

World Heritage Scanned Nomination

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UNESCO Region: ASIA AND THE PACIFIC

SITE NAME: **Petroglyphs within the Archaeological Landscape of Tamgaly**

DATE OF INSCRIPTION: 7th July 2004

STATE PARTY: KAZAKHSTAN

CRITERIA: C (iii) CL

DECISION OF THE WORLD HERITAGE COMMITTEE:

Excerpt from the Report of the 28th Session of the World Heritage Committee

Criterion (iii): The dense and coherent group of petroglyphs, with sacred images, altars and cult areas, together with their associated settlements and burial sites, provide a substantial testimony to the lives and beliefs of pastoral peoples of the central Asian steppes from the Bronze Age to the present day.

BRIEF DESCRIPTIONS

Set around the comparatively lush Tamgaly Gorge, amidst the vast, arid Chu-Ili mountains, is a remarkable concentration of some 5,000 petroglyphs (rock carvings) dating from the second half of the second millennium BC to the beginning of the 20th century. Distributed among 48 complexes with associated settlements and burial grounds, they are testimonies to the husbandry, social organization and rituals of pastoral peoples. Human settlements in the site are often multi-layered and show occupation through the ages. A huge number of ancient burials are also to be found including stone enclosures with boxes and cists (middle and late Bronze Age), and mounds (kurgans) of stone and earth built above tombs (early Iron Age to the present). The central canyon contains the densest concentration of engravings and what are believed to be altars, suggesting that these places were used for sacrificial offerings.

1.b State, Province or Region: Almaty Oblast

1.d Exact location: N43 48 12 E75 32 06



UNITED NATIONS EDUCATIONAL, SCIENTIFIC AND
CULTURAL ORGANIZATION

Convention concerning the protection of the
world cultural and natural heritage



**NOMINATION OF CULTURAL PROPERTY FOR INSCRIPTION
ON THE WORLD HERITAGE LIST**

NOMINATION OF

**PETROGLYPHS WITHIN THE ARCHAEOLOGICAL
LANDSCAPE OF TAMGALY**

STATE INSTITUTE FOR SCIENTIFIC RESEARCH AND PLANNING ON
MONUMENTS OF MATERIAL CULTURE

COMMITTEE OF CULTURE

MINISTRY OF CULTURE, INFORMATION AND PUBLIC CONSENT

GOVERNMENT OF THE REPUBLIC OF

KAZAKHSTAN

2003

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1. Identification of the Property

- a. Country: Republic of Kazakhstan
- b. State, Province or Region: Almaty Oblast
- c. Name of Property: **Petroglyphs within the Archaeological Landscape of Tamgaly**
- d. Exact location on map and indication of geographical coordinates to the nearest second:

The Archaeological Landscape of Tamgaly is situated in the southeastern part of Kazakhstan, in the Tamgaly gorge in the southeast part of Chu-Ili mountains, in 4 km northwest from Karabastau Village (Zhambyl District of Almaty Oblast) and in 170 km northwest from Almaty, the former capital of the country. The geographical coordinates of 43° 48' 12" North, 75° 32' 06" East show the exact location of the most significant petroglyphs in the core zone of the site – Group IV, surface 118 with the figures of 6 solar images.

- e. Maps and/or plans showing boundary of area proposed for inscription and of any buffer zone:

The following maps are enclosed:

- i. Map 1. The Republic of Kazakhstan, showing the Almaty Oblast and the location of the Archaeological Complex of Tamgaly;
- ii. Map 2 at 1:6500000 scale. Main Petroglyph Sites of Kazakhstan and Neighbour States of Central Asia, showing the distribution of the important petroglyph sites over the region;
- iii. Map 3 at 1:35000 scale. The Archaeological Landscape of Tamgaly and the Buffer Zone, showing the boundaries of the area proposed for inscription and of the Buffer Zone;
- iv. Map 4 at 1:15000 scale. The Archaeological Landscape of Tamgaly, showing the boundary of the area proposed for inscription and the distribution of archaeological sites within its territory;
- v. Map 5 at 1:25000 scale. Sites Pattern within the Archaeological Landscape of Tamgaly in 4 Historical Periods, showing the distribution of the Bronze Age, Early Iron Age, Middle Ages and Modern Age archaeological sites within the nominated area of the Archaeological Landscape of Tamgaly,
- vi. Map 6 at 1:35000 scale. The Archaeological Landscape of Tamgaly and its Environment. Neo-Tectonics;

- vii. Map 7 at 1:35000 scale. The Archaeological Landscape of Tamgaly and its Environment. Geo-morphology;
 - viii. Map 8 at 1:50000 scale. The Archaeological Landscape of Tamgaly and its Environment. Land Ownership;
 - ix. Map 9 at 1:4000 scale. The Core Area of the Archaeological Landscape of Tamgaly. Visitor Paths and Facilities.
- f. Area of property proposed for inscription (ha) and proposed buffer zone (ha)

The nomination consists of the Archaeological Landscape of Tamgaly with a total area of 900 hectares proposed for inscription, plus the proposed Buffer Zone of 2900 hectares. Together they constitute a Protection Zone with a total area of 3800 hectares. To date, the boundaries of the above-mentioned Protection Zone are under consideration by the Government of the Almaty Oblast – the responsible authority for their legal approval.

2. Justification for inscription

a. Statement of significance

The high cultural significance of the Archaeological Landscape of Tamgaly derives from several factors making it outstanding amongst all the most important rock art sites of Central Asia. Not the last role in that plays a particularity of its landscape, related to the features of geological and neo-tectonic development of the area of Tamgaly and of Chuli mountains. The particular climate and the relief were main pre-conditions predestined the way of life of the local inhabitants and the way of the reorganization of the natural environment. The cultural and historical phenomenon of Tamgaly has been predefined also by its geographical location at one of the crossroads of the Central Asian ancient communications stretched along the North Tien Shan.



In the vast arid area in the central part of the Chu-Ili mountains, that is almost deprived of sweet water and places suitable for dwelling, the Tamgaly gorge is distinguished by its favorable conditions for a long-term residing, due to the abundance of springs and stretches of water, pastures reach with vegetation, and the availability of hollow ways and valleys protected from wind and suitable for the settling of small groups of people. In this respect, Tamgaly represents an ideal landscape for dwelling of the traditional pastoral community of the Central Asian arid zone.



Same time, some very particular characteristics of the landscape distinguish Tamgaly from the other similar sites. The most outstanding feature is a rather small canyon formed at the S-shaped meander of the Tamgaly river. Here, at the short cut of the narrow valley, there are found several large denuded rocks covered by black “desert sunburn” (patina). The stepped rock terraces with shining surfaces raise rhythmically over the valley. The pristine mountainous landscape is superior to the average and attracts the attention by its majesty and wonderful harmony. This not made with human hands gallery served as an ideal ground for several thousand petroglyphs created first by the Bronze Age artists and then continued by those of all the following historic periods. In his respect Tamgaly represents a rare site due to its integrity providing a quite full and representative demonstration of the rock art development for the duration of more than three last millennia.

Within the whole of the archaeological complex of Tamgaly, in a compact area of 900 ha, there are situated the remains of more than one hundred sites of different types dating from the middle of the XIV c. B.C. to the beginning of the XX c. In total, the archaeological monuments are well preserved and wonderfully harmonize with their natural environment as the remains of stone structures – dwellings, enclosures for pasturing cattle, burial fences and mounds. Most actively the area was used by the pastoral tribes of the Early Iron Age and later by Kazakhs in the modern time (XIX – early XX c.). The present level of knowledge allows to regard the cultural archaeological landscape of Tamgaly as a bright example of the development, within a limited area, of

the traditional forms of husbandry, land use and social organization of the pastoral peoples in the arid zone of Central Asia.

The petroglyphs, with a total number of about 5000 thousands, constitute the most important part of the archaeological landscape of Tamgaly. They are spread actually all over the territory of the site - at the first sight rather spontaneously, wherever the suitable rock material is found, but in fact their location is determined by certain natural conditions of the landscape, and also by the cultural and functional contents of its particular elements. The best examples of petroglyphs of all epochs are concentrated in the picturesque canyon, that has rather limited conditions for the building of settlements, but is most suitable for the rock art activity and, probably, for the collective rituals. The smaller groups of the less representative by the repertoire and quality petroglyphs and patrimonial signs (*tamga*) are found on the denuded rocks in the vicinity of settlements and contain the drawings related to the time of their functioning. The third category is represented by single petroglyphs and simple compositions of the common contents (depictions of animals and scenes of hunting). They are found on separate stones near the sources of water, along the transit mountain routes and on the tops of hills dominating over the pastures. Nevertheless, despite of the high concentration of petroglyphs and other monuments within the complex, the landscape to a considerable degree keeps its pristine character.

Amongst several thousand petroglyphs of Tamgaly, the outstanding are the homogenous series of the most ancient depictions created at the border of XIV-XIII cc. B.C. at the early stage of the occupation of the territory of Semirechie (the historic area in the South-East of modern Kazakhstan) by the pastoralist tribes of the Andronovo cultural historical community associated with the historical Indo-Iranians. The Bronze Age petroglyphs of Tamgaly demonstrate a highest level of development of this kind of the prehistoric art in the period of its growth and wide spread all over a vast territory of Central Asia from Altai mountains to the North Tien Shan and Pamir.



The site is most representative in respect of the artistic mastery and conceptual contents of petroglyphs of that time, but also of the role they played in the formation of cultural landscapes. The peculiarity of these drawings lies in their large dimensions (from 25-75 cm to 1,0 m), technique, style, iconography and repertoire, and in the presence of the narrative construction, allowing their definition as the particular petroglyphs of *Tamgaly type*. The important feature of these petroglyphs is a plenty of rare and unique images of the prehistoric mythology – first of all, of the anthropomorphic “sun-head” images. Of the universal value is a rock panel of about 7 m long and 4 m high with a poly-figural scene that constitutes a conceptual centre of the ancient sanctuary and where, placed in a certain order, there are represented six main iconographic types of solar images of the Bronze Age heathen pantheon. Besides of that, the site contains many original scenes and brilliantly done particular images. Some of them can be qualified as rock art masterpieces – the cow with calf, the solar anthropomorphic image standing on the back of a bull, some of the depictions of horses and bulls. There is also found a series of the unique images, such as an archer with a wolf mask, the disguised personages and the others, inherent only to the petroglyphs of the *Tamgaly type*.



The rather elaborated iconography of the particular images, repeated over and over in various combinations, witness the existence of the developed representation canon and to the presence of the developed mythology, constituting a basis of the prehistoric artists’

creative genius. It is important that same time the rocks of Tamgaly contain almost all types of images known in the Bronze Age rock art of Central Asia. In this sense the petroglyphs of Tamgaly, with their clearly defined themes of solar cosmogony, represent a quintessence of the Bronze Age rock art and characterize the important phase of development of the beliefs and mythology of the steppes communities in the II millennium B.C. The phenomenon of the *Tamgaly type* petroglyphs, found within just a limited area of the south part of the Chu-Ili mountains, is not studied well enough yet. The genesis of this exceptional phenomenon, that on a general ground of the rock art development in the region looks like a bright spark of the creative genius of some separate groups or, perhaps, individuals, is not known yet.

The petroglyphs of this type are concentrated mainly on the rocks of the five main sites (called Groups I-V) located in the canyon of Tamgaly. They constitute multi-figured scenes. The prehistoric artists demonstrated a skillful use of the natural features of stone surfaces and landscape, giving thus the additional meaning to the scenes they created. The petroglyph gallery as a whole seems to be a thematically integral system of compositions constituting a kind of artistic decoration of the ancient sanctuary, marking the sacred area in the landscape.



The other sites of Tamgaly – burial grounds and settlements – are located around this area and clustered in groups according to their function. The topography of the sites of all the periods clearly shows a sustainable functional structure of the cult complex with the isolated sacred zone and the peripheral residential area. At all stages of the historical development the main function of the periphery was to protect and serve the cult zone of Tamgaly. The large scale of the sanctuary and its exceptional (in comparison with the other petroglyph sites of the region) ideological contents suggest more wide geographical area of its cult significance than just a territory of its residential periphery.

Same time, a great number of later petroglyphs created both on the rocks of the main sanctuary and in the proximity of settlements are illustrative well enough of a gradual transformation of the rock art contents and function. Although there are still many

artistically performed drawings, by their quality they considerably condescend to the petroglyphs of the Bronze Age and are a part of the common repertoire of the later rock art, more brightly represented in the other petroglyph sites of Kazakhstan.

The exceptional variety of petroglyphs, the intrinsic integrity and historical representativeness of the Tamgaly cultural landscape make it outstanding amongst the other rock art sites of Central Asia and regarded as one of the largest ancient cult centres. In the customs and imaginations of the modern Kazakh population of the area there is still preserved some echo of a tradition to respect this place, while already without any concern to the content and function of its petroglyphs.

Nevertheless, it is evident that it is exactly the long-time tradition to create petroglyphs played the main role in the transformation of the natural environment of the Tamgaly gorge into a cultural landscape presently nominated for inscription on the World Heritage List.

b. Possible comparative analysis (including state of conservation of similar properties)

In the territory of Kazakhstan and neighbor states of Central Asia there is a great number of the rock art sites. Thousands of petroglyphs left by the disappeared and present peoples show the diversity of aesthetical, religious and cultural traditions formed and developed within this territory during the last 3-5 millennia. In total, for the major part of this region of mountains and steppes this type of monuments constitutes an essential and most representative part of cultural heritage witnessing to for the most important characteristic features of the traditional steppes civilizations. Due to many reasons, this bright phenomenon still remains poorly studied and little known to the world community. One of the difficult things to understand is the role of petroglyphs as a means of expression of social interconnections and of the interrelations between man and nature. Among the hundreds of sites known in the territory between Pamir and Altai, there are some dozens of especially large ones, and Tamgaly is one of them. They are of different level of survival and not equally studied, and still no one of them is represented in the World Heritage List. In respect of number and quality of petroglyphs, as well as of the integrity and representativeness of cultural landscapes, Tamgaly is comparable with such sites as Eshkiolmes, Arpaufen and Baikonur in Kazakhstan, Sarmyshsai in Uzbekistan, Saimaly-Tash in Kyrgyzstan, and some other sites.

All the above-mentioned properties have petroglyphs as a main component of the cultural landscape. In respect of the total number of petroglyphs, the largest sites like Eshkiolmes and Saimaly-Tash, having tens thousands of petroglyphs each, certainly leave Tamgaly behind. Same as Tamgaly, these rock art sites demonstrate more or less completely the evidence of development of the rock art from the Bronze Age to the modern time. Although, they are situated in the different geographical parts of the region with the different natural conditions, and their formation was connected with the different historical processes of the ancient times. All these resulted in a certain peculiarity of each of them.

Eshkiolmes. The fertile valley of the Koxsu river and a rather low mountain range of Eshkiolmes (Dzungarsky Alatau), which declivous slopes are rich with grass, from ancient times attracted both shepherds and tillers as the area of rich natural resources. The archaeological complex of Eshkiolmes includes dozens of settlements and burial grounds

of the different epochs located in the valley very close to each other along the whole distance of several kilometers. Unfortunately, the severe erosion of the riverbank, but also the agricultural activities of the last decades of the XX c., as well as the extensive archaeological excavations, had affected the state of conservation of both the archaeological sites and the landscape. Because of the numerous traces of the human pressures, the features of this rich archaeological landscape are rather hardly legible.

The south slope of the mountain range is considerably dissected by gorges. They are deep, hardly accessible and isolated from each other, and more than twenty of them have petroglyphs. Every gorge represents a separate rock art site of a certain historical and artistic value. The whole of the Eshkiolmes cultural landscape, despite of its large total dimensions, doesn't show such strong connections between its separated components as we can see it in Tamgaly. The petroglyphs and other archaeological sites of Eshkiolmes seem rather isolated from each other in the whole context of the archaeological landscape. The tradition of respect to the petroglyphs or other monuments is not observed here, and, judging by the traditional and doubly pragmatic name of this place (Eshkiolmes means: "the goat will subsist and not die"), this tradition had drawn to its end very long ago.

Unlike Tamgaly, the most ancient petroglyphs of Eshkiolmes are represented only by the Late Bronze Age engravings (XII-X cc.). The artistic value of the most of them is out of doubts, but their thematic contents is rather trivial (hunting, driving or steeling cattle, fighting) and reflecting rather the daily life of the pastoral peoples. Starting from the end of the Bronze Age, and especially in the Early Iron and Middle Ages, the leading motive of the rock art of Eshkiolmes is an importunate theme of struggles, collisions and military apotheosis. The fantastic images are rare, their iconography is extremely simple, and even the solar personages are little differing from the other anthropomorphic images, as they also participate in the scenes of on-foot and chariot combats. In the chaos of the multi-figured scenes, overburdened by the standard miniatures and details, it is difficult to find the original composition designs, of which the Bronze Age petroglyph gallery of Tamgaly is so rich.

Saimaly-Tash is the largest rock art site of Central Asia (about 100000 petroglyphs). It represents a particular type of petroglyph site in the highland alpine landscape. This grandiose monument is situated in the Fergana mountain range, at one of the mountain passes connecting the fertile Fergana valley with the mountainous highland of the Inner Tien Shan. Historically it is a zone of the direct contact between the ancient agrarian cultures with shepherds from the mountains and steppes of Central Asia, and it founds its reflection in the petroglyphs of Saimaly-Tash.

The main features of Saimaly-Tash are the high concentration of petroglyphs (more than 10000 carved moraine stones within the area of less than 1 square km) and the actual absence of the other kinds of monuments or any traces of the people's long stay and dwelling. Despite of the huge number of petroglyphs, many stones retained untouched. The evident superfluity of material predefined another particular feature of the site – the absence of palimpsests, i.e. of alternative pictures superimposed on earlier figures. It creates a great difficulty in studying the historic sequence (within the historic periods) of the petroglyphs related to the different styles and cultures. And, at last, another particular quality of the substrate lies in the chaotic piles of stones spread over the ground surface. It also doesn't help in realizing the majesty of this place, while it is native of the cultural landscape of Tamgaly.

The petroglyphs of Saimaly-Tash is a highly significant monument of the rock art of the early epochs – the Neolith (probably) and the Bronze Age. And, while the age of one the most ancient series of petroglyphs retains discussible, its peculiarity lies in the presence of scenes which are completely foreign to all the rock art of the steppe civilizations of Central Asia – e.g. the scenes of tillage. The so-called *bi-triangle style* of those engravings is also associated with painted ceramics of early agrarian cultures of the Front Asia (IV-III millennia B.C.). Same time, the major part of images have a strong resemblance to the typical thematic of the petroglyphs found in the territory of Kazakhstan and Kyrgyzstan, reflecting thus another significant phenomenon of the rock art of Central Asia – the cultural synthesis of the settled agrarian and steppe pastoralist civilizations.

Baikonur is situated in Central Kazakstan, in the narrow meandered valley of the Baikonur river, in the arid steppe area. The relief of this place consists of a vast flat plain with rare hills. In the middle part of the valley its rocky slopes create a kind of a canyon with a brownish-black patina on the surfaces of the old sandstone rock, considerably damaged due to weathering and human impact. The archaeological sites are dispersed along the part of the canyon of 25 km in length. They are clustered in 2 groups consisting of petroglyphs of different periods from the Middle Bronze to the Middle Ages, settlements of the Neolith, kurgan burial grounds of the Early Iron Age and Turkic times. The site is poorly studied yet, and the only few Bronze Age monuments are known here to date. The petroglyphs of the transitional period and Early Iron Age are prevailing, represented by the numerous images of horses and camels. The number of the detected Middle Bronze Age petroglyphs is quite small, and they are in a poor state of conservation. The most representative group of the Bronze Age images is found at the site of Baikonur III. They are arranged in several large surfaces, one of which has four depictions of the “sun-headed” anthropomorphic images. The largest and most important of them has some similarity to one of the iconographical variants of the “sun-head” images of the Tamgaly “pantheon”, as well as some other anthropomorphic personages, e.g. so-called “worshipping” images. It must be noted that the anthropomorphic images are rather rare in Baikonur. Some depictions of animals (bulls and horses) are of the same size as in Tamgaly, but their style is some different. The similarity of the Baikonur Archaeological Site to Tamgaly lies also in the arrangement of its petroglyphs in the multi-figured scenes on the high vertical rock surfaces of the canyon. While the petroglyph site of Baikonur as a whole looks rather modest in comparison with Tamgaly, some of the particular features of its Middle Bronze Age ptroglyphs are very important from the scientific point of view, because they are situated in the Central Kazakhstan – the neighbor historical region, that is considered as a possible origin of the ancient population of Semirechie of that period.

In **Tamgaly**, the most cultural significance refers to the petroglyphs of the Bronze Age, playing the organizing role in the cultural landscape. The phenomenon of the *Tamgaly type* petroglyphs requires the further studies. The main questions are their genesis and evolution. The present level of knowledge of this eponymic monument doesn't give a simple answer. No one of all the known large sites of the vast region is comparable with Tamgaly in respect of the representativeness and, same time, exceptionality of its Bronze Age petroglyphs repertoire, their evident artistic professionalism and completeness of evidences testifying to the organic interconnections between petroglyphs themselves with an outstanding landscape, functionally organized as a cult centre.

Among the known sites of the region, like Sarmyshsai (Uzbekistan), Arpauzen and Gabaevka (South Kazakhstan), and Baikonur (Central Kazakhstan), there can be found some few stylistic and iconographic parallels of the *Tamgaly type* petroglyphs. Besides the Tamgaly site, the presently known *Tamgaly type* petroglyphs are concentrated in the central and southern parts of the Chu-Ili mountains, i.e. within a very limited area of Semirechie, which, in historical respect, played an important role as the crossroads of the

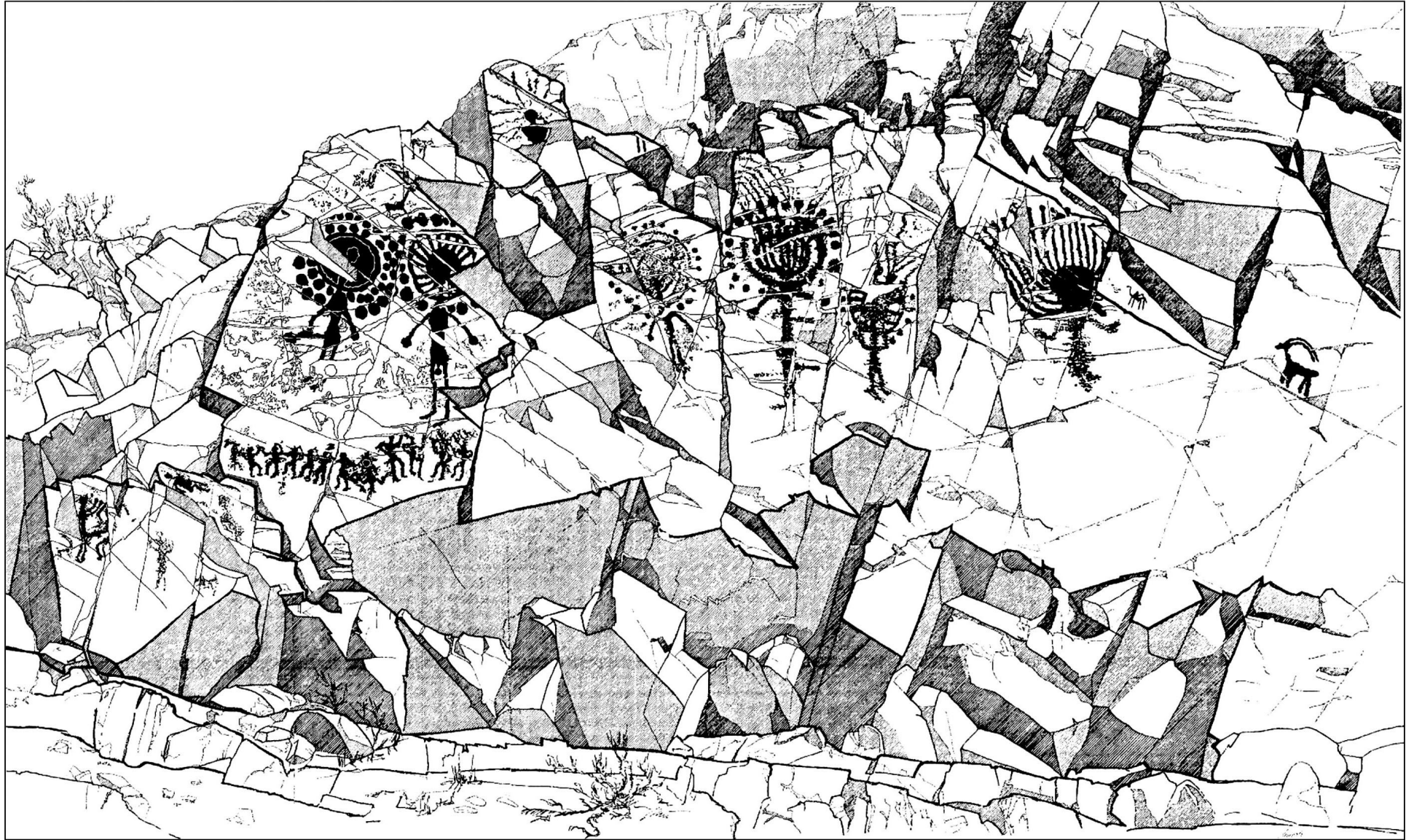
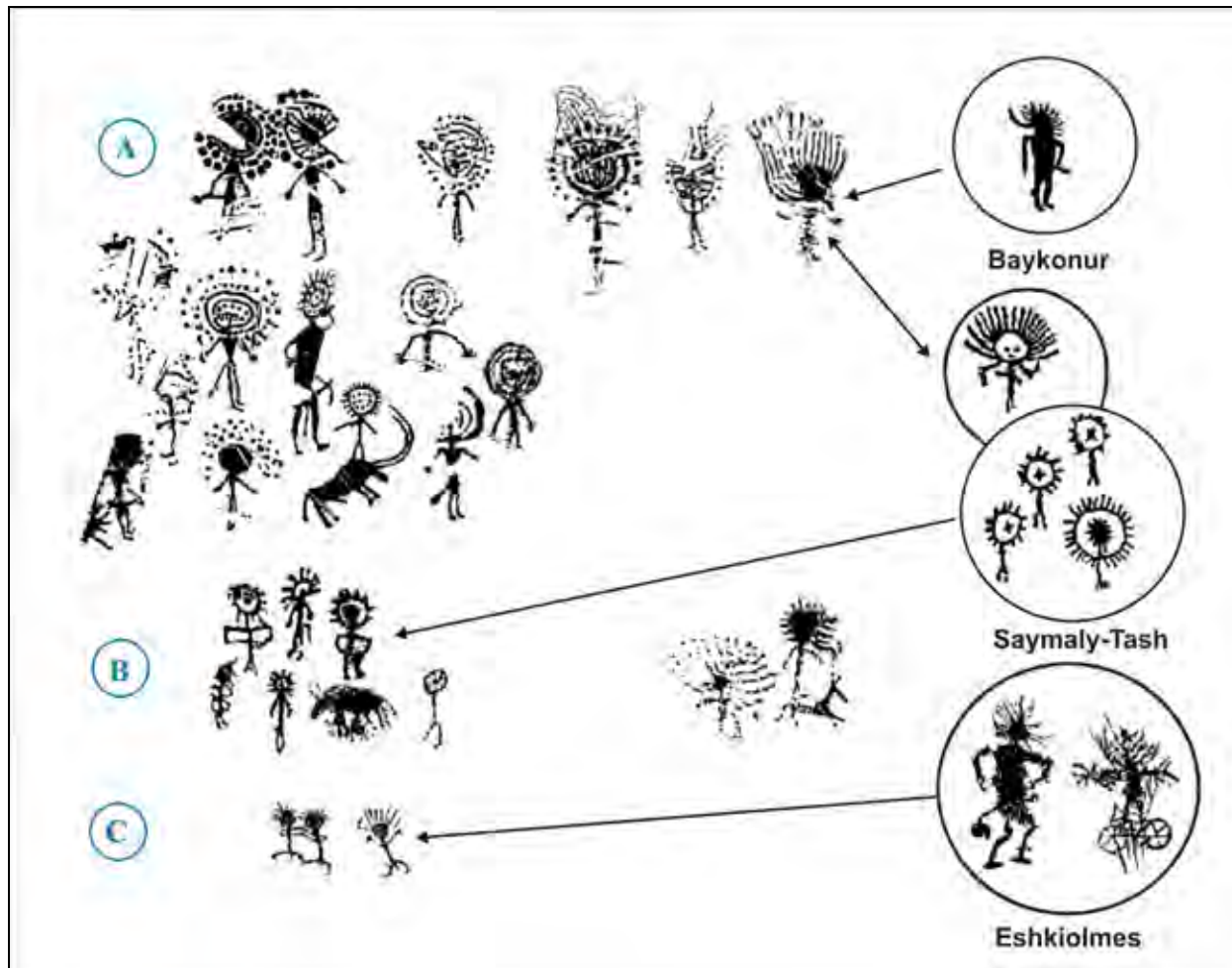


Fig. 1 "Pantheon" (the main scene with the solar images)



A. *Tamgaly type*. Middle Bronze Age representations.

B.C. Tamgaly. Variants of the Late Bronze Age representations.

The “sun-head” images of the *Tamgaly type* are represented in 6 iconographic variants. The drawings of the Late Bronze Age are homogenous and seem to be derivations from one or two images of the “sun-head” figures of the *Tamgaly type*.

The “sun-head” images enclosed in the circles are coming from the 3 main sites of petroglyphs of Central Asia. Amongst them, only the drawings of Baikonur can be related to the Middle Bronze Age images of the *Tamgaly type*. The “sun-head” images of Saimaly-Tash and Eshkiolmes have close analogies with two different variants of the Late Bronze Age representations of the “sun-head” images of Tamgaly.

Fig. 2. Comparative scheme of representations of “sun-head” images in Tamgaly and other sites of Central Asia

sub-latitude and sub-meridian transit routes of Central Asia. In this area the most close analogy is the recently discovered Kuljabasy site in the Anrakhai mountains, in 60 km westward from Tamgaly. Here it has been detected a large series of figures of horses, bulls and also some rare images (like an archer with a wolf head) of the *Tamgaly type*.

Most probably the *Tamgaly type* of petroglyphs as a phenomenon has originated from the synthesis of some local traditions of the area with the others brought from outside during the process of setting of the tribes migrated from the Central Kazakhstan in the middle of XIV – XIII cc. B.C.

c. Authenticity/Integrity

The site is authentic in its setting. In spite of some intrusions of the Soviet period, the Archaeological Landscape of Tamgaly still keeps its pristine character and essential natural and cultural features intact. It also has well-preserved cultural layers, representing the evidence of all the stages of development of this important cult centre of a large region.

The main elements of the cultural landscape are the petroglyphs of the different levels of visibility (from bluish black ones of the Bronze and Early Iron Age to the light grey carvings of the latest time), the low stone-earth mounds and stone tombs hardly visible on the surface, the ruins of stone dwellings and enclosures. Despite of the fact that some parts of the rock massifs have traces of ancient destruction (Groups II-III) and modern graffiti (Groups IV-V), as a whole the gallery of petroglyphs preserved its integrity and representativeness. Some of the Group II rock massifs underwent the emergency conservation in the beginning of 1990s.



The major part of the archaeological sites is buried. The traces of the past archaeological excavations (dump piles, shallow digs of the burials) are inconsiderable, partly removed and not noticeable in the whole context of the other sites and the landscape. The modern ruins on the top of some Bronze Age burial grounds didn't disturb the major part of the archaeological remains of ancient burials, protected by a layer of soil. The high water table

and its salinity affect the bones and artifacts (grave goods) in the burials. The most of the archaeological remains are well preserved.

In the northern part of the site some parts of the plain have been ploughed in the Soviet times, while it didn't disturb the buried archaeological remains. The auto-road lies rather far from the mountains, and the concrete posts – the remains of the former electric line, along with some ruins of modern sheepfolds, just insignificantly disturb the natural character of the landscape. The removal of the above-mentioned posts and modern ruins is planned for the next 2 years.

The integrity, authenticity and the level of preservation of the landscape in general and of its particular components are high.

d. Criteria under which inscription is proposed (and justification for inscription under these criteria)

Criterion i. represent a masterpiece of human creative genius.

The Bronze Age petroglyphs of the Tamgaly type meet this criterion, because they represent an example of an innovative, by qualities of form and contents, artistic creature in the renaissance epoch of the rock art in Central Asia. The novelty appeared first of all in the creation of the iconographic canon for the main anthropomorphic images of the ancient mythology, cleverly presented as a heathen “pantheon” on the central panel of the Group IV, but also in the series of the zoo-anthropomorphic images and the bestiary (especially in the Groups I-III). New was also the way of arrangement and successive disposition of the multi-figured scenes, inspired by the possibility of the simultaneous observation of the rock galleries with petroglyphs. And, at last, the outstanding artistic lperformance of such rock art masterpieces as “cow with calf”, “solar deity on a bull”, some disguised images witness a high level of their creators' artistic skills.



Criterion ii. exhibit an important interchange of human values, over a span of time or within a cultural area of the world, on developments in architecture or technology, monumental arts, town planning or landscape designs.

The petroglyphs of the archaeological landscape of Tamgaly meet this criterion, because they represent an important evidence of continuity, development and interchange of the values system among the peoples of the Central Asian steppe civilization over a period of more than three millennia.

The geographical location of Tamgaly, its picturesque landscape, a plenty of excellent and accessible rock material, as well as its cult function and spiritual significance sustained over a span of time are the main factors provided its exceptional representativeness of the rock art development process, that best of all witness the changes of values orientations.

First of all, Tamgaly gives an integral retrospection of changes within a relatively homogenous cultural environment, of a social function of the rock art, and of the people's relation to its conceptual and aesthetical contents. The general tendency was that changes to the function of petroglyphs as a main component of the open-air temple were followed by the reduction of value of their creation and by impoverishment of their conceptual and artistic contents.



The artistic value of the most ancient drawings of the Tamgaly sanctuary and their forming role in the organization of cultural landscape give a visual evidence of the fact that during the Bronze and Early Iron Ages the creation of petroglyphs retained a socially significant sphere of activities and was full of ritual and mythological meaning. But, starting from the Turkic times, with the formation of military and political unions, development and spread of the written language and Islam, the cultural and social significance of petroglyphs and the

practice of their creation gradually declined. The rock galleries of the Tamgaly canyon provide an unsurpassed record of those long-term transformations.



Moreover, the Tamgaly petroglyphs give a visual evidence of changes to aesthetic standards and human relation to the cultural landscape as a whole and to the rock art in particular. The rock art panorama of all epochs represented in the petroglyphs of Tamgaly demonstrates the changes to the main spiritual ideals and social symbols of the Central Asian steppe peoples' culture in a particularly dynamic and expressive way. The rich world of unreal images of the Bronze Age rock art, wonderful by their pristine indigenoussness and frankness of expression, has been replaced by a complicated zoomorphic symbolism of the eschatology of the Sakae epoch. The art of the Ancient Turkic peoples is concentrated on the propaganda of the new social symbol – an equestrian warrior, the conqueror of peoples triumphantly establishing himself on a ground of the archaic rock-art imagery. The simple and artless petroglyphs of the modern times reflect the daily life of the traditional pastoralic society in the stage of its decline.

The changes to the people's relation to the art of their predecessors and revaluation of the ancestors' heritage are marked on the rocks of Tamgaly by a careful repairing of some Bronze Age petroglyphs or, to the contrary, by rough palimpsests and a total reconstruction of the artistic performance of the sanctuary in the Sakae time and Middle Ages (especially it concerns the IV-V Groups of petroglyphs). These tendencies are not less understandable in the other monuments of Tamgaly, such as settlements and burial grounds. It is witnessed by the known facts of re-excavation of some ancient burials of the cult zone (Tamgaly I, II burial grounds), but also by the appearance of Moslem burials in the sacred area near the Group IV petroglyphs, rooted in a loss of understanding of their function and semantics. In this context, the evidence of a loss of such an understanding of value of the Archaeological Landscape of Tamgaly in the Soviet times also has a certain historical significance. Nevertheless, in spite of all cultural and social changes, the most important thing retained unchanged since the Bronze Age till the boundary of XIX-XX cc. – the functional role of Tamgaly as a place of worship and collective rituals.

Criterion iii. bear a unique or at least exceptional testimony to a cultural tradition or to a civilization which is living or which has disappeared.

During several millennia in the spacious steppes zone of Central Asia, in parallel with ancient civilizations of settled peoples, a specific civilization of pastoral steppe peoples developed itself, retaining without a knowledge of reading and writing and known mainly from archaeological sources. Thousands of ancient archaeological remains, dispersed over a vast territory, represent the evidence and, to a certain degree, give a possibility to understand the economic, social, religious, ritual, or political aspects of that civilization. Amongst a great number of those monuments and sites, it would be rather difficult to select the one that could better than the cultural archaeological landscape of Tamgaly throw a light on the most peculiar feature of that culture – an extremely high level of adaptability to the natural environment and the talent for active use of the first-formed landscapes in a friendly and non-intrusive way. The cultural archaeological landscape of Tamgaly is a striking and bright testimony to a harmony of that society with nature.



In the exceptionally well-preserved archaeological landscape of Tamgaly, all the important components of the cultic centre are present and clearly legible:

- a) sacred zone (sanctuary), created in the natural rock canyon and marked in the relief by a homogenous series of petroglyphs,
- b) necropolis, also formed within the limits of the clearly distinguished natural features, like a single dome-shaped hill in the northern burial area and a depression closed by mountains in the southern one, and
- c) residential area forming the periphery of the complex.

The dominant of the cultural landscape of Tamgaly is a canyon. Its rocky slopes, thanks to their rock art decoration, create an artistic background of the sanctuary. The most ancient petroglyphs of Tamgaly are not only of undisputable beauty and rich ideological contents, but also they express in the clearest way a special vision of space in the real forms of the landscape. Although, the peculiarity of the substrate (rock galleries of the Tamgaly canyon) was just an important prerequisite for the realization of the Bronze Age artists' profound design. The *Tamgaly type* petroglyphs, in a wonderful way comprising actually all the main

rock art images of the eastern part of Central Asia, represent in this outstanding landscape the integral ideological concept of the Central Asian steppe peoples of the middle of the II millennium B.C. No one of the other known rock art sites in Kazakhstan and neighbor states could be on more accounts than Tamgaly associated with a special type of cultic complex of the steppe peoples – the open-air temple.



The formation of the sacred zone caused the appearance of the other functional groups of monuments organized also around some particular natural features of the relief, in the context of metaphoric vision of the landscape. The necropolis is an example – the big group of burials of different times (including the earliest ones in Tamgaly) located around the foot of a single dome-like mound north from the canyon. This mound is of a rare, almost regular shape and not so high, but due to its isolated position it is very noticeable in the relief. Located near the edge of the tectonic terrace, at the border between steppe plain and mountainous area, it stands aside from the surrounding mountains and looks like a centre or a vertical axis of the landscape, similar to the *axis mundi*. Such a symbolic meaning could explain a high concentration of burials related to several epochs around this mound, far from the most of the large settlements and near the sacred area of the complex.

Some parts of the landscape, for instance, the wide and surrounded by mountains inner part of the valley, were used for the burials of a great number of people only the Bronze Age (Tamgaly IV-VI burial grounds). These burial grounds located far from the sacred area in the mountainous part of the gorge were closely related to the settlements of the residential area.

The very fact that in Tamgaly this pattern of a functional use of the landscape survived without changes for the duration of more than three millennia of its history proves its traditional character for the steppes culture of Central Asia.

Criterion iv. be an outstanding example of a type of building or architectural or technological ensemble or landscape which illustrates (a) significant stage(s) in human history.

