuclei that activate this process-the "seeds."

Fauna is mainly confined to nodules, sandy interlayers and interlayers with nodules of phosphorites: ammonites, oysters, sea urchins, belemnites, teeth of sharks.
Pic 7.2 - Discoid form of sandstone nodules
Pic 7.3- Sandstone nodules of irregular shape

8. Mount Kokala Geosite
The territory of the geosite of the mountain Kokala is located in the range of Western Karatau, to the southeast of the village Shayyr.
Kokala Mountain is a natural variegation of Jurassic clays. Nature surprisingly created fanciful forms of columns, pyramids and mini-canyons. The relief is gully-braggly.

Near the mountain there is the same mountain gorge. Its length is about 2.5 km. The gorge strongly winds in a rocky massif, along its bottom riches a stream with beautiful mountain water. At the rock steps the fontanel forms small lakes. The local population believes that the Kokalin water is curative. The gorge is impassable.
The rocks of the motley-colored suite of the Lower Jurassic are located with a sharp angular disagreement and a clearly pronounced break on the uneven surface of the Karatau complex of Permo-Triassic rocks. The variegated formation is represented by clay, siltstone, peat, and, less often, sands and marls. The whole strata are colored greenish-gray, white, crimson-red, light-violet and other tones.

The mottled clay is an ancient weathering crust that is observed on Permian Triassic rocks within the undisturbed sections of the surface of Western and Eastern Karatau, which are not dissected by modern erosion. The weathering crust is kaolinized and often chloritized variegated clayey rocks that retain the structure of permo-Triassic rocks and is mainly confined to the deposits of the lower Triassic teraitite formation, but decolorized altered rocks also occur on the deposits of the anthraconite formations. The weathering crust developed on the peneplanized surface of the rocks, which experienced folding not earlier than the upper Triassic.

Flora of Jurassic: Cladophlebis nebbensts (Brongn.), Clathropteris obovata Oishi., Pterophyllum audreanum Schem., P. braunianum (Cosp.) And Anomozamites minor (Brongn.).

Similar weathering crusts are observed in East Karatau near the village Zharmysh.

9. Samal Geosite

The territory of the geosite is located in Samal 15 km from the village Shetpe to the north-west.
Gorge Samal - this is another green oasis in the Western Karatau mountain range, which is located three kilometers southeast of the Akmysh tract on the way to the village. Shetpe, on the right side of the road is the spring of Kogez and the gorge itself. In it, a small river flows throughout the year. A series of picturesque cascades can be observed along the gorge. Here grows hawthorn, blackthorn, reeds and various medicinal herbs.

The river bed in the gorge is made by modern alluvial-proluvial deposits of the Quaternary period (apQIV) - sands, pebbles, coarse and fine-grained sands, sandy loam, clays.

The steep slopes of the gorge are composed of Triassic deposits, which are intensely schistose and are represented by cross-
bedded medium-grained dark-gray-green quartz-polymictic sandstones, at the base of which a layer of well-rounded quartz pebbles can be traced in many places. The whole of the Triassic sequence is characterized by a dark gray-green coloration of the rocks. In addition, a thick stratum of siltstones of green-gray and gray-green, thin-plated with horizons of denser sandstones of fine-grained, polymictic rocks with interlayers of argillite-like rocks can be traced here. All these rocks are strongly punctured, as a result of which a characteristic slate separation often appears in the stratum structure. Interbeds of small-cone conglomerates are observed throughout the thickness.

In clay shale, there are horsetails, ferns, cicadophytes, ginkgo and coniferous characterizing the Triassic: Equisetites ferganensis Setae, fern Cladophlebis hebbensis (Brongn.), And gymnosperms Taeniopteris sp., Podozamites cf. lanceolatus L. In addition to plant residues, an insignificant amount of freshwater, difficultly identifiable fauna was found.

10. Mount Sherkala Geosite

The territory of the geotope Mount Sherkala is located about 170 kilometers from the city of Aktau, 18 km from the village Shetpe to the north-west. In morphological terms, the table remains with a complex gully-relief relief.
Pic 10.1.