Many important questions of the ancient history of the region are not studied well enough yet, e.g. the ethnic and cultural roots and the level of social development of different groups of the Bronze Age population remain unknown. This is why only indirect arguments can be used to justify the conformity of the site's values with the criterion iv. Nevertheless, the creation of such a large and outstanding ideological centre like Tamgaly in the 2nd half of the II millennium B.C. could be related to the consolidation of tribes in the southern part of what is now a territory of Kazakhstan, and to the beginning of the process of their ethno-cultural and political integration. The continuity of cultural significance and important spiritual role of Tamgaly during several historic periods visually illustrates the traditional (preserved from prehistoric times) character of use of the landscape during the Early Iron and Modern Ages, whose historical content is directly related to the ethno-genesis and state formation of the Kazakh and other peoples of Central Asia.



Criterion v. be an outstanding example of a traditional human settlement or land-use which is representative of a culture (or cultures), especially when it has become vulnerable under the impact of irreversible change.

A relatively small area of the Tamgaly gorge contains an impressive number of cultural assets of different types and periods, often associated with the same parts and forms of the relief. The surveys and studies of these monuments and their topography helped to understand some principles of the organization of separate components, a system of functional interconnections between them and a whole organization of cultural space. While the knowledge of different monuments of Tamgaly is not at the same level yet, it is evident that they are related to the same traditional culture of pastoral type, that developed itself in

this area during a long time from the Bronze Age to the beginning of the industrial era. The specific climate and geographical environment were the main pre-conditions of a relatively sustainable way of life of people in this territory. Petroglyphs and other monuments of Tamgaly visually demonstrate that the changes of ethnical, aesthetical, political and religious tendencies were not able to considerably change neither a character of life, nor the cultic function and cultural significance of this place. A real tragedy of the traditional culture and the beginning of its agony was a deep social and economic cataclysm in the first half of the XX c., that also affected the archaeological landscape of Tamgaly. The chronological diapason of its monuments is representative of the evolution of the traditional steppes culture from the time of its wide spread and growth to the beginning of its decline in the southern areas of Kazakhstan and in a part of neighbor Central Asian states.

3. Description

a. Description of Property

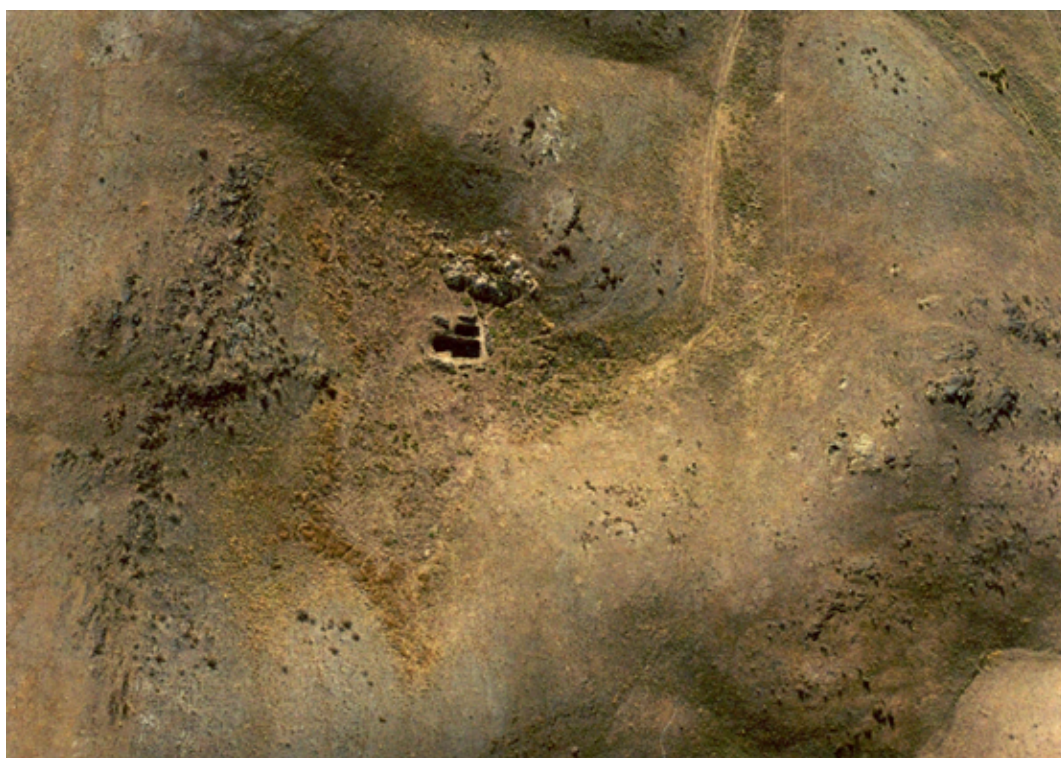
The landscape. The Tamgaly gorge is situated in the southeast part of the Chu-Ili mountains, in the semi-desertic area. The area, because of its semi-desertic landscape and inland climate, is poorly inhabited today. There are few streams, and many of them dry up during summer when only salted springs and rivers can provide water for animals and people. There are no forests but scattered trees, and just bushers cover mountains slopes. This poor vegetation becomes brighter and richer in spring, with mountains and plains covered by multicolored flowers. Under the summer heat the vegetation quickly turns to yellow, and till late autumn only the bed of the Tamgaly river keeps some green and constitutes an oasis. These climatic features make that rare species of plants grow uniquely in Chu-Ili mountains, that is recorded in the Red Book of Kazakhstan.

The low mountainous relief of Tamgaly is generated by the neo-tectonic movements and the following denudation process. The main components of the relief are the low mountains and the vast piedmont plain. In general, they have preserved their original character.



The most impressive and important parts of the landscape are the rock canyon at the S-shaped meander of the Tamgaly river and the isolated mound on its left bank in the mouth of the gorge, at the border between the plain and the mountainous zone. Both of them – the mound and the canyon – possess a visually legible connection, while being the independent (autonomous) parts of the internal organization of the space. Both objects have certain natural features, practically and symbolically used by the population of the Bronze Age and of the other periods. The archaeological sites in the relief of the mountainous zone of the gorge (mainly the remains of settlements and burial grounds) are not visible from the canyon or from the plain, while from any elevated point of the internal part of the complex the rock canyon and the plain are looked over well enough. In such spatial interconnection (mutual disposition, arrangement), the self-existence (even isolation) of the main functional zones, and, same time, their integrity within the cultural landscape.

The archaeological complex of Tamgaly gorge is constituted of about one hundred monuments of different epochs - settlements, tombs, ancient stone-mines, petroglyphs and cult structures (sacrificial places) dated to a wide interval of time going from the middle of the XIV-XIII century BC up to the boundary between the XIX and XX centuries AD.



The settlements are mostly situated in the hilly relieves of the mountainous part of the gorge. They occupy small sites with an area between 300 and 1200 sq.m., where some geomorphological conditions are given: or wide parts of valleys, or flat slopes of small gorges (sai), or raised sites of so called “hanging” valleys. In spite of these topographical differences all sites have a southern, south-western or south-eastern exposition. Places of ancient settlements can be recognised in the landscape by the presence of the following features: rests of one or two dwellings and of housekeeping structures (like enclosures for cattle) made of natural stones; a cultural layer with fragments of utensils (in ceramic, stone, metal, bones) and fragments of animal bones; the characters of soils and vegetation (for example, only near the settlements the presence of overgrowths of hemp is remarked). The permanent character of the archaeological remains of villages and the specific features of

their localisation suggest their long-term seasonal (mainly winter) use by part of the ancient Tamgaly cattle-breeders. However, together with stationary settlements, another kind of monuments is found characterised by a small site with rests of a stone enclosure, without any signs of constructions typical of a permanent dwelling, with an insignificant cultural layer constituted mainly of bones of domestic animals. Such monuments are classified as temporary dwellings or as camping areas, eventually used in the context of spring-autumn transumances by nomadic peoples during recent ethnographic times.

Many of the presently known Tamgaly settlements are multi-layered archaeological sites containing the cultural remains of several historical epochs. Partial excavations have been carried out only on two of them: Tamgaly I and Tamgaly V. The most important stratigraphic information has been collected from the settlement Tamgaly I, where have been revealed cultural layers of four historical periods. On the depth of 2,8-3,2 m have been found the stone bases of the walls of a dwelling dated to the late bronze period (XI-X c. BC) in an excellent state of conservation, with a hearth in the centre and the ritual burial of a sheep under the room floor. Above that level have been revealed stone structures of Early Iron epoch (IV-I century BC), late Middle Ages (XVI-XVII c AD) and ethnographic period (at the transition between the XIX and XX c.). More than ten dating analyses by radiocarbon C14 and EPR methods have been done on samples from different layers of the dwelling. By analyses of samples from 2 stratigraphical trenches, one in Tamgaly I and the other in the valley of the Tamgaly stream, the curve of the paleoclimatic changes in the region has been reconstructed for the period going from the bronze epoch up to the present times. In the cultural layers of the all four periods during which the dwelling has been inhabited, stones have been found which carry petroglyphs with representations of different animals (wild goats, camels) and of a man with a bow.



Ancient burials represent one of the basic elements of the Tamgaly complex. They are characterised by individual tombs incorporated in groups, located on the hilly parts as well as on the flat parts of the gorge. Referring to their shape, two types of burial grounds can be recognised: stone enclosures with boxes and cists (provided with a laying out of the walls of

the tomb made by several lines of stone slabs); and mounds (kurgans) consisting of stone-and-earth embankments built above the tomb.

The most ancient burial places are represented by the monuments of the first type, attributed to the middle and late stages of the Bronze Age. Kurgans can largely differ by the design of the tomb and by the parameters of the embankment, representing in that way one of the most characteristic features of each historical period going from Early Iron Age till the present time.

At present the monuments of the Bronze epoch are the ones that have been investigated the most. On the territory of Tamgaly seven burial grounds have been studied: Tamgaly I, II, IV, V, VI, VII and Karakuduk II, all grouped along the main valley, on the right and left banks of the stream. The cemeteries of Tamgaly I, II and Karakuduk II are located in the foothill plain where they occupy some elevated areas of the relief (like alluvial cones or hills slopes), sedimented by an alluvial layer of 10-15 cm so that they can hardly be seen at the surface. The quantity of tombs present in Tamgaly I, IV, V, VII and the area occupied by them are relatively insignificant: 15-20 tombs each on an area of 250-400 sq m. In the larger cemeteries of Tamgaly II, VI and Karakuduk II are counted 30-50 tombs, each group covering an area of 500-1500 sq.m.

Different years of excavations been dedicated to all the bronze epoch cemeteries, and, the accumulated information including the definitions of absolute dating, though their methods have been quite different, allowed the cultural and chronological systematisation of the monuments.

All the tombs of the bronze epoch pertain to the class of monuments of the cultural-historical group called *andronovo*, which during the II millennium BC diffused from the Urals to the low course of the Syrdaria, Southern Siberia and Western China (Sintszyan) on the most part of Central Asia including all the territory of modern Kazakhstan. The ethno-cultural features of the *andronovo* pastoral tribes still represents a debatable question, but a significant part of the researchers support the thesis of their indo-iranian origin. Typologically the monuments of Tamgaly are related to the Central-Kazakhstan (Atasu) and Semirechie cultural-chronological variant of the *andronovo* group, suggesting the migrational-diffusional character of the formation the Southeast Kazakhstan population during the late bronze epoch.

The most ancient monuments of the archaeological complex are the cemeteries of Tamgaly I, V, VI that functioned synchronously during the second half of the XIV-XIII c. B.C. The characteristic features of these monuments are the burial of a dead person with the body on a side in a ritual foetal position, in large stone boxes inside a round or square fence made of vertical stone plates. The grave goods are represented by gracefully ornamented hand-made pottery and bronze adornments.

The burial grounds of Tamgaly II, IV and Karakuduk II have been built at the boundaries of the XIII-XII c. BC and are classified as monuments of *Semirechie type* (or Semirechie culture) of the Late Bronze epoch. Characteristic features of these cemeteries are the co-existence in contiguous stone boxes of the rite of burial of the corpse and of the rite of cremation; rough hand-made ceramics without any ornaments; peculiar sets of bronze adornments and objects. On some stones of the cists of 3 tombs of the cemeteries of Tamgaly II and Karakuduk II have been found petroglyphs with anthropomorphic and animals figure, executed with the style of the most ancient Tamgaly rock engravings.

The latest burial places of Bronze epoch have been found on the periphery of the Tamgaly I and Tamgaly VII burial grounds, and have been attributed to the XI-X c. B.C.

The kurgan burials are found everywhere in the gorge, consisting of several types differentiated by the structure of the burial construction:

- kurgans with earthen embankment of diameter 15-20m, height 1,0-2,0m;
- kurgans with earthen embankment of diameter 4-10m, height 0,1-0,4m, with a ring encircling the basis, an oval stone above the tumulus, a tomb walled by vertical stones and covered by plates;
- kurgans of the same sizes of type 2, but with a line of stones as 'armour' of the earthen embankment

The largest kurgans are found in the foothill plains, 1km far from the mountain massif, by groups of 20-30 structures and marking the east and northeast borders of the Tamgaly site (cultural landscape). As a rule they are disposed in parallel lines, with the largest kurgans surrounded by small stone-and-earth structures. Especially remarkable are the so-called kurgans "with moustaches", one of which has been partially excavated in 1957.

In the cemetery of Karakuduk II three ritual stone enclosures have been excavated, and in one of them it has been found a "deer stone": a stone stele with images of weapons (bow and battle axe) dated to the V-IV c. BC.

The kurgans located in the mountain part of the gorge are clustered in small groups (from 2 to 5-6 structures) and occupy various forms of the relief: raised areas of valleys, deposition cones, hilltops, watersheds, etc. In most cases they are neighboring ancient settlements.

The study by excavations of Tamgaly kurgans has been mainly made during the year 1957 and provided a rather small quantity of findings and information, therefore the cultural-chronological attribution of the majority of the Tamgaly kurgans remains unclear. The investigations of the year 1957 classify them as monuments of the early iron epoch and A.G.Maksimova date them between the III and I c BC.

Medieval burial places of the Turkic period in Tamgaly have not been clearly individuated. Probably, they constitute a part of the stone barrows and ritual fences located at the tops of hills and on low mountain passes. However no excavations have been made of such a kind of monuments.

Kazakh Moslem burial places are characterised by having a mound quite small, 0,2-0,5m in height, made of stones and located usually near the ruins of stationary settlements.

Ancient stone-quarries in Tamgaly have been found close to the Bronze epoch cemeteries of Tamgaly I, II, VI, for the construction of which wide stone slabs have been widely used recovered from rock blocks tectonically disturbed. In such stone-quarries are evident traces of deep excavations (up to 0,5m) partially filled with alluvial sediments and surrounded by fragments of slabs of different size. Excavation or other studies of these monuments have not yet been done.

Cult structures (sacrificial places - altars) are a very rare and important monument and their use up to the beginning of XX c indicates the persistence, in the traditional Kazakh culture, of the sacral importance of places with petroglyphs. In the gorge of Tamgaly cult

structures consist of a kind of stone altars located near rocks with petroglyphs, functioning as places for sacrificial offerings.

Stone fences are met at the top of some rocks or on flat slopes of dominant hills near permanent Kazakh villages. The cultural layer is usually insignificant; on the surface inside such fences scattered animals bones are found together with fragments of utensils or of metal objects. Fences with a diameter going from 3-5 up to 10 m are made by large stones well aligned, with an aperture on the east or south-east side. The side opposite to the door is constituted by a natural rock wall; petroglyphs can be found on individual stones of the structure, with images including some specific subjects as cauldrons and Kazakh inscriptions in Arabic script.

A sacrificial place (altar) with fragments of a large iron cauldron accurately and deliberately buried under flat stones has been found near the petroglyphs of IVa Group. In Tamgaly excavations of cult monuments have not been done.

Petroglyphs represent a kind of monument most valuable and most abundant in the gorge of Tamgaly. Almost all the Tamgaly rock images are made on unsheltered rocks by picketing technique, and more rarely engraved with the help of metal or stone tools. No painted images have been found in the site.

In the Tamgaly complex the number of petroglyphs sites found up to now reaches the number of 48. Five of them are the most important (I, II, III, IV, V groups) numbering together about 3000 petroglyphs; 22 sites of secondary importance are numbering from 50 up to 100 representations each. Smaller sites numbering between 1 and 50 figures each are practically distributed all over the territory of the gorge. That makes that in the Tamgaly complex the total number of petroglyphs is of around 5000.

By the kind of periodisation and localisation 3 types of petroglyphs sites can be individuated:

- the main sites represented by the I-II-III-IV-V groups, including representations of various epochs, located on the picturesque rocks of the small canyon called Tamgaly;
- sites with petroglyphs of 1 or 2 historical periods, usually located near ancient settlements or tombs on the mountain zone peripheral to the gorge;
- small sites including images of 1 or 2 periods, located far away from the other monuments of the complex, on the slopes or tops of hills along traditional walking or horse-riding tracks.

In Tamgaly the petroglyphs pertain to several historical epochs and cover a chronological interval from the second half of the II millennium BC till the beginning of XX c, periodized as follows: Middle Bronze (Tamgaly type petroglyphs), Late Bronze, transitional period, Early Iron (Sakae and Wusuns), Middle Ages (ancient Turks) and Modern times (Dzungarians and Kazakhs).

Petroglyphs of Middle Bronze epoch

In Tamgaly the greatest aesthetic and cultural value is represented by the petroglyphs of the Middle Bronze period, which created the most ancient and most expressive set of rock images. They are endowed with specific features, which allow to define them as petroglyphs of '*Tamgaly type*'.

- Images of large size are prevailing, averaging about 25-30 cm, with exceptional images

reaching 0,7-1,0 m.

- The technique of picketing is dominant, with an engraving depth of 3-5 mm.
- The image reproduces a bright naturalistic allure.
- The repertoire of the images is very rich and includes many rare and unique anthropomorphic, zoomorphic and syncretic subjects: solar deities ("sun-heads"), disguised personages ('shamans'), men with clubs, archers with wolf mask, 'worshippers', armed warriors, scenes of animals and people sacrifices, erotic scenes, birthing women, chariots, footprint, 'lattices', points and other marks, images of bulls, wild asses, horses, camels, wild boars, wolves, deer etc.
- The iconography of the main images and subjects is steady.
- The arrangement of petroglyphs compositions on the rocky substratum is done in close interrelation with the landscape, which constitutes the frame of the whole illustrative-narrative construction and representational patterns.



The petroglyphs of Tamgaly type are dated to an interval between the second half of the XIV and the XIII c. BC on the basis of stratigraphical analyses, subjects and similarities with the dated figures found in the tombs of Tamgaly II, Karakuduk II and in the settlement of Tamgaly I.

The main part of the petroglyphs of the Middle Bronze period consists of images of wild animals, including some species today extinct: the wild bull (tur or auroch), bactrian camel, wild ass (kulan), horse, deer, goat, wild boar, wolf. Images of horses and bulls are prevailing, the ones of camels, deer, wild boars are scarce. The main themes of the petroglyphs of this period are the ones of animals chased by predators and of men hunting wild animals; scenes of pastoral activities are practically absent. Most of the zoomorphic and anthropomorphic images are witnessing the performance of a highly skilled master by accuracy by which allegorical meanings are transferred to natural creatures. An example of special artistic skill is represented by the images of the calf inside a cow (III group) where the calf is made in high-relief on the background of the cow silhouette. Unique are the images of the anthropomorphic solar deity standing on a bull (III group), of a mysterious one-legged being (III group), of the archer with a wolf mask, of zoo-anthropomorphic beings

"dressed in furs", and of some other figures.

A very special place in the repertory of the Tamgaly petroglyphs is covered by the images of the fantastic anthropomorphic figure with the "sun-head". A total of 30 "sun-head" images are found in Tamgaly, of which 26 still preserved today. All of them are dated to the Middle and Late Bronze periods and the greatest expressiveness pertains to the most ancient of them: they are figures of relevant height (0,4-0,75 m), in static poses, with intricate 'halo'(aura) drawn by various combinations of circles, circumferences, rays and points. Among all the 'sun-head' images 6 steady iconographic types can be individuated.



A masterpiece of primitive rock art is represented by the vertical panel (IV group, surface 118) which shows the images of 6-7 divine subjects, ten dancing men holding weapons, a birthing woman, an erotic scene, some 'worshippers'. A hierarchy between three groups of subjects is underlined by their composition: the highest level is occupied by solar deities; worshippers are in the lower part of the picture; and between them are represented in series the dancers and the birthing woman.

The importance of the "sun-head" images is underlined by the size of the figures. All images convey the general qualities of deities in anthropomorphic appearance. But, with the help of

iconographic means (like localisation, height and serial arrangement of the figures, orientation, form of their "halo", gestures) some specific characters for each of them are expressed, reflecting nuances in their individual semantics. Isolated 'sun-head' images can be seen in other places of the Tamgaly complex (II, III, IV, V groups), however only the composition of the vertical surface of IV group shows various deities incorporated in one composition, allowing to be considered as the representation of a pantheon. Moreover the structure of the composition, which shows a strict hierarchy between 'sun-head' figures and other anthropomorphic images, suggests the presence of an attempt of drawing the picture of the whole world and makes of the composition an important document of the mythological conceptions of the bronze epoch.



The petroglyphs of *Tamgaly type* are distributed on the whole territory of the gorge in a non-uniform way: they are located mainly on the rock surfaces of I, II, III, IV, V and IVa groups, where they are more than 1000 in number. Isolated images can also be met on several peripheral sites of the complex. Everywhere they occupy the most wide, smooth and visible surfaces; never superposed to other images but at the contrary often covered by images of other periods, proving in that way their most ancient age.

The archaeological study and documentation of the rock images of the main 5 groups revealed a special regularity in the arrangement of the petroglyphs of *Tamgaly type*: they occupy surfaces characterised by a very similar orientation that, together with the large sizes of the figures, allows them to be seen from a distance of 20-30-50 m. With the help of special measurements, calculations and experiments, near each of the rocky blocks carrying *Tamgaly type* petroglyphs some focus-points of optimal vision have been determined, i.e. from where is possible to see simultaneously all the images of *Tamgaly type*. Such regularity has not been found in the distribution of the petroglyphs of the Late Bronze and later periods.



The petroglyphs of the *Tamgaly type*, by the constancy of their characters, of their interrelations, of the dynamics of the subjects, represent a system of steady iconographic images juxtaposed in compositions that play the role of narrative texts. The contents of such a pictographic text, by the features of some fantastic anthropomorphic and zoo-anthropomorphic images, seems to refer to mythological subjects of the indo-iranian cosmogony.

The petroglyphs of *Tamgaly type* represent a special cultural phenomenon, which spread on a narrow geographical territory. At the present state of knowledge, it looks limited to the southern part of the Chu-Ili mountains and the foothills of Zailiski Alatau, where some sites with few *Tamgaly type* images have been found.

Petroglyphs of Late Bronze and transitional periods

The petroglyphs repertory of the Late Bronze Age looses a relevant number of subjects of the precedent time, and also differs from the former period by technical performance, style and localisation in the area of the Tamgaly complex. The treatment of images shows less concern for the representation of the natural shape of the animals and a schematic representation of anthropomorphic figures. The performance technique is the one of picketing by small points to a dept of 1-2 mm, with details sometimes done by engraving.

The mean dimension of the images does not exceed the 0-15 cm.

The subjects' repertory looks poorer. Complex images become rare, syncretic images very rare, and the few 'sun-head' figures left are just the reminiscence of one of the iconographic variants of the earlier solar deities. The central place in the repertory is still covered by images of horses, bulls and wild animals, but the theme of the hunter is accompanied with new scenes of pastoral life filled with elements emphasizing dynamics and conflicts.



On the surfaces of the main groups the Late Bronze petroglyphs are superimposed on former figures or located in the spaces between them, increasing in that way the composition created before. Small sets of petroglyphs of this period are found not far from settlements and burials at the periphery of the complex.

As a whole the Late Bronze Age petroglyphs reflect significant changes in social life and ideology among the steppe tribes roaming the territory of Kazakhstan and Central Asia at the transition between the II and I millennium BC. These changes are due to the rise of nomadic cattle breeding activities, to the increasing mobility of large human groups and to the expansion of geographical communications. Rock art repertory, style and techniques become analogous on a very large territory, so that the Tamgaly Late Bronze petroglyphs find similarities with many sites going from Western Mongolia and Altai to Western Tien-Shan.

A special set of Tamgaly petroglyphs represents the transition from Bronze to Early Iron Age dated around the beginning of the I millennium BC. It is not so numerous and is characterized by quite specific features of style and iconography. The most expressive compositions are located in the IV and V Tamgaly groups.

Their repertory completely excludes anthropomorphic images and privileges stylized images of different kinds of animals: deer, wild goats and predators (wolves, wild boars and panthers). Scenes of hunting and scenes of chase of herbivorous animals by part of predators become the main themes of the rock art creativity. Moreover, the choice of stele-like vertical surfaces, atypical in the rock art performance, makes possible to relate these petroglyphs

with the pictographic tradition of the so-called 'deer stones' of Western Mongolia and Altai. On the Tamgaly surfaces figures in 'deer' stones style quite often are roughly superposed to ancient images, underlining the absence of continuity and the cultural originality of the petroglyphs of this style. In Tamgaly, like and even more than the petroglyphs of Late Bronze Age, the petroglyphs of the transition period are witness of a wider circulation of new aesthetic ideas and of the start, among the ancient nomads of Central Asia, of an epoch of formation of military-political unions and of large regional expansions and migrations.

Petroglyphs of Early Iron epoch

The images of the Early Iron epoch constitute in Tamgaly the most numerous set of petroglyphs. They are located on the rocks of the larger 5 sites (mainly in the IV and V groups); and at the periphery of the complex near the settlements, kurgans, tombs and on hilltops, when stone surfaces are provided with metallic black patina.

The petroglyphs of that time are not homogenous in style, quality and subjects. They have been created by different peoples and tribes (Sakae, Wusun, Yueche, Huns) that inhabited eventually together Semirechie during the end of I millennium BC and the first half of the I millennium AD within the process of mass movements and military campaigns of nomadic confederations.



The brightest petroglyphs set of this epoch is represented by the images in Sakae 'animal style', related to the animalistic artistic tradition that characterizes Central-Asia during the VI-IV c BC. The hunt of wild animals and the chase of deer and goats by predators still remain the main themes of the rock art, supplemented by individual and serial images of camels. The image of a man riding a horse, or the one of a walking warrior, are sporadically found and play a complementary role with the animalistic compositions. The images of wild animals appear in different graceful attitudes; and sometimes the contours of the figures are filled by decorative elements such as spirals, lines etc.



The petroglyphs in Sakae 'animal style' in Tamgaly are rather few, but are diffused a little bit everywhere, on the rocks of the main groups as well as on the periphery. Their appearance is connected with a massive reworking of Bronze Age petroglyphs of the groups III, IV and V, where Sakae images are quite often roughly drawn on the top of ancient ones. Also the practice appear of adding elements on earlier compositions, using Bronze epoch images as a 'precondition' for new creations: for example figures of horses or bulls are often remade into images of a goat. The impressing evidence of the antagonism of the Sakae "animal style" against the Bronze epoch rock art is witnessed by the palimpsest of IV group where the 'sun-head' images are roughly superposed by the Sakae representations of a rider, a wild boar and other animals figures.

Together with Sakae petroglyphs there are on the Tamgaly rock surfaces a lot of engravings created in the same epoch in different styles by other tribes and peoples. It is not always possible to determine precisely their age and their cultural belonging, being that they mainly consist in homogenous images of animals (for the most part goats) very schematic and rather rough in performance. Anyway there are some exceptional images of very high quality representing wild animals, domestic animals and some anthropomorphic subjects in scenes of hunting or of defending the herd against the attack of predators.

On the rocks of the main sites (especially of the IV and V groups) simple representations of these subjects are done on small surfaces that, because their unusual exposition, are free of previous petroglyphs. At the contrary of the Sakae images, they do not disturb the lines of

the Bronze Age petroglyphs, but are just juxtaposed to them according to new aesthetic norms. In general these petroglyphs are located not far from stationary settlements where are found handmade ceramics of Wusun type and stone constructions holding petroglyphs of the same style and technique: facts that allow to see in such simple petroglyphs the product of native inhabitants of Semirechie.



A special category of petroglyphs is represented by the so-called ‘tamga’, symbols of tribal belonging and clanic property. Most often they are met on rocks near ancient settlements; but one image is found in the V group. Some of these symbols are related to Yueche and Sarmatian tribes and can be seen on the whole extension of the Eurasian steppes, marking the historical ways of the ancient Central Asian nomads.

In that way the petroglyphs of the Early Iron Age represent some complex processes of interaction between ancient Central Asian tribes; and show as main character the tendency to continue the extraordinary petroglyphic tradition inherited from the Bronze Age but continuing it with lesser impulse and minor innovations

Petroglyphs of Middle Ages and modern times

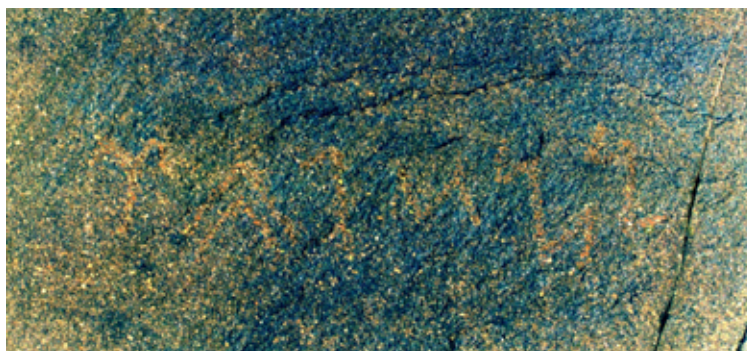
The petroglyphs of the Middle Ages, like the petroglyphs of the Early Iron Age, are found everywhere in Tamgaly, though their total quantity doesn’t exceed the 300 images. The most part of them is deposited on the rocks of the groups IV and V, but the best samples are found in few peripheral sites located along roads and mountain paths.

Medieval petroglyphs differ from the petroglyphs of all the former historical epoch by the special repertory and artistic originality of the nomadic rock art of the Turkic time (VI-XII c AD) It is the epoch of the appearance of huge steppe empires and the main character of the rock compositions becomes the standard-bearer rider, the archer, the warrior with heavy weapons. New figurative scenes are: scenes of duels between a warrior on horse and an unmounted warrior; of collective total hunting, of nomadic displacements. The hunting scenes, always present in the petroglyphs history, now get a new meaning: if for the ancient

artists in the hunting scene the most relevant image was the one of the animals, now the accent is laid on the anthropomorphic hero and on its military attributes: banner, weapons, horse equipment. In general the themes of the Turkic rock art reflect, together with representations of the life of a rich cattle breeding society, the rise of the epic creativity and the establishment of an aristocratic military aesthetic.



The technique of medieval engravings essentially differ from the techniques of the former epochs. The choice of the surfaces quality and exposition is obviously not designed for a wide display of figures. Even the most imposing compositions, in spite of opportunities for better choices, are frequently occupying unprofitable positions: surfaces out of view, narrow, rough or non metallic. Apart rare exceptions, the figures are engraved quite superficially, patina layers are removed from the silhouette unequally; a lot of images are just scratched with the help of a sharp metal tool or knife. Especially popular became the renewing of the ancient drawings intended to change the original contents of the image by the addition of new details. A clear example is represented by the image of a bronze epoch bull (group III, surface 23) changed into the figure of a rider-warrior. On the surfaces of the main sites, generally already covered by compositions of the Bronze epoch, the possibilities of the medieval artists were limited to the adding of one or two new figures by carefully renewing and correcting ancient figures. On the IV-V groups most of all ancient figures suffered from the medieval renewing, including many 'sun-head' images.



There are some medieval petroglyphs in Tamgaly that constitute unique samples in the Central Asian rock art repertory. Such are the large image of an elephant with rider, located near the settlement of Tamgaly I; and the figure of a sitting anthropomorphic deity (?) in V

group, of which an analogue is found in Western Mongolia (on the secondary usage during Turkic times of a deer stone from Temeni khuzu in Bayankhongorski aimak). A rare monument in south Kazakhstan is represented by the ancient Turkic epigraphy of 6 letters of runic alphabet found in IV group (surface 13). By the preliminary analysis of S.G. Klyashtorny (St.- Petersburg, Russia), the writing quotes a man's name and is dated to the VIII c AD.



Thus, since the medieval period, the creation of new petroglyphs in Tamgaly, as well as on the majority of the other rock art monuments of Central Asia, is gradually replaced by the practice of renewing and adding elements to ancient compositions. Further on, with the strengthening of central governments, the development of writing and the spread of Islam, the creation of petroglyphs will definitely stop functioning.

The centuries that followed the Mongolian conquest (XIII-XVI c AD) represent a 'dark age' in the history of Tamgaly and the events of this epoch didn't find any appreciable reflection in the petroglyphs of the site. Not earlier than XVII c AD a Buddhist prayer got inscribed in Mongolian alphabet on a surface of IV group, together with a small series of rather schematic anthropomorphic images and animals, that can be connected with the establishment in Semirechie the Dzungarian (Oirat) political control.

Popular Kazakh figures are executed during the XIX and the early XX, some of which are excelling in elegance and represent the last burst of rock art creativity. Their repertory is extremely limited with just images of goats, horses, riders. The figures show different techniques and different levels of quality: most of them are schematic figures roughly picketed with the help of a stone or softly scratched with a metal tool; but, less often, quite accurate performances are done of single images or of whole compositions. A significant part of Kazakh petroglyphs is located near stationary settlements and some of them on isolated stones of dwelling constructions. On the surfaces of the main groups they occur as single figures, which generally occupy surfaces untouched by former petroglyphs. Together with images of people and animals, there are images of patrimonial marks (tamga) of the

Kazakh tribes ‘dulat’ and ‘alban’.

b. History and Development

The monuments of the Tamgaly gorge constitute a whole cultural complex, i.e. the system of the archaeological sites of several types (settlements, burial grounds, petroglyphs, altars, etc.), interconnected by the territorial and functional unity, characterizing the important aspects of the social and cultural life of its inhabitants from the Bronze Age to the early XX c. The cultural context of the Tamgaly Archaeological Landscape refers to a certain life situation, which contents can be partly reconstructed on the grounds of data obtained from the archaeological, ethnological and historical sources.

In general, the picturesque relief of the gorge, with its particular features, represented the original environment that in many senses defined the way of life in different historical periods and reflected clearly enough the evolution of their social and cultural life and a vision of world of the ancient and modern peoples within a large area. The grouping of the synchronous monuments according to their functional and typological type can be seen in the space organization of the cultural landscape, and it was a principle that sustained during all historical periods.

The canyon with five major groups of petroglyphs (Groups I-V) was a core of the site during all the historic periods. No remains of dwellings or other structures are found here. The ancient tombs and cult structures of the largest burial grounds of the site (Tamgaly I & II) are concentrated around the dome-shaped mound in the neighboring piedmont valley. The separate groups (ensembles) of monuments, including settlements, burial grounds and smaller petroglyph sites are scattered in the mountainous periphery surrounding the core area. The topography of the site allows one to distinguish its functional parts – cult zone and residential area. They are isolated from each other by a kind of “buffer zone” that doesn’t contain cultural remains or any other signs of its past use.

The geo-morphological features of the site, such as terraced rocks of the canyon, with their expressive outline and sculptured shape, the homogenous shining black ground of the wide rock surfaces covered by patina, were intentionally used by the creators of the most ancient petroglyphs. Bright and unrepeatable images of the Bronze Age petroglyphs illustrate the mythological contents and integrity of the pictographic “text” arranged as a rock art “gallery”. The petroglyphs of the “*Tamgaly type*” are concentrated mainly on the rocks of this canyon, marking the space of the ancient sanctuary, or of the open-air temple, as a place for ritual activities and ceremonies.

The composition center of the whole ensemble is the petroglyphs of the Group IV. Here, at the S-shaped turn of the valley, the rocks come close to the viitor, creating the illusion of the closed space. This place is famous by some special acoustic and optical effects: for example, within the canyon it is possible to speak through the distance of 100-150 m without raising one’s voice. The vertical rocks raised over the narrow valley attract one’s attention to the top tier of the massif, where the impressive scene with “sun-head” images is situated (surface No 118).

The forming of the complex is related to the period of the Middle Bronze Age (mid XIV – XIII cc. B.C.), when its main structural components took their shape: the sanctuary with

petroglyphs and the burial ground (cult zone), and, to the south, in the mountainous area – the residential periphery. Then, during the following historical periods, the boundaries of the residential area subsequently altered, that finally resulted in the insulation of the sanctuary core zone between Groups IV and V and in the reduction of the role of the other parts of the original cult zone. Although, the growth of the residential area took place exclusively in the periphery and didn't touch the cult zone.

In the Late Bronze period it was seen the vast spread of petroglyphs all over the territory, and new burial grounds appeared both in the cult zone and in the periphery. Within the sanctuary, the smaller series of new petroglyphs appeared on the rocks, just partially preserving the continuity of repertoire and iconography of the oldest petroglyphs of Tamgaly. The petroglyphs of the transition period show the most innovative character. In total, the sites on the late II – early I millennium B.C. reflects the considerable cultural influence of the different groups of the population related mainly to the eastern parts of the region – Dzungaria, Altai and South Siberia.



In the Early Iron Age the residential area shows a considerable growth, occupying the major part of the suitable, in respect of the natural conditions, places within the periphery zone of Tamgaly and in the neighboring gorges of Shoshkaly and Bes-shal. The topography of the cult zone is kept unaltered also in this period. The kurgan burials occupy free spaces of the ancient burial grounds, concentrating near the Bronze Age burials. A number of new ensembles including settlements, kurgan burial grounds and smaller sanctuaries with petroglyphs appear in the mountainous area adjacent to the cult zone. Those new petroglyph galleries contain, with some exceptions, rather uniform scenes. Although, in their architectonics and partly in their contents they sometimes reproduce the structure of the Bronze Age sanctuary with its clearly defined centre and subsequently grouped compositions. While the animalistic theme is clearly preferred in this period, some archaic images and motifs, like a woman giving birth or dancing warriors, also appeared that time. On the rocks of the canyon during this period there appeared not so many new depictions,

but same time a number of the grown dark Bronze Age images had been “renewed” and “repaired” at the rock surfaces of the Groups IV and V. Thus, in the rock art of the aboriginal nomads of Semirechie in the middle of the I millennium B.C. it is reflected a kind of continuity and respect to the cultural significance of Tamgaly as an important sacred place.

Same time, in the cult zone and in the periphery it can be seen the appearance of some palimpsests and the damage and alterations to the Bronze Age images and scenes by the petroglyphs of the Sakae animal style (VI – IV cc. B.C.). Some separate groups of kurgan burials of the nomadic elite appeared in the piedmont valley. Some of the excavated Bronze Age burials show the evidence of re-excitation and plundering happened in the 2nd part of the I millennium B.C., and at the sites of the Bronze Age settlements there are the traces of strong fires related to the same period. Those phenomena can be understood as the evidence of external political violent commotions, armed and ideological conflicts, that in a certain historical moment had destroyed the traditional way of life of the Tamgaly inhabitants.



In general, the period of the Early Iron Age can be considered as a time of the active economic development of Tamgaly, while it preserved its cult significance despite of the considerable social, economical and ideological changes.

Concerning the Middle Ages, the evidence of this period of history doesn't give much information. The burials of that time are not found yet in the area. The settlements occupy the same sites as those of the previous periods, but their number is considerably reduced. The small groups of petroglyphs of the Turkic times appear mainly at the periphery sites, but also in the sanctuary. The common way of the creation of the multi-figured scenes in this period was a “renovation” and alteration of the ancient drawings with the addition of one-two new images. Same as the Sakae petroglyphs, the medieval drawings often cover the scenes of the Bronze Age, transforming them in accordance with new ideological standards. The epical content of the medieval rock art with its military esthetics marks a loss of the ritual magic meaning of petroglyphs, as well as the beginning of the reduction of their main communicative function.

The topography of the sites related to the latest historical period of Tamgaly (XIX – early XX c.) is of high importance. Many of Kazakh winter abodes of the late XIX c. occupy the sites of the Early Iron and Middle Ages, but same time some of them appear in the new places in Tamgaly and neighbor gorges. The grouping of the sites in the residential area is corresponding with the system of the patronymic setting (by large families) mentioned by the Russian and European researches of the nomadic and semi-settled peoples (Kazakh, Kyrgyz, Turkmen, Altai, etc) of Kazakhstan, Central Asia and Siberia in XIX – early XX cc. That time the periphery of the gorge was actually embraced by a chain of settlements coming close to the territory of the ancient sacred area. The series of rather schematic and uniform rock drawings and also the so called “tamga” (kin signs) and inscriptions of the Arabic scripture appeared in the immediate vicinity of some large settlements.



The sacred centre of the gorge, that had got in this period its modern Kazakh name “Tanbaly”, still had that time some significance in the local inhabitants’ life. While a further weakening of the tradition to carve and repair the petroglyphs is clearly seen, the small altars appeared near the rocks with the existing petroglyphs. The ancient burial grounds have not been used any more, and a new cemetery appeared right in the territory of the ancient sanctuary, at the foot of the Group IV rocks.

The considerable reduction of the sacred area and of a number of new drawings at the rocks of the Group I-V was, probably, caused by a loss of understanding of the function and semantics of the ancient petroglyphs, and, moreover, by a final loss of the social significance of rock art.

The 30-40s of the XX c. was a fracturing period in the modern history of Tamgaly. As a result of the forcible collectivization and the subsequent migration of the part of population from Semirechie, the area of Tamgaly became uninhabited. Only since 1956 the territory of the gorge had been occupied again as a part of the lands of the “Roslavl’sky” Soviet farm. The demographic situation had changed when new people came from Russia and Ukraine, and later some Kazakh people migrated here from China. These major migrations caused the assimilation of the few local people who in some sense were the holders of the old tradition of respect to Tamgaly.



The traditional functional topography of Tamgaly has been totally destroyed. The newly constructed country track stretched through the gorge, and heavy vehicles driven near the rocks with petroglyphs until 2001. It caused the enforced disintegration of the rocks, but also a number of modern graffiti appeared on the rock surfaces of the Groups IV-V, and some new structures have been built on the top of the burial grounds of Tamgaly V –VI. Some stones with petroglyphs have been used for the building construction.

Same time, the respect to Tamgaly as a sacred place of the ancestors’ burials still survives among the local Moslem population. In spring and autumn, the traditional festivals with the horse race (kokpar) take place here, and the pilgrims still pray and perform rites in the gorge and leave the strips of textile fabric on the branches of prickled shrubs (*shenghel*) near the rocks of the Group IV. The local Kazakh population have preserved some “protective” legends telling that a chastisement from heaven must reach anyone who defiled this sacred place. Although, these rites and respect to Tamgaly as a sacred place have no relation to petroglyphs, and the very fact of their existence was a discovery for local people who learned of them from scientists, educators and media.

c. Form and date of most recent records of property

The most recent published scientific accounts of the site were by A.Rogozhinsky in 2001 and 2002. The detailed reports on the recent survey and emergency works of 2001-2002 by the State Institute for Scientific Research and Planning on Monuments of Material Culture (NIPI PMK) are kept in the Institute’s Cultural Heritage Archive along with the other

relevant documentation and reports on the past conservation works, surveys and studies carried out since the late 1950's.

d. Present state of conservation

The most important but also most vulnerable part of the site are the rocks with petroglyphs. The bedrock of Tamgaly is sandstone. It is characterized by a system of narrow cracks and wider crevices running in all directions, crossing the entire rock surface and penetrating deep into the parent rock. Water circulation within the cracks results in a growth of plants and lichens, speeding up the weathering process and causing cracks to widen so that small and larger blocks of rocks loosen and fall out. A particularly damaging situation can be observed in Group IV, where a whole section of rock with a highly significant scene of the "sun-head" images (surface 118) is separated from the rock massif and seriously damaged by structural cracks.

The stratification of the bedrock is parallel to the surface. It makes the surface extremely vulnerable to exfoliation, especially in the places where cracks cross each other. There are many examples where large sections of 2-3 cm in thickness have exfoliated from the parent material. Some panels, where the rock surface seems to be undamaged, have crevices between the surface layers and the solid rock underneath. Any external pressure on such a surface can cause its crumbling.

The first major conservation works have been started in 1990 on the rocks of the Group II, targeting to reduce the damage caused by water running from the slope and penetrating into the cracks of the fragile sandstone. The wide cracks were cleaned up and filled with the crushed stone and then closed with a thin layer of mixture made of crushed stone with the organo-silane. The water distribution scheme was carefully designed and implemented, in order to prevent its penetration into the rocks with petroglyphs. Also some loose stones have been glued back to the parent rock. Unfortunately, all the works have been stopped by a lack of finance.

During the period from 1991 to 2001 when the site was actually neglected some of the fragile surfaces were damaged by the visitors who climbed the rocks. Another important damage by people was graffiti. During the above-mentioned period many inscriptions appeared on the rock surfaces, especially in the Groups IV-V in the parts easily accessible for visitors.

To protect Tamgaly and to prevent it from further deterioration, the State Institute for Scientific Research and Planning on Monuments of Material Culture (NIPI PMK) have prepared a project proposal for safeguarding, management and conservation of the site and forwarded it to UNESCO. To try the funding possibilities for the Project, UNESCO Division of Cultural Heritage approached the Directorate for Cultural Heritage of Norway. The first mission of the Norwegian experts took place in April 2000 and resulted in the designing of the revised project proposal, followed by the decision of the Norwegian Ministry of Foreign Affairs to award a grant of 101990 USD to UNESCO for the implementation of the UNESCO/Norwegian Trust Fund Project for the Management, Conservation and Presentation of the Tamgaly Petroglyph Site (see Appendix IV). The Project didn't start yet, but the emergency works in Tamgaly started in 2001 by the State Institute for Scientific Research and Planning on Monuments of Material Culture (NIPI PMK) due to a special grant of the UNESCO Almaty and continued in 2002. Presently the site is well-protected due

to the establishment of guard and guide and to the construction of protection barrier, preventing the rock canyon from the entry of vehicles. The damage to the rocks by visitors is considerably reduced due to the construction of visitor paths along the main routes and to the improvement of the guard and guide service. New graffiti doesn't appear on the rocks any more since June 2001 when a permanent guard has been established. Nevertheless, the rocks with petroglyphs are still a subject to the deterioration by weathering.

e. Policies and programmes related to the presentation and promotion of the property

Presently the site and its buffer zone are managed by the by the State Institute for Scientific Research and Planning on Monuments of Material Culture (NIPI PMK), which is subordinate to the Committee of Culture.

The establishment of the permanent guide and guard and the emergency works implemented by NIPI PMK have contributed in the promotion of the site and in the building of public awareness of the cultural heritage protection and conservation. Also, it fostered the establishment of the site's legal protection and the process of creation of the State Cultural Reserve-Museum of Tamgaly.

The present monitoring of the site by the experts of NIPI PMK, with the participation of local people from the Karabastau village, has also an additional important aim of a social character – an interaction with the local community, targeted on the raising of their awareness and understanding of the site's cultural significance, but also on the clearing up their relations and opinions concerning the on-going process of changes to the site, their social needs, etc. It is understood that the most effective way to raise the local awareness is to talk with the most respected local people of the oldest generation and also with the young people, and to support it by the distribution of booklets and other educational materials on Tamgaly and on the history of Kazakhstan, free of charge and written Kazakh.

The first visitor map and the tourist guidebook have been prepared by NIPI PMK and published, due to a sponsorship from the UNESCO Almaty, in the beginning of 2001, in three languages - Kazakh, Russian and English (see Appendix VI).

4. Management

a. Ownership

The Archaeological Landscape of Tamgaly is in the ownership of State. It is covered by the provisions of 1992 Law on the Protection and Use of Historical and Cultural Heritage. According to the Article 11 of the Law, the rights of owner on behalf of the State are exercised by the Committee of Culture, an agency of the Ministry of Culture, Information and Public Consent. The Committee of Culture plays a part of a State Agency for Protection and Use of Historical and Cultural Heritage.

b. Legal status

The Archaeological Landscape of Tamgaly is a Property of National Significance. It is inscribed on the Kazakh List of Monuments of History and Culture of National Significance by the Governmental Decision No 1282 of 05 October 2001 (see Appendix III) as the archaeological site under the name *The Complex of Tamgaly*.

c. Protective measures and means of implementing them

The proposal for the establishment of the site's Protection Zone has been prepared in 2001 by the State Institute for Scientific Research and Planning on Monuments of Material Culture (NIPI PMK, Almaty) under the invitation of the Committee of Culture. Presently, after the approval by the Committee of Culture in 2002, this proposal is under consideration by the Government of Almaty Oblast (former Alma-Ata Oblast). It is anticipated that in the nearest months the boundaries of the site and of the proposed Protection Buffer Zone will be legally established.

Having the highest national listing since 2001, the Archaeological Landscape of Tamgaly (named *Tamgaly Complex* in the Kazakh List of Monuments of National Significance), along with its natural setting within the boundaries of its Protection Buffer Zone, is supposed to become a territory of the future State Archaeological Reserve of Tamgaly. The Reserve-Museum is to be established in 2003. It will occupy the territory within the boundaries of the Protection Zone, corresponding to the boundaries of the Buffer Zone. Same as the other seven already existing State Historical and Cultural Reserves-Museums, it will come under the Committee of Culture.

As an exclusive measure, in order to provide as soon as possible the immediate physical protection and maintenance of the site and to prevent it from any inappropriate use of its territory, but also to train the personnel for the future State Archaeological Reserve of Tamgaly, in 2001 a special Temporary Management Agency has been created within the State Institute for Scientific Research and Planning on Monuments of Material Culture (NIPI PMK, Almaty), which also comes under the Committee of Culture. NIPI PMK with its Temporary Agency is charged with the responsibility of protection and management of the site and its Buffer Zone until the time when the planned State Archaeological Reserve of Tamgaly will be finally established.

d. Agency/agencies with management authority

- i. Committee of Culture, an agency of the Ministry of Culture, Information and Public Consent.
- ii. State Institute for Scientific Research and Planning on Monuments of Material Culture (NIPI PMK, Almaty) – presently, as a Temporary Management Agency, which comes under the Committee of Culture.
- iii. State Archaeological Reserve-Museum of Tamgaly – in the near future, as a Permanent Management Agency, which also will come under the Committee of Culture. The Office of the Reserve Museum will be located in one of the nearest to Tamgaly villages.

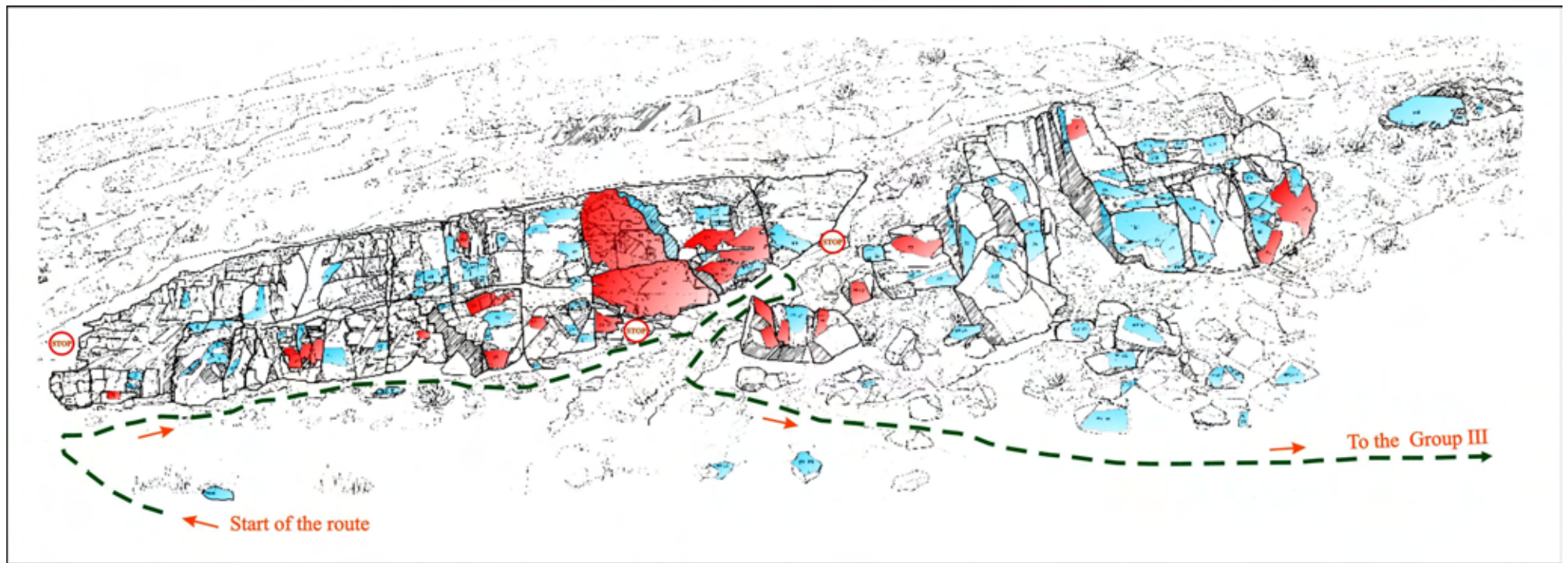






Fig. 3. Panorama of the Group II

LEGEND

- | | | | |
|---|--|---|----------------|
|  | Rock surfaces with petroglyphs |  | Stop up signs |
|  | Surfaces selected for showing the visitors |  | Rout direction |
|  | Visitors path | | |

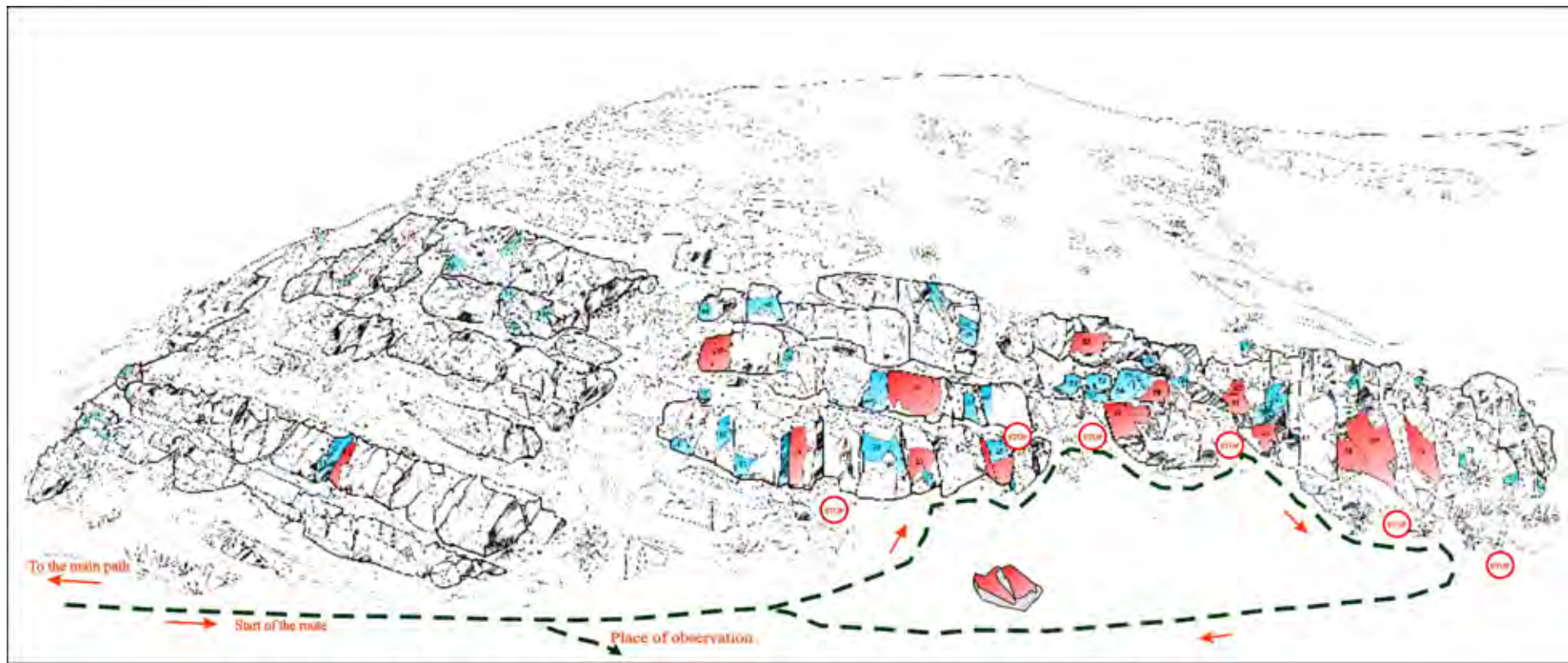


Fig. 4. Panorama of the Group III

LEGEND

- | | | | |
|---|--|---|-----------------|
|  | Rock surfaces with petroglyphs |  | Stop up signs |
|  | Surfaces selected for showing the visitors |  | Route direction |
|  | Visitor path | | |

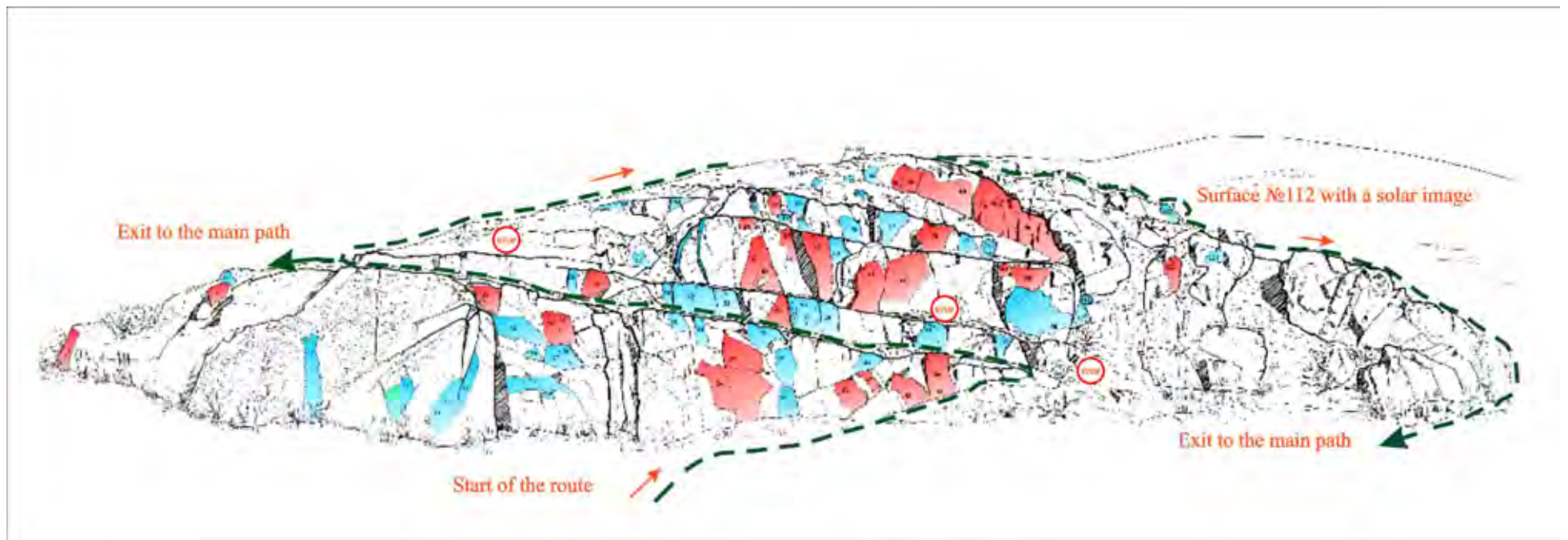


Fig. 5. Panorama of the Group V

LEGEND

- | | | | |
|---|--|---|-----------------|
|  | Rock surfaces with petroglyphs |  | Stop up signs |
|  | Surfaces selected for showing the visitors |  | Route direction |
|  | Visitor path | | |

e. Level at which management is exercised (e.g., on property, regionally) and name and address of responsible person for contact purposes

At national level: The responsible person is E.A.Amanshaev, Chairman of the Committee of Culture, the agency of the Ministry of Culture, Information and Public Consent.

Address: 2 Manas Str., 473000 Astana, Kazakhstan.
Tel.: (7 3172) 374135, 306318; Fax: (7 3172) 371123
e-mail: comcult@ok.kz

At on-property level: Presently, the responsible person is Alexey Rogozhinsky, Head of the Temporary Management Agency of the State Institute for Scientific Research and Planning on Monuments of Material Culture (NIPI PMK).

Address: 21 Tole bi Str., 480100 Almaty, Kazakhstan
Tel.: (7 3272) 914386; Fax: (7 3272) 917931
e-mail: nipi_pmk@nursat.kz

f. Agreed plans related to property (e.g., regional, local plan, conservation plan, tourism development plan)

To date, there are no agreed development plans for the area. The only plan indirectly related to the site is a tourism development plan of the Zhambyl district, mentioning Tamgaly as one of the local objects of tourism.

The start of the UNESCO/Norwegian Trust Fund Project for the Management, Conservation and Presentation of the Tamgaly Petroglyph Site (see Appendices IV-V), already agreed between UNESCO and the Norwegian Government, is expected in spring 2003, after the signing of the Plan of Operations between UNESCO and Kazakhstan.

g. Sources and levels of finance

At national level: State budget allocations. In 2002 The Committee of Culture has provided a financial support of a total amount of 3 mln. tenge (about 20000 USD) for some emergency works and first-need visitor facilities. In 2003 the Government has allocated 20 mln. tenge (about 130 000 USD) for the creation of the State Archaeological Reserve-Museum of Tamgaly, and also 2,5 mln. tenge for the maintenance of the site.

At on-property level: Entrance fees (to be introduced in 2003 with the creation of the State Archaeological Reserve of Tamgaly).

Other sources: In 2001 UNESCO Almaty has granted to NIPI PMK 9000 USD for the implementation of emergency measures on the site plus 2400 USD for the preparing and publishing of the visitor map and the guidebook.

In the end of 2001 the Government of Norway has awarded to UNESCO a grant of 101990 USD for the implementation of the UNESCO/Norwegian Trust Fund Project for the Management, Conservation and Presentation of the Tamgaly Petroglyph Site (see Appendices IV-V). The start of the Project planned for 2002 has been postponed until 2003.

In 2002 the Directorate of Cultural Heritage (Norway) has additionally granted 2700 USD for the preparatory works before the start of the Project.

h. Sources of expertise and training in conservation and management techniques

The main source of expertise in Kazakhstan in the field of conservation and management of cultural heritage is the State Institute for Scientific Research and Planning on Monuments of Material Culture (NIPI PMK), presently responsible for the management, maintenance and monitoring of the site and for the training of personnel for the future State Archaeological Reserve-Museum of Tamgaly, through the involvement of local young people in the above-mentioned activities. The further training is planned within a framework of the UNESCO/Norwegian Trust Fund Project for the Management, Conservation and Presentation of the Tamgaly Petroglyph Site, with the duration of 2.5 years from 2003 to 2005. The Kazakh State Central Museum will provide a special training for guides.

i. Visitor facilities and statistics

There are no hotels in the local villages yet, and the recently provided visitor paths and first-need temporary facilities, made as a part of emergency works implemented in 2001-2002, are not sufficient and require further development. The working plan and the budget of the UNESCO/Norwegian Trust Fund Project for the Management, Conservation and Presentation of the Tamgaly Petroglyph Site, as well as the proposed budget of the Kazakh contribution in kind in the implementation of the Project, foresee the most necessary facilities (e.g. parking lots, shadow shelters, *yrta* camp, etc.). The creation of the State Archaeological Reserve-Museum of Tamgaly in 2003 will give the additional possibilities for the improvement of visitor services and facilities.

The systematic monitoring of visitations has started in Tamgaly on 23 June 2001, when first time a daily guard of the site has been established as a part of the emergency protection measures. The programme of visitor monitoring, developed by experts of the State Institute for Scientific Research and Planning on Monuments of Material Culture (NIPI PMK), is being implemented on site mainly by the guards-custodians from the local village of Karabastau, engaged in the Temporary Management Agency of NIPI PMK.

The present visitor monitoring programme is targeted on the gathering of data necessary for the short- and long-term planning for tourism in Tamgaly.

The objectives of monitoring are:

1. The collection of data on the tourist use of the site (number, age and social status of visitors, aims and organization forms of visits);
2. The detection of sources of information (where from the visitors learned about the site and its value);
3. The survey of the visitor needs and requirements concerning the on-site services and facilities.

The following monitoring methods are applied:

1. The regular recording of visitations in the special log-books (by the guardians-custodians);
2. The query (through questionnaires) of visitors, guides, and some of the managers of the Almaty tourist firms and agencies;

Fig. 6. Number and percentage of Kazakh and foreign visitors to the site from June 2001 to December 2002



3. The photographic recording of excursions and marking the actual pattern of visitor moving on the existing maps of visitor routes and paths (periodically, by the experts of NIPI PMK).

The collected data are stored, systematized and processed in NIPI PMK for the present decision-making, for further analysis and for the future site management database that is supposed to be created in 2003, according to the working plan of the UNESCO/Norwegian Trust Fund Project for the Management, Conservation and Presentation of the Tamgaly Petroglyph Site.

The diagram at the Fig.5 shows some data of the visitor statistics.

j. Property management plan and statement of objectives (copy to be annexed)

The development of the Management Plan is foreseen within the framework of the UNESCO/Norwegian Trust Fund Project for the Management, Conservation and Presentation of the Tamgaly Petroglyph Site (see Appendix IV) that must start in 2003. Nevertheless, the works on the preparing of the plan and on the creation of the Management Database have been started by the Project team, following the guidelines given by the Norwegian Project Adviser Ms. A.-S..Hygen, who has drafted a structure of the Management Master Plan and three Management Sub-Plans. Presently the work is in the process, but it can be completed only after the Project starts.

k. Staffing levels (professional, technical, maintenance)

The present staff of the Temporary Management Agency of NIPI PMK consists of the manager, the inspector for monitoring, four daily horse guardians, two night guardians, three workers for maintenance and one driver. The manager and the inspector for monitoring are experts from NIPI PMK, Almaty, the others are locals from the Karabastau village.

The multidisciplinary Project Expert Team consists in total of 12 both international and national experts of different professions, including archaeologists, conservationists, botanists and geologist.

The staff of the future State Archaeological Reserve-Museum of Tamgaly will consist of about 25 persons.

5. **Factors affecting the property**

a. Development pressures (e.g., encroachment, adaptation, agriculture, mining)

Some parts of the Buffer zone are presently rented by local farmers and used as pastures. That doesn't cause any damage to the site, but nevertheless after the official establishment of the State Archaeological Reserve of Tamgaly, these lands will be included in its territory and any private use of them will be excluded.

b. Environmental pressures (e.g., pollution, climate change)

Rain and thawed water, coming from the slopes, seeps through deep cracks of the sandstone rocks. Freezing processes within cracks cause exfoliation's to develop cracks to widen and bits of rocks to fall out. Vegetation and lichens grow in the wet cracks causing not only

mechanical but also chemical damage. Major changes in daily temperatures, typical for this area with its inland climate, represent one of the most serious causes of rocks deterioration. High water table and soil salinity affect the archaeological sites in the lower parts of the relief.

c. Natural disasters and preparedness (earthquakes, floods, fires, etc.)

The Almaty region lies in an earthquake zone and there is still a neo-tectonic activity in the area. The Chu-Ili mountains are considered to be an area of a low seismic activity, but it is enough to represent a threat to the fragile sandstone rocks of Tamgaly. Ground movements can cause cracks to develop further and cracked rocks to fall out.



d. Visitor/tourism pressures

During the period of ten years from 1991 to 2001, there were no possibilities or resources available for the control and limitation of visits to the site. Cars and even tourist buses drove to the canyon and parked there. Visitors climbed the unstable rocks to see the petroglyphs, causing loose stones and gravel to be dislocated and to fall out. Graffiti became a big problem, and also some separate stones with petroglyphs have been stolen. To prevent the site from the further damage, the emergency protection measures have started in 2001, with a financial support from UNESCO Almaty, and then continued in 2002, due to the contribution from the Committee of Culture. The construction of a stone barrier against vehicles entering the canyon and the establishment of the permanent horse guard, along with the creation of the first-need temporary visitor paths and facilities, have finally stopped the visitor pressures and damage to the site.

Presently a number of visitors grow slowly, but Tamgaly has a potential to become in the near future an important destination of tourism, and the canyon with petroglyphs is the main attraction. The appropriate preventive measures are to be undertaken, in order to prevent the parts with the low carrying capacity within the canyon from the possible encroachment and damage.



- e. Number of inhabitants within property, buffer zone

The territory of the Archaeological landscape of Tamgaly and the Buffer Zone are uninhabited.

- f. Other

6. Monitoring

- a. Key indicators for measuring state of conservation

To date, only the following few indicators are proposed for the conservation monitoring of rocks with petroglyphs and the degree of environmental pressures of them:

- Daily air temperature in summer (morning, afternoon);
- Temperature of the exposed rock surfaces;
- Temperature under the stone surfaces on a depths of 5 and 10 cm;
- Daily air humidity;
- Precipitation rate;
- Chemical contents of atmospheric precipitation;
- Micro-flora – evidence, % of the covered surface;
- Macro-flora - evidence, height, % of the covered surface;
- Soil: PH rate;
- Soil: water-soluble salts contents;
- Width of cracks, cm (on the selected parts, 2 times a year);
- Water distribution on the rock slopes (in spring);
- Evidence of under-surface cavities (special “hollow” sound);
- Photographic record for comparative analysis

b. Administrative arrangements for monitoring property

The site is monitored by the National conservation experts from NIPI PMK (Almaty), with the participation of the guardians-custodians – the local young people from the Karabastau village accepted in the staff of the Tamgaly Temporary Management Agency of NIPI PMK and trained by its experts.

c. Results of previous reporting exercises

Unlike the visitor monitoring, the monitoring of the site's state of conservation has just started and haven't been reported yet. Presently the comparative analysis of the old photographs (archival documentation of 1950s and 1990s) with the present state of the rocks with petroglyphs is in the process, aiming to define the changes took place during the last 50 years.

7. Documentation

a. Photographs, slides and, where available, film/video

The photographic documentation attached in the Appendix II includes 25 slides and 72 photographs. All slides and most of the color photographs, including the aerial views, have been done during the photo-expeditions of September-October 2002 by Mr. Renato Sala (Italy) following the contract agreement and the lines discussed together with the national experts from the State Institute for Scientific Research and Planning on Monuments of Material Culture (NIPI PMK) responsible for the preparing of the present nomination dossier. The photograph No 12 is by Mr. Alexey Rogozhinsky (Kazakhstan), and the photograph No 30 is by Mr. Vladimir Sarayev (Kazakhstan). The slides and photographs are provided in Appendix II.

b. Copies of property management plans and extracts of other plans relevant to the property

See separate document.

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8. Signature on behalf of the State Party



Erkebolat TOKMAGAMBETOV

Chief Expert,
Responsible Representative in Almaty,
Committee of Culture,
Ministry of Culture,
Information and Public Consent
of the Republic of Kazakhstan

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Almaty, Kazakhstan

Place

23 January 2003

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Director

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RESEARCH AND PLANNING ON
MONUMENTS OF MATERIAL
CULTURE (NIPI PMK)

Appendices

APPENDIX I Maps

APPENDIX II Photographic Documentation

APPENDIX III Legal Texts

APPENDIX IV UNESCO/Norwegian Trust fund for the Management, Conservation and Presentation of the Tamgaly Petroglyph Site, the Republic of Kazakhstan (Project Document, drafted by A.-S.Hygen & G.Mandt, The Directorate for Cultural Heritage, Oslo, Norway)

APPENDIX V RIKSANTIKVAREN. Directorate for Cultural Heritage, Oslo, Norway. The Tamgaly petroglyph site. Almaty Oblast, Republic of Kazakhstan. Report: Second mission to Almaty and Tamgaly Gorge, June-July 2002. Written by: Anne-Sophie Hygen, the Directorate for Cultural Heritage, Oslo
Torbjorg Bjelland, University of Bergen, Bergen
Kjartan Gran, Tromso

APPENDIX VI Visitor map and guidebook of Tamgaly (published in Almaty, Kazakhstan, 2001)

APPENDIX I






Maps

1. Map 1. Republic of Kazakhstan;
2. Map 2. Main Petroglyph sites of Kazakhstan and Neighbour States of Central Asia;
3. Map 3. The Archaeological Landscape of Tamgaly and the Buffer Zone;
4. Map 4. The Archaeological Landscape of Tamgaly;
5. Map 5. Sites pattern within the Archaeological Landscape of Tamgaly in 4 historical periods;
6. Map 6. The Archaeological Landscape of Tamgaly and its Environment. Neo-Tectonics;
7. Map 7. The Archaeological Landscape of Tamgaly and its Environment. Geomorphology;
8. Map 8. The Archaeological Landscape of Tamgaly and its Environment. Land Ownership;
9. Map 9. The Core Area of the Archaeological Landscape of Tamgaly. Visitor paths and facilities.

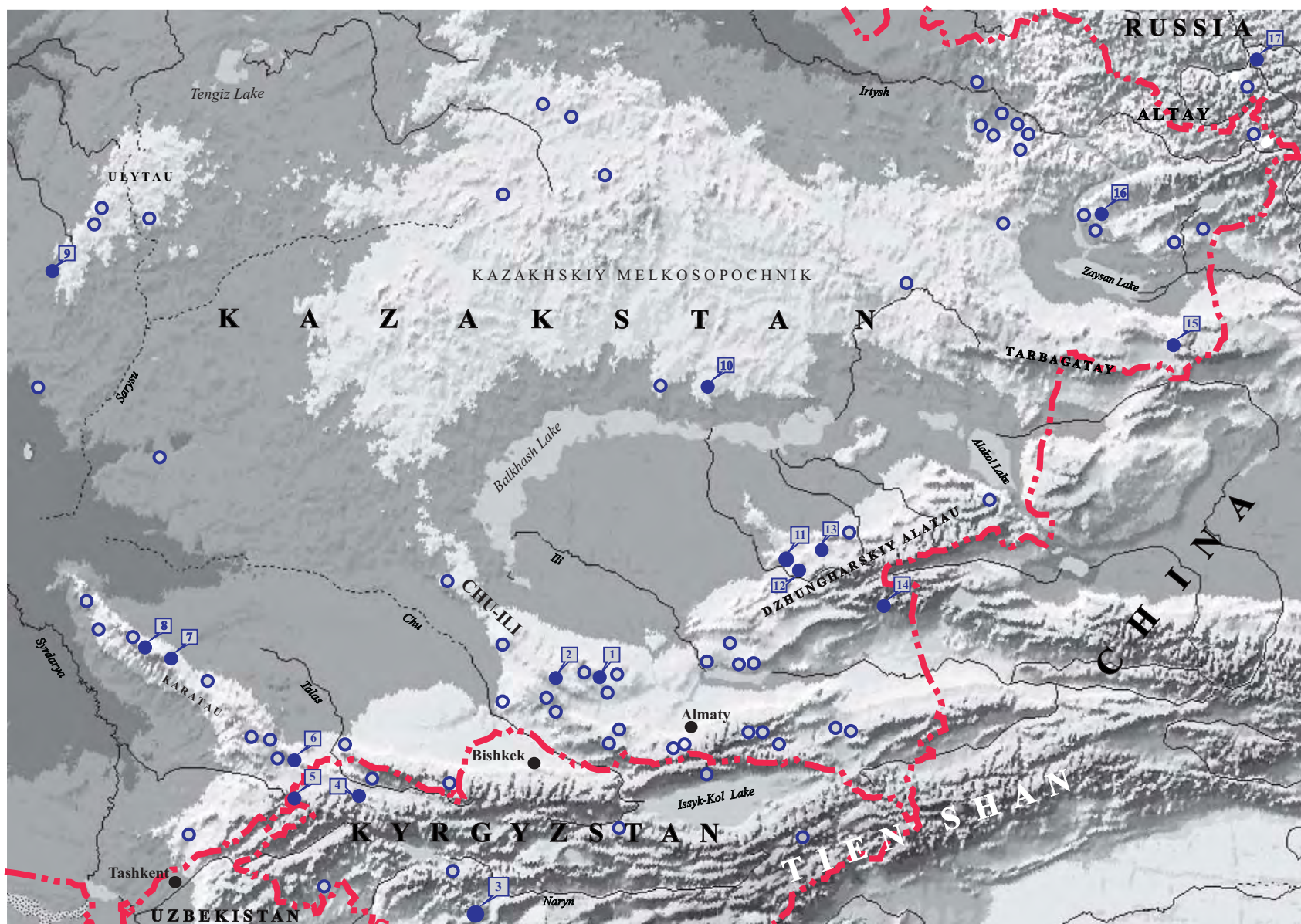
MAP 1. Republic of Kazakhstan



LEGEND

-  Almaty Oblast
-  Other oblasts (regions)
- Boundaries of the oblasts (regions)
-  ASTANA Major cities
-  Aktobe Capitals of oblasts (regions)
-  Location of the Archaeological Landscape of Tamgaly

MAP 2. MAIN PETROGLYPH SITES OF KAZAKSTAN AND NEIGHBOUR STATES OF CENTRAL ASIA



LEGEND

PETROGLYPH SITES

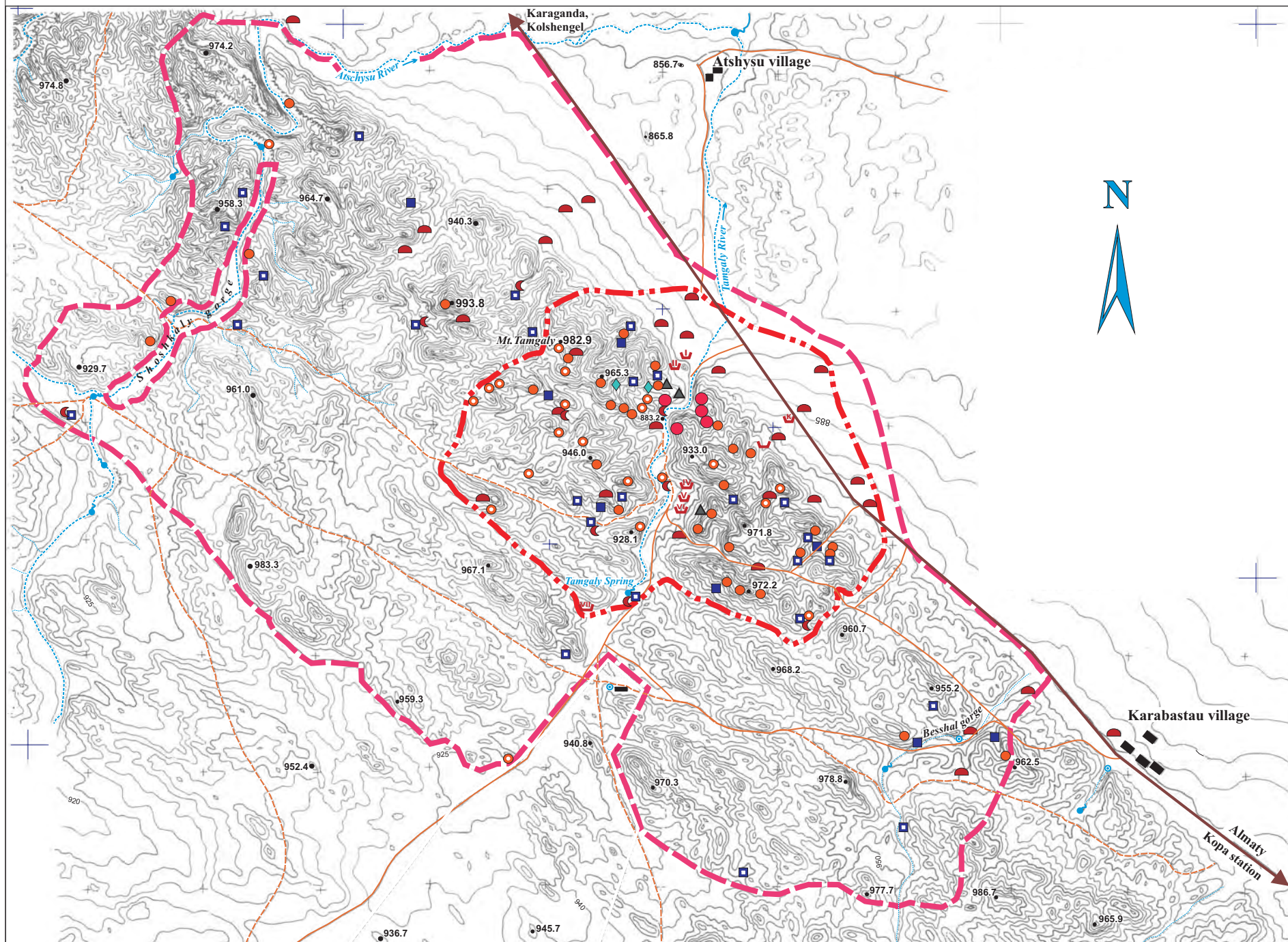
- From 100 to 1000 petroglyphs
- More than 1000 petroglyphs