Mount Sherkala is a lonely standing mountain, of a very unusual shape. If you look at it from one side, the mountain looks like a huge white yurt (Nomadic house), but on the other - Sherkala is like a sleeping lion, who laid his huge head on his paws. Therefore, the mountain was named - Sherkala, which in translation from Turkmen means "Lion Mountain" or "Lion Mountain". The Sherkala mountain is composed of sediments of the Upper Cretaceous, the Turonian stage (K22), represented by grayish-white, greenish-gray sandy marl, brown chalk-like marls, with a powerful horizon of white writing chalk that seems to encircle the mountain with a white scarf. Neogene Sarmatian clays (N12sr) gray layered calcareous, with interlayers of marls and siltstones, overlapping with dense light-gray limestone-shells armor the surface of the mountain. In the foothills and around the Sherkala Mountains, in the clay limestones of brownish yellow with an admixture of sandy
material, clayey-sand deposits, the horizon of giant globular sand concretions is traced - this is a whole placer of spherical boulders of various sizes. Together with them there are small phosphorite nodules. This horizon of sandy concretions is a continuation of the horizon found in the tract Torysh.

In the foothills of the mountain Sherkala there is an abundance of organic remains: large ammonoids. Here, too, bivalve mollusks, flora, microfauna, belemnites, teeth of sharks, oysters, bryozoans have also been found.

12. Mountain Karadiirmen
The geotope of the Karadiirmen-Saridiyormen mountains is located 15 km to the north-east of Shetpe point (East Karatau ridge). Geomorphologically, mountains are characterized by mountain-ridge relief.

Support slots are unique geological objects. On the territory of the Mangystau peninsula, the most complete and representative are the sections of the Jurassic deposits in East Karatau. In the Karadijormen-Saridiyormen mountains a basic section of the Jurassic deposits is established. Here, the stratotypes of the Karadijirma and Sarydiarmenian formations of the Lower and Middle Callovian (J2) were singled out. The cut is a composite of two parts. The first of them, under the name "Karadiirmen", includes sections of the Karadijirma and Bazarlin formations, and the second "Sarydiormen" - the Sarydiarmen suite of the lower and middle sections of the Callovian...
stage. Here is a cut through the mountain Karadiyormen. The study of the stratigraphy of the Jurassic deposits of the Mangystau peninsula is of great scientific and practical importance. Most of the open oil fields are confined to Jurassic deposits, in which to date, 13 productive horizons have been identified, each of which is confined to a certain age level. These horizons are characterized by extreme lithological variability both in the section and along the strike, which is explained by frequent changes in facial sedimentation environments.

The Jurassic rocks that form the Karadiirmen-Sarydiormen mountains, represented by thin terrigenous facies, form the anticlinal structure of the northwest strike. the anticline has an asymmetric structure with a steep northern wing, the fall of rocks reaches 15-17 °, and a more gentle southern wing, the slope of the rocks on which does not exceed 8-10 °.

In the Karadiyormen mountains, the Jurassic deposits of the Karahedinian Formation are represented by terrigenous dark-gray-colored facies: fine-grained sandstones of gray and light gray color, passing upwards along the section into coarse-grained bluish-gray siltstones. Dark gray shale with thin layers of gray fine-grained sandstones, in which thin wavy layering is noted. In the lower part of the section, oblique parallel stratification prevails in the rocks, and in the upper part - oblique and wavy. Clay shales are bluish-gray in color, highly bioturbated and contain the remains of shells of bivalve mollusks. In the lower part of the layer carbonate concretions are noted.

In some areas there is a thin interbedding of clay shales and fine-grained siltstones of gray color, areas with inclusions of carbonate nodules. In the sandstones, ammonites of the lower Callovian Parkinsonia (Durotrigensia) dorsetensis (Wright), Sigaloceras (Catasigaloceras) cf. enodatum (Nikitin.), Sigaloceras (Catasigaloceras) sp., Macrocephalites (Kamptocephalites) sp.,

In the Bazarlin suite, limestone-shells appear, overflowing with bivalve mollusks: Pholadomya murchisoni Sow., Astarte cf. opalina Quen, Pleuromya voltzi Agassiz, Pleuromya sp. aff. balkhanensis Pchelincev, Astarte pulla Roemer, Camptonectes lens (Sowerby), Thracia (Thracia) depressa (Sowerby).