1. Tamgaly
2. Kuldzhabasy
3. Saymaly-Tash
4. Zhaltyrak-Tash (Ur-Maral)
5. Aksu-Zhabagly
6. Maymak (Ters)
7. Arpauzen
8. Koybagar
9. Baykonur
10. Sayak
11. Eshkiolmes
12. Terektly
13. Bayan-Zhurek, Kapal
14. Usek
15. Okey
16. Moynak
17. Kalbak-Tash


















Scale 1:6500000



MAP 3. THE ARCHAEOLOGICAL LANDSCAPE OF TAMGALY AND THE BUFFER ZONE



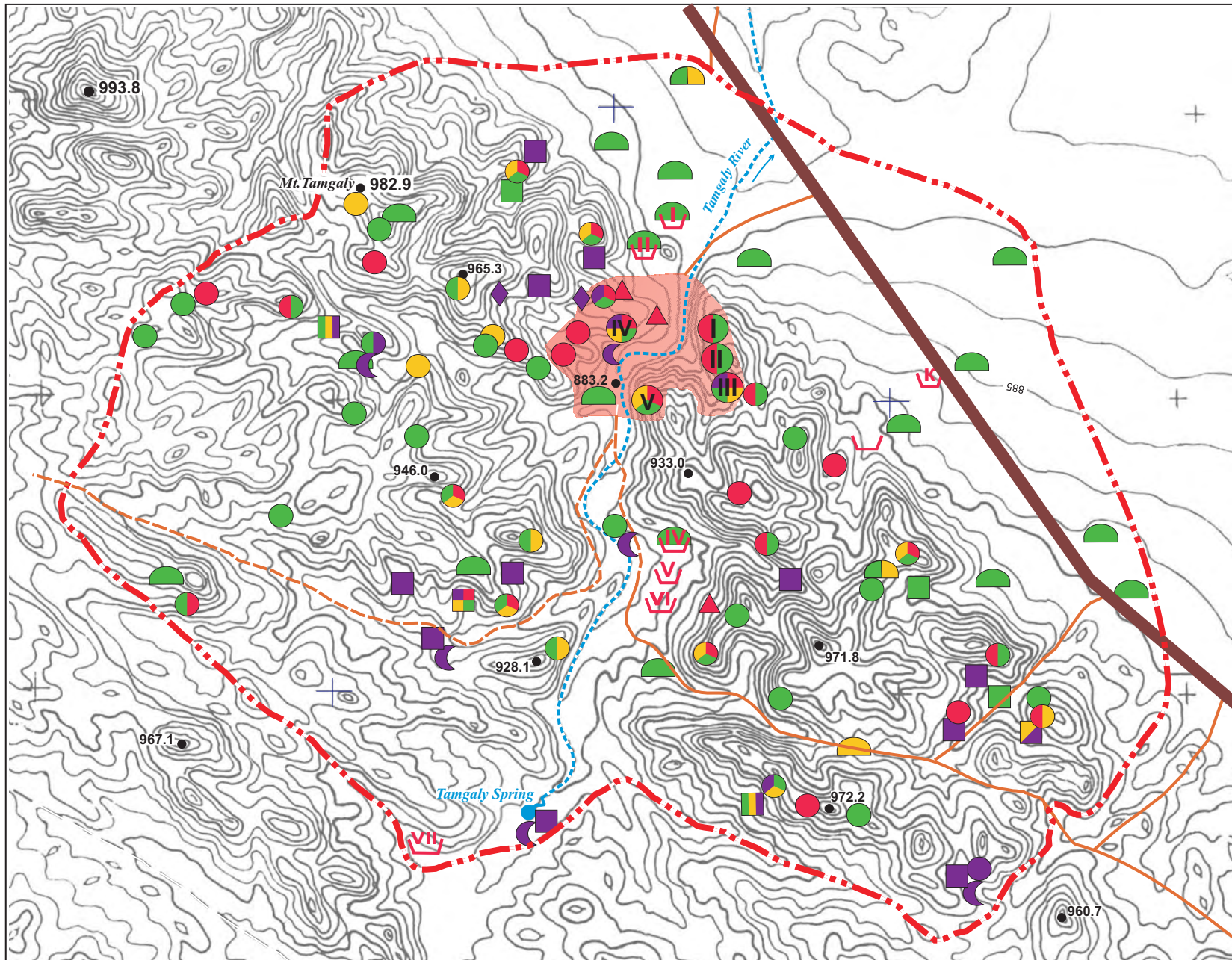
LEGEND

-  Boundary of the Buffer Zone
-  Boundary of the Archaeological Complex of Tamgaly
-  Main petroglyph sites of the Groups I-V
-  Other petroglyph sites with more than 50 petroglyphs each
-  Other petroglyph sites with less than 50 petroglyphs each
-  Ancient settlements
-  Abodes of the XIX - early XX c.
-  Burial grounds of the Bronze Age
-  Karakuduk burial ground
-  Tamgaly I-VII burial grounds
-  Burial mounds (kurgans)
-  Moslem graves of the XIX - early XX c.
-  Ancient quarries
-  Altars of the XIX - early XX c.
-  Auto-road
-  Dirt roads
-  Local dirt roads

Scale 1:35000



MAP 4. THE ARCHAEOLOGICAL LANDSCAPE OF TAMGALY



LEGEND

Boundary of the Archaeological Complex of Tamgaly

Auto-road

Dirt roads

Local dirt roads

Archaeological sites

Main petroglyph sites of the Groups I-V

Other petroglyph sites

Ancient quarries

Settlements

Burial grounds of the Bronze Age

Burial mounds (kurgans)

Moslem graves

Altars

Sacred area

Historical periods

Bronze Age

Early Iron Age

Middle Ages

Modern Age

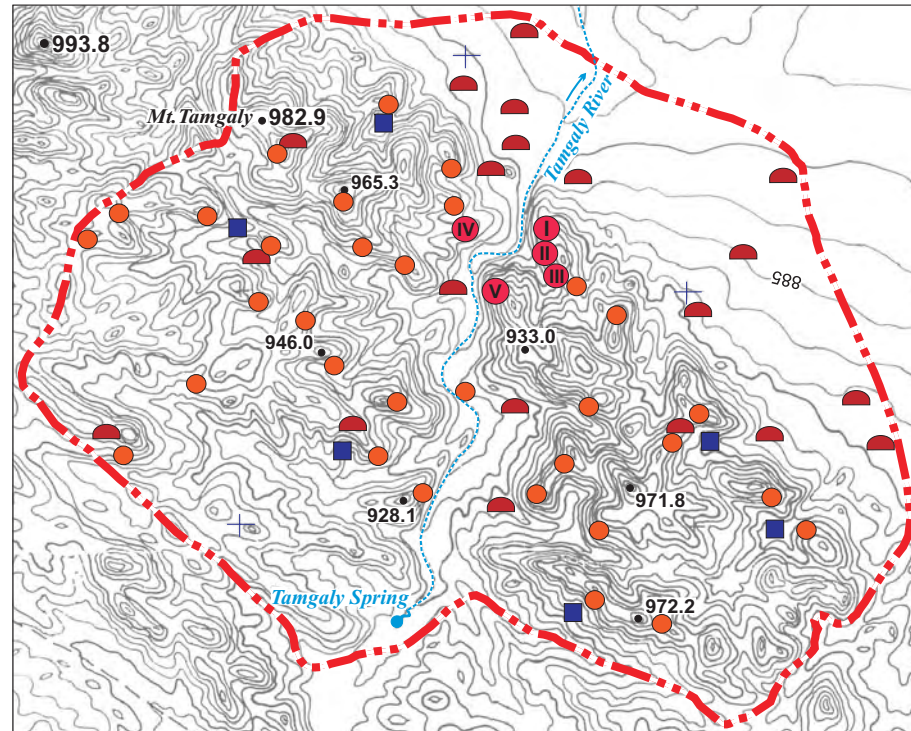
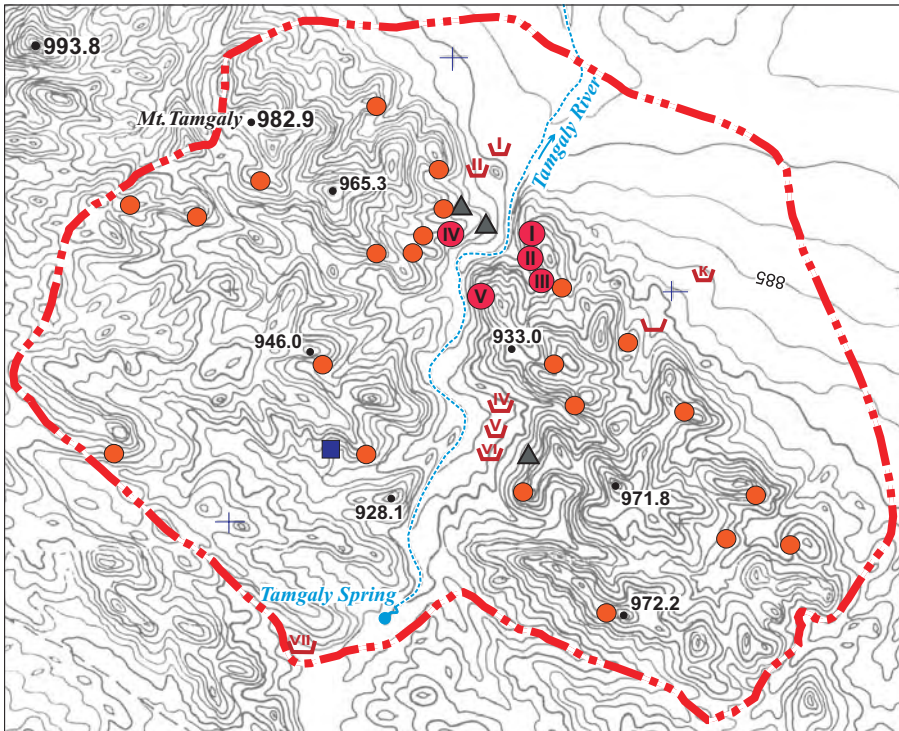
Scale 1:15000

0 100 200 300 400 500m

MAP 5. SITES PATTERN WITHIN ARCHAEOLOGICAL LANDSCAPE OF TAMGALY IN 4 HISTORICAL PERIODS

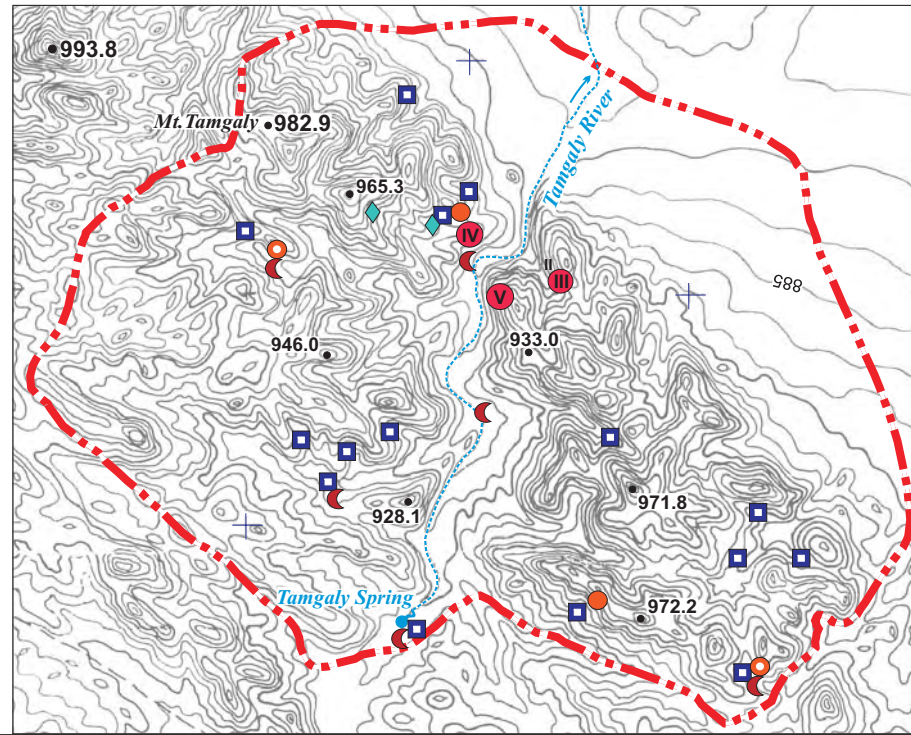
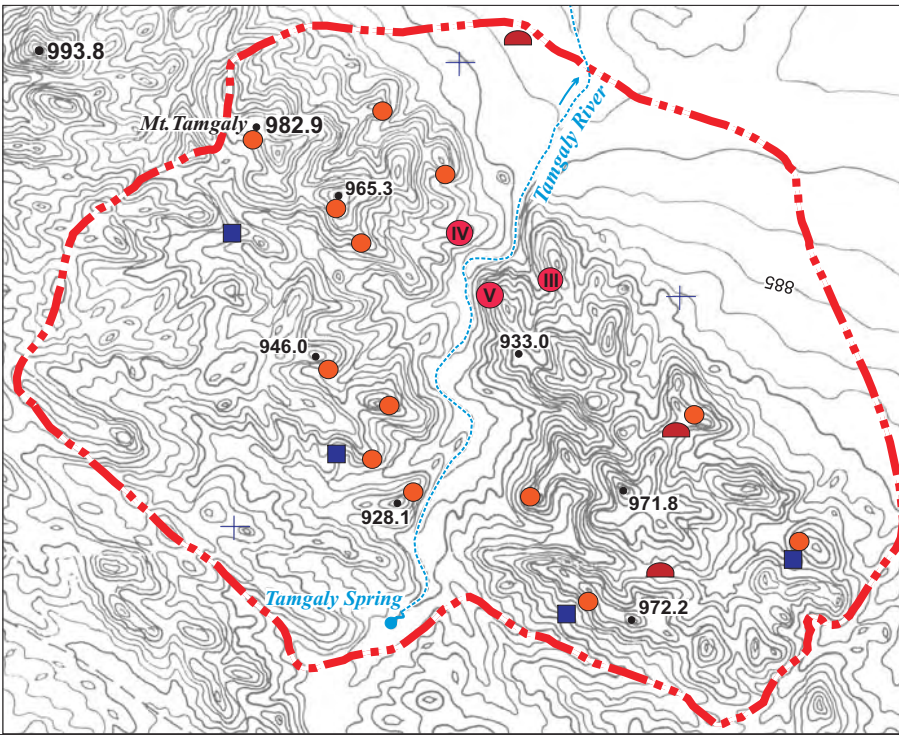
Bronze Age

Early Iron Age















Middle Ages

Modern Age



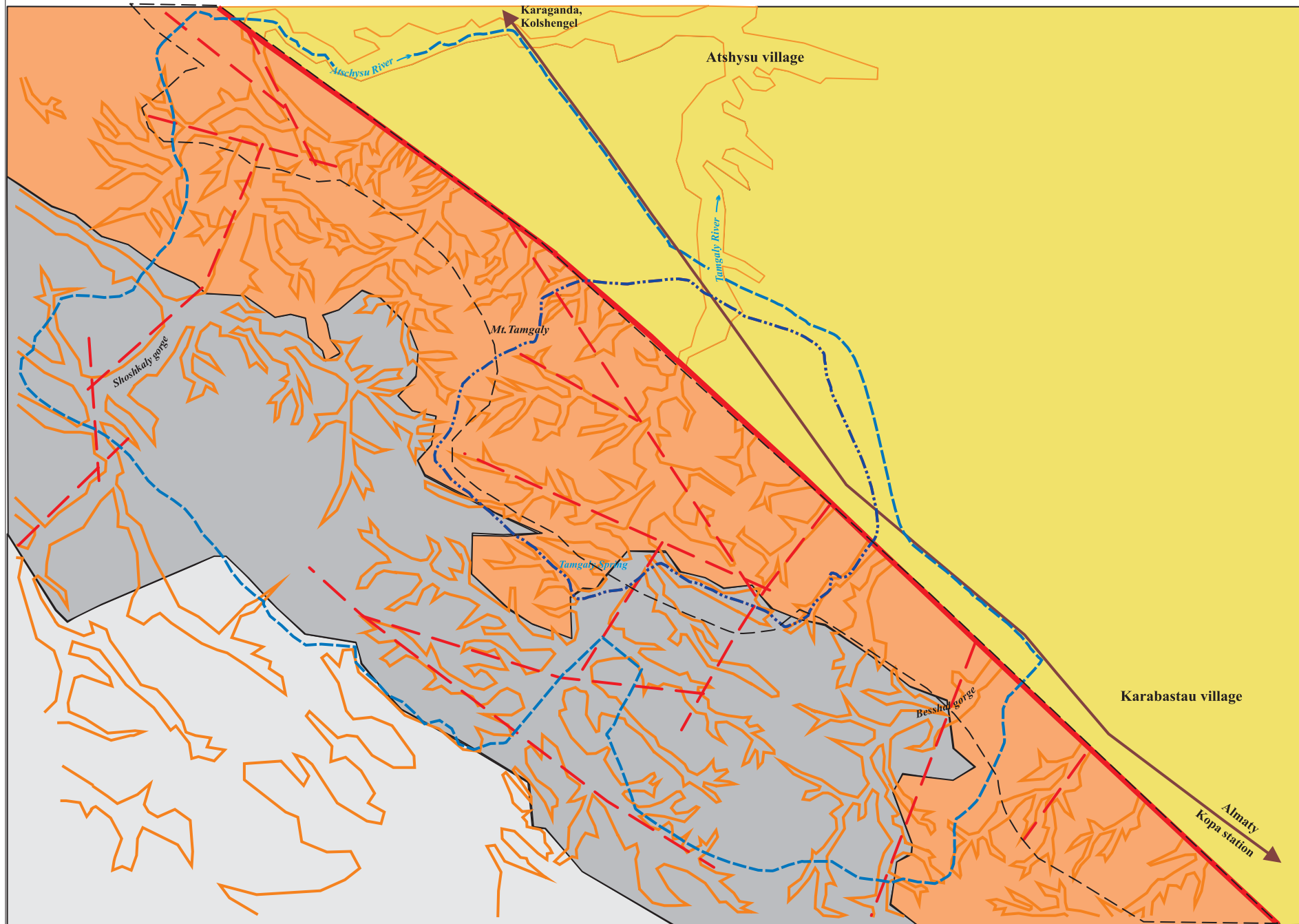
LEGEND

-  Boundary of the Archaeological Complex of Tamgaly
-  Main petroglyph sites of the Groups I-V
-  Other petroglyph sites
-  Ancient settlements
-  Abodes of the XIX - early XX c.
-  Burial grounds of the Bronze Age
-  Karakuduk burial ground
-  Tamgaly I-VII burial grounds
-  Burial mounds (kurgans)
-  Moslem graves of the XIX - early XX c.
-  Ancient quarries
-  Altars of the XIX - early XX c.










Scale 1:25000



**MAP 6. THE ARCHAEOLOGICAL LANDSCAPE OF TAMGALY AND ITS ENVIRONMENT.
NEO-TECTONICS.**



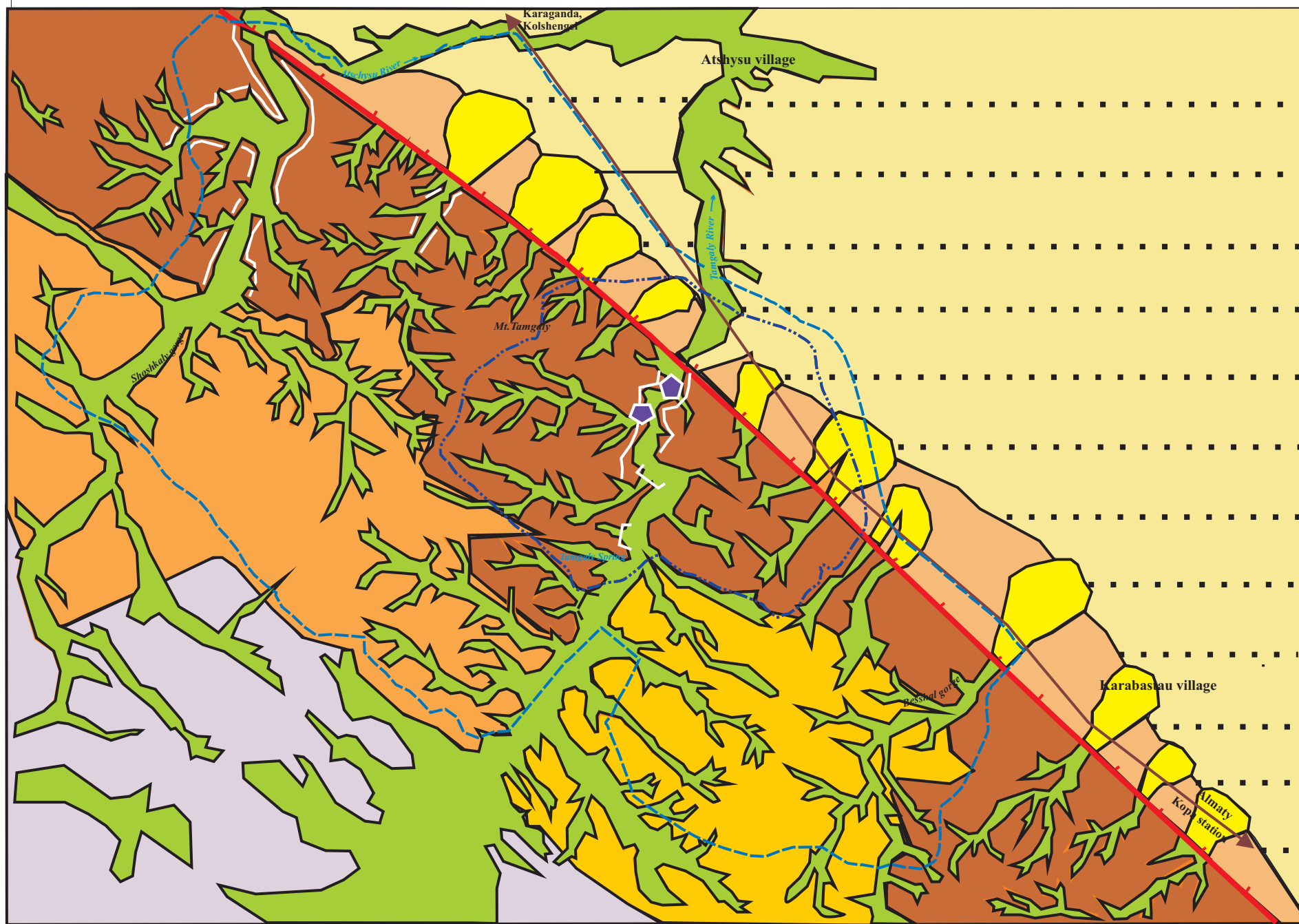
LEGEND

-  Boundary of the Buffer Zone
-  Boundary of the Archaeological Landscape
-  Large ancient break renewed at neo-tectonic stage
-  Large neo-tectonic breaks
-  Area of tectonic depression
-  Area of large amplitudes of neo-tectonic movements
-  Area of smaller amplitudes of neo-tectonic movements
-  Area of low neo-tectonic movements
-  Area of cleavage along the renewed and neo-tectonic breaks














Scale 1:35000



MAP 7. THE ARCHEOLOGICAL LANDSCAPE OF TAMGALY AND ITS ENVIRONMENT.
GEO-MORPHOLOGY.










LEGEND

-  Boundary of the Buffer Zone
- PLAINS**
-  Boundary of the Archaeological Landscape
-  Denudation plains on the folding Paleozoic and Prepalaeozoic
-  Accumulative alluvial-proluvial plain
- HILLS**
-  Denudation-tectonic, ridge-declivity, extremely dissected hills
-  Tectonic-denudation, ridge-declivity, dissected hills
-  Tectonic-denudation, ridge-declivity, dissected hills
- RELIEF**
-  Valley
-  Parts of ancient valleys with preserved "Upper Gobi" conglomerates
-  Hanging valley
-  Denuded tectonic terrace
-  Antecedent part of valley
-  Alluvial fan

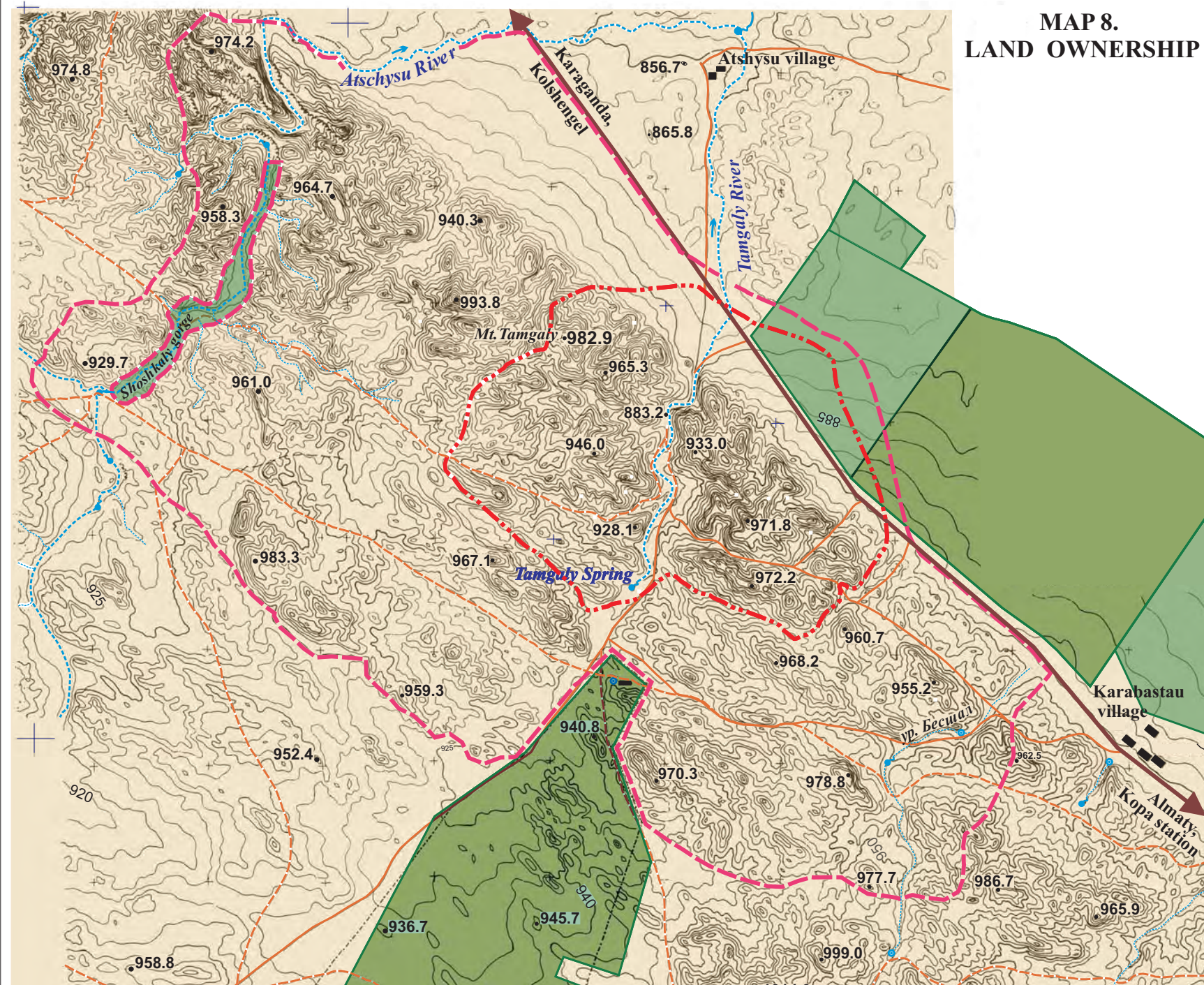
Scale 1:35000
0 200 400 600 800 1000 m

**MAP 8.
LAND OWNERSHIP**

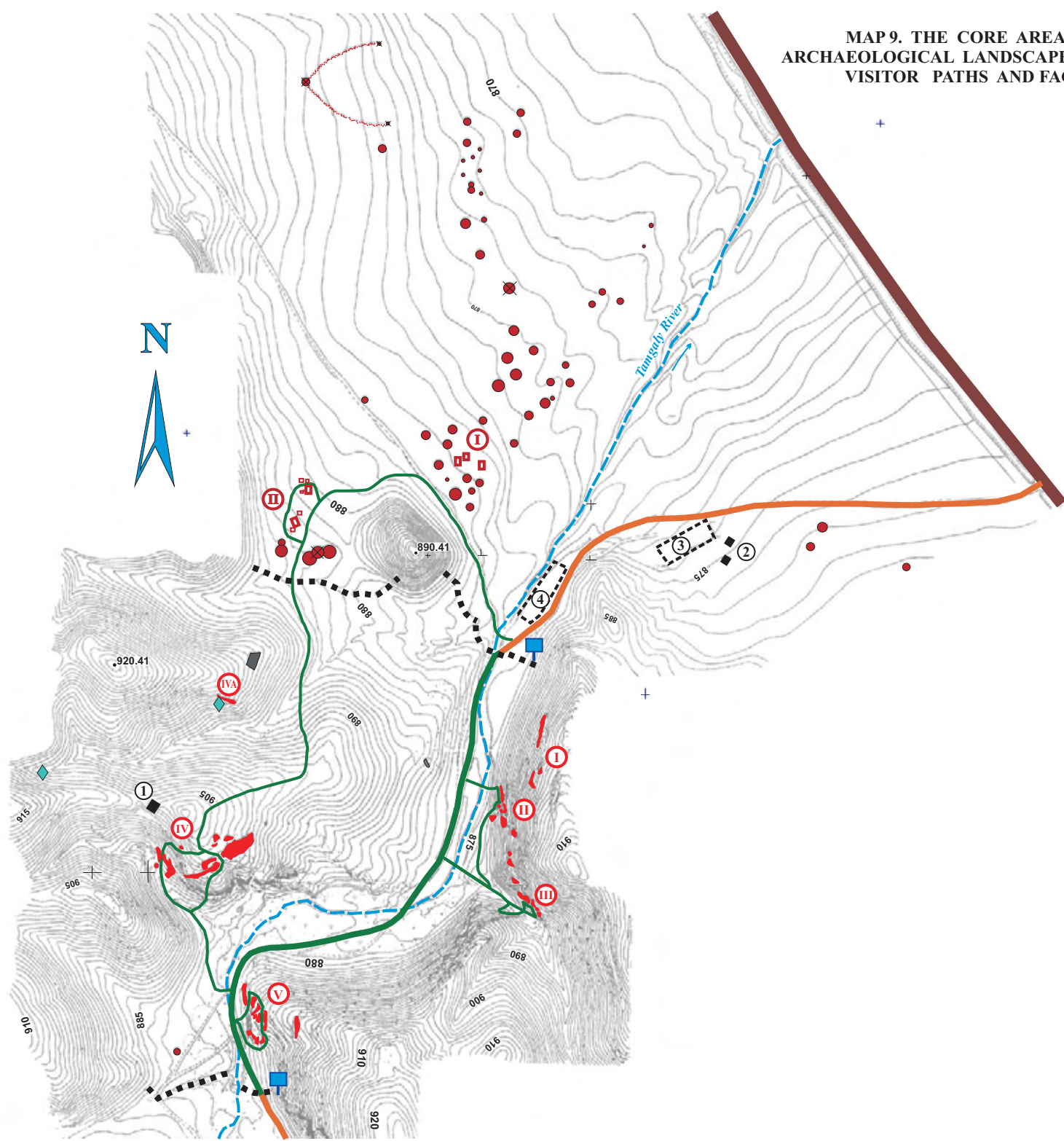
LEGEND

-  Boundary of the Buffer Zone
-  Boundary of the Archaeological Landscape of Tamgaly
-  State owned land
-  Private Farms
-  Auto-road
-  Dirt roads
-  Local dirt roads

Scale 1:50000



**MAP 9. THE CORE AREA OF THE
ARCHAEOLOGICAL LANDSCAPE OF TAMGALY.
VISITOR PATHS AND FACILITIES**



LEGEND

- Main petroglyph sites of the Groups I-V
- Burial grounds of the Bronze Age
- Burial mounds(kurgans)
- Excavated burial mounds
- Burial mound with stone ridges
- Numbers of the Bronze Age Burial grounds (Tamgaly I, Tamgaly II)
- Ancient quarries
- Altars
- Auto-road
- Dirt roads
- Main visitor path
- Visitor route path
- Protection against the entry of vehicles
- Temporary explanatory boards
- Temporary Guard post
- Toilets
- Parking lot for tourist buses
- Parking lot for cars

Scale 1:4000
50m 0 50m

APPENDIX II

Photographic Documentation

a) Slides

25 *Slides Originals* are framed and inserted in the “Tamgaly slides Case” of the 1st copy of the Nomination dossier.

25 + 25 *Slides Copies* (Slides Copies a, Slides Copies b) are framed and inserted respectively in “Tamgaly slides Box 2” and “Tamgaly slides Box 3” attached to the 2nd and 3rd copies of the Nomination dossier.

The list of titles and descriptions of slides photos given below specifies the place, the period and the subject. The optic is specified too: most of the 25 original slides are made with 50 mm lenses (without distortion); and some of them with wide-angle lenses.

They are named and described as follows:

01. Aeroview Tamgaly
02. Aeroview canyon
03. Landscape. Spring
04. Landscape. Autumn
05. Tombs - Bronze Age
06. G I - Bronze-zooanthrop
07. G II - General view
08. G III - central surface
09. G II - Bronze - animals
10. G II - Bronze - zooanthrop
11. G II - Bronze - deer
12. G II - Bronze - deer & footprint
13. G II - Bronze - erotic scene
14. G III - Central view
15. G III - Bronze - animals
16. G III - Bronze - pregnant cow
17. G III - Bronze - sunhead on bull
18. G IV - Bronze - view of “Pantheon”
19. G IV - “Pantheon” particular
20. G V - General view
21. G V - Bronze - animals & men
22. G V - Bronze - chariot
23. G V - Early Iron - deer
24. Periphery - Bronze & Turkic
25. Periphery - Turkic - elephant

b) Photographs

72 color photos are grouped, by subject or geographical location, in 6 sections; and named by progressive numbers from 1 to 72. Petroglyphs groups are ordered in the classic north-south way from Group I to Group V. For each group, petroglyphs representations are ordered by the way they are met when walking along the visiting itineraries recommended by the site manager. The list of titles and descriptions of color photos given below specifies the place and orientation of the shot and, when significant, also the season. In the case of the petroglyphs representations, it specifies also the historical period, the subject and the style. The optic used is specified too: most of the photos are made with 50 mm lenses (without distortion); and some of them with wide-angle lenses. All aerial photos have been shot the 19 September 2002, h 18.30 pm; or the 20 September 2002, h 10.00 am.

Color photos are named and described as follows:

1. Landscape and archaeological monuments (villages, tombs) / 13 photos (1-13)

- 01- Aerial view of the whole protected area (Monumental zone and Buffer zone) /19 September 2002, h 18.30 pm / view towards East / wide-angle
- 02- Aerial view of the western boundaries of the protected area (Shoskaly) / 19 September 2002, h 18.30 pm / view towards North-East / wide-angle
- 03- Aerial view of the Shoskaly stream / 20 September 2002, h 10.00 am / view towards South / wide-angle
- 04- View of the Shoskaly canyon / springtime / view towards North-West / wide-angle
- 05- Aerial view of the Monumental zone / 20 September 2002, h 10.00 am / view towards North / wide-angle
- 06- Aerial view of Tamgaly canyon (main petroglyphs center) / 20 September 2002, h 10.00 am / view towards North / 50 mm lens
- 07- View of Tamgaly canyon (main petroglyphs center) / early autumn / view towards North / 50 mm lens
- 08- Source of Tamgaly stream / springtime / view towards South / 50 mm lens
- 09- Valley with non-excavated village / Saka, Turkic and Kazakh periods / springtime / view towards South / 50 mm lens
- 10- Aerial view of valley Tamgaly I with excavated village / Bronze, Saka, Turkic and Kazakh periods / 20 September 2002, h 10.00 am / North on the left / 50 mm lens
- 11- Tamgaly I, Bronze age house / particular of the entrance corridor / North on the left / 50 mm lens
- 12- Tamgaly I, Bronze age house / particular of the central hearth / West on the left / 50 mm lens
- 13- Cemetery of Tamgaly II / autumn / tombs of Bronze age / view towards North-East / wide-angle

2. Petroglyphs of Group I and II / 18 photos (14-31)

- 14- Group I / petro Bronze age / 2 bulls and other animals / wide-angle
- 15- Group I / petro Bronze age / horse, dog, archer / 50 mm lens
- 16- Group II, general view / early autumn / view towards East / 50 mm lens
- 17- Group II, view of central part / wide-angle
- 18- Group II, view of central part, lower surfaces / Bronze age / animals / wide-angle
- 19- Group II / petro Bronze age / deer, archer, footprint / wide-angle
- 20- Group II / petro Bronze age / wolf / 50 mm lens
- 21- Group II / particular of central part lower surfaces / petro Bronze age / animals / 50 mm lens
- 22- Group II / petro Bronze age / deer, square symbol, horse / wide-angle
- 23- Group II / petro Bronze age / man with tale and club / 50 mm lens
- 24- Group II / petro Bronze age / 4 men with furs holding spiraled horns (?) / 50 mm lens
- 25- Group II / petro Bronze age / erotic scene / wide-angle
- 26- Group II / petro Bronze age / birthing woman and man / 50 mm lens
- 27- Group II / petro Bronze age / bull / 50 mm lens

- 28- Group II / petro Bronze age / 1 bulls and 2 horses, spectacles symbol / 50 mm lens
- 29- Group II / petro Early Iron age / goats in Saka style / sample of restoration works / wide angle
- 30- Group II / contemporary inscriptions / 50 mm lens
- 31- Group II / contemporary inscriptions after restoration works of 1993 / 50 mm lens

3. Petroglyphs of Group III / 11 photos (32-42)

- 32- Group III, general view / early autumn / view towards North / wide angle
- 33- Group III / petro Bronze age / horse, dog / 50 mm lens
- 34- Group III, view of central part / view towards North / wide angle
- 35- Group III / petro Bronze age / bulls, horned horse, animals, humans / wide angle
- 36- Group III / petro Bronze age / horned horse with rider and anthropomorphic figures / 50 mm lens
- 37- Group III / petro Bronze age / pregnant cow, undamaged / 50 mm lens
- 38- Group III / petro Bronze age / pregnant cow, damaged after spring 2001 / 50 mm lens
- 39- Group III / petro Bronze age / sunhead on bull / 50 mm lens
- 40- Group III / petro Bronze age / man one-footed / 50 mm lens
- 41- Group III / petro Early Iron and Middle Ages / deer of Early Iron period (Wusun style) and horse of Kazakh period / 50 mm lens
- 42- Group III / petro Bronze age / horse, dog, archer / 50 mm lens

4. Petroglyphs of Group IV / 10 photos (43-52)

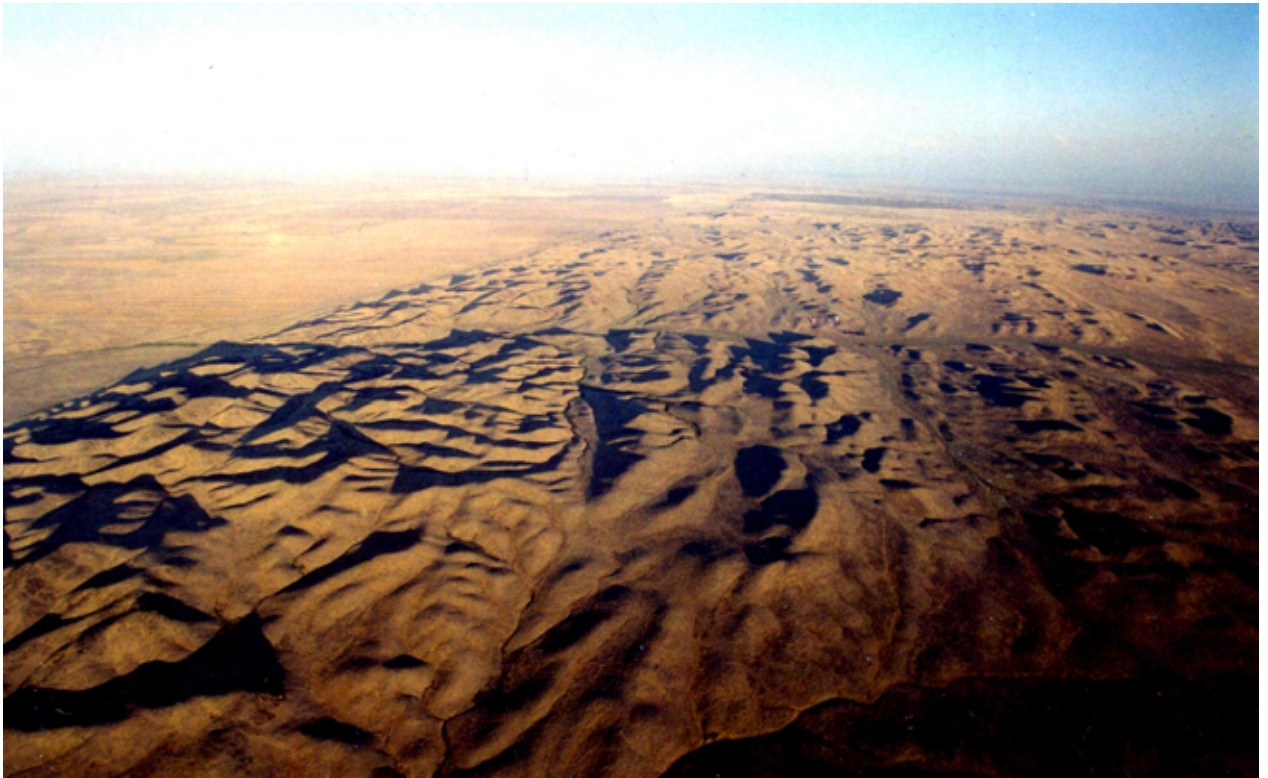
- 43- Group IV, general view / early autumn / view towards West / composition of 3 photos with 50 mm lens
- 44- Group IV, view of “pantheon” surface / view towards West / petro Bronze age / 6 sun-head figures / wide angle
- 45- Group IV particular of “pantheon” surface / petro Bronze age / 2 sun-head figures and 12 personnages / 50 mm lens
- 46- Group IVa / petro Bronze age / chariot and footprint / 50 mm lens
- 47- Group IV / Early Iron / wild boars, goats, human figure / 50 mm lens
- 48- Group IV / petro Bronze and Early Iron age / bulls and humans of Bronze age, animals of Early Iron age in Saka style / wide angle
- 49- Group IV / Early Iron / particular of dog and bull in Saka style / 50 mm lens
- 50- Group IV / Turkic inscription / 50 mm lens
- 51- Group IV / Jungarian and contemporary inscriptions / wide angle
- 52- Group IV / Kazakh tamga and goat / 50 mm lens

5. Petroglyphs of Group V / 12 photos (53-64)

- 53- Group V, general view / early autumn / view towards North-East / 50 mm lens
- 54- Group V, view of central part / view towards East / wide angle
- 55- Group V / petro Bronze and Early Iron ages / man and archer of Bronze age, 3 sitting deer in early Saka style / 50 mm lens
- 56- Group V / petro Early Iron / horse, deer, goat in Saka style / 50 mm lens
- 57- Group V / petro Early Iron and Middle Ages / bull in Saka style, deer Turkic / 50 mm lens
- 58- Group V / petro Bronze age / sun-head and anthropomorphic figures / wide angle
- 59- Group V / petro Bronze age / sun-head on onager / 50 mm lens
- 60- Group V / petro Bronze age / bull / 50 mm lens
- 61- Group V / petro Bronze age / goats, deer, horse, human with aura / wide angle
- 62- Group V / petro Bronze age / 2 sun-head figures / sample of strong degradation of lithic structures / wide angle
- 63- Group V / petro Bronze age / chariot / 50 mm lens
- 64- Group V / petro Bronze age / sun-head and animals of later epochs / wide angle

6. Petroglyphs of the periphery / 8 photos (65-72)

- 65- Periphery North-East / petro Bronze age / 3 birthing women with raised hands / 50 mm lens
- 66- Periphery North-East / petro Bronze age / 3 deer / 50 mm lens
- 67- Periphery North-East / petro Early Iron / 3 deer in Saka style under rubbing paper / wide angle
- 68- Periphery South / petro Middle Ages / deer, archers and animals in Turkic style / 50 mm lens
- 69- Periphery South / petro Middle Ages / 2 horsemen with banners in Turkic style / 50 mm lens
- 70- Periphery South-West / petro Middle ages / elephant with rider in Turkic style / 50 mm lens
- 71- Periphery West (Shoskaly) / petro Bronze age / goat / 50 mm lens
- 72- Periphery West (Shoskaly) / petro Bronze age / bull / 50 mm lens



01. Aerial view of the whole protected area (Monumental zone and Buffer zone)
/19 September 2002, h 18.30 pm / view towards East / wide angle



02. Aerial view of the western boundaries of the protected area (Shoskaly)
/ 19 September 2002, h 18.30 pm / view towards North-East / wide angle



03. Aerial view of the Shoskaly stream
/ 20 September 2002, h 10.00 am / view towards South /wide angle



04. View of the Shoskaly canyon / springtime / view towards North-West / wide angle



05. Aerial view of the Monumental zone / 20 September 2002, h 10.00 am / view towards North / wide angle



06. Aerial view of Tamgaly canyon (main petroglyphs center)
/ 20 September 2002, h 10.00 am / view towards North / 50 mm lens



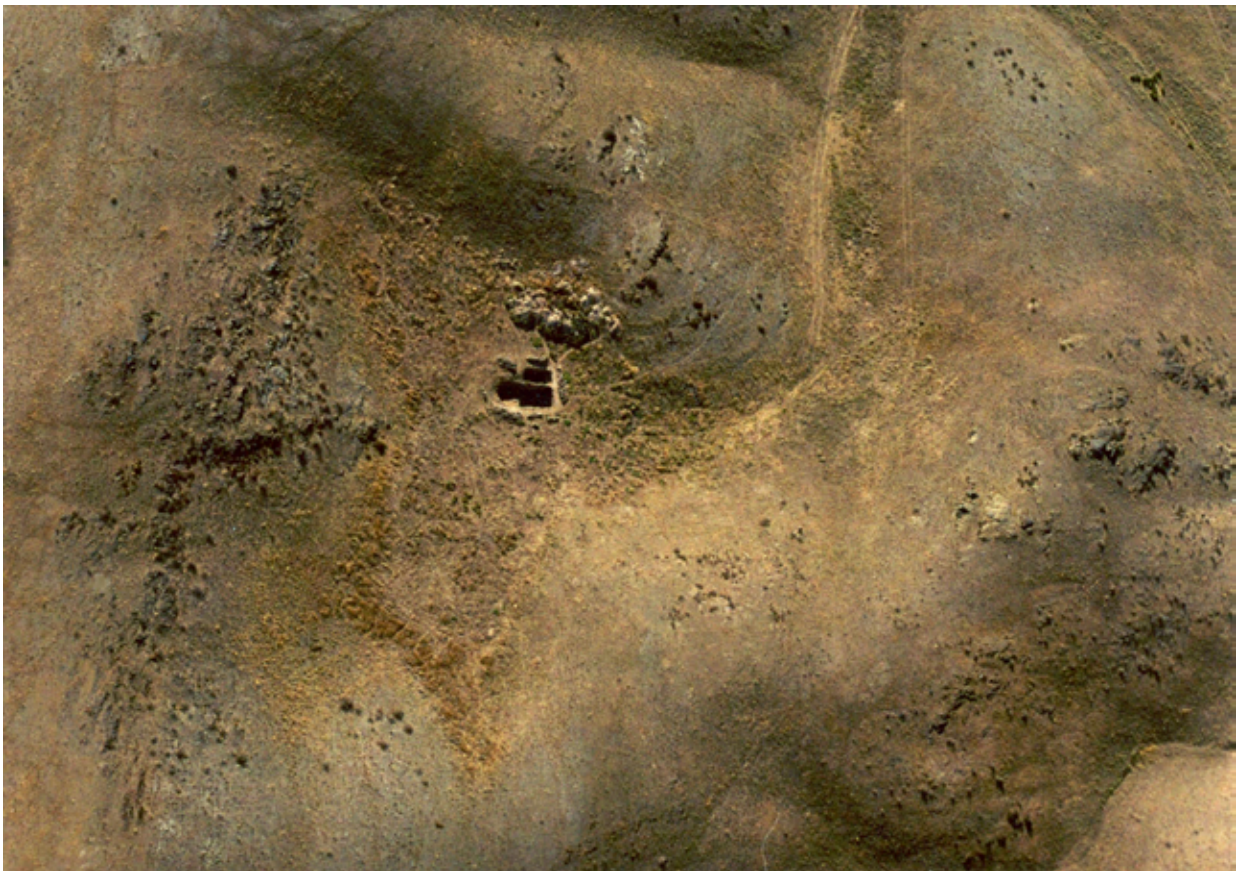
07. View of Tamgaly canyon (main petroglyphs center) / early autumn / view towards North / 50 mm lens



08. Source of Tamgaly stream / springtime / view towards South / 50 mm lens



09. Valley with non-excavated village / Saka, Turkic and Kazakh periods / springtime / view towards South / 50 mm lens



10. Aerial view of valley Tamgaly I with excavated village / Bronze, Saka, Turkic and Kazakh periods / 20 September 2002, h 10.00 am / North on the left / 50 mm lens



11. Tamgaly I, Bronze age house / particular of the entrance corridor / North on the left / 50 mm lens



12. Tamgaly I, Bronze age house / particular of the central hearth / West on the left / 50 mm lens



13. Cemetery of Tamgaly II / autumn / tombs of Bronze age / view towards North-East / wide-angle



15. Group I / petro Bronze age / horse, dog, archer / 50 mm lens



16. Group II, general view / early autumn / view towards East / 50 mm lens



17. Group II, view of central part / wide angle



18. Group II, view of central part, lower surfaces / Bronze age / animals / wide angle



19. Group II / petro Bronze age / deer, archer, footprint / wide angle



20. Group II / petro Bronze age / wolf / 50 mm lens



21. Group II / particular of central part lower surfaces / petro Bronze age / animals / 50 mm lens



22. Group II / petro Bronze age / deer, square symbol, horse / wide angle



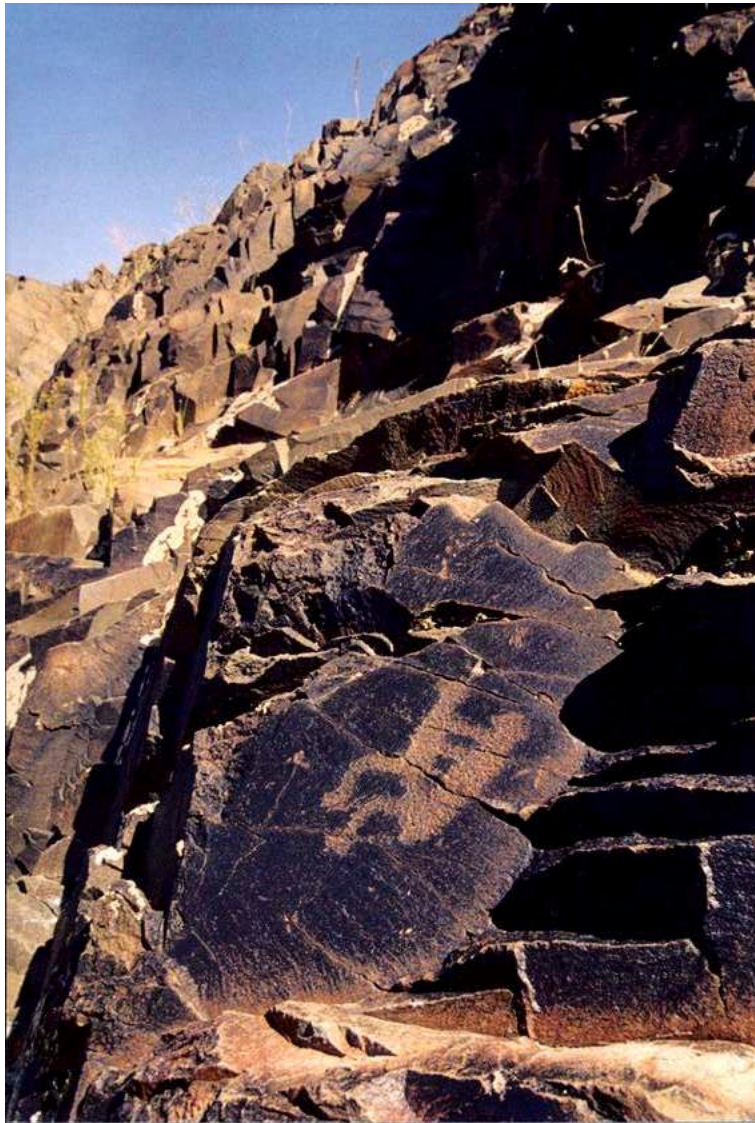
23. Group II / petro Bronze age / man with tale and club / 50 mm lens



24. Group II / petro Bronze age / 4 men with furs holding spiraled horns (?) / 50 mm lens



14. Group I / petro Bronze age / 2 bulls and other animals / wide-angle



25. Group II / petro Bronze age / erotic scene / wide angle



26. Group II / petro Bronze age / birthing woman and man / 50 mm lens



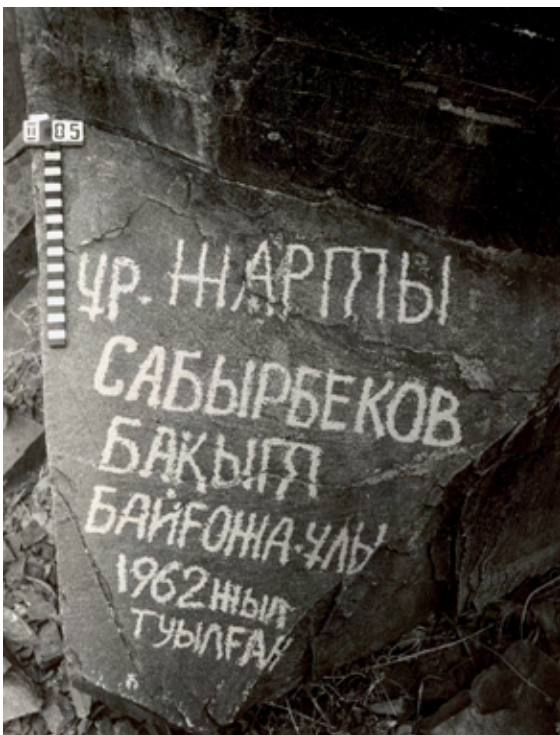
27. Group II / petro Bronze age / bull / 50 mm lens



28. Group II / petro Bronze age / 1 bull and 2 horses, spectacles symbol / 50 mm lens



29. Group II / petro Early Iron age / goats in Saka style / sample of restoration works / wide angle



30. Group II / contemporary inscriptions / 50 mm lens



31. Group II / contemporary inscriptions after restoration works of 1993 / 50 mm lens



32. Group III, general view / early autumn / view towards North / wide angle



33. Group III / petro Bronze age / horse, dog / 50 mm lens



34. Group III, view of central part / view towards North / wide angle



35. Group III / petro Bronze age / bulls, horned horse, animals, humans / wide angle



36. Group III / petro Bronze age / horned horse with rider and anthropomorphic figures / 50 mm lens



37. Group III / petro Bronze age / pregnant cow, undamaged / 50 mm lens



38. Group III / petro Bronze age / pregnant cow, damaged after spring 2001 / 50 mm lens



39. Group III / petro Bronze age / sunhead on bull / 50 mm lens



40. Group III / petro Bronze age / man one-footed /
50 mm lens



41. Group III / petro Early Iron and Middle Ages /
deer of Early Iron period (Wusun style) and horse of
Kazakh period / 50 mm lens



42. Group III / petro Bronze age / horse, dog, archer / 50 mm lens



43. Group IV, general view / early autumn / view towards West /
composition of 3 photos with 50 mm lens



44. Group IV, view of “pantheon” surface / view towards West / petro Bronze age / 6 sun-head figures / wide angle



45. Group IV particular of “pantheon” surface / petro Bronze age / 2 sun-head figures and 12 personnages / 50 mm lens



46. Group IVa / petro Bronze age / chariot and footprint / 50 mm lens



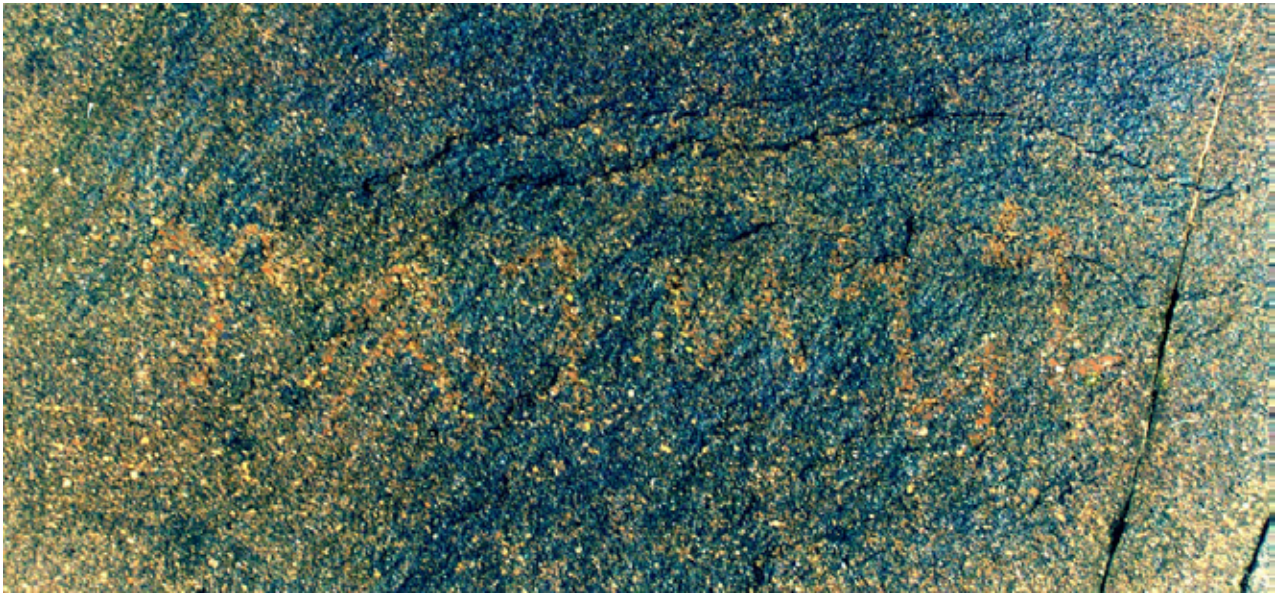
47. Group IV / Early Iron / wild boars, goats, human figure / 50 mm lens



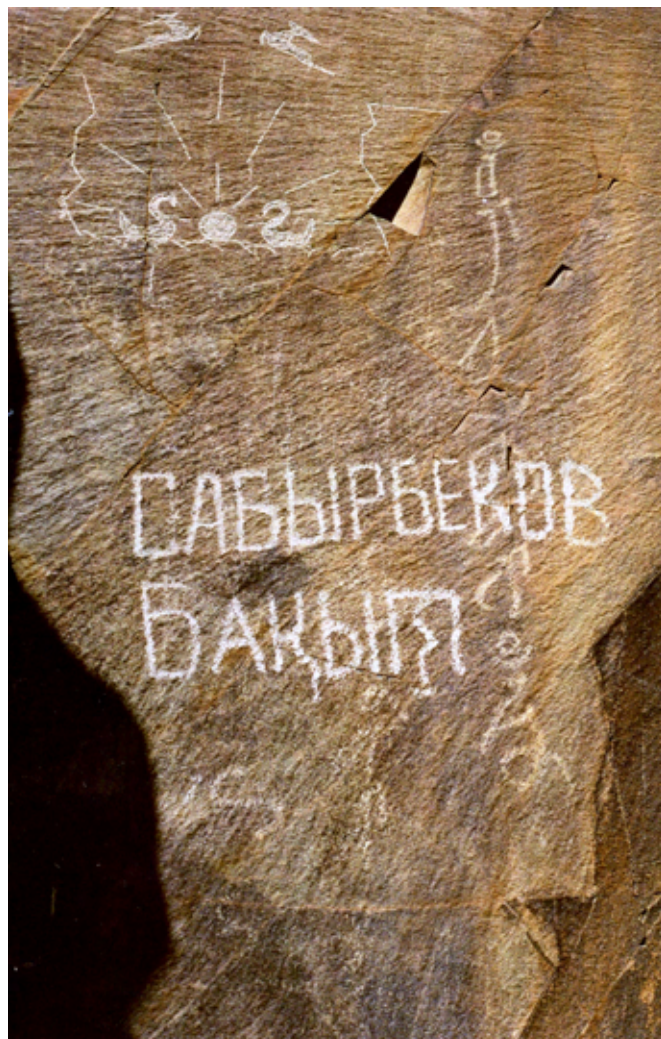
48. Group IV / petro Bronze and Early Iron age / bulls and humans of Bronze age, animals of Early Iron age in Saka style / wide angle



49. Group IV / Early Iron / particular of dog and bull in Saka style / 50 mm lens



50. Group IV / Turkic inscription / 50 mm lens



51. Group IV / Jungarian and contemporary inscriptions / wide angle



52. Group IV / Kazakh tamga and goat / 50 mm lens



53. Group V, general view / early autumn / view towards North-East / 50 mm lens



54. Group V, view of central part / view towards East / wide angle



55. Group V / petro Bronze and Early Iron ages / man and archer of Bronze age, 3 sitting deer in early Saka style / 50 mm lens



56. Group V / petro Early Iron / horse, deer, goat in Saka style / 50 mm lens



57. Group V / petro Early Iron and Middle Ages / bull in Saka style, deer Turkic / 50 mm lens



58. Group V / petro Bronze age / sun-head and anthropomorphic figures / wide angle



59. Group V / petro Bronze age / sun-head on onager / 50 mm lens



60. Group V / petro Bronze age / bull / 50 mm lens



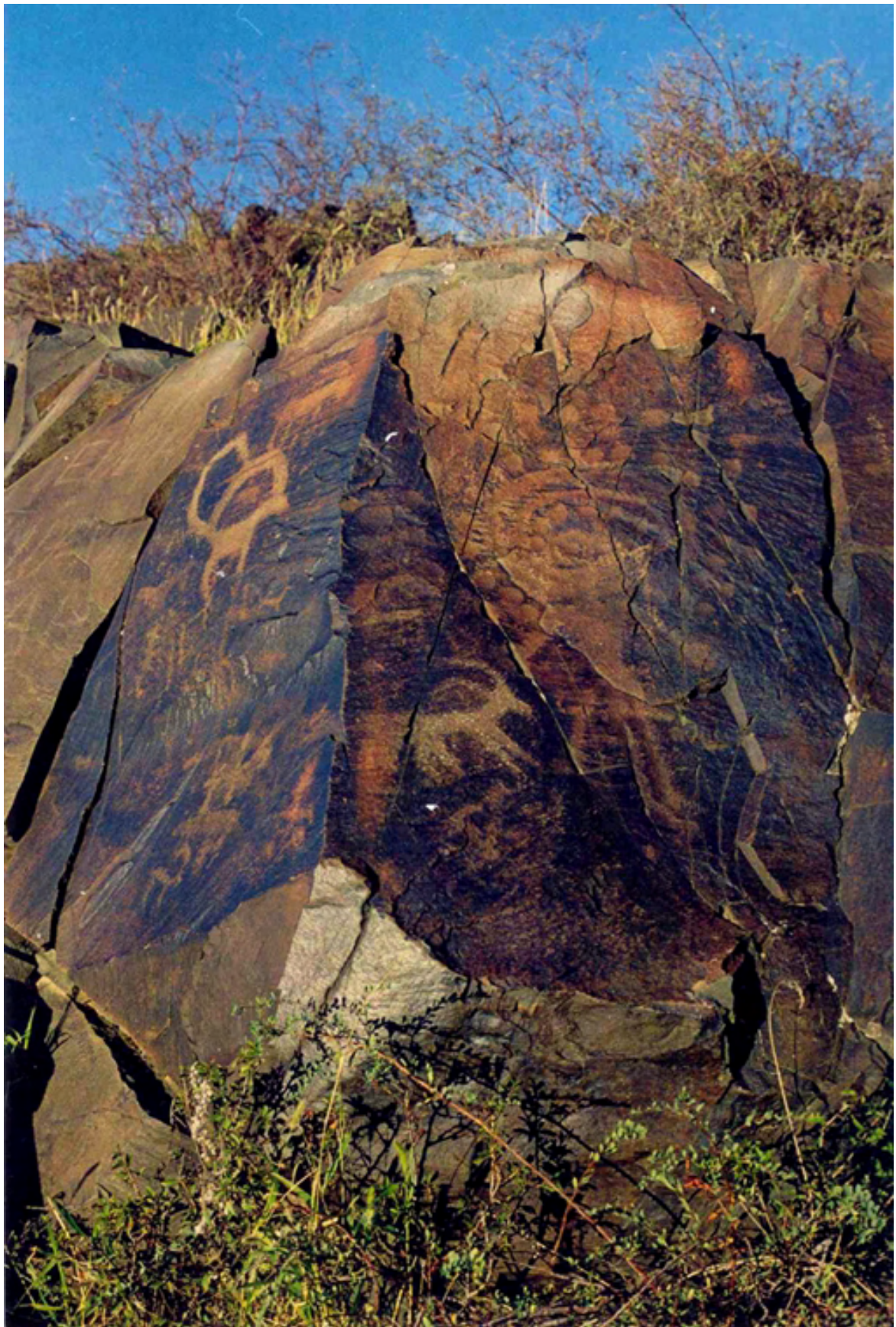
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63. Group V / petro Bronze age / chariot / 50 mm lens



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65. Periphery North-East / petro Bronze age / 3 birthing women with raised hands / 50 mm lens



66. Periphery North-East / petro Bronze age / 3 deer / 50 mm lens



67. Periphery North-East / petro Early Iron / 3 deer in Saka style under rubbing paper / wide angle



68. Periphery South / petro Middle Ages / deer, archers and animals in Turkic style / 50 mm lens



69. Periphery South / petro Middle Ages / 2 horsemen with banners in Turkic style / 50 mm lens



70. Periphery South-West / petro Middle ages / elephant with rider in Turkic style / 50 mm lens



71. Periphery West / petro Bronze age / goat / 50 mm lens



72. Periphery West / petro Bronze age / bull / 50 mm lens

APPENDIX III

Legal Texts

1. The Law of the Republic of Kazakhstan about the protection and utilization of historical and cultural heritage, 1992
2. The Decree of the President of the Republic of Kazakhstan about the list of objects of state property not subject to privatization
3. The Decision of the Government of the Republic of Kazakhstan of 05 October 2001, No 1282 about the amendment and supplement to the Decision of the Council of Ministers of the Kazakh SSR of 26 January 1982, No 38

THE LAW OF THE REPUBLIC OF KAZAKHSTAN
About protection and utilization of historical and cultural heritage

The historical and cultural heritage, as the major evidence of historical destiny of the people, as a basis and indispensable condition of its present and future development, as a component of all human civilization, demands constant protection from all dangers. The maintenance of it in the Republic of Kazakhstan is the moral debt and duty, determined by the present law, for all legal and physical persons.

Section I.

GENERAL PROVISIONS

Clause 1. The legislation of the Republic of Kazakhstan on protection and utilization of the historical and cultural heritage.

The legislation of the Republic of Kazakhstan on protection and utilization of the historical and cultural heritage includes the present Law and other acts regulating questions in the given area of the public relations.

Clause 2. The purpose and tasks of the legislation of the Republic of Kazakhstan about protection and utilization of the historical and cultural heritage.

The purpose of the present Law is the regulation of the public relations ensuring safety and successive development of the historical and cultural heritage, namely:

- Definition of concepts of the historical and cultural heritage, its protection and use;
- Attaching of the legal status of objects of the historical and cultural heritage;
- Regulation of the rights and duties of the bodies of state authority, enterprises, institutions and organizations, public associations and also separate persons before a society and people in sphere of preservation of the historical and cultural heritage;
 - Differentiation of the competence of the state bodies in the field of protection of the historical and cultural heritage;
 - Establishment of measures of the responsibility for action or inactivity causing direct or indirect damage to the historical and cultural heritage.

Clause 3. The historical and cultural heritage

All kinds of archaeological objects, structures and subjects connected to the historical past of the people, development of the society and state, historical and cultural landscape, unique objects of a nature representing rare geological, physiographical formations, works of material and spiritual culture having historical, scientific and art value concern to the historical and cultural heritage.

Clause 4. Protection and utilization of objects of the historical and cultural heritage

The protection, preservation and utilization of objects of the historical and cultural heritage includes system of measures directed on:

- Exposure (discovery), research and propagation of the historical and cultural heritage;
- Establishment to the historical and cultural values of the status of monuments of history and culture;

- Maintenance of protection of monuments from destruction, acts of vandalism, falsification, mystification, distortion, entering of unreasonable changes, withdrawal from a historical context;
- Preservation and revival of monuments by preservation, restoration, regeneration and facsimile edition;
- Maintenance of monuments according to norms ensuring their safety;
- Utilization of monuments during revival of the ethno-cultural environment and also for scientific and educational purposes.

The stipulated system of measures is distributed to all the historical and cultural values of Kazakhstan recognized by monuments, without dependence from their kind, degree of safety and from what property they are in.

Clause 5. The legal status of objects of the historical and cultural heritage

The objects of historical and cultural heritage get the status of monuments from the moment of recognition of them by those in the order established by the present Law.

The recognition of historical and cultural value by monuments is fixed by inclusion of them in the state lists of monuments of history and culture subject to obligatory publication. All kinds of archaeological monuments initially have historical, cultural and scientific value and status of monuments of history and culture.

The monuments of history and culture of the Republic of Kazakhstan are subject to obligatory protection and preservation in the order stipulated by the present Law, the changes of the property right on them and deprivations of their legal status have the special legal regime of their utilization. The deprivation of a monument of history and culture of its legal status and exception from the state list of monuments of history and culture is supposed only in exclusive cases (at destruction as a result of acts of nature or loss of historical-cultural value) by the decision of Government of the Republic of Kazakhstan on presentation of the appropriate local body of authority co-ordinated with a special commission of the State Body of the Republic of Kazakhstan for the Protection and Utilization of the Historical and Cultural Heritage, on the basis of the conclusion of scientific examination.

Clause 6. Kinds of objects of historical and cultural heritage

Objects of historical and cultural heritage can be recognized as (wholly or in the stipulated part):

The material historical evidences:

1) immovable, including:

- Individual objects and works of architecture, of monumental art, elements or structures of archaeological character, epigraphic materials, works of science and engineering, building, structures or other objects having historical or memorial importance;
- Complex objects - works of town-planning art (architectural ensembles and complexes, historical towns and populated areas, parts of towns, quarters, streets, elements of town-planning structures), works of garden-park art, historical necropolis, historical territories and places;

2) movable, including:

- Individual objects — archaeological finds, subjects of antiquity, elements of the immovable monuments which have undergone partition, anthropological and ethnological materials, historical relics, works of art (painting, graphic, applied art, art of cinema and photo), hand-written and rare printed documents, cinema, photo and video-documents, sound recording;

- Complex objects - historically usual complexes, funds and collections of the specified individual objects taken as a single unit, and also complexes, funds and collections of naturally-scientific value having as the whole historical importance.

The non-material historical evidences:

- Traditions of human communities - historical, cultural, religious, household, economic;
- Local dialects and languages of the small peoples, historical toponyms.

Clause 7. The competence of the Republic of Kazakhstan on protection, preservation and utilization of objects of the historical and cultural heritage

The Republic of Kazakhstan on behalf of the appropriate bodies has complete authority on protection, preservation and utilization of monuments of history and culture recognized by those in the order established by the legislation of the Republic and located on its territory

To protection, preservation and utilization are subject also monuments being the property of the Republic of Kazakhstan, but located on territory of other states.

The protection, preservation and utilization of monuments located in territory of the Republic of Kazakhstan, but being the property of other states, their legal persons and citizens, is established according to the treaties.

The Republic of Kazakhstan accepts the responsibility for the location, organization of the account, and preservation and returning to the historical native land, objects of cultural value which are outside the Republic, recognized by the historical and cultural property of the Kazakh people and peoples living in the Republic of Kazakhstan.

Section II.

FEATURES OF REALIZATION OF THE PROPERTY RIGHT ON OBJECTS OF HISTORICAL AND CULTURAL HERITAGE.

Clause 8. Regulation of the relations of property

The relation of property on monuments of history and culture are adjusted by the Law "About the property in Kazakh SSR" and other acts of the Republic. The features of realization of the property right on monuments of history and culture are established by the present Law.

Clause 9. Objects of the property right

Objects of the property right on monuments are the material and spiritual historical and cultural values recognized by monuments in the order established by the present Law.

Clause 10. The subjects of the property right

The subjects of the property right on objects of the historical and cultural heritage of the Republic of Kazakhstan can be: the Republic of Kazakhstan, legal persons of various patterns of ownership and citizens of the Republic of Kazakhstan.

Clause 11. The state property on monuments of history and culture

All monuments of history and culture located in the territory of the Republic of Kazakhstan and which are not the property of other subjects, and also historical and cultural landscapes recognized as monuments in the order established by the legislation, are the exclusive property of the Republic of Kazakhstan.

On behalf of the Republic of Kazakhstan, the power of the proprietor of monuments of international and national importance will be camped out by the State Body of the Republic of Kazakhstan for the Protection and Utilization of Historical and Cultural Heritage, and appropriate local bodies of authority protect monuments of local importance.

Clause 12. The rights of the subjects of the property

The proprietor possesses the rights of possession, usage and disposal of monuments of history and culture as for objects of property, except for the right of their independent destruction.

The proprietor keeps the property right to an object at its final recognition as a monument of history and culture.

The citizen having in the property the monument of history and culture, has the right to demand the maintenance of the privacy of its contents or inaccessibility to researches and public survey for the term of 30 years, if the object of the property belongs to him on the rights of the inheritance and on the origin or contents is connected to the person who composed his will or the ancestors of the proprietor.

The proprietor has the right of extraction of the profit (receipt of the income) as a result of utilization and operation of monuments limited by the obligations on their protection.

At change of the property rights on immovable monuments, their territories take over of the new proprietors gratuitously.

Clause 13. Duties of the proprietors

The proprietors of monuments of history and culture carry out activity on their preservation and are obliged:

- 1) to arrange the maintenance and safety of monuments;
- 2) to register monuments with the authorized state bodies for the protection of monuments in the place of presence of monuments (immovable) or on a residence of the proprietor (movable);
- 3) to notify state bodies for the protection of monuments on the prospective or realized changes of the property rights;
- 4) to notify state bodies for the protection of monuments on the prospective or realized changes of site, conditions of the maintenance and utilization of monuments;
- 5) to notify state bodies for the protection of monuments on works on repair, preservation, restoration of monuments;
- 6) to provide availability to a monument in scientific, cultural and other purposes in the order and limits established by the special contracts with state bodies for the protection of monuments.

The obligations of the proprietors of monuments of history and culture are fixed in the security documents signed by the proprietor and an authorized state body for the protection of monuments, and containing besides the aforesaid general obligations the special obligations with reference to physical monuments.

The obligations mentioned in items 1, 2 of the present clause, equally concern to the owners and users of monuments.

The actions listed in items 1, 3, 5 of the present clause, are not subject to realization by the owners and users without the certified consent of the proprietors of monuments.

Clause 14. Compulsory deprivation of the property rights on objects of the historical and cultural heritage

The compulsory deprivation of the property rights for monuments, on fault of the proprietor destructions, exposure to threat, or damage is carried out only on the basis of the decision of court.

In default of the individual, collective proprietor will take up the obligations on protection of monuments stipulated by clause 13 of the present Law, the decision is accepted by court under the claim of the State Body for the Protection of Monuments.

The compulsory deprivation of the individual proprietor of the monument, being his apartment house or dwellinghouse, cannot be carried out without granting to him another dwellinghouse in the order established by the law, and appropriate compensation under the contract.

Thus the obligations for the protection of monuments are subject to transfer on the contractual basis to other legal persons or citizens of the Republic of Kazakhstan; or the monument in the compulsory order is subject to public sale. On revealing the impossibility of sale the monuments, under the decision of the State Body for the Protection of Monuments, are transferred to the property of the state with payment to the former proprietor of compensation at a rate established by the contract, and in case of dispute — by court.

In default of state bodies from acceptance of the obligations on maintenance of safety of monuments taking place or acting in state ownership, the specified monuments are subject on the contractual basis to transfer the property to other subjects undertaking to ensure safety of monuments according to the present Law.

Clause 15. Advantages to buying the property rights to the monument

The proprietors of parts of the monument, which is located in the common share property, have the right of priority of purchase other parts of this monument in the property.

The right of priority of purchase of other parts of monument stipulated in the first part of the present clause is distributed also to cases, when the property of the buyer has not the status of monument.

At public sale of monuments the state has the right of their primary purchase for the market (auction) price except for cases stipulated in the first and second parts of the present clause. In these cases the state has the right of priority after the proprietors specified in the first part of the present clause. The same rights, as well as state, have the legal persons and citizens getting monuments for passing them to the state if they have legalize obligation.

ligation. Section III.

Section III

STATE MANAGEMENT IN THE FIELD OF PROTECTION OF HISTORICAL AND CULTURAL HERITAGE

Clause 16. System of bodies of state management in the field of protection, preservation and utilization of the historical and cultural heritage.