In the section there are more sandstones of brownish gray and light gray color, yellowish-gray calcareous, fine-grained, ammonites of the Parkinsonia (Parkinsoni) zone are found in the middle part of the suite balakhanensis Khydabaev.
13. Sarydiîrmen mountain geosite

The geotope of the Karadiîrmen-Saridiyormen mountains is located 15 km to the north-east of us. Shetpe point (East Karatau ridge). Geomorphologically, the mountains are characterized by a cuesta relief.

Pic. 13.1. Mount Karadiîrmen (south-eastern slope)

Support slots are unique geological objects.
On the territory of the Mangystau peninsula, the most complete and representative are the sections of the Jurassic deposits in East Karatau. In the Karadijormen-Sarydiyormen mountains a basic section of the Jurassic deposits is established. Here, the stratotypes of the Karadijirma and Sarydiarmenian formations of the Lower and Middle Callovian (J2) were singled out.

The support section is a composite of two parts. The first of them, under the name "Karadiirmen", includes sections of the Karadijirma and Bazarlin formations, and the second "Sarydiormen" - the Sarydiarmen suite of the lower and middle sections of the Callovian stage. Here is a cut through the mountain Karadiyormen.

The Jurassic rocks that form the Sarydiormen mountain form an anticlinal structure of the northwest strike. The anticline has an asymmetric structure with a steep northern wing, the fall of rocks reaches 15-17°, and a more gentle southern wing, the slope of the rocks on which does not exceed 8-10°.

The section of the Sarydiormen mountain is the second component of the general reference section.

Jurassic deposits of the Sarydiarmen Formation are represented by terrigenous, terrigenous-carbonate facies of grayish-yellow, brownish-yellow flowers and more coarse-grained compared to the section of the Kara-Yorman Formation. Sandstones are yellowish gray, gray and light gray in color, weakly cemented, medium-fine-grained, often calcareous. The interlacing of gray siltstones is light gray and yellowish-gray in color, with a thin horizontal stratification and very fine-grained sandstones with undulating lamination. Dark gray shale with thin layers of gray fine-grained calcareous sandstones with thin interlayers of gray clays. Gray medium-grained densely cemented sandstones with carbonate cement, sometimes so heavily saturated with shells of bivalve mollusks, which turn into limestone-shells. The rocks are frequently cleaved along the layers of the layering, inclusions of small siliceous nodules are encountered.

In sandstones, there is often a small oblique layering. Siltstone with carbonate cement contains numerous remains of pelletzipod shells. In some parts of the breed, they are bioturbated. In the sections there are purple layers of siltstones, aleuropelites, less often interlayers of dark gray clay limestones. In the foothills of the Sarydiirmen mountain, very large effective ammonoids of the lower and middle Callovian (J2) were discovered.

The age is about 165 million years. In addition to ammonoids, bivalve mollusks, flora, and microfauna were found.
Ammonoids: Parkinsonia (Parkinsoni) cf. balakhanensis Khydabaev (zone parkinsoni (parkinsoni), Kosmoceras jason Rein, Erymnoceras coronatum (Brig.);


Bivalve mollusks: Pholadomya murchisoni Sow., Liostrea (Deltostrea) eduliformis Schloth., Pleuromya voltzi Agas., Thracia (Thracia) depressa (Sower.).

The Middle Callovian deposits are subdivided into two zones: Kosmoceras jason and Erymnoceras coronatum

14. Iridium Horizon Geosite

Mangistau is known for a particularly unique geological event of a global scale associated with a cosmic catastrophe - the presence here of the famous iridium horizon.

The territory of the geotope of the iridium horizon is in the cliff of the mountain of Aksyyrtau (abs 330 m) about 5.6 km away from us. Shetpe point to the north-east and 10 km from the village. Fires to the north-west. In morphological terms represents a mountain with a complex gully-relief relief.

At the boundary between the Cretaceous and Paleogene, which is simultaneously regarded as the boundary of the Mesozoic Era and the Cenozoic (66 million years ago), a very important global event occurred, connected with a cosmic catastrophe. In the area of the Gulf of Mexico, a large asteroid collided with the Earth. The consequences of this collision are well represented in many marine sediments around the globe, including some sections of Mangystau and Ustirt.

It was here that for the first time in the USSR a famous iridium horizon was discovered - a layer of clay 10-20 cm thick, exceptionally rich in iridium, a metal that many meteorites are saturated with (Figure 3.2.10).
Pic. 14.1. Iridium horizon

The energy released by the fall of the Mexican asteroid is estimated as the equivalent of several hundred million hydrogen bombs. A sudden ecological catastrophe was disastrous for many organisms, especially for dinosaurs. The remains of these
reptiles, which are abundant in the sections of the continental Cretaceous, are completely absent from the overlying Paleogene deposits.

In the marine environment of the Cretaceous Mangistau period, dinosaurs did not live, but here the main witness of the global catastrophe, the iridium horizon, is well represented.

**B 3. Details on the interest of these sites in terms of their international, national, regional or local value (for example scientific, educational, aesthetic)**

The geosites described above have great scientific value. For example, departments of geology of leading universities organize student’s practicum at these sites. International expeditions are carried out in Mangistau for its unique geological features and good condition, i.e. the spheroid concretions. The aesthetic value of the territory attracts up to 25 thousand tourists per year.

**B 4. Listing and description of other sites of natural, cultural and intangible heritage interest and how they are related to the geological sites and how they are integrated into the proposed Geopark.**

**Fortress-shelter Zhygylygan**

Located at the bottom of the Zhygylygan failure of the Tupkaragan district, 45 km from the city of Fort Shevchenko. Three fortresses were found, arranged on rocky landslide remnants. The remains are represented by small rock blocks in passable places with fortified walls made of natural stone 1-1.8 m high, making them unassailable. On the remnants area there are fragments of ceramics of the Aktam type of the late 14th and 15th centuries. Fortresses probably served as shelters for the local nomadic population and livestock. In the square there are rock carvings and tamgas.

**Ancient City Kyzyl-Kala**

Near the mountains of Sherkala are the ruins of the ancient, once very rich and famous city of Kyzyl-Kala. In translation
from the Turkic Kyzyl-Kala - "Red City". According to archaeologists, the city was founded in the second half of the tenth century. Until now, from the once great Kyzyl-Kala remained only fragments of the fortress wall and the foundation of several buildings. Excavations, suspended today, were started only a few years ago. During archaeological research, scientists led by archaeologist Andrey Astafyev managed to find out that Kyzyl-Kala was a city center that was located on an important trade route that connected medieval Uzbekistan, Khorezm and the Volga region: Etil, Saksin. We can say that it was a very powerful intermediate trading post between Europe and Asia.

Established for recreation and sending to the further path of the merchants of numerous caravans, Kyzyl-Kala soon turned into an important center. Archaeologists found that its population lived mainly due to agriculture. Scientists have found a lot of fragments of millstones, fragments of reaping sickles. The researchers dug even the canals through which water flowed into the city. Other findings are evidence of the high development and wealth of Kyzyl-Kala. Here was found the Baltic amber, Chinese nephrite, Indian and Egyptian glass, that is, the range of goods movement through Kyzyl-Kala was wide enough.

One of the main attractions of the Mangistau region is the unique monument of religious architecture, the underground mosque Shakpak-Ata. The mosque is located on the Tyub-Karagan Peninsula, more than 20 kilometers north-east of the city of Fort-Shevchenko, and is considered the oldest architectural monument in Western Kazakhstan.

The Shakpak-Ata underground mosque was cut down in a mountain chalk cliff. It is known that the Sufis who sheltered in this cave practiced healing magic. They helped people who came here to get rid of diseases. To do this, they left the sick person in the cave for the night. It was believed that during the night the patient will descend benevolent spirit and the disease will necessarily recede. And till now people come here with the hope to be healed of ailments. According to archaeologists, the mosque was built in the 9th-10th centuries. Her name is given in honor of Sufi Shakpak-ata, who lived here with his disciples during the enemy raids. In the last years of his life he was a recluse and no longer left his underground abode.