State management in the field of protection, preservation and utilization of monuments of history and the culture of the Republic of Kazakhstan carry out:

- Government of the Republic of Kazakhstan;
- Local bodies of authority;
- State Body of the Republic of Kazakhstan for the Protection and Utilization of Historical and Cultural Heritage;

- State Body for the Management of Archives of the Republic of Kazakhstan.

Clause 17. The competence of the Government of the Republic of Kazakhstan in the field of protection and utilization of the historical and cultural heritage

Government of the Republic of Kazakhstan:

- Forms and carries out state policy in the field of protection and utilization of the historical and cultural heritage;
- Approves the regulation of state bodies and structures on protection and utilization of historical and cultural heritage;
- Establishes the order of the state registration of objects of historical and cultural heritage and also their discovery, research, maintenance, preservation, restoration, regeneration, interpretation, propagation and utilization, import and export, and rate of rent payment for utilization of historical and cultural heritage located in national property.

Clause 18. The competence of local bodies of authority in the sphere of protection of the historical and cultural heritage

Local bodies of authority in the own territory:

- Provide revealing, registration, protection, restoration and utilization of objects of historical and cultural heritage;
- Provide observance of the legislation about protection and utilization of the historical and cultural heritage;
- Provide measures on organization of the registration, protection and restoration of monuments of local importance by way of economic and social development of the appropriate territories, and also finance their realization at the expense of means of their own budgets;
- Promote the organizations of patronage of the enterprises, organizations and establishments above monuments;
- Involve the public in the realization of measures on protection and propagation of monuments;
- Solve the problem on granting use of buildings and structures being monuments located in lands of state ownership and in agreement with the State Body of the Republic of Kazakhstan for the Protection and Utilization of Historical and Cultural Heritage;
- Establish the rates of rent payment for utilization of monuments of local importance which are located in lands of state ownership;
- Provide the implementation of measures on the discovery, study, and preservation of monuments of all categories, drawing up of the historical-building basic plans and maps; in agreement with the State Body of the Republic of Kazakhstan for the Protection and Utilization of Historical and Cultural Heritage by development and statement of the projects of layout, building and reconstruction of cities and other populated areas;
- Carry out allotment of the ground areas under development for economic-building and defensive purposes only at presence of the conclusion of the State Body for the Protection and Utilization of Historical and Cultural Heritage;
- Resolve problems concerning delay and also prohibition of building and other works creating danger to monuments upon presentation of the State Body for the Protection and Utilization of Historical and Cultural Heritage;
- Carry out other powers stipulated by the legislation of the Republic of Kazakhstan.

Clause 19. The competence of the State Body of the Republic of Kazakhstan on Protection and Utilization of the Historical and Cultural Heritage

State Body of the Republic of Kazakhstan on Protection and Utilization of the Historical and Cultural Heritage:

- Develops the state programmes and participates in formation and realization of state policy in the field of protection, preservation and utilization of monuments of history and culture;
- Carries out the state control of condition of utilization and order of the maintenance of monuments, execution of works on preservation and regeneration of monuments;
- Provides location, registration, preservation and observance of rules of utilization for monuments of history and culture which is located in the territory of the Republic of Kazakhstan;
- Carries out protection and utilization of natural monuments and other objects of the environmental/natural environment connected to monuments of history and culture in agreement in necessary cases with other interested organizations;
- Sanctions work permits on realization of any kind of research, design and restoration-preservation works on monuments of history and culture;
- Stops or forbids activity which may pose a threat to the safety of monuments of all categories;
- Carries out the control of observance of the legislation about the order of import and export of cultural values;
- Petitions for calling to account of the officials, enterprises, institutions, public associations, organizations and citizens breaking the norm of the legislation (law) concerning protection, preservation and utilization of monuments of history and culture;
- Carries out other powers stipulated by the relevant Regulations.

Clause 20. The competence of the State Body for the Management of Archives of the Republic of Kazakhstan in the field of protection and utilization of historical and cultural heritage

State Body for the Management of Archives of the Republic of Kazakhstan:

- Participates in the formation and realization of state policy in the field of protection and utilization of historical and cultural heritage and funds of rare manuscripts, and develops the appropriate state programs;
- Supervises work concerning state archives of the Republic of Kazakhstan on revealing and collecting documentary monuments, their registration, protection, restoration, utilization and propagation;
- Carries out the control of maintenance of safety of documentary monuments which are not located in the state archives;
- Provides access to study of documentary monuments located in the state archives, to experts, to representatives of mass media, and to scientific and other researchers.

Section IV.

FINANCING THE SPHERE OF PROTECTION AND UTILIZATION OF THE HISTORICAL AND CULTURAL HERITAGE

Clause 21. Funds of protection and utilization of the historical and cultural heritage

Within the State Body of the Republic of Kazakhstan on Protection and Utilization of the Historical and Cultural Heritage is created the State Fund for the Historical and Cultural Heritage

of the Republic of Kazakhstan at the expense financial assets of: the republican budget, percentage deductions, in roubles and currency, state, co-operative, public and other organizations which are carrying out building, reclamation, agricultural and other works in zones of protection of monuments of history and culture; tourist-excursion measures connected to visiting of monuments, release of souvenir production, advertising editions with the images of the registered monuments, cinematography, television and video-films filming on location at monuments of the scale/size established by the Regulation about reserves (funds) confirmed by the Government of the Republic of Kazakhstan, and also voluntary donations of public associations, citizens, other enterprises, institutions and organizations.

At the expense of fund the financing is carried out;

- The state programs in the field of protection, restoration and utilization of historical and cultural heritage;

- The programs on professional training of the staff - restorers, strengthening and development of industrial bases of restoration organizations, equipment by their modern engineering, equipment and tools, creation of social conditions for the workers of these organizations;

- Other measures stipulated by the Regulation about reserves (funds).

For financing local programmes and measures in the field of protection of monuments the local bodies of authority create at the expense of means of the local budget, and also voluntary deductions of the enterprises, public associations and payments of the citizens funds of protection of monuments. Thus part of the means from local funds is sent to the state fund for needs of protection and restoration of monuments of international and republican importance located in the territory of the appropriate areas.

The sums of the taxes and not tax payments acting in the local budgets from the proprietors and the users of monuments, and also from excursions, tourist organizations and their enterprises are enlisted in the specified funds according to the Regulation about funds confirmed by local body of authority.

Section V.

PARTICIPATION OF PUBLIC ASSOCIATIONS, ENTERPRISES, INSTITUTIONS, ORGANIZATIONS AND CITIZENS IN REALIZATION OF MEASURES ON PROTECTION AND UTILIZATION OF THE HISTORICAL AND CULTURAL HERITAGE

Clause 22. Participation of public associations, enterprises, institutions, organizations and citizens in realization of measures on protection and utilization of historical and cultural heritage.

The enterprises, institutions, organizations, educational institutions, public associations and citizens participate in propagation and popularization of monuments, promote to the state bodies of protection of monuments in realization of measures on protection, preservation and utilization of monuments.

The enterprises, institutions, organizations and citizens can establish patronage above monuments of history and culture with the purposes of maintenance of their safety, to render to the state bodies of protection of monuments the financial and material and technical help in the execution of works on repair, preservation and restoration of monuments.

The public associations carry out activity on protection, preservation and utilization of monuments of history and culture according to their regulations and also to the legislation of the Republic of Kazakhstan.

Clause 23. Participation of the Kazakh Society for the Protection of Monuments of History and Culture in the realization of measures for the protection and utilization of historical and cultural heritage.

The Kazakh Society for the Protection of Monuments of History and Culture promotes the involvement of the population to participate in the realization of measures connected to protection, preservation and utilization of objects of historical and cultural heritage, carries out propagation of monuments, and co-operates in the activity with the state bodies on protection and utilization of historical and cultural heritage.

Clause 24. Participation of the National Academy of Sciences of the Republic of Kazakhstan in protection and utilization of historical and cultural heritage

The National Academy of Sciences of the Republic of Kazakhstan:

- Participates in the revealing and studying of objects of historical and cultural heritage and in summarizing information concerning monuments of history and culture;
- Together with the State Body of the Republic of Kazakhstan on Protection and Utilization of the Historical and Cultural Heritage and local bodies of authority, gives conclusions on various questions of monument-protection at allotment of the ground areas under development by civil and military departments, and at the expense of their means carries out necessary prospecting works.

Section VI.

THE STATE REGISTRATION OF MONUMENTS OF HISTORY AND CULTURE

Clause 25. Organization of the state registration of monuments of history and culture

The monuments of history and culture located in the territory of the Republic of Kazakhstan, irrespective of the ownership of property where they are located, are subject to state registration.

Clause 26. Reference of monuments of history and culture to categories of monuments of international, republican and local importance

With the purposes of effective organization of the registration and protection of monuments of history and culture the monuments are subdivided into monuments of international, republican and local importance.

Clause 27. The order of the confirmation of the lists of monuments of history and culture

The list of monuments offered for inclusion in the World Heritage List is represented by the Government of the Republic of Kazakhstan in an established order.

The lists of monuments of history and culture of republican importance are affirmed by the Government of the Republic of Kazakhstan on presentation of the State Body of the Republic of Kazakhstan on Protection and Utilization of the Historical and Cultural Heritage.

The lists of monuments of history and culture of local importance are affirmed by local bodies of authority on presentation of territorial state and public bodies of protection of

monuments co-ordinated with the State Body of the Republic of Kazakhstan for the Protection and Utilization of the Historical and Cultural Heritage.

The exception of objects on the lists of monuments of history and culture of republican and local importance is supposed only under the decision of the Government of the Republic of Kazakhstan.

Clause 28. The order of formation and structure of special commission of state bodies on protection and utilization of the historical and cultural heritage

For preparation of the conclusion about the recognition of historical and cultural values for monuments of history and the culture and also about depriving them of this status, the State Body of the Republic of Kazakhstan for the Protection and Utilization of the Historical and Cultural Heritage will create authorized commissions, whose structure will include scientists, experts, figures of culture and art, representatives of creative unions and other public associations.

Section VII.

THE ORDER OF UTILIZATION OF OBJECTS OF THE HISTORICAL AND CULTURAL HERITAGE

Clause 29. Utilization of objects of the historical and cultural heritage

The objects of historical and cultural heritage are used for the purposes of revival and development of spiritual and cultural traditions of the peoples of Kazakhstan, and also for scientific and educational purposes.

Utilization of objects of historical and cultural heritage in other purposes is supposed only from the sanction of the state bodies of protection and utilization of historical and cultural heritage.

The mode of use of monuments of town-planning art for both historical centres of cities and other populated areas is determined in the projects of their zones of protection confirmed by the Government of the Republic of Kazakhstan or the State Body of the Republic of Kazakhstan for the Protection and Utilization of the Historical and Cultural Heritage within the limits of their competence.

Clause 30. The order and conditions of granting the use of monuments of history and culture

The granting of monuments of history and culture for use by organizations, public associations, enterprises and citizens for scientific, cultural, educational, tourist and other purposes is carried out in the order determined by the present Law.

The buildings, structures being monuments of history and culture, are permitted use under the decision of local bodies of authority in the preliminary co-ordination with the appropriate state bodies on protection and utilization of historical and cultural heritage.

Clause 34. Restoration, preservation and regeneration of monuments of history and culture

The restoration, preservation, and regeneration of monuments of history and culture is carried out only with knowledge of state bodies of protection of monuments and under their control.

The restoration, preservation and regeneration of monuments of history and culture is carried out at the expense of means of funds of protection of monuments, and also at the expense of means of the proprietors and users of monuments. The works of restoration, preservation and regeneration of monuments of history and culture are to be made by specialized scientific restoration organizations, other organizations and citizens, on the basis of the license for the right of such activity and special sanction which is given out by the State Body of the Republic of Kazakhstan for the Protection and Utilization of the Historical and Cultural Heritage.

Scientific, restoration, and other organizations and citizens are involved with the proprietors or users of monuments for realization of the appropriate works on the basis of the contracts.

Clause 35. Coordination with the bodies of protection of monuments for the projects of layout, building and reconstruction of cities and other populated areas having monuments of history and culture

The projects of layout, building and reconstruction of cities and other populated areas and also maps of land using having monuments of history and culture, are subject to the coordination with the state bodies of protection of monuments, local bodies of authority and National Academy of Sciences of the Republic of Kazakhstan.

Clause 36. Zones of protection of monuments of history and culture

With the purposes of maintenance of protection of monuments of history, archaeology town- planning and architecture, and monumental art are established security zones, zones of regulation of building and zones of protected natural landscape in the order determined by the legislation of the Republic of Kazakhstan.

The borders of security zones, zones of regulation of building and zones of protected natural landscape are determined by the appropriate local bodies of authority in agreement with the State Body of the Republic of Kazakhstan for the Protection and Utilization of the Historical and Cultural Heritage.

Within the limits of security zones, carrying out of (excavation) ground, building and other works and also economic activity without the sanction of the appropriate bodies of protection of monuments is forbidden.

The zones of protection of monuments are included in the general plans, projects of detailed layout and buildings of the populated areas.

If the movement of transport on roads adjoining the monuments or running through security zones, creates a threat to existence of monuments under the decision of the local body of authority the movement transport on such roads is limited or is forbidden.

Clause 37. Protection of the historical and cultural reserves

The ensembles and complexes of monuments, territories representing special historical, scientific, artistic or other cultural value can be announced by historical and cultural reserves, whose protection is carried out on the basis of special regulations about them

Clause 38. Prohibition of demolition, moving, change of monuments of history and culture

Demolition, moving, or changing of immovable monuments of history and culture is forbidden. The exception of this rule is supposed only in the special case from the sanction of the

Government of the Republic of Kazakhstan at the destruction of an object as a result of act of nature and loss of historical, scientific, art value.

The enterprises, organizations, institutions, public associations or citizens who have received such sanction, at realization of demolition, moving or change of monument are obliged to ensure observance of conditions stipulated by the legislation of the Republic of Kazakhstan and the appropriate state body on protection and utilization of historical and cultural heritage is obliged to carry out works on scientific study and fixing of monuments.

The charges connected to realization of the specified works are made at the expense of the enterprises, organizations, institutions or citizens who have received the sanction on demolition, moving or change of monuments.

Clause 39. Maintenance of safety of objects of the historical and cultural heritage at development of territories

In all kinds of development of territories for the period of allotment of the ground areas the research works on revealing objects of historical and cultural heritage should be made at the expense of means of land users. The realization of all kinds of works that pose a threat to the existence of monuments is forbidden.

The enterprises, organizations, institutions, public associations in citizens in case of detection while conducting similar works on archaeological and other objects having historical scientific, art and other value, are obliged to inform the State Body of the Republic of Kazakhstan for the Protection and Utilization of the Historical and Cultural Heritage about their work and to suspend the further conducting works.

Clause 40. Conducting excavation and investigations of monuments of archaeology

The conducting of excavations and investigations of monuments of archaeology is supposed at presence of the research permit sanction (permission for excavations).

The sanction to conducting excavation and investigations in the territory of republic is given out by the State Body of the Republic of Kazakhstan for the Protection and Utilization of the Historical and Cultural Heritage under the recommendation of Field Committee of the National Academy of Sciences of the Republic of Kazakhstan and with agreement of local bodies of authority.

All materials and finds received by the legal and physical persons of the Republic of Kazakhstan and other states in result of archaeological researches in the territory of Kazakhstan are transferred in state museums of the Republic of Kazakhstan after scientific fixing and processing. Their export outside the borders of the Republic of Kazakhstan is forbidden.

Clause 41. Import and export of monuments of history and culture

The order of import of monuments on the territory of the Republic of Kazakhstan and export them from the territory of the Republic of Kazakhstan is determined by the legislation of the Republic of Kazakhstan.

Section VIII.

THE RESPONSIBILITY FOR INFRINGEMENT OF THE LEGISLATION OF THE REPUBLIC OF KAZAKHSTAN ABOUT PROTECTION AND UTILIZATION OF HISTORICAL AND CULTURAL HERITAGE AND CONTROL OF ITS EXECUTION

Clause 42. The responsibility for infringement of the legislation of the Republic of Kazakhstan about protection of historical and cultural heritage

The officials and citizens guilty of infringement on the legislation on protection, preservation and utilization of monuments of history and culture found expression in activity or inactivity, bear responsibility according to the legislation of the Republic of Kazakhstan.

The enterprises, organizations, institutions, public associations and citizens, who have done harm to monuments of history and culture or their corresponding security zone(s), are obliged to restore to a former condition the monument or its security zone, and at impossibility of it they must compensate the caused losses according to the legislation of the Republic of Kazakhstan. The restoration of the monument or its security zone is carried out with observance of the established order of registration of monuments and under the control of state bodies of protection of monuments.

Clause 43. The control of execution of the legislation of the Republic of Kazakhstan about protection and utilization of objects of the historical and cultural heritage

The control of execution of the legislation of the Republic of Kazakhstan concerning protection and utilization of historical and cultural heritage is carried out by:

- Local bodies of authority;
- State Body of the Republic of Kazakhstan for the Protection and Utilisation of the Historical and Cultural Heritage;
- State Body for the Management of Archives of the Republic of Kazakhstan.

Section IX.

THE INTERNATIONAL TREATIES AND AGREEMENTS

Clause 44. Alignment of the legislation of the Republic of Kazakhstan about protection and utilization of the historical and cultural heritage and international treaties and agreements

If the international treaty or agreement, in which the Republic of Kazakhstan participates, establishes rules other than those contained in the legislation of the Republic of Kazakhstan on protection and utilization of historical and cultural heritage, those rules of the international treaty or agreement are applicable.

The president of the Republic of Kazakhstan

N. NAZARBAYEV
Alma-Ata, July 2, 1992
N. 1488-XII

**2. The Decree of the President of the Republic of Kazakhstan
of 28 July 2000, No 422
about the list of objects of state property not subject to privatization**

With the purposes of the maintenance of the state regulation of activity of organizations and objects having the special importance for strategic interests of the Republic of Kazakhstan, decide:

Government of the Republic of Kazakhstan:

- 1) refer to objects of state property, according to the applied list, as not subject to privatization and its preliminary stages;
- 2) make modifications in the list only with the agreement of the President of the Republic of Kazakhstan.

**The President of the Republic of
Kazakhstan
N. Nazarbaev
Astana, 28 July, 2000**

The appendix to the Decree of the President of the Republic of Kazakhstan of 28 July 2000:

The list of objects not subject to privatization and its preliminary stages

1. The earth (except for what can be in a private property on the grounds and in limits established by the legislation of the Republic of Kazakhstan), its bowels, waters, vegetative and fauna.
 2. Specially protected natural sites.
- (3...9)
10. Objects of historical and cultural heritage under protection of the state.

**3. The Decision of the Government of the Republic of Kazakhstan
of 05 October 2001, No 1282
about the amendment and supplement to the Decision of the Council of Ministers
of the
Kazakh SSR of 26 January 1982, No 38**

In accordance with the Law of 02 July 1992 “About protection and utilization of historical and cultural heritage”, the Government of the Republic of Kazakhstan
DECIDE:

1. To amend and supplement the “Alma-Ata Oblast” Chapter of the List of Monuments of National Significance, approved by the Decision of the Council of Ministers of the Kazakh SSR of 26 January 1982, No 38, as follows:

To substitute the Name “Alma-Ata” by the name “Almaty;

To add the line of the following contents:

The Complex of Tamgaly of the Bronze Age	Zhambyl district, 4 km from the Karabastau village	Archaeological site
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2. To enforce the present Decision since the date of its signing.

The Prime Minister of the Republic of
Kazakhstan K. Tokaev
Astana, 05 October 2001

APPENDIX IV

UNESCO/Norwegian Trust Fund for the Management, Conservation and Presentation of the Tamgaly Petroglyph Site, the Republic of Kazakhstan

**Project Document, drafted by A.-S.Hygen & G.Mandt
The Directorate for Cultural Heritage, Oslo, Norway**

COPY

Drafted by
The Directorate for Cultural Heritage
Oslo, Norway, by
A-S. Hygen and G. Mandt
November 2001

**UNESCO / NORWEGIAN TRUST FUND FOR THE
MANAGEMENT, CONSERVATION AND PRESENTATION OF
THE
TAMGALY PETROGLYPH SITE,
THE ALMATY REGION,
THE REPUBLIC OF KAZAKHSTAN**

Country / Region: Kazakhstan / Central Asia

Title of Project: Management, Conservation and Presentation of
the Tamgaly Petroglyph Site, Almaty Region,
Kazakhstan

National Implementation Agencies: The Ministry of Culture, Information and Public
Accord
The State Institute for Scientific Research and
Planning on Monuments of Material Culture
Tamgaly Gorge Temporary Management Agency

International Executing Agency: UNESCO, Division of Cultural Heritage, in
collaboration with UNESCO Almaty office

Donor: The Government of Norway, the Ministry of
Foreign Affairs

Adviser: The Norwegian Directorate for Cultural Heritage

Total Donor's Contribution: US \$ 101.990
(Including 13% Programme Support Cost)

Duration of the project: 2002 – 2004 (2 ½ years)

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Executive Summary

For 4000 years, maybe longer, Tamgaly Gorge has been a sanctuary, a sacred place for human ritual activities. In this gorge, people have lived, found a refuge, performed their ritual acts, and died. They left their careful marks on the landscape in the form of settlement sites, graves and not the least, the carvings in the rocks.

For natural as well as anthropogenic reasons weathering and deterioration seriously threaten the rock carvings of Tamgaly, also the other archaeological remains and the very sensitive landscape itself. Undoubtedly, Tamgaly is a site of major global importance. The purpose of the project is to save it for present and future generations.

The Tamgaly Gorge is an oasis on the Kazakh steppe covering around 30 km², 4 km from the village of Karabastau and 180 km north-northeast of Almaty. The for the most part unspoiled landscape is dominated by coniform hills around a small riverbed, dry for most of the year. While the vegetation is rich and green with flowers, herbs and bushes in spring, it becomes dry and yellow in mid summer. In the gorge, there are rich and varied traces of prehistoric habitation from the Bronze Age – around 4000 years ago - to the Middle Ages: settlement sites, graves and several thousand rock images.

Since the first petroglyphs were discovered in 1957, an impressive amount of multi-scientific work has been very professionally performed within topics like archaeological and geological/ paleo-geological surveys, image documentation and recording, excavations, paleo-botanical and –climatic studies, and ethnology. Emergency conservation activities have been tried out in the beginning of the 1990ies, however with little or no success¹.

The condition of the carved rocks is varied; some places not too bad, some places seriously critical, most often gravely worrying. The sandstone is extremely cracked in the rock surfaces as well as deep down in the rocks; there are crevices under the surface threatening to crack open and fall out; there are open exfoliations; and there are lichens and vegetation growing in and out of the wet cracks. Extreme sun exposure and quick and frequent temperature changes, freezing and thawing cycles within and behind the cracked surfaces, neo-tectonic activity and human impact are serious threats to the preservation of the rock art at the site. Immediate as well as long-term measures are vitally necessary in order to save and to be able to present the cultural heritage of Tamgaly Gorge.

The Tamgaly Petroglyph Site represents a vital part of Kazakhstan's Cultural Heritage. The purpose of the project is not only to preserve this rich heritage but also to present it to visitors – national as well as international. The site's sustainable development will be emphasised, notably through protective and prophylactic measures, through improving controled visitor access to the site, through promoting

¹ It should be mentioned that this is not particular to this area. In most parts of the world, rock art conservation has gone through several phases of trial and error.

the site as an interesting and beautiful tourist destination, and through the development of the skills and expertise of Kazakh and Central Asian professionals involved in the safeguarding and conservation of Cultural Heritage sites.

The project will thus serve as a focus for the sharing of expertise between international specialists and those from all over Central Asia, building national capacity and acting as a pilot project for other Cultural Heritage conservation projects in the region.

1. Project Background

For the past 15 to 20 years there has been a growing global concern about the difficult preservation conditions for prehistoric and historic rock art – rock carvings / petroglyphs and rock paintings. Not covered by protective layers of sand, soil and turf like many other prehistoric remains, the rock art is openly exposed to the dangers of erosion, weathering, deterioration and human impact. Rock imagery represents a source of knowledge different to that of settlement sites, graves and other constructions. It represents a possibility to create interpretations connected to the mythological, cosmological and ritual world; therefore it also represents a different path to the interpretation of peoples' social, cultural, economic, political and ideological ways of ordering their world.

At the same time, rock art is one of the most attractive cultural heritage categories of all to visitors and tourists. Symbolic imagery is an expression common to mankind, and rock carvings and paintings can be found in all corners of the world. The use of symbols, signs and imagery – regardless of the media in question – is a form of expression which ties people together across time and space. Without proper protective measures, the popularity of rock art represents a danger in itself: the danger of wear and tear, wilful or insensible damage, and overexploitation. Conservation, preservation and conscious short- and long-term management are necessary preconditions for presentation and development.

The combination of the great value of the site, the grave worries about its present and future condition, and a strong wish to present it to the public is the direct background for this project. Realising the global importance of the Tamgaly Petroglyph Site the Republic of Kazakhstan nominated it to the World Heritage Tentative List in 1998, and a close co-operation with UNESCO has since then been established. Through UNESCO, a contact was made with the Nordic World Heritage Office in Oslo in 2000, resulting in a first mission to Almaty and Tamgaly in April 2001 by two archaeologists/researchers/cultural heritage managers representing the Norwegian Directorate for Cultural Heritage. The Norwegian Ministry of Foreign Affairs financed the mission. A Senior UNESCO official from the Division of Cultural Heritage in Paris also joined the mission for its final days.

Tamgaly is a mountain gorge of the Chu-Lli mountains in the Almaty region, 43°48'12" N, 75°32'06" E. The gorge, oriented north-south, is situated 4 km from the village Karabastau and 180 km from Almaty. It is a semi-desert oasis and refuge for many species of rare plants and animals as well as for human beings. The main road to Almaty closes the gorge to the north and a dirt road leads through the gorge itself in a southerly direction to the farm of Mr. Samat Sakiev and his family. A small river, dry for most parts of the year, flows through the gorge between the low, coniform

hills. The vegetation consists of grass, flowers, herbs and bushes. There is some neotectonic activity in the area.

Over an area of ca. 3 x 10 km there are around 4000 petroglyphs in 7 main groups, groups I, II, III, IV, IVa, V and VI, on both sides of the centre of the gorge. The petroglyphs are found on flat, bare, sandstone panels and slabs in the hill slopes, for the most part facing south, southeast and southwest. In the outskirts of the main groups there are a number of scattered petroglyphs, single motifs here and there, and minor clusters.

Six stylistic and chronological phases can be distinguished: Middle Bronze Age, 14th - 13th cc. BC, Late Bronze Age, 12th - 10th cc. BC Transitional Period (Final Bronze Age, 9th c. BC, Early Iron Age (Saka, 700-200 BC), Wusun and Ancient Turkic Period (until c. 400 AD) and Medieval². The motifs consist among others of anthropomorphic figures, bulls, mountain goats, horses, chariots, and concentric circles. Several motifs seem to be combined in lively and beautifully composed scenes and narratives. Some are superimposed others, some are retouched and recarved and changed over time. Even though most of the motifs are very shallowly carved, they are for the most part clearly visible since they are made in rock blackened by desert varnish.

Rock carvings are not the only prehistoric remains in the Tamgaly Gorge. There is at least one settlement site and a number of graves from the Bronze Age. The settlement sites in the gorge are difficult to locate since they are covered by thick, deposited fluvial layers; the only one so far identified, in the middle of the western part of the gorge, was found after an intentional search and has been partly excavated. Several of the graves - chambers and cists constructed by stone slabs - have been excavated and studied. The excavated ones are located in the northwest part of the gorge. Some of the grave slabs are carved.

The rock art in the Tamgaly Gorge - in the context of the other archaeological remains, the landscape and the natural and cultural surroundings - is without doubt of high interest and significance, not only in Central Asia, but also in a global perspective.

2. Project Justification

Most of the cultural remains in the Tamgaly Gorge can be dated to the Bronze Age. The settlement site, the excavated graves and most of the rock carvings are dated to this period. Some of the motifs are unique to Tamgaly, some are more or less common to several sites in Kazakhstan and Central Asia, and some are typical motifs belonging to the different chronological phases. The rich and lively scenes and compositions in Tamgaly seem to constitute narratives, most probably connected to myths, rituals and cosmology. As a source material for further studies the Tamgaly material is of undisputed importance.

² The Central Asian chronology differs from the northern European one: Early Bronze Age: ca. 1800-1000 BC, late Bronze Age: ca. 1000-500 BC. The other periods mentioned cover the early Iron Age (500 BC-550 AD) and the beginning of the late Iron Age.

Two terms may be used to characterise the Bronze Age: communication and change. Bronze items changed hands, salt and foods were bartered, metallurgy spread, ideas, beliefs and symbols shared. There seems to already have existed connections between East and West in the Bronze Age, and there are indications that certain technological as well as cosmological traits were common to the steppe regions and Europe. Close scientific/archaeological contacts between the Central Asian and European countries will obviously be a benefit to all.

The Tamgaly Gorge is a site of universal importance as a human sanctuary for at least 4000 years. Through its combination of settlement sites, graves and petroglyphs in a beautiful natural and cultural landscape, Tamgaly represents a unique combination of high scientific interest and strong potential as a visitor's site. The combination of protection, preservation and conservation on the one hand, and visitation, presentation and tourism on the other, is in many respects a very difficult and critical one. In order to overcome the inherent difficulties, careful consideration, solid short- and long-term planning, flexible and multiple solutions, tailor-made monitoring models, regular management routines and local support are of vital importance.

Tamgaly can be translated into English as "the signs", meaning that the gorge is named after the rock symbols and signs. Except for the small dirt road leading through the gorge Tamgaly is an entirely authentic site in a beautiful natural setting. With its unique combination of nature and culture, Tamgaly could be an ideal target for tourists seeking "the real thing".

Tamgaly has a large tourist potential, but it needs to be prepared for such an influx. Being located only a few hours drive from Almaty, the country's commercial and cultural capital, the visitor flow, already increasing year by year, could very soon be quite substantial. Considering the present condition of the petroglyphs, a continued – and even increased – influx of visitors and tourism will be disastrous. The rock art is in urgent need of attention, and the whole site is in need of conservation and protection according to an overall management plan since:

- There is a threat of natural and anthropogenic disturbances to the structure and the surfaces of the engraved stones, which already require emergency action to be taken.
- As the site it is within easy reach of Almaty it is becoming more and more popular, and as its reputation grows, so does the flow of visitors. The development of private tourist agencies bringing visitors to the site has been very rapid, followed by a rise in the rate of deterioration. The regional and local authorities are planning further development of tourist activities here. The need for protective measures and active management of the site is urgent.
- Some of the engravings have been cut out and stolen, consequently a market for stolen pieces has appeared. At least 20 fragments of the petroglyphs have been removed in the last 2 years.
- Some of the visitors, out of ignorance more than malice, carve their own graffiti – often their names and declarations of love on masterpieces over 3000 years old. Some of these have been made directly on top of the ancient carvings. In the last 2 years more than thirty new inscriptions have appeared.

- The question of access also creates other problems – the lack of set footpaths means that tourists can and do clamber all over the rocks, which has resulted in some of them being dislodged, besides the dislocation of loose deposits.
- The quality of the sandstone on which the petroglyphs are carved makes it vulnerable to weathering, and practically all the panels are more or less densely cracked. The surface patina tends to exfoliate from the parent material, and crevices under the surfaces threaten to crack open. One of the most significant of the petroglyph sections, with seven anthropomorphs with rayed heads (group IV), is separated from the rock massif, and is gravely damaged by structural cracks. There is an urgent need to consolidate and conserve this stone face. The loss of important images will inevitably reduce the cultural and scientific value of the site, also its potential for tourism
- The natural weathering processes are speeded up by the growth of plants and lichens, extreme temperature changes and mechanical deterioration caused by frequent freezing- and thawing cycles.

3. Objectives and Goals

There is an urgent need of attention, management and conservation to prevent further damage to the Tamgaly petroglyphs, which represent an important part of Kazakh, Central Asian and World heritage. In addition, the excavated structures – settlement site and graves – need conservation and protection. In order to be able to combine protection with a growing number of visitors, the following project objectives may be formulated:

Through the protection, conservation and sustainable presentation of the Petroglyph Site of Tamgaly strengthen and increase the national capacity for the management, safeguarding and promotion of the of Kazakh Cultural Heritage.

In order to reach these objectives, the following goals can be formulated:

- Prevent further deterioration of the Tamgaly petroglyphs through active and passive emergency and long-term protective measures
- Provide protection for the other archaeological sites in Tamgaly
- Co-operation and training of national and international specialists and students in conservation and site- and visitor management
- Document the site, the environment, the art, the damage to the art and the causes of it, besides all measures taking place in the area for future evaluation and experience
- Creation and implementation of a Long Term Management Master Plan for the site's conservation, preservation and management including three thematic sub-plans:
 - Management, care and monitoring
 - Documentation, conservation and safeguarding
 - Education, information and tourism
- Gradually and in controlled forms encourage, facilitate and increase tourism to Tamgaly and consciously feed the national and international awareness of this and other Kazakh cultural heritage sites
- Involvement of the local population in the care of the site

4. Expected outputs

At the end of the project, the following outputs are expected:

- A. One of the most important petroglyph sites in the world, testifying to a long period of archaeological and historical interest across several thousand years, will have been secured for future generations
- B. A national strategy and Management Master Plan including sub-plans for the conservation, management and presentation of the Tamgaly Petroglyph Site will have been drawn up and implemented
- C. A Technical Report and inventory concerning the Tamgaly Petroglyph Site, including the training and updating of the skills of the local professionals involved in the safeguarding of the Cultural Heritage, will have been drawn up
- D. National capacity for the preservation of the Kazakh Cultural Heritage will have been greatly developed and strengthened
- E. Local, regional and national awareness of and interest and pride in the Cultural Heritage, not the least among schoolchildren and young people
- F. Promotional activities concerning the value of the Kazakh Cultural Heritage will have been undertaken, notably in the publication of special issues and articles through the UNESCO Media - including those of its International Partners
- G. A lasting, fraternal relationship and collaboration between UNESCO, Kazakhstan and Norway/Scandinavia to the benefit of all, extending to other Central Asian countries and regions.

5. Activities

While most of the activities listed below are directly part of the project, some have to be solved at a level other than the project level – administratively and/or financially, i.e. by Kazakh national and regional authorities.

To obtain the above-mentioned objectives and goals, the following activities are foreseen:

Activity 1: Administration and planning

- Establish national legal protection
- Establish a Temporary Management Agency
- Design and implementation of a Management Master Plan
- Design and implementation of three Management Sub-Plans
 - Management, care and monitoring
 - Documentation, conservation and safeguarding
 - Education, information and tourism
- Contacts and discussions with regional and national tourist organisations (should be facilitated by regional and national support)
- Annual reports, project evaluations, necessary project revisions
- Annual Review Mission (one representative from UNESCO, one from Norway) for an overview of management planning, project accomplishments, problem solving, and annual work plan review (preferably February each year)

Activity 2: *Infrastructure, Tamgaly*

- Close the gorge at north and south entrances (accomplished 2001)
- New road (750 m) north of the farm property (accomplished 2001)
- New road (3,5 km) north of the protection zone
- Repair of and clearing of rubbish along the entrance road to the site (ca. 5 km) (accomplished 2001)
- New roadsigns from the east and west
- Removal of modern ruins, deserted structures (not worthy of protection)
- Provide electricity
- Drilling of well
- Permanent mud brick building at the farm

Activity 3: *Field work – geology, documentation, conservation*

- Geological/geo-morphological surveys
- Finish image documentation
- Finish stereo-photogrammetry and panorama overviews (partly accomplished 2001)
- Systematic observation and monitoring of vegetation incl. lichens, damage, cracks, loose parts of rock, human impact
- Report on present over-all condition and give recommendations incl. involvement of the local population
- Damage documentation (cavities, cracks, exfoliations, vegetation, lichens in cracks and on surfaces, human impact)
- Test panels for removal of vegetation in cracks
- Creation and implementation of monitoring models
- Direct conservation

Activity 4: *Documentation, office/archive work*

- Prepare for damage documentation (photos of rubbings w/. scale)
- Compilation of all documentation and archive information
- Comparisons btw. photos from different years – study development of damage and establish weathering rates
- Multi-scientific, international advice and conservation re: big crack in group IV

Activity 5: *Protection of archaeological structures*

- Settlement site - plans, decisions, preparations, implementation
- Graves - consolidation, fencing, information boards

Activity 6: *Database*

- Equipment
- Data input - archaeological, image, archive and damage information, conservation, management and monitoring information

Activity 7: *Custodians and guides*

- Involvement of the village population (already started)
- Education and training (already started)

Activity 8: *Facilities for visitation*

- Parkinglots by farm and at camp
- Toilets
- Provide yurtas (the movable houses of the steppe) for sales and food

Activity 9: *Education, information and tourism*

- Information boards
- Establish visitor's paths with signposts (started 2001)
- Provide binoculars for visitors
- Program for school teachers
- Establish regular bus connections from Almaty
- Plan, prepare and develop sales products

Activity 10: *Training and Kazakh national capacity building*

- Visit from Norway – 2 experts. Training in conservation, damage documentation and lichenology (preferably with involvement from Khyrgyzstan, Uzbekistan and Russia/Siberia)
- Visit to Norway and Sweden (Alta, Vingen, Tanum plus Oslo) – 3 persons (not included in this budget)
- Yearly visit from Norway, management planning and project support – 1 person

Activity 11: *Publications*

- Produce an information leaflet in Russian, Kazakh and English
- Produce a guidebook in Russian, Kazakh and English
- Publish a Technical Report on the project activities and its execution
- Publish a Final Report with evaluation of the project

6. Roles, obligations and responsibilities

Committee of Culture

Implementation Agency with responsibility for the project, through NIPI PMK
Supervision of the project
Approval of plans, proposals and solutions
Quality and budget control
Annual progress reports

Temporary Agency for the Management of the Petroglyph Site of Tamgaly, at NIPI PMK

Organisation and administration of the project
Planning (Master Management Plan with sub-plans)
Implementation of the plans
Reports to the Committee of Culture, through NIPI PMK

NIPI PMK

Co-ordination of the project and keeping account
Communication with all institutions and individuals involved

Organisation of expert meetings for discussions of current scientific and technical matters, plans and proposals
Quality control through monitoring and periodical evaluation

The Norwegian Ministry of Foreign Affairs

Funding, based on periodic reporting and approved accounts

The Norwegian Directorate for Cultural Heritage

Provides expertise and advice

Collaborates with UNESCO on annual programs and reports

Reports on request to the Donor on the progress and the quality of the project

UNESCO, Division of Cultural Heritage in collaboration with UNESCO Almaty Office

Serves as Executing Agency

Technical, administrative and logistic programme support

Quality and budget control

Collaborates with the Directorate for Cultural Heritage on the preparation of annual program and progress reports

Annual Review (with donor) with examination of the project's progress and achievement

Preparation and publication of the final report

7. Reports and Monitoring

The Kazakh National Project Co-ordinator, who will be appointed by UNESCO in consultation with the Kazakh and Norwegian authorities, shall submit an Annual Progress Report to UNESCO through the UNESCO Almaty Office, and UNESCO shall then submit an Integrated Report to the Norwegian Government. At the end of the project, UNESCO, in close collaboration with the Kazakh authorities, will organise a Norway – UNESCO Joint Mission for the evaluation of the Project and a tripartite meeting shall be held on site and in Almaty during the mission. The mission should be covered separately by the Norwegian Ministry of Foreign Affairs, for Norwegian experts, and the UNESCO participation.