In a literal translation, the word Shakpak-Ata means "the aged flint", according to one ancient legend, Shakpak-ata is not the name of the founder of the mosque, but the nickname given to him in battles with the enemies: from his weapons, as from silicon, sparks. Some scholars claim that in mythology Shakpak-ata is the ruler of snakes and the patron of the dead, and as a historical figure - the grandson of Shopan-ata. As for the real name of the creator of the mosque, it is, according to many scholars, Shahmardan. The fact is that Shopan-ata had two sons: Shahruh-ata (Shagyryk-ata) and Isan-ata. Shakhrukh had two sons at his time: Kapash-ata (Kapan-ata) and Shahmardan, nicknamed Shakpak-ata for their ability to easily throw out fire from
a stone, with fire, to incinerate the enemy. As for the Sufi's lifetime, the opinions of the researchers differ: Academician Medoev claimed that Shakpak-ata lived in the IX century. Barthold was of the opinion that the Sufi lived during the reign of Uzbek Khan, who ruled from 1312 to 1342 (XIV century). Undeniable is the fact that Shakpak-ata, was a follower of the teachings of Khodja Ahmed Yassaui, and was among the 360 saints revered in Mangistau.

The form of the mosque plan, as well as other architectural details, indicate the belonging of the building to the 9th-10th centuries. The mosque is strictly oriented around the world, cut down in limestone rock and consists of four chambers, being thus a kind of variant of the cross-domed temple, which has four columns with capitals. The domed structure imitates the construction of the yurt, and in its center a round window is cut down.

The mosque is a vivid manifestation of the stone-carving nomadic art. The entrance to the cave is decorated in the form of a portal arch, near which a number of spacious niches for burial of deceased preachers were cut by the hands of an ancient master. There are several rooms in the stone cave. The hands of an ancient master cut several spacious niches for the burial of dead preachers. There are several rooms in the stone cave. The main hall is crowned with massive pillars supporting the arch. In the central part of the vault is a light well decorated with decors. In the western wing of the mosque there is a niche and a small cell for seclusion of hermits. The walls of the premises of the mosque and portal, as well as niches for burial, are covered with different inscriptions, contour images of horses, riders, bulls, open palms, plant patterns. Among the inscriptions there is a Sufi poem about the impermanence of this world and the short life of life. The rock paintings of the palms are unusual.

On either side of the entrance to the mosque in the rock, caves are buried, according to the assumptions they belong to the students of Shakpak-ata or to people close to him. Where exactly the relics of the Sufi itself are buried are for certain unknown. This makes all burials be treated with special trepidation and attention. Some scholars claim that the main purpose of this sanctuary is healing. It is not excluded that the servants of this place were a monastic order treating patients.

The Shakpak-Ata Mosque is a unique monument of religious architecture, perfectly preserved to our time. The mosque is in the UNESCO World Heritage List. However, due to its uniqueness from geological point of view, the UGG status will enhance the value of the site and ensure preservation and celebration of geological heritage.

5.1. The tract of Zhygylgan
The tract is located on the shore of the Caspian Sea in Tyubkaragan district about 45 km to the north-east-east of Fort Shevchenko. A unique landscape, geological and paleontological object. In addition to the chaotic scenic rock fragments of the size of a 2-3 storey house, which were probably formed as a result of a huge landslide, one can see here unique plates with petrified traces of ancient animals, estimated age of about 1 million years (Figure 48 to Figure 50). In addition, Ustyurt Uriyals lived here in the recent past. The tract is also probably the only place of growth of a unique species of plants for Mangistau - the fern shield of the male Dryopteris filix-mas.

C – Geoconservation
1. Current or potential pressure on the proposed Geopark
Currently, the pressure on proposed Geopark is of antropogenic nature. Geosites are not protected under local law. The creation of geopark will allow conservation and popularization of geoheritage of Mangistau.

2. Current status in terms of protection of geological sites within the proposed Geopark
Currently the geological sites do not have legal protection. However, an Atlas of unique sites is being developed by the Institute of Geography. It will be completed in December 2017. Based on the findings a protected regime will be proposed for the government.

3. Data on the management and maintenance of all heritage sites (geological and non-geological).
All heritage sites are being inventoried and maintained by Akimat of Mangistau Oblast.

D – Economic Activity & Business Plan (including detailed financial information)
D 1. Economic activity in the proposed Geopark
Main economic activity of the proposed Geopark is conducted through its partners. First partner is – Limited Liability Company “Tourist”. "Tourist" LLP is a tour operator and reliable provider of quality tourist services, LLP "Tourist" is the author of about 30 one-day and 15 two-day and three-day routes on Mangistau, as well as the development of routes for individual customer
requirements. It offers tourist services: Organization of one-day excursions and multi-day tours around Mangistau; Organization of all kinds of events - seminars, conferences, teambuilding, exhibitions, fairs, and Information tours around Mangistau; Organization of group and individual tours in Mangistau. Each tour is a proven documented route developed by Tourist LLP, taking into account the maximum safety of tourists. The markups of Tourist LLP are fixed and do not depend on the number and volume of services provided.

Transport service: (on passenger cars of economy class and premium class for a group of up to 3 people, on comfortable SUVs for a group of up to 3 people, on comfortable minibuses (Mercedes Sprinter, Ford Transit, Toyota Hiace for a group of up to 12 people on comfortable buses of the Toyota Coaster brand for a group of up to 20 people, for buses of an economy class PAZ for a group of up to 20 people, for comfortable buses of the Hyundai brand for a group of up to 40 people.

There are multiple tours offered to domestic and foreign tourists.

Three tours are geotourism tours and include visits to all geosites in the park.

Address: Republic of Kazakhstan, Mangistau region, Aktau city, 9 microdistrict, 4 house, 110 office.

Phone: +7 7292 430000; 31-56-31; fax: +7 7292 435520

Website: www.aktau-tourist.kz

Second partner of the proposed geopark is Mangystau Museum of local history. Address of museum: Kazakhstan, Aktau city, 9-microdistrict, 23«А» TEL. 8 (7292) 42-71-96, 43-26-45, 43-23-14 TEL/FAX 8(7292) 42-66-15

http://www.muzey.kz/en/mangystau Third partner is the Association of Hand Made Crafts Masters: Some of the examples of their work with traditional Kazakh motives
D 2. Existing and planned facilities for the proposed Geopark (e.g. geo-education, geotourism, tourism infrastructure etc)

A Master plan was developed for the promotion of geopark and its activities. Analysis of geotourism potential of the proposed Geopark Overview and policies for the sustainable development of: A new policy for sustainable development in line with the Government of Kazakhstan “Transition to Green Economy” directive is being implemented by the Akimat of Mangistau region.

Existing facilities include visit center at Kogez and planned facilities include a larger visit centre at Shetpe village. Geo-educational programmes are conducted with high schools students. Tourism infrastructure is represented by a number of budget hotel in Shetpe village, ethnic village at Kogez, roads of national importance etc.
D. 3. Analysis of geotourism potential of the proposed Geopark

Mangistau geopark has a great potential for geotourism due to its geographical location (closest point of the country to Europe and North America, Turkey, Azerbaizhan etc.), international and national flights to major cities, commitment from the regional municipality for investing in infrastructure, the only marine port in the country, attractive landscapes and geotourism activities (biking, fishing, diving, paragliding etc.)

D. 4. Overview and policies for the sustainable development of:
- geo-tourism and economy;
- geo-education
- geo-heritage. Please include examples illustrating activities in these sectors.

A) In the secondary school named after Umirbaev in Fort-Shevchenko the boiler (boiler room) was automated, LED devices were installed, the ventilation system of the premises was updated, which allowed improving the microclimate of classrooms, saving energy, reducing the emission of greenhouse gases and reducing the incidence among students. Activities and equipment (three-section washbasin and sensor taps) for the rational use of water have become a positive addition to the environmental education of children;

B) Modernization of street lighting of the central streets of Aktau and Fort-Shevchenko of Tupkaragan district was carried out. Energy-efficient lighting equipment based on LED is installed.