8. Budget

The following contributions, which cannot be estimated at this point, are expected from the Kazakh national/regional administrations:

- New road north of the protection zone
- Road signs
- Electricity
- Infrastructural measures
- Income from visitors should be directly fed back into the project from the start

Annual budget in US \$ - Norwegian support (for budget details, see Annex 2):

Activity	2001	2002	2003	2004	SUM
Co-ordination, administration, , planning, etc. work	4.750	9.500	9.500	4.750	28.500
Conservation	1.210	2.420	2.420	1.210	7.260
Perdiem, transport and materials	3.300	6.600	6.600	3.300	19.800
Archaeological documentation and recording	5.000	*	*	*	5.000
Geological field work	2.050	4.100	4.100	2.050	12.300
Education, Information and Tourism	1.000	1.200	1.400	500	4.100
On site investments	9.700	25.800	8.000	2.000	45.500
Special protection		22.000	8.000		20.000
Database and computer equipment		8.000	2.000*	*	10.000
Expert visits		20.100	2.600	2.600	25.300
SUM	27.010	99.720	44.620	16.410	187.760
Minus: UNESCO national contribution	-9.500				
<i>per year</i>	17.510	99.720	44.620	16.410	178.260
<i>+ 10% unforeseen expenses</i>	<i>1.751</i>	<i>9.972</i>	<i>4.462</i>	<i>1.641</i>	<i>17.826</i>
Total cost	19.261	109.692	49.082	18.051	196.086
<i>UNESCO Programme Support Cost 13%</i>					25.491
GRAND TOTAL					221.577

* Work included in administration etc.

Annex 1. Work Plan

Activity	2001	2002		2003		2004
Season	2. part	1. part	2. part	1. part	2. part	1. part
Administration and planning						
Establish legal protection						
Establish Temporary Management Agency						
Design of Management Master Plan						
Design of 3 management sub-plans						
Contact with tourist organisations						
Evaluation and reports						
Visit to Norway, project participants						
Visit from Norway, management						
Permanent management structure and org.						
Conference						
Infrastructure, Tamgaly						
Close the gorge						
Toilets						
Well						
Road works						
Parking lots						
Removal of modern ruins						
Electricity						
Plan and build permanent brick building						
Scientific- and field work						
Geology and geo-morphology						
Compilation of documentation etc						
Archaeological documentation						
Establish test areas, models for monitoring						
Report on condition						
Monitoring						
Visit from Norway, conservation						
Damage documentation						
Direct conservation						
Protection of archaeological structures						
Management database						
Facilities for visitation						
Information boards						
Visitors' paths						
Binoculars						
Development of sales products						
Yurtas						
Regular bus connections						
Education, information and tourism						
Involvement of local population						
Training of custodians and guides						
Information leaflet						
Guide book						
Devel. and implement. of school's programs						

Annex 2. Budget details

In US \$

Activity	2001	2002		2003		2004
Season	2. part	1. part	2. part	1. part	2. part	1. part
Wages and field work incl. perdiem						
Project co-ordinator incl. documentation work	1.800	1.800	1.800	1.800	1.800	1.800
2 project assistants	2.500	2.500	2.500	2.500	2.500	2.500
Management, 2 months per whole year	180	360		360		180
Management planning and ethnology	270	540		540		270
Conservation leader	625	1.250		1.250		625
Conservation assistant, 3 months per whole year incl. perdiem	585	1.170		1.170		585
Geology/geo-morphology, 4 pers/6 months per whole year incl. perdiem	2.050	2.050	2.050	2.050	2.050	2.050
Perdiem, 4 ½ units/4 months/10\$	2.700	2.700	2.700	2.700	2.700	2.700
Transport	100	100	100	100	100	100
Materials	500	500	500	500	500	500
<i>Sub-total</i>	<i>11.310</i>	<i>12.970</i>	<i>9.650</i>	<i>12.970</i>	<i>9.650</i>	<i>11.310</i>
<i>Sub-total per year</i>	<i>11.310</i>		<i>22.620</i>		<i>22.620</i>	<i>11.310</i>
Archaeological doc. and recording						
Image documentation, leader+3 ass./1½ month	2.500					
Recording of 350 rubbings	1.500					
Buying back photos from 1972	500					
Photogrammetry, group IV	500					
<i>Sub-total</i>	<i>5.000</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>
<i>Sub-total per year</i>	<i>5.000</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>
On site investments						
Road bypassing the farm	750					
Closing the gorge	5.700					
Repair of entrance road		500				
Removal of rubbish, entrance road		500				
Parking lots	550					
Toilets, permanent and movable	700	4.000				
Drilling of well	2.000					
Yurtas, 1 large, 9 small incl. transport		4.300				
Removal of modern ruins		8.500	8.000			
Permanent mud brick building				2.000	6.000	2.000
<i>Sub-total</i>	<i>9.700</i>	<i>17.800</i>	<i>8.000</i>	<i>2.000</i>	<i>6.000</i>	<i>2.000</i>
<i>Sub-total per year</i>	<i>9.700</i>		<i>25.800</i>		<i>8.000</i>	<i>2.000</i>
Other investments						
Protection of group IV (special project)		10.000	10.000			
Protection of archaeological structures			2.000	8.000		
Management database			8.000	2.000		
<i>Sub-total</i>	<i>0</i>	<i>10.000</i>	<i>20.000</i>	<i>10.000</i>	<i>0</i>	<i>0</i>
<i>Sub-total per year</i>			<i>30.000</i>		<i>10.000</i>	

Activity	2001	2002		2003		2004
Season	2. part	1. part	2. part	1. part	2. part	1. part
Education, information and tourism						
Education of custodians and guides	200	100				
Path of visitors	400	300				
Binoculars	300		300		400	
Information boards	100	200				
Information leaflet, 3000x		200				500
Guide book, 2000x				700		
Translation		100		300		
<i>Sub-total</i>	<i>1.000</i>	<i>900</i>	<i>300</i>	<i>1.000</i>	<i>400</i>	<i>500</i>
<i>Sub-total per year</i>	<i>1.000</i>		<i>1.200</i>		<i>1.400</i>	<i>500</i>
Expert visits						
Conservations from Norway		9500				
Management from Norway		2.600			2.600	2.600
Conservations and management from Kazakhstan to Norway incl. exp. for hosts			8.000			
<i>Sub-total</i>	<i>0</i>	<i>12.100</i>	<i>8.000</i>	<i>0</i>	<i>2.600</i>	<i>2.600</i>
<i>Sub-total per year</i>	<i>0</i>		<i>20.100</i>		<i>2.600</i>	<i>2.600</i>
Sum	<i>27.010</i>	<i>53.770</i>	<i>45.950</i>	<i>25.970</i>	<i>18.650</i>	<i>16.410</i>
Minus: UNESCO national contribution	-9.500					
Costs	<i>17.510</i>	<i>53.770</i>	<i>45.950</i>	<i>25.970</i>	<i>18.650</i>	<i>16.410</i>
Costs per year	<i>17.510</i>		<i>99.720</i>		<i>44.620</i>	<i>16.410</i>
+ 10% unforeseen expenses	<i>1.751</i>		<i>9.972</i>		<i>4.462</i>	<i>1.641</i>
Total costs	<i>19.261</i>		<i>109.692</i>		<i>49.082</i>	<i>18.051</i>

Plus expected Kazakh national/regional contribution, not evaluated

Total Costs: 196.086 US \$

UNESCO Programme Support Cost 13%: 25.491 US \$

GRAND TOTAL: 221.577 US \$

APPENDIX V

RIKSANTIKVAREN. Directorate for Cultural Heritage, Oslo, Norway

The Tamgaly petroglyph site Almaty Oblast, Republic of Kazakhstan

**Report: Second mission
to Almaty and Tamgaly Gorge, June-July 2002**

**Written by: Anne-Sophie Hygen, the Directorate for Cultural Heritage, Oslo
Torbjorg Bjelland, University of Bergen, Bergen
Kjartan Gran, Tromsø**

SCANNED COPY

RIKSANTIKVAREN

DIRECTORATE FOR CULTURAL HERITAGE, Oslo, Norway

**THE TAMGALY PETROGLYPH SITE
ALMATY OBLAST
THE REPUBLIC OF
KAZAKHSTAN**

**REPORT:
Second mission to Almaty and Tamgaly Gorge
June - July 2002**

Anne-Sophie Hygen, the Directorate for Cultural Heritage, Oslo
Torbjorg Bjelland, University of Bergen, Bergen
Kjartan Gran, Tromsø



Summary

In spite of major problems due the Agreement between Kazakhstan and UNESCO not yet having been signed by the time of the Norwegian mission, consequently a halt of UNESCO payment out of the Norwegian donation, the Tamgaly Management, Conservation and Presentation Team connected to the State Institute for Scientific Research and Planning on Monuments of Material Culture (NIPI PMK) has done important and an impressive amount of project work. In particular, the efforts have been concentrated on geological survey and measures connected to public visitation. However, the project basically came to a halt when the Norwegian mission was completed, although some work will continue financed by the Kazakh national contribution for 2002.

Fotographs

Front page and chapter 1-5: Anne-Sophie Hygen

Chapter 6: Torbjörg Bjelland and Kjartan Gran

Cover photo.

When arriving at the north entrance of Tamgaly Gorge, you are met and welcomed by guards who also offer guide service. The information signs at the north and south entrances, with text in Kazakh, Russian and English are temporary

Foreword

Based on the report *First mission to Tamgaly Gorge 20-30 April 2001* by Anne-Sophie Hygen and Gro Mandt, the Norwegian Ministry of Foreign Affairs decided to donate NOK 950.000 (USD 101.990) to the management, conservation and presentation of the Tamgaly Petroglyph Site, Almaty oblast, the Republic of Kazakhstan, 2002-2004 (2 ½ years). The money was transferred to UNESCO, Paris, as the International Implementation Agency and a UNESCO / Norwegian Trust Fund document was signed and dated 21 January 2002. The Norwegian Directorate for Cultural Heritage, as a cultural heritage authority, acts as adviser to the project in scientific, management and practical project related matters.

The second Norwegian mission to Almaty and Tamgaly took place in June-July 2002: Lichenologist Torbjørg Bjelland and conservation technician Kjartan Gran, 19 June — 11 July. Adviser/archaeologist Anne-Sophie Hygen, 26 June — 5 July.

The participants of the Norwegian team want to express our gratitude for the not only highly professional but also the warm and friendly way in which we were received by our Kazakh colleagues. We got the 2001 experiences confirmed to the full: in spite of the vast distance between our two countries, major language differences and differences in cultural and scientific traditions — when it comes to care of prehistoric rock art, cultural heritage management and human relations we simply "speak the same language". We are pleased to be able to state that we, and our Kazakh colleagues have a common, firm conviction that international collaboration is vitally necessary in cultural heritage work. We hope and believe that they also share our conviction that the Kazakh — Norwegian co-operation is to the equal advantage of both parties.

According to normal standards, this report is much too long, not the least because we have chosen to include a number of photographs. Let's just call it our way of honouring the efforts of our Kazakh colleagues and friends under extremely difficult and demanding conditions.

The Directorate for Cultural Heritage

Oslo/Bergen/Tromsø 24. september 2002

Anne-Sophie Hygen

Torbjørg Bjelland

Kjartan Gran

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1. Project status as of first half of 2002

1.1 Contributions

In 2002, there are three different sources of financing for different, although closely related categories of tasks:

UNESCO contribution, financed by the Norwegian donation

Based on the agreed budget, altogether USD 44.320 is allocated to the first project year (1 half of the year: 29.420; 2 half: 14.900). The money was allocated to 5 activities: Wages and field work, USD 19.520 (11.620+ 7.900); on site investments, USD 7.000 (5.000+ 2.000); Other investments, i.e. database, USD 5000 (0+ 5.000); education, information and tourism, USD 800 (800+ 0); and expert visits, i.e. from Norway, USD 12.000 (12.000 + 0).

Kazakh national contribution

For 2002, the Kazakh national authorities have contributed 3.000.000 Tenge (USD 19.737): for site protection and management, USD 9.846 (4.476 + 5.379); infrastructure measures, USD 9.484 (7.973 + 1.511); and work and materials connected to visitation and marketing, USD 378 (120+ 278)¹². Besides, the 2002 Kazakh contribution is also expected to be in kind, concentrated on tasks like legal protection, the establishment of a temporary Management Agency within NIPI PMK and support and facilitation of co-operation with tourist organisations.

World Heritage nomination

Tamgaly Gorge was inscribed on the National World Heritage Tentative List in May 1998 by the Committee of Culture, a committee under the Kazakh Ministry of Culture. The preparations for the nomination to the WH List has been going on ever since, and in mid 2002 a UNESCO grant of USD 6.000¹³ was made available for the nomination. The nomination documents will be prepared by NIPI PMK and will be submitted by 31 December this year. Much of the work connected to the nomination is overlapping with the project work.

1.2 Causes for and consequences of absent or late contributions

By the time of the Norwegian mission, the UNESCO contribution for 2002 was still not made available to the project. This means that USD 17.420¹⁴ worth of work, according to

¹² The Kazakh contribution of 3.000.000 Tenge for 2002 was authorized by the Ministry of Finance and transferred to NIPI PMK in May. This contribution includes the salary for attendants of the Tamgaly complex (manager, 4 guardians, 2 workers and guide), and also payment of some urgent works - removing of the archaeological spoil pits, building of winter shelter for guardians, and purchase of a car, portable radio transmitters and another necessary equipment.

¹³ Of a USD 9000 grant in total. According to the contract, a first advance of USD 6000 was made for necessary field work and preparations of the Tamgaly Site nomination dossier.

¹⁴ Subtracted from the total sum of USD 29.420 for to the 1 half of 2002, is the USD 12.000 allocated to the expert visits from Norway. The first payment under the contract was transferred to the Directorate for Cultural Heritage in the beginning of September.

the agreed budget, could not be done. According to our information, the crucial reason is that the Agreement (Plan of Operations) between UNESCO and the Kazakh authorities, i.e. the Ministry of Culture, has not yet been signed. Until the Agreement is signed by both parties UNESCO is not willing to transfer this year's payment. The trouble seems to be that the Kazakh authorities have not yet accepted certain items of the Kazakh financial and in kind contribution, such as the establishment of the Temporary (during the project period), later the Permanent (per 1 July 2004) Agency for the management and preservation of the Tamgaly Gorge Petroglyph Site, under NIPI PMK.

The Norwegian project adviser is gravely worried about this situation and its short- and long term consequences and immediately after clarification of the problems on arrival in Almaty reported to the Norwegian Directorate for Cultural Heritage, the Norwegian Ministry of Foreign Affairs in Oslo and the Norwegian Embassy in Moscow. The adviser has urgently called for serious and immediate action by the international UNESCO and the Kazakh national offices, with the support of the Norwegian MFA, to put adequate pressure on the Kazakh authorities in order to solve the problems and get the Agreement signed without further delay.

Neither the Kazakh national contribution nor the UNESCO World Heritage nomination contribution was made available to the project until around the middle of the year. The nomination contribution makes it possible for the project co-ordinator to continue his work through 2002. Except for activities being financed through the Kazakh contribution, all others came to an immediate halt by the end of the Norwegian mission.

Obviously, this situation has created major problems for the project, and the intended progress in 2002 cannot possibly be achieved. Moreover, this will create a "domino-effect" all through the project.

What may now safeguard the necessary project progress and save the project from irreparable damage is that the 2002 UNESCO contribution made available early in the second half of 2002. By the time this report is finished, we have still not got any positive confirmations.

During the Norwegian mission we created a revised project budget meant to remedy the grave situation (cf. chapter 5.4 and annex II), provided that the contribution for 2002 is transferred without further delay. If not, a revised project plan with a new budget has to be created. At present, the consequences cannot be fully foreseen; one may be that the project has to go on for a longer period of time.

There seems, according to our understanding, to be basically four reasons why the project has been able to show any progress at all. The first is the USD 2.700 made available by the Norwegian Ministry of Foreign Affairs which were left over from the first mission grant in 2001; the second is the Kazakh national contribution of USD 478 for a field seminar 2002 besides contributions available to establish guard/guide service and certain other infrastructure investments; the third is the fact that the project participants to a large degree have worked without payment; and finally, the fourth and dominant reason is that all the participants have a strong sense of responsibility, idealism, belief in the project and love for Tamgaly. Fine as this idealism is, it goes without saying that the situation is intolerable and not to be accepted (cf. chapter 4.1).

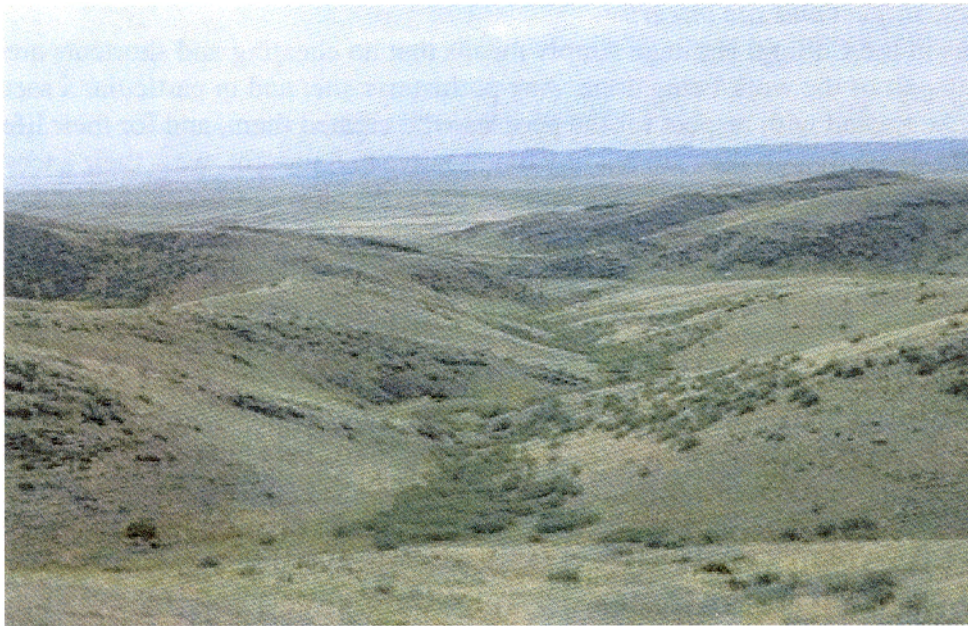
2. Guidelines for management, conservation and visitation

The Tamgaly Project Team and the Norwegian advisers are in perfect agreement on the underlying principles and guidelines to be applied in a cultural heritage and landscape project like this. It should be noted that these are well in accord with the international charters and conventions covering the field.

The basic guidelines to be applied in Tamgaly can be summed up as follows:

Environment and context

Cultural heritage monuments and sites are intimately inter-woven with the landscape and its different species and resources, to the extent that they cannot be separated. Neither human beings nor nature are independent cultural determinants. The peoples and the landscapes formed and were formed by each other. This fact makes it unacceptable as well as unreasonable to treat the monuments separately from their environments - past and present, and vice versa. Everything is part of the same contexts, also meaning that everything that is done with the monuments and their surroundings must be treated contextually.



The pristine and sensitive Tamgaly landscape is an experience in itself and must be cared for in a careful and conscious way. The Gorge itself runs north south towards the two hills in the upper part of the photo. Seen from southwest from the top of the hill north of the settlement site.

The local community

Motivation, understanding and active participation on the part of the local community are necessary factors for the success of any cultural heritage project. This means that short- and long- term local involvement and commitment must be of high priority from the start, preferably based on active collaboration and the taking part of the decision-making. Sustainable development in this connection means that the project should not in any way

cause threats to or destruction of local traditions, values and social rules but serve as a positive factor for the preservation, development and wellbeing of the community.

Minimum intervention

It has to be realised and accepted that any conservation and management project implies certain interventions. Without them, no preservation and protection measures or scientific work could be performed, and the site could not be open for visitation. The idea is always to bear in mind, regardless of what their causes are, that the interventions to an as large as possible extent visually, physically and materially should be as unobtrusive, invisible, minimalist, reversible and environment friendly as possible. Samples should never be taken from surfaces with petroglyph and experimental conservation and tests should never be performed on petroglyph surfaces.

Maximum of expertise, knowledge and experience

No site is exactly the same as another. Still, experience from similar work at other sites is compiled in basic methodologies that must be applied and modified to the site in question. Together with intimate knowledge and understanding of the particular site and its characteristics, methodological adaptations based on experience and research must be combined to the best for the site, the present population and visitors.

Ethics, respect and site integrity

Ethics in the Cultural Heritage simply means that no cheating and shortcuts are acceptable in any part of the work being done. Any prehistoric site, and in particular a sacred site

must be treated with respect for the peoples who created them, and for their life, acts and beliefs. Even though they are not any longer alive and present, we — their ancestors — are. Life on earth would be impossible without our predecessors who created what are our own physical, social, technological and spiritual platforms. Treating a prehistoric site with integrity, as holding its own integrity, means to continue to carefully enhance qualities that are indispensable to any society.

Using the site without damage

People living in the present have a right to experience, enjoy and learn about previous cultures, expressions and cultural environments. Presumably, a sustainable use of cultural heritage sites, monuments and landscapes, based on principles of ethics and integrity, will affect visitors positively. Through appreciation, understanding and respect for prehistoric expressions and the values involved they will also get an understanding of the necessity of preservation and modern use of heritage sites without major intrusions. How the site is managed regarding instalments and other infra-structural measures will, hopefully, influence and set an example for visitors' proper behaviour.

3. Achievements

The achievements described below must be regarded as having been done not because of, rather in spite of the Norwegian donation comprising the main UNESCO contribution, since it has not been made available in time. Still, the national UNESCO office in Almaty has supported the project and their 2001 contribution together with the Kazakh national contribution still made the project somehow functioning.

Technically, since one of the roles of the Norwegian adviser is to report to UNESCO and the Norwegian Donor - the Ministry of Foreign Affairs - on the internationally supported project, nothing should be reported at all and this chapter should be blank, except for a few words on what the Norwegian team actually did during the mission. However, by disregarding this technicality, the author wants to honour the professionalism, integrity and dedication of the Project Team; they are able to make the impossible possible.

3.1 Closing the Gorge

The first priority in the project has from the start been to close the dirt road passing through the Gorge. The road was created some time in the Soviet period by heavy military vehicles (the Gorge was then used as a military training ground). Probably both before and certainly after this, the road were used for legal and illegal traffic alike.

The main work on closing the Gorge was done in the second part of 2001, financed by a grant by the national UNESCO office that year (USD 9.070). The barriers were repaired and improved in May-June 2002 through the Kazakh contribution.

Following the principle of minimal interventions to the landscape the Team chose to use natural stone as materials. They have created small piles of stones making it impossible for vehicles to pass through the Gorge from the north and south entrances. Since they experienced that visitors dismembered the piles, they had to enforce them by cement mortar doing careful masonry.



Small, mortared stone piles close the north entrance of the Gorge.

They also experienced that cars bypassed the closed road entrances by driving on natural ground. This unpleasant practice made it necessary to continue the rows of stone piles at certain places, reaching towards hilltops. This is done with great care and sense of landscape and represents only very minor physical and visual interventions to the landscape.

3.2 Geological survey

The geology in Tamgaly is an extremely complicated one, influencing what can and cannot be done in relation to conservation, safeguarding and visitor's availability to sites to see. The following is based on an oral report from the chief geologist of the Tamgaly Team, professor Bolat Aubekerov.

The strengthening of the visitor's paths to petroglyph groups II, I and IV

The slopes must be monitored carefully since the ground is unstable in this neo-tectonic region and there is a danger of landslide. This also means to have control over the vegetation. Every measure connected to the removal of or adding to footpaths has been based on an understanding of the particular conditions. Below some of the petroglyph groups, tectonic cracks may cause the loosening of blocks representing a danger both to the monuments and to visitors. Some of the already established paths must be made more stable, and some new routes must be found which are geologically more suitable. Typical of the situation in Tamgaly is that there is silt beneath the stone-covered surfaces. If stones are removed from the surface in order to clear paths, the soft silt ground is uncovered and will be washed out, which again will provoke further erosion. Rather, the paths must be re-covered with suitable quality stones. When steps are created in the footpaths, they must be built into the ground for the same reasons.

A special study of group IV

In the caption to the photo on page 33 in the first mission report (200 I) the condition of petroglyph group IV is briefly described. The urgent question has been how to prevent the front panel rock to collapse.



The Group IV petroglyphs are the most spectacular of all in Tamgaly, and at the same time the most endangered. The critical point of the panel is at the bottom left.

Through his geological study and recordings of major and minor cracks, Aubekerov has been able to find the crucial point to be supported physically, as a counter force (“buttress”) to block the forces acting outwards in order to keep the whole stone wall stable. The key point is at the bottom left of the panel. How this is to be solved in practice is a matter for engineers. A partly loose block in the bottom middle part has to be supported, too. At the same time, nobody must be allowed to walk on the top of the panel.

This study for done in the second half of 2001, financed by the grant by the national UNESCO office that year. Further studies are necessary to find the safe and effective way to consolidate, possibly fill in, the big crack in the longer perspective (cf. chapter 5.1).

Studies concerning the effects of tectonic activity

What are the consequences of the tectonic movements and how can they be met? The negative influences can be extremely local and are conditioned upon the existing individual situation. A program has been made on the possible successions of damaging effects, in particular concerning group IV. The crack structures are complicated to the extreme.

Safeguarding of dangerous places

Based on the “testing” of visitors’ paths by the Norwegian team, some dangerous places for visitors where identified, especially concerning groups II and III. Based on geological studies and advises, engineers must be consulted to find effective measures of minimal physical and visual intrusiveness. The Norwegian team suggested metal platforms camouflaged in the best possible way.

Monitoring

Future studies have to include the monitoring of water drainage and channels causing erosion, landslides, thermal crack developments and uncontrolled growth of lichens and plants. This work has not started yet.

Education

There are a number of interesting geological phenomena in the Gorge that will be of interest to visitors. Plans should continue for the development of signposts and other written information, and the guard/guides should be educated to be able to cover basic geological information.

External expertise

There is a strong need to get external advise and support on geological engineering and geomorphology. This was realised after the initial budget was created, and the budget is so tight that it does not allow for major reallocations. The problem was solved after the mission through a special grant of USD 1000 from the Directorate for Cultural Heritage.

3.3 Palaeobotanic studies

Based on pollen analyses of several samples taken from the profiles of the excavated settlement site it has been possible to draw conclusions on the climatic conditions in Tamgaly during prehistoric phases, besides on climatic changes. In the late Bronze Age, i.e. at the time the site was settled, the climate was dry, dryer than today. This conclusion is also drawn from the fact that if the weather had been wetter that particular site simply

could not be settled. The first half of the Iron Age saw more pluvial conditions here on the Steppe, while in the mountain areas, this change took place in the second part of the Iron Age. During the later periods, late Iron Age and Medieval Ages, the climate gradually approached today's. The characteristics of today's climate is that it is severely continental, i.e. basically arid. The temperature in the Late Bronze Age was around 1,5°C warmer than today.

3.4 Archaeological documentation and recording

Due to lack of economic resources for previously described reasons, the continuation of archaeological documentation and image recording has come to a temporary halt. Some new recordings were produced in the second half of 200 I, financed by the grant by the national UNESCO office that year. There are still a considerable number of panels to be recorded, and archaeological landscapes and situations to be documented. During a meeting/excursion of archaeologists and heritage managers, however, the participants were asked to do some rubbings, thereby adding to the number of recordings without expenses.

3.5 Leaflet and guide booklet

A guide leaflet with a map showing the site with the visitor's path and with text, recordings and high quality colour photos have been created by the project co-ordinator, dr. Alexey Rogozinsky. He has also made a 15 page illustrated guide booklet. Both are produced in Kazakh, Russian and English, 500 of each of the languages so far, and are highly informative as well as visually pleasing. The guards sell these products to visitors 50 Tenge for the leaflet, 100 Tenge for the guide booklet.



The English translations could have been better and the Norwegian project adviser has promised to have a look at it; also to suggest possible experience based improvements - if necessary at all.

These products, too, were financed by a special grant by the national UNESCO office ⁴ on the condition that the sales income is to continuously be earmarked reprints.

3.6 Facilities for visitors

To describe the measures so far having been done to the pleasure for, wellbeing of and information to visitors, the author wishes to take the readers along on a story-tour through Tamgaly Gorge from the beginning to the end. All information is, of course, based on facts and own experience - although with some freedom of improvisation.

Referring to the map (Annex I) showing the paths and what has been done already we start by turning left (south) from the Almaty - Bishkek highway, c.4 km past the village of Karabastau. The map is created by senior specialist Kadisha Imanbekova who is one of the important brains behind this part of the project. The works were done in May-June 2002 and financed through the Kazakh contribution.

Low coniform hills, almost like round pyramids, look as if they grow up from the Steppe ground. Arriving by car, we are allowed to drive through the "lock", meaning that buses can't pass beyond it. They must park just a short walk from the proper north entrance. When we pass the bus parking lot ⁵ we notice two triangular outdoor toilets to the left of us; very convenient, the drive from Almaty took us more than 3 hours...



One of the two toilets north of the north entrance to the Gorge.

⁴ Ms Gulnara Kapekova has been particularly helpful.

⁵ So far meant to house 2-3 buses at a time.



Temporary information signposts are set up at the north and south entrances. A sponsor will finance new professionally designed information posts.

We park the car when we realise that we can drive no further, the road is blocked by two rows of small and very discreet stone piles ("varder" in Norwegian) and there is a blue information signpost with a map and a text painted in white, in Kazakh, Russian and English.

While we're studying it (later we learn that it is to be replaced⁶⁶), we realise that a young man in a nice uniform is approaching us. He's the guard and he says that he can also give us a guided tour, if we like. We do. Admission is free (good!) and he offers us to buy an information leaflet with a site map and a booklet. We do that, too. According to Western European standards the price is ridiculously low and we almost want to pay him the double amount. At least.

First we turn right, and checking the map we understand that our guide first of all will lead us to a Bronze Age gravesite. Suddenly we are aware of a stone on the ground with a snake painted in bright orange.

- A-a-are there snakes here???

- Yes, says the guide calmly, - and some of them are poisonous. By the way, there are Black Widows and Tarantellas here, too, so you'd better look where you're going!

- (Oops!)

- But don't be afraid, he adds, - I'll be on the lookout. Besides, if you don't bother them, they won't bother you.

Oh well. We approach the first of the three burial grounds.

⁶⁶ They have managed to find a sponsor for the production of specially designed signposts.

There is no vegetation surrounding the graves so they are easy to notice (they should care for the vegetation so that it will always be like this!). There are elevated "platforms" covered with flat stones, giving us a good view inside the grave⁷. , The graves are stone cists, and one of them even has got petroglyphs on a side stone slab - upside-down! We realise that they are meant for the dead, not for the living. Nice.



The platforms by the graves, actually recycled excavation dirt piles, give a good view inside the graves, designed to avoid intervention by visitors going close to them or even into them or even into them. Erecting a low, discrete fence for further protection is under discussion.

There are two more groups of graves, and by then we are ready for the rock carvings. We turn back to the north entrance while the guide tells us about climate, landscape and plants in the Gorge.

Another short walk and we turn left on a path marked on the roadside by a blue arrow sign with "Group I and II" painted on it (actually, we are only allowed to visit Group II so we think that "I" should be omitted). Orange arrows painted on small stones on the ground make it next to impossible to take a wrong path. Besides, in order to make us stick to the "narrow path" they have also painted stop signs and made tiny piles of stones where we shouldn't walk.

Rock carvings - petroglyphs - rock art! Whatever one chooses to call them, they are wonderful! Even though they are very shallowly pecked, they stand out quite clearly against the bluish black patina on the stone surfaces.

Discrete steps made in the path make it fairly easy to descend, and arrows point to a path going left at the bottom of the hillside and towards group III. A rubbish bin is placed in a slight depression by the path, so discretely that we notice it when we're only a few meters from it. So we rid our pockets of some waste, just to test the facilities.

⁷ Actually, they have very ingeniously «recycled» the excavation dirt piles for making the platforms!



“Playing on nature’s team” is a good rule for non-intervention management. In Tamgaly, they have actively used the sticky thistles to stop visitors from going where they shouldn’t and made small piles of stones to close possible paths. A few stones painted “STOP” make the message clear.

*When we're between two hills, a pair of binoculars is painted on a stone. Let's do it! Opposite group **III** some thoughtful persons have paved the ground with flat stones, like seats. We take a seat, fish out binoculars and water bottle from our pack pack and --- we get a spectacular sight! The opposite hillside is simply crowded with petroglyphs!*



View of Group III from the resting place just opposite. Most of the panels are crowded with rock images.

A pregnant animal, a human-like figure with head rays, and a great number of different animals large and small- the hillside is practically alive! We are allowed to approach the panels, again we follow the arrows and are able to study them fairly close up. More than 3000 year-old art!⁸ Our guide tells us that Tamgaly means “place of signs” and that the whole of Tamgaly is a sacred site - a sanctuary - and we have no problems believing him. We feel that some improvements could be made to let us view and photograph the “solar figure“, as the guide calls it, and the pregnant animal more comfortably, but we are sure that the clever managers have thought about that already. Actually, the guide says that the path with its instalments is not finished yet.



A slight modification of the road makes it possible to pass wet spots without getting one's feet wet.

We are ready for more sights! We return to the dirt road and follow it to an arrow pointing to group V to the left. The guide explains that by visiting Group V before Group IV, the return will be shorter. Fair enough. By then we have noticed another clever thing done for our wellbeing; the road is rather wet (they say that this summer has been unusually rainy), but slight build-ups of stones on the road, like tiny open bridges, allow us to pass without getting our boots wet at all. Clever!

The path leads us to the top of the hill, then turning right and a little down and right again. In order to reach the highlight of this group - a human-like figure with rays around the head that the guide tells us is used as logo for the Kazakh Music Festival- we have to enter a rather tiny space. Falling down the steep slope would be unpleasant to say the least, and we think that the managers should do something about it.

Anyway, we descend safe and sound, cross the road and then we're on the path to group IV. By now we are, to be honest, hot and a tiny bit tired. How pleasant it would be to sit down in the shade for a while, take our boots off and enjoy the landscape, the rustling

⁸ The most ancient Bronze Age petroglyphs in Tamgaly are dated to second half of the 14th and the 13th century BC, i.e. are approximately 3300 years old.

wind in the bushes and the wonderful smell of Artemisia!⁹ But we go on, encouraged by our guide who says that the best is yet to come.

He's right! A path, marked out through the steppe grass by stones and a couple of orange arrows leads to the hillside. We start climbing, and a little more than half way up the path nicely starts following the side of the hill. It's rather steep down to its side, so we walk carefully.

The guide tells us that these rocks constitute an interesting geological and tectonic phenomenon, but so far he's not able to explain it to us¹⁰.



The path towards Group IV at the top right. From the left: Kjartan Gran, Torbjörg Bjelland and Elena Khorosh.

Then we are there. The highlight of Tamgaly; the site we have heard about and seen photos of. It's an incredible panel with big human-shaped figures with large heads circled by rays and cup-marks, and we stand in front of it on a comfortable natural terrace. The panel is almost covered with images around and between the large ones: a lot of animals and even a row of dancing people (actually, we have seen a very similar row of people at Aspeberget, Bohuslan in Sweden!). The stonewall is criss-crossed by even more cracks than we have seen before, and the guide tells us that it is extremely fragile and that the experts are busy trying to figure out how to preserve it.¹¹ We sincerely hope they succeed - this is phenomenal!

It's time to turn back. We return over the top of the hill and down the hillside towards the parking lot. The view is marvellous and we ask the guide - but where did the people live?

⁹ - which, of course, is exactly what is intended

¹⁰ This, in fact, is one of the places where Bolat Aubekerov plans to put up an explanatory board.

¹¹ The plans are to apply to the Getty Conservation Institute in California for a grant to research, plan and perform safeguarding and conservation measures for group IV; in fact, Getty's has already confirmed that they are very interested in the problematic (cf. chapter 5.1).

They surely cannot only have made this wonderful rock art and then buried each other and died?

Of course not, says the guide. In fact, there is an excavated settlement site in Tamgaly but at this point it's not yet open for visitation. First it has to be safeguarded¹², then it will be shown to visitors, probably to groups wanting to spend more than a single afternoon in Tamgaly, even spend the night in a yurta - the traditional dwelling "house" of the Steppe¹³. Wonderful idea!



The settlement site was covered with thick deposit layers and at the time it was settled (late Bronze Age, Iron Age and the Medieval Age in distinct layers divided by deposits) a stream ran by it. There are still traces of a modern 19th Cent. farm immediately south of it, with a camel engraved on an entrance stone (cf. chapter 5.2). The site is in the middle of the photo, taken from a hill north of it.

By this time we are really hot and tired - the round has taken almost 2 1/2 hours (surely because we were so thrilled by the sites and had so many questions to ask) and would have loved to sit down in a shady place with tea and something to eat, and maybe buy some postcards and souvenirs, preferably traditional Steppe stuff Why can't we? Again the guide explains: come back next year and this is exactly what you'll have. You will be able to eat, drink and buy to your heart's content in yurty when you have finished the round¹⁴.

¹² The plans are to build a shelter over the site in order to stop erosion (cf. chapter 5.2).

¹³ Cf. chapter 5.3.

¹⁴ Yurty has become much more expensive than we planned for in the 2001 budget due to the fact that they are not mass-product(d anymore. Plans now are to buy one large and beautiful yurta for the selling of souvenirs and handicraft and one small one for serving food and tea to visitors. Safe storage must be found in the village. Besides, one small one will be bought serving as dining room and "conference room" for the project. For visitor's services in the south of the area, the local population will be invited to use and have responsibility for their own yurty.

We take farewell with our spending young guide and thank him for taking us around. We are impressed by his knowledge and insight and the way in which he was able to convey it to us¹⁵. Another quick visit to the rather unfamiliar toilet and we're in the car again. Suddenly we realise that we saw neither snakes nor any other unpleasant and poisonous creatures. Good for us. Probably because we behaved properly, followed the prescribed route and threw our litter in the rubbish bin....

We're back in Almaty (not to complain, but the roads could have been better and the road signs, too) and already miss the Steppe and the smells, sounds and light – and the peace and quiet — of Tamgaly Gorge. We'll surely come back next year!

3.7 Guides / guards

As described above, the guards are educated to also serve as guides. At present there are four guards divided into two teams, each working two 12 hour days (09.00-21.00 during the season, shorter days off-season), then two days off, and so on. As long as the number of visitors is not higher than now, this works. Very soon, however, there is a need to educate more guide teams.

A temporary sun shelter for the guards is erected on the top of one of the hills, overlooking the north entrance area and most of the Gorge and sites. There is a need to make a more permanent, although movable, shelter suitable for winter conditions. This is a high priority measure already under preparation, to be performed in September. Plans are to erect the construction on the northern slope of the hill with petroglyph Group IV.

3.8 Marketing and information

Already, Tamgaly Gorge has been presented in newspapers and national television. Also, tourist bureaux in Almaty advertise guided tours to Tamgaly. As long as the infrastructure in Tamgaly cannot cope with a sudden rise in visitors, the relationship between marketing and capacity seems to be well balanced.

There are plans to intensify marketing when the capacity is extended, for instance by Internet presentation, by getting “the Tamgaly experience” described in international guidebooks etc. (already the site is mentioned in “Lonely Planet”, but the information given is superficial and basically incorrect).

3.9 Arranged guided tours

The tourist business in Almaty is a little difficult to understand for an outsider. As far as we understand it, there is definite legislation and state rules defining how the business should be carried out. However, there seems to be a number of “pirate” tourist offices not exactly following the rules and guides without the required license. Among other things,

¹⁵ This is not based on pure conjecture. The fact is that in the survey forms (cf. chapter 3.11) visitors have given the local guides high credit; far higher than the Almaty guides following the groups. Which again, of course, is also to the credit of the project co-ordinator who has educated and motivated the local guards/guides.

this means that it is next to impossible to arrange educational courses for guides to Tamgaly, at least at present. One of the expected national Kazakh contributions in kind is to “support and facilitate contacts and co-operation with tourist organisations”. This activity is meant to go on all through the project period, but so far it does not seem to have started.