C) Geotours are organized on a regular basis by “Tourist” for schoolchildren and adults.

D. 5. Policies for, and examples of, community empowerment (involvement and consultation) in the proposed Geopark.

1. In the village of Kyzylozen, in the Tupkaragan district, 7 people from vulnerable groups received working specialties and equipped workplaces in the building provided by the rural akimat. Now there are 2 hairdressers, 2 sewing masters, 2 carpenters and a baker-confectioner here;
2. In the villages of Bautino and Taushyk, in the Tupkaragan district, massage rooms are opened at the Family-Medical outpatient clinics, where 3 unemployed women with medical education who have completed training at specialized courses on massage work at the current time.

3. In the village Shetpe Mangistau district opened a Health Center for the elderly. The center conducts lectures on healthy lifestyles, a volleyball team of pensioners is organized, children with disabilities attend classes at the simulators.

4. For the first time in the region, the children's school summer camp opened its doors for children with disabilities and children from low-income families, as part of a project in the Kyzylolen village of the Tupkaragan district in the summer of 2016. With special equipment, NGOs and the school administration will conduct such camps every summer.

5. Within the framework of the Joint Program, UNDP worked to improve conditions for economic diversification by supporting rural entrepreneurship and access to information. Four online centers have been opened with rural libraries in the villages of Mangistau district, two more online centers are opening at the opening stage. 20 librarians serving the online centers, upgraded their skills in using Internet resources, computer literacy. Together with JSC "NIT" courses on the use of E-government services were conducted. The UNDP Small Business Development Specialist, hired in 2016, constantly provides various consultations for all comers.

6. The youth public organization "Tupkaragan Zhastary" is implementing a project aimed at improving the sea coast of the village of Kyzylolen, to organize recreation for the population.

7. The Mangystau regional fund "Khazret" is implementing a project aimed at the introduction of an effective greenhouse complex in the establishment of the village of Taushik in the Tupkaragan district of the Mangistau region.

8. In the Shetpe Mangistau district of the non-governmental institution "Eco Mangistau" implemented a project to organize a guest house, in order to create jobs and develop tourism in the region.

D. 6. Policies for, and examples of, public and stakeholder awareness in the proposed Geopark are included in the 80 concrete steps plan for tourism developing in Mangistau region and are currently being developed by the Tourism
Authority. The policies are being promoted to wider audience at round table events, conferences and committee meetings in Astana.

**E – Interest and arguments for becoming a UNESCO Global Geopark**

Local population at Mangistau is interested to become a UGG due to the following reasons: increasing household income; more employment opportunities for women; diversification of economic activity and switching from resource oriented employment at oil and gas companies and agriculture to the production of goods for tourists and providing service for tourists (guiding, accommodation in guest houses, production of dairy products etc.). Regional and local municipality supports the UGG because it is in line with the government of Kazakhstan policy on Green Economy, it provides opportunities for underprivileged groups of people, including disabled and elderly and stabilizes the political situation in the unstable region (events in Zhana Ozen 2011). Priority areas of the region’s economic development are transport and logistics, construction, tourism, agro-industrial complex, as well as the oilfield service industry with the prospect of development of the sea direction. In the region there is a Free Economic zone "Morport Aktau". In January 2018 Akim of Mangistau Region signed a contract with British and Chinese investors. According to the signed agreement, the parties should appoint a general contractor for the construction and creation of a financing structure for the development of a major eco-city project. Under the agreement, the investment will amount to 100% of the project amount of $ 2.1 billion from the British side, the Chinese side pledged to provide a bank guarantee of $ 400 million. The contract was signed between the companies Global Project Capital Ltd, AAG Corporate Services Ltd, China Road and Bridge Corporation (CRBC) Ltd and Akimat of the region. The planned eco-city project will serve as a significant support to the development of international and local tourism, geotourism in particular.