3.10 Visitor statistics 2001-2002

The careful notes about the number of visitors and visitor characteristics and behaviour by the guards during the period 23.06-18.11.2001 have been analysed by the project co-ordinator. It should be noted that in 2001, Tamgaly had received only moderate publicity and instalments etc were not yet in place.

The total number of visitors was relatively low, typically 10-20 per day but with some peaks reaching 40-50. All the high peaks represent Kazakh visitors. Foreign visitors were rather few, maximum 20 per day and for the most part in the first halves of August and September. Kazakh visitors, however, were more numerous and visited during a longer season: from end of June until around September 1. Except for June, all the months have some “empty days”, especially in November. Altogether, there were a total of 718 visitors (553 from Kazakhstan, 165 foreigners) in Tamgaly during the period 23 June-7 December 2001, the date of the last visit that year. Most of the visitors came during the weekends.

During the one-year period 23 June 2001-12 June 2002 there were 1926 visitors: 1512 from Kazakhstan, 414 foreigners.

What is interesting to notice is that big to large visitor's groups spend a considerable shorter time in Tamgaly than smaller groups. The number of visitors in each group should not surpass 20; 10-15 would be the optimum, meaning that larger groups coming by bus preferably should be divided. It is very difficult to handle large groups of people, for infra structural as well as for educational reasons. The average time spent in Tamgaly is around two hours: at least one hour, but usually not more than three and a half to four hours.

So far, statistics for 2002 has not been analysed in detail.

3.11 Survey: Visitors' reactions and suggestions

The guards have presented forms with questions to visitors in May and June this year, and already more than 100 have answered them, from several age groups, backgrounds and nationalities. The answers are not analysed yet, and the following is just a short abstract of some of the reactions, which were extremely positive.

- The guards did a better guide job than the Almaty guides following their group — “they must be well educated”. The (Almaty) guides should tell more about the rock carvings
- The guided tour visit should be longer / the excursion is suitably long
- Please continue with the practice of no admission fee
- The road from Almaty is very bad
- Have heard about Tamgaly from television and newspapers

- You should make this more public, people should know about it, Tamgaly deserves to be known to many people
- Will tell others about it and recommend a visit to others
- You must provide sun shelter and have a place for getting food and drink
- You should have more guards to protect the site from careless visitors; don't let people come too close to the carvings; restricted visit to vulnerable places Good foot-paths / the foot-paths should be better
- Want more information and image descriptions

3.12 Management planning

In February, the Norwegian project adviser sent off a suggested index with key words for the Master Management Plan (MMP) and the three Management Sub-plans (MSP). Due- again — to the lacking UNESCO contribution, it was impossible for the Project Team (o start working on it. However, they found the draft quite useful, and we continued to work along the same lines when together in Almaty. Even though the MSPs are not due to be finished until 2003, the MMP must be created in connection with them. The MMP is supposed to be finished by the end of 2002, which could be difficult although the project co-ordinator, supported by the adviser and the rest of the Team, will try his best. The work on the MMP partly overlaps the work on the Nomination documents, making a parallel process very suitable.

4. Evaluation

4.1 Doing work without money

The achievements described in chapter 3 are reached in spite of very little to no money for salaries. The Norwegian adviser finds this situation admirable though utterly intolerable. The work is characterised by high scientific, practical and ethical standards, great respect for the site, the landscape and for the local population and visitors alike. The Norwegian support is important, but we have clearly realised that we are not only “givers” in this transaction; we are just as much “receivers” — of the experiences, attitudes and practices of the Kazakh Team. We found it a tiny bit embarrassing that while they for the most part had to do their work without pay during our visit, we worked on our affluent salaries.

4.2 Scientific work

What, maybe, impressed us most was their meticulous documentation practice. In establishing the footpath not even a stone without carvings is moved without being marked on a map. Also, it is immensely valuable to have a geologist on the Team and the studies and analyses of the geologist are indispensable to all activities in the Gorge. We are also impressed by the sensitive and well thought out ways in which the footpaths and the visitor's facilities are created and worked out.

The best of all, and what we are actually struggling to make happen in all the five museum regions in Norway, is that they have a very functional multi- and cross-

scientific team working steadily together on the project, covering archaeology, geology and palaeogeology, conservation technology, management planning, landscaping and partly botany.

The conclusion is that all scientific and science-based work is performed according to the highest quality and ethical standards.

4.3 Facilities for visitation

In chapter 3.6 there are some comments on measures that have not yet been performed and some suggestions. It should be noted that even though the visitors' path is basically established, there is still a lot of work to be done. The Team is perfectly aware of this, and there are a multitude of items on the lists "is to be done" and "is to be improved" and a few on "is to be changed". When the money starts coming in, tasks will be speeded up. There is a lot to be done yet, but The Norwegian team agrees to the basic choices that have been made.

The survey among visitors is a way of keeping a sort of dialog with them. In addition, the guards/guides become important informers to the Management Team on visitors' needs, wishes, ideas and suggestions. Therefore, making improvements will become an ongoing process in the interface between protection, preservation and visitors' interests, within the framework of the management guidelines (cf. chapter 2).

4.4 Organisation of visits

It is to be hoped that the Kazakh national and regional authorities will be able to fulfil the contribution called "Support and facilitate contacts and co-operation with tourist organisations". The situation today is not satisfactory, and one of the central problems is that the Management Team is not able to give courses for the guides and educate them to the necessary degree on the many different topics involved in Tamgaly. To educate the guides is necessary for a number of reasons and will benefit both the preservation of Tamgaly, the focus on the site, the tourist business and not the least, the visitors' themselves.

4.5 Management planning

One of the several effects of the fact that the project has not received the 2002 grants is that the Master Management Plan (MMP) is delayed. The original idea was that the Tamgaly Management Team together with the Norwegian adviser should have a draft ready for the June-July mission. This, of course, was not possible. However, we were able to reach a framework for the plan, create some basic management principles etc during the mission, and hopefully the MMP can be at least partly operative by the beginning of next year. Further polishing of the plan might have to continue a while into 2003.

The project co-ordinator is, naturally, in charge of the production of the liVIP and will work on it parallel with the World Heritage nomination. One important reason why it is

advantageous to work on the two in parallel is that it will be possible to show that the actions foreseen in the management plans serve to preserve the values of the cultural landscape described in the statement of significance in the nomination documents, the criteria for which are that the landscape

- Must have universal value
- Must be representative of the culturally defined region
- Must illustrate the central, essential and distinct cultural elements in the Steppe cultural heritage

It is agreed that the time perspective of the **MMP** is to be 5 years before it is to be revised. Three time perspectives will be drawn up: the short term, the middle term and the long-term perspectives. The basic guiding principle for any work to be performed in Tamgaly Gorge is to do whatever is necessary with as little intervention as possible; scientifically and in relation to visitors.

Our worry now is that too much work will be loaded on the project co-ordinator alone since there are no salaries for assistants and co-worker. The Norwegian management adviser will do her best to give help and support in this extremely difficult situation, but still project money is vitally important for a good result.

4.6 Project organisation

The project team is cross- and multi- scientific, which is vitally important for a project of this magnitude. It seems to us like the Team functions extremely well together, and when the money problem is solved and the Team can continue their work without this worry we are in no doubt that the results will be as hoped for and foreseen. Because of reorganisation of the leadership of **NIPI PMK** management planning and project organisational support is, at this point, not fully covered through the composition of the Team.

The Temporary Tamgaly Management Agency is not established, which is a matter to be solved by the Kazakh national authorities. The fact that the Temporary Agency is not yet operative creates considerable organisational insecurity and a number of practical problems. It is strongly to be hoped that this problem will be solved without much delay.

In conclusion to this chapter we feel that it is necessary to point out that the Kazakh infra structural and organisational support of the project is somewhat lacking and should be stronger and more active.

5. Tasks, visions and revised plans

Several tasks and visions are already described in the previous text. In order not to repeat ourselves, we will mention only a few points in this chapter.

5.1 The Group IV safeguarding problem

The Getty Conservation Institute, California USA, is interested in the special conservation challenges related to the petroglyph Group IV and has given signals that an application for a conservation grant in all probability will be met. However, because of the organisational insecurities at NIPI PMK, and the fact that the Temporary Management Agency has not been established it has been decided to wait until there is a good apparatus available to handle a Getty grant properly.

The Norwegian adviser has come up with a suggestion for a special adviser for Group IV conservation, but this will have to wait for the application and — hopefully — a grant.

5.2 The settlement site

The archaeological excavation of the settlement site in the southeast part of Tamgaly Gorge was finished in 2000. On different stratigraphic layers there is evidence of three settlement phases: late Bronze Age, early Iron Age and Medieval Age. Besides, just some 20-30m southwest of the prehistoric site there are ruins of a 19th century settlement site. On a stone — probably an entrance corner stone — there is even a small carved camel. There are long and strong traditions in Tamgaly!

The traditional settlement pattern in this area, from prehistoric times until well into the modern ages, is to live on a farm with a permanent house and a stone enclosure for the animals. In times of draught and critical grazing conditions a part of the group takes the animals out on the Steppes for as long as necessary. Animal husbandry has been much more important than farming which has been of very little importance.

Through a visit to the settlement site visitors will get an understanding of prehistoric life and the strong cultural traditions on the Steppe. In order to be able to relate to the rock art, the beliefs and the funeral rites of the prehistoric peoples, a human context must be established for the modern visitor: who were they? How did they live their lives?

The excavation walls are beginning to erode and must be safeguarded. The most effective way of stopping erosion is to cover the site by a simple, unobtrusive metal roof. The design and solutions should be planned through the co-operation with architect and engineer. There are concrete plans on how to safeguard and present the site to the public, which the Norwegian advisers support. We have also recommended the clearing of the vegetation and making the 19th century site visible and included in the context of human settlement in the Gorge through the centuries; it is so much better to show the traditions in settlement and house building practices than just to talk about it.

5.3 Target group orientation

Visitors are different; they have different wishes and needs and should be able to choose different ways to visit Tamgaly. At this point one may sketch the following ideas and possibilities for different target groups:

- a. Visitors who want just a quick visit to Tamgaly of around 1 hour should be able to get a basic impression of the most important sites and their settings in the landscape.
- b. Visitors on a full day trip from Almaty and back again on the same day will want to spend a few hours in the Gorge and will need food and drink and places to rest.
- c. While some people on a tour for the most part will focus on the archaeological and other highlights of Tamgaly, others will be only moderately interested. These, too, should be allowed to have a nice day, even though they might be mostly concerned with souvenirs and a meal.
- d. There is much more to see and experience in Tamgaly than what can be reached in a few hours. Plans are to offer people to stay for a two- (maybe even three-) day visit. For instance, day one: Arrive from Almaty, see the grave site in the south part of the Gorge (c.20 Bronze Age graves where modern farm ruins are now; these are to be removed) and the settlement site, focus on geology, vegetation and landscape, have a traditional meal, spend the night in a yurt. The camp could well be placed between the large gravesite and the settlement site. Day two: See the petroglyph sites and the northern gravesites, return to Almaty.
- e. School children should not only be offered a separate visit to Tamgaly. A school package could be created, based on work and preparations in class beforehand, then the visit with different tasks and finally a following up in class.
- f. - And other possibilities and ideas

5.4 Revised budget

The Norwegian donation was based on a budget 01.January 2002 - 01.July 2004 worth USD 101.990 including 13% UNESCO Programme Support, net total project costs USD 90.260. Again, due to the delay in the grant payment in 2002, the budget had to be revised. The revised budget, worked out jointly by the project team and the Norwegian adviser (Annex II) is based on the 2002 contribution being transferred to the project before August 15. If this is not the case (which in fact it isn't), the budget will have to be revised again.



The public will not be allowed to see every place of interest when in Tamgaly. A panel that the public will not be able to visit, only hear about is the one with a single elephant. This is a rather to the sensational rock image since it is the only one in Kazakhstan. It can be dated 8th - 10 th Cent. AD.



Group IV A, with the splendid chariot panel, is another site that visitors will not see.

6. Conservation and documentation

One of the goals of this project has been to start a co-operation and training of national and international specialists in conservation. Conservation technician Kjartan Gran has been working with documentation and conservation of Norwegian rock carvings for several years, while lichenologist Torbjørg Bjelland has done her PhD on weathering effects of lichens related to Norwegian rock carvings. The main aim of our stay was to exchange knowledge with the experts from Kazakhstan regarding documentation, weathering and conservation of rock carvings.

6.1 Plans for fieldwork in 2002

According to information previous to our mission we made the following plan for the fieldwork in Kazakhstan 2002:

1. Get an overview of the Tamgaly petroglyph site
 - Rock art panels - damages, problems and so on
 - Geology
 - Climate
 - Vegetation

2. “State of the art” information/demonstration from the expert team in Kazakhstan

- Main weathering processes
 - Main dangers — anthropogenic, atmospheric and biological factors, effect of water-soluble salts
 - Conservation methods used at the site — experiences, results
 - What are their plans (documentation, analyses, conservation) for the site?
3. Inform about the work in Norway
 - Weathering studies — results (literature), future plans
 - Damage documentation — "Documentation Standard" .
 - Conservation — test panels (covering, materials, cleaning, use of Mowilith)
 - Handbook in rock art conservation
 4. Demonstration of methods used in Norway • Damage documentation
 - Removing macro vegetation
 - Removing micro vegetation (lichens) - cleaning with ethanol
 - Covering?
 - Preparing panels for Mowilith treatment?
 5. Documentation of vegetation together with ecologist from Almaty
 - Vegetation types
 - Lichens — different species, their ecology, cover
 - Study the biological mediated weathering at the site
 6. Discuss conservation, preservation and management plans for the site
 - Further analyses to document the causes for the damage?
 - Preparing panels for conservation (e.g. cleaning with ethanol, covering)
 - Conservation of the site — priority list?

6.2 Fieldwork 2002

During our stay we managed to follow the plan. In spite of some language difficulties we had some very interesting and fruitful discussions with the experts from Almaty. First we were informed about their work and knowledge about the area, their problems and their conservation methods. Then we demonstrated our methods and discussed with them if and how they could be applied in Tamgaly. After the demonstration the conservationists from Almaty tried our methods in field. We also had some time together to discuss and evaluate the work already done in Tamgaly, and to formulate suggestions for further work related to weathering studies, conservation and documentation in Tamgaly.

6.2.1 Observations

Weathering

The weathering in Tamgaly involves complicated interactions between physical, chemical and biological processes, which lead to the breakdown and alteration of rocks and minerals. Already, different kinds of geological studies have been performed in the area. As already

described in chapter 3.2, tectonic activity is found to be one of the main problems causing opening of cracks, loosening of rocks and boulders, and landslides. Other important weathering factors are water drainage, vegetation in cracks and on the surfaces, and anthropogenic activity.

Most of the panels are covered by desert varnish (a black patina), a feature of weathering in arid regions. The thickness (colour) varies within the area, in general with a thicker desert varnish on exposed panels facing south than on panels facing north. There is no desert varnish on panels that recently have been covered by soil, lichens or other vegetation. On the top of bird rocks it can be observed that the desert varnish is thinner than on other places on the rock. This might indicate that soil, the lichens, and bird droppings contain substances that dissolve or prevent the production of desert varnish.



Rock surface with desert varnish. The more black the thicker the desert varnish.

Lichens

Approximately 15 different lichen species have been observed at the site, most of them crustose lichen species. The lichen samples have so far not been analysed and identified to species. The amount of lichen cover clearly varies with the humidity surrounding the rock panels. On sun exposed panels (covered with desert varnish) lichens have been observed scattered in cracks only. Shadow, humidity and protection against wind make the microclimate more stable in the cracks than on the surface.



Sun exposed rock panels with thick desert varnish but little lichen cover.



On sun exposed rock panels covered with desert varnish, lichens occur scattered in cracks only.

Surfaces facing north or surfaces not covered by a thick desert varnish are often partly or totally covered with lichens. Some panels have a denser cover of lichens close to the ground, especially if there is vegetation in front of the panel. The vegetation keeps the humidity higher close to the ground, In addition, small rocks surrounded by vegetation have a higher lichen cover than the more exposed rocks.



Rock panels exposed to the north with a dense lichen cover.

Conservation

There have been some efforts to deal with the weathering actions in Tamgaly Gorge, using different methods of conservation. Most of the conservation and tests date from the period 1990 to 1992, performed by Lubov Charlina, Elena Ripinskaja and Nuriya Tajpina (Kaz.). The most intensive conservation work took place in 1992 under the direction of Stanislav Shchigorets (Rus.) In 1998 Ewa Tymchik (Pol.) made some conservation tests with specific materials.

The experimental conservation work in the early 1990's was the first step in an effort to find conservation materials and methods suitable for the specific problems and rock type in Tamgaly. The aim of this work was to find materials for the filling of cracks and for the repair of loose parts on the rock surface. The work was done at Group V and at surface 86 opposite Group V. For these test materials with organo silanes were used. The idea of the test was to try the effect of different solutions of organo silanes and water, mixed with crushed stone. Several different mixtures were used at specific areas to close cracks and refit lost parts. Unfortunately, these experiments came to a halt and the results of the experiments have not yet been concluded. In general this type of conservation is quite successful and the conclusion of the exact results will be of great importance to the further testing of these and other materials and methods.

Due to archaeological and geological survey at Group II in the beginning of the 1990' s, all accumulated soil and plants on the rock surface had to be removed. This caused water to flow over the surfaces and an increased weathering of the surface was observed. For the conservation work at Group II, done by a Russian conservation group in 1992, organo silanes were used, too. The substance was mixed with "heatproof clay" and, in some areas, crushed

local stone for filling in of cracks and the repair of loose parts. To prevent water from flowing into cracks and to stay in holes, the big cracks and "holes" on the surface were filled with local stone and covered with the mixture.

In 2002 this surface needs re-conservation as the work done in 1992 is no longer satisfactory. Many of the fillings are loose and parts of filling material and stones are spread on the surface. The conservation method used is also quite intrusive and should be discussed in the planning of future actions and re-conservation.

After a halt in the conservation activity some small-scale experiments were performed in 1998. At panel 4 of Group IV A epoxy resin was used to fill cracks. The fillings were coloured to become similar to the rock surface but already in 1999 this colour had disappeared and the fillings had turned into a pinkish colour. Apart from this, the result of the use of epoxy resin has not been evaluated for its durability. This should be included in the further work to find suitable materials and methods for conservation.



Cracks in Group IVA, panel 4 filled with epoxy resin.

6.2.2 Documentation standard

The recording of images and documentation of the rock condition are essential for further planning of actions and future monitoring of any site. One of the main aims of the ongoing national Norwegian Rock Art Project has been to develop a Documentation Standard for rock art. This work has been going on for several years and is a result of a co-operation between

archaeologists, geologists, botanists and conservationists. The Swedish Rock Art Data Base has also been a model and a good help in this work. The Documentation Standard for rock art has been used in field for several years and is a powerful tool for recording images and the

condition of the macro- and microenvironment. Today, it functions as a database with the possibility of getting an overview of both images and condition.

Both the mentioned documentation standards were discussed and the specific points in each section were evaluated from the point of view of the needs in Tamgaly and elsewhere in Kazakhstan. This resulted in a conclusion of which sections were not relevant and the need of new terms and points. As there already exists a standard way of recording basic data, general description, and the archaeological information in Kazakhstan, this part of the documentation was not discussed in detail.

The Norwegian and the Swedish Documentation Standards are not useful when it comes to descriptions of the macro-vegetation. The botanists in Kazakhstan should make a standard suited for their type of vegetation. The Norwegian Standard is also too detailed on micro-vegetation. The user should be a lichenologist, at least a botanist. We therefore recommended the Swedish Standard regarding this topic. It is not necessary to find the exact species name, only type of growth form. That is if the species is for instance a crustose, fruticose, foliose, or a placoid lichen.

In addition, we discussed some changes regarding the description of weathering processes at the site. The introduction of a term for an area with an air pocket beneath the surface with "hollow" sound called "born" in Norwegian was introduced. More specific terms related to tectonic movement, weathering (e. g. thermal weathering), macro and micro-cleavage are also needed. In order to identify the colour of the patina and discoloration of the surface a standard colour scale (Boubee colour scale: Code des couleurs des sols) previously used at the site was found useful.










After importing the new topics in the modified documentation standard it was tried out in field and further discussed. The local scientists used the "Standard" under our supervision and the meanings of all the specific categories regarding weathering actions, geological and biological details and other points connected to the condition, were clarified.

6.2.3 Damage Documentation

To get the necessary information about the physical condition of each rock art surface, it is important that the damage documentation is precise and informative. This information makes the further planning of actions and future monitoring easier. For this purpose a specific method of damage documentation was introduced to the scientists in Tamgaly. The method is widely used in Norway as a part of the damage documentation included in the Documentation Standard.

The method is based on specific colour signatures, which directly indicate specific damages or geological phenomena. The signatures are applied to a scaled drawing of the images and the surface. In this way the information is clearly shown and can easily be compared with other surfaces. For monitoring purposes this method makes it easy to put new information on top of the old by using computer scanning or clear folios.

Colour code for damage recording

	Earlier conservation
	Broken, earlier conservation
	Cracks, cleavages
	Area with micro cleavage
	Anthropogenic damage
	Lost parts
	Loose parts
	Lichen / moss
	Higher plants / macro vegetation
	"Bom" , hollow areas

Symbols and colour codes for damage documentation

The damage documentation, the same as in the Documentation Standard was introduced in Tamgaly. The introduction of the method resulted in several discussions and the work to establish a standard set of symbols suitable for the conditions in Tamgaly was initiated. Through several days of training in field the method and the symbols were modified to the specific environment in Tamgaly.

The recording of images and surfaces in Tamgaly is partly photographic and partly done through a very exact "rubbing" technique on special paper with ink and ordinary copies on clear plastics. The paper and plastic copies are reduced and are useful for later damage documentation. Recording on paper or plastic is not finished and in some cases there is only photographic recording.

Both paper and photos were used for damage documentation during the fieldwork and we discovered specific advantages and disadvantage with both media. In Norway the damage documentation is usually based on a reduced paper copy of the images copied on plastic sheets. This makes it possible to draw directly on the paper with good colour pencils or on some kind of transparent folios placed on top. If the previous drawings of the images and the surfaces are detailed this method is useful and quite exact, but lack of details makes the work more complicated and it takes longer time to make.

The use of photos as background may be a solution to less detailed drawings, but there can also be some problems with shadows and "grayish" surfaces with no details. Damage documentation directly on photos may also be a problem because some markers look different on photo paper then on ordinary paper. The colours of markers may also be less lasting than colour pencils in the long run. The use of folios on top of photos will to some extent reduce these problems.

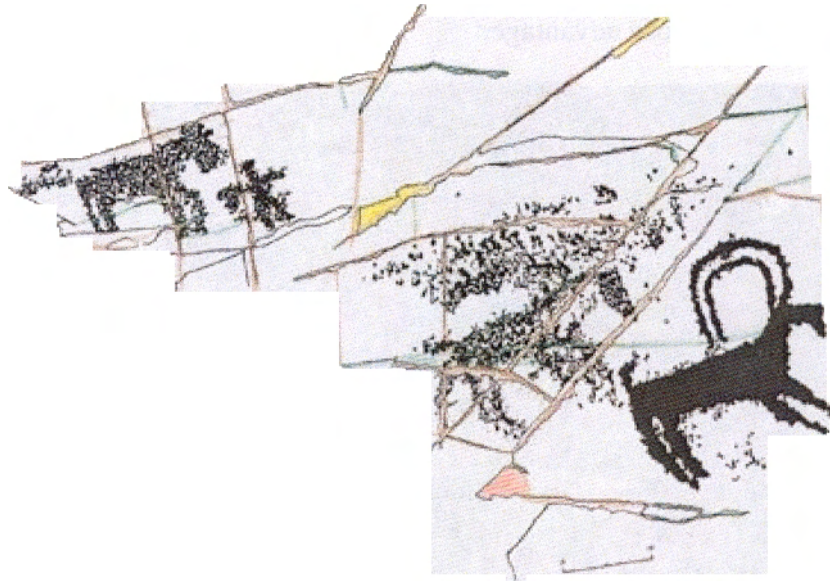
The use of photos for the purpose of damage documentation is not very common in Norway but in some cases, when the photos are of good quality with many details the use of photo for this purpose will be an obvious advantage.



Photo of Group II surface 49.



Group II surface 49, damage documentation on photo as above.



Group II surface 49, damage documentation on reduced paper copy.

In Norway, it is common to use pure chalk or a chalk-water solution to mark the images on the surface before copying them on clear plastic. Because the images sometimes are difficult to see the chalk is added in artificial inclined light at night, or by closing off the daylight with black plastic sheets just opening for some light from the side. Chalk can also be used to mark damages to visualise them on photographs. Due to the possibility that chalk could interfere with future methods for direct dating the policy in Tamgaly is not to use chalk. In the climatic conditions on site the addition of chalk may cause efflorescence and possible damage. In cases where the images are hard to see they are marked with colour pencils before further documentation.

6.2.4 Test surfaces

To test different conservation methods in Tamgaly some test panels were started. Suitable test surfaces were found close to Group IV A. Four test surfaces were started during our mission, while the fifth is planned to start this autumn. The panels were photographed and graphically illustrated before the damage documentation started. The main types of lichen species were also recorded for each panel.

Lichen removal

According to tests in Norway, the best way to remove a lichen cover with no or insignificant damage to the rock surface, is (1) to spray the surface with ethanol (96%), scratch the lichen surface carefully with a razor blade, (2) cover the panel with black plastic, and then (3) wait 1-2 years, (4) spray again with ethanol, cover the panel one more year, and then (5) spray with more ethanol if still more lichen fragments are left on the surface. Even if it takes time, this is the gentlest way to remove lichens from a rock surface. We can also be more confident that the biological material within the rock is removed.

As the climate and the bedrock in Tamgaly are different from Norway, we wanted to test if this method could be useful in Tamgaly. It could be easier or it could be more difficult to remove the lichen cover and the biological material within the rock in Tamgaly than in Norway.



Torbjorg Bjelland spraying a test surface with ethanol.

Mowilith DM 123 s

Mowilith DM 123 s is a water based copolymer emulsion of vinyl acetate, ethylene and vinyl chloride stabilised with cellulose derivatives and surfactants. Mowilith DM 123 s has successfully been used on sandstone in Norway, so we wanted to test the effect on the sandstone in Tamgaly.

Mowilith DM 123 s was used in 10 - 50 % solution in water. The rate of solution depends on the use. 10 % solution is used for thin and deep cracks and hollow areas - "born" - and in other relevant areas where the glue is supposed to penetrate deep into the rock.

Solutions of around 50 %, and in some cases even more, are used when the need of penetration is not so deep or when the solution is supposed to be mixed with fillers. Such cases could be when cracks are to be filled or when repairing edges or refitting loose parts.

In Tamgaly we used two types of fillers: crushed local stone and commercial building cement with sand, but without lime. These were mixed with the glue solution to a paste or added to the glue already applied to the surface and mixed directly there. Usually the glue solution is injected to the surface with a syringe. After filling the cracks and hollow areas, the edges are closed with less soluted glue with filler added, usually 50%.



Kjartan Gran demonstrates how to use Mowilith.

The use of Mowilith DM 123 s at the test area in general went quite well but some specific problems were identified. Due to the high temperature of the rock the water evaporated quickly and the glue sometimes dried too quickly. Especially when filling cracks and hollow areas it is vital that the glue stays liquid until the space is filled so that the entire area within is covered. The quick drying was also a problem when the glue was spilled on the surface and dried before it could be removed.

Deep cracks were difficult to fill without spilling because it was hard to see the pattern and all the possible ways the glue could flow. To avoid spilling it was necessary to experiment with the solution of glue and solutions up to about 90 % were used for this purpose.

After starting the test surfaces with spraying of ethanol and cleaning, the conservation training at test surface 1 - 2 went on for about four days. The last action of the period of training and testing was to make updated documentation of the test surfaces with all the performed conservation acts included.

Afterwards, all the conserved areas were photographed at close distance and marked on the graphic illustration, made earlier. All the descriptions of the work according to the specific method applied and the amount of material added were finished. The exact documentation from the test surfaces, and the description and conclusion from the conservation work will be reported by the local scientists and stored in Almaty for later monitoring and further tests.



Kadisha Imanbenkova does practical work on a test panel.

The following test surfaces were started in July 2002 (I-IV) or are planned to start this year (V) in Tamgaly:

- I. Test surface 1: Mowilith DM 123 s
- II. Test surface 2: Mowilith and lichen removal
- III. Test surface 3: Lichen removal without cover
- IV. Test surface 4: Lichen removal without cover
- V. Test surface 5: Lichen removal with cover

6.3 Summary and suggestions for further work

6.3.1 Weathering

Large-scale weathering is well documented in the area but little is still known about the small-scale weathering or the geochemical processes on the surfaces and within the rocks. In order to better understand the different small scale weathering processes it would be interesting to compare the weathering rind at different sites. It is suggested that in addition to the continuation of the studies of the macro weathering, future studies should include a comparison of weathering rinds beneath -

- 1) Different lichen species
- 2) Soil cover
- 3) Desert varnish
- 4) "Wet" surface
- 5) Dry surface

This is necessary to be able to confirm or reject hypotheses about whether for instance a lichen thallus, a soil cover, or the desert varnish protect the surface or not. A better knowledge about the weathering rind will also be important for the conservationists, e.g. how porous the rock is, how deep and how much biological material is present within the rock.

A few rock samples (with desert varnish, different lichen species) were collected from different sites during the fieldwork in order to study the weathering rind and the penetration of biological material. These samples will hopefully give some information but more studies and analyses will most definitely be necessary to answer the above-mentioned questions.

6.3.2 Lichens

A more detailed study of the lichen flora in the area will be necessary for further studies related to lichens and weathering. It is important to have a detailed species list, which species dominate and some information about their ecology. Due to limited time in the field, and as it was not planned to use time for analyses after the fieldwork, only a restricted study was possible this year. It would be an advantage to have a lichenologist, familiar with this lichen flora, working on the project.

6.3.3 Documentation

Exact documentation of the environment and the state of conservation is of essential importance in the further work for safeguarding the rock carvings. The collected information will be the basis in the process of understanding the weathering factors and for planning of further action. In addition, such information represents the starting point of future monitoring.

A standard way of doing future documentation will make the collection and use of data a lot easier for the purpose of safeguarding and monitoring. A standard set of parameters can make it easier to compare different surfaces and future plans and priorities can then be made in the best possible way.

It is important to continue the field discussions, the testing of the local documentation standard and the damage documentation method. The further development and definition of specific terms should be done by a multi-scientific team with the participation of specialists like geologists and botanists. In this way it will be possible to turn the standard and the method of damage documentation into accurate and powerful tools.

6.3.4 Conservation

Despite of the conservation at Group II, the previous conservation efforts in Tamgaly have been small-scale experiments for the purpose of establishing methods. A short study of the tests from the early 1990's showed the effects of these to be interesting. The work in general looks quite good and solid and the materials should be included in further testing.

To be sure about the short and long term effects of the previous conservation methods, it is necessary to do more specific analyses and further test the conservation materials on some test surfaces. On test surfaces it will also be possible to take core samples and study the penetration and the effect of the materials within the rock. Some materials could for instance increase the growth of biological material within the rock, which could lead to increased weathering.

The large-scale conservation at Group II has lost some of its effects due to the loss of conservation material caused by anthropogenic activity and weathering. There is a need for evaluation of these efforts and for making plans for re-conservation or new possible ways of safeguarding.

7. Conclusions















Despite of all the problems, the work for the management, conservation and presentation of the Tamgaly Gorge Petroglyph Site is showing considerable progress. It is a beautiful place; the cultural heritage is of global quality, the Steppe landscape stunning and the Management Team professional. Given the full economic and structural potential, we are in no doubt that the project will be a success, to the local community and to the Kazakh nation. The Norwegian team feel privileged to be connected to the project.

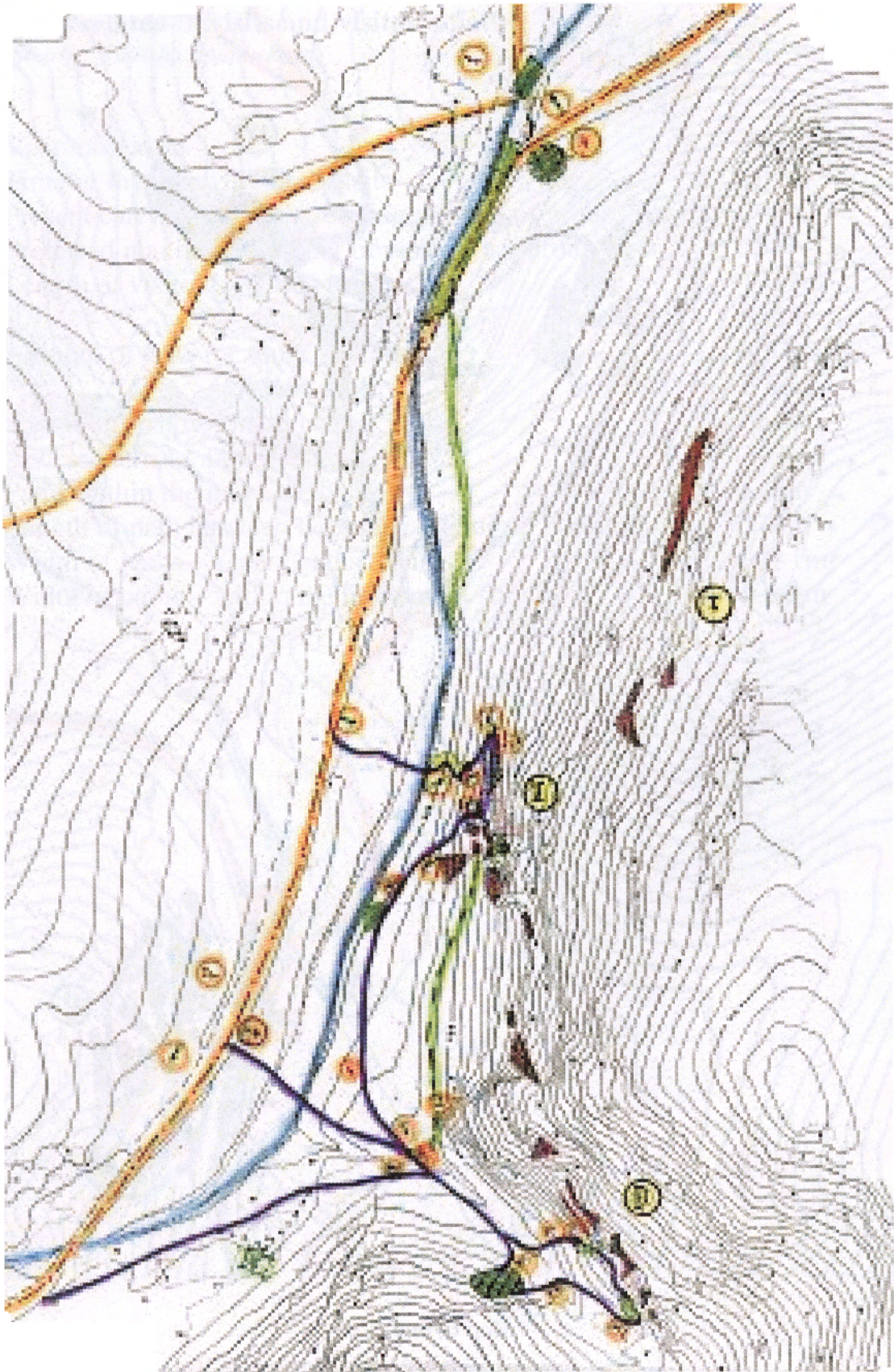


ANNEX I. Maps of footpaths and installations

Two parts of the map are included here, showing the petroglyph groups I-III and groups IV-V respectively.

Captions are as follows:

	Main visitor's path
	Petroglyph access path
	Recommended walking direction
	Place of observation
	Site to see
	Interventions to strengthen path
	Tamgaly river
	Arrows showing walking direction
	Attention – snakes
	Group number
	Garbage bin
	Planned toilet
	STOP
	Planned shadow shelter



Map Group I-III



Map Group IV-V

Facts related to visits and visitor's path

(Source: Kadisha Imanbekova)

Visitors season	April-October
Time of the day with most visits	10-16
Present carrying capacity relating number of groups per day	3-4
Preferred maximum number of visitors per group	15
Lengths of visitor's route — total	1912m
— “— “— “— “— “— short route	943m
Amount of time for route — total route	4,5 hours
— “— “— “— — “— “— short route	2 hours
Length of paths — main path	664m
Access paths to monuments	292m
Paths within the monument sites	578m
Length of path between Group IV and north burial ground	378m
Width of paths — access paths to sites	0,8-1m
Width of paths — within the monument sites	0,6-1m

Annex II. Revised budget June/July 2002 — UNESCO contribution through the Norwegian donation in USD

Activity	2002		2003		2004
	1. part	2. part	1. part	2. part	1. part
<i>Wages and field work incl. perdiem</i>					
Project co-ordinator incl. documentation work ¹⁶	900	900	900	900	900
Project co-ordinator, perdiem ¹⁷	1.500	1.500	1.500	1.500	1.500
2 project assistants ¹⁸	1.440	1.440	1.440	1.440	1.440
2 project assistants, perdiem ¹⁹	1.125	1.125	1.350	1.350	1.350
Management ²⁰	0	240	0	240	120
Management, perdiem ²¹	0	150	0	150	75
Management planning and ethnology ²²	0	0	360	240	0
Man. planning and ethn., perdiem ²³	0	0	450	0	0
Conservation leader ²⁴	120	360	240	240	240
Conservation leader, perdiem ²⁵	0	900	0	900	450
Conservation assistant ²⁶	180	180	180	180	180
Conservation assistant ²⁷	600	600	600	600	600
Geology/geo-morphology ²⁸	2.050	2.050	2.050	2.050	2.050
Transport, driver ²⁹	50	300	300	300	300
Driver, perdiem ³⁰	150	450	300	300	300
<i>Sub-total</i>	<i>8.115</i>	<i>10.195</i>	<i>9.670</i>	<i>10.390</i>	<i>9.505</i>
<i>Sub-total per year</i>		<i>18.310</i>		<i>20.060</i>	<i>9.505</i>
On site investments					
Toilets	0	0	70	0	0
Yurty, 1 large, 2 small incl. transport ³¹	0	0	4.300	0	0
Movable shelter for guardians	0	225	0	0	0
Permanent station (building)	0	0	2.000	5.760	2.000
Emergency protection of archaeological structures		500	1.500		
<i>Sub-total</i>	<i>0</i>	<i>725</i>	<i>8.500</i>	<i>5.760</i>	<i>2.000</i>
<i>Sub-total per year</i>		<i>725</i>		<i>14.260</i>	<i>2.000</i>

¹⁶ 150 USD pr month

¹⁷ 20 USD pr day, 5 months

¹⁸ Each at 120 USD pr month

¹⁹ 1: 15 USD pr day, 5 months. 2: 15 USD pr day, 1 month 2003 and 2004

²⁰ 120 USD pr month, 2 months a year, 1 month in 2004

²¹ 15 USD pr day, 10 days in 2002 and 2003, 5 days in 2004

²² 120 USD pr months, 3 months in 2003

²³ 15 USD pr day, 1 month in 2003

²⁴ 120 USD pr month, 4 months pr year

²⁵ 15 USD pr day, 2 months pr year

²⁶ 90 USD pr month, 4 months pr year

²⁷ 10 USD pr day, 4 months pr year

²⁸ 4 pers/6 months per whole year incl. perdiem

²⁹ 50 USD pr month 12 months pr year

³⁰ 5 USD pr day, 4 months pr year

³¹ Yurty have become much more expensive due to the fact that they are not mass produced anymore. In addition to investment in yurty the project will invite local people to use their own yurty for specific activities

Activity	2002		2003		2004
Other investments					
Management database	0	5.000	2.000	0	0
<i>Sub- total</i>	<i>0</i>	<i>5.000</i>	<i>2.000</i>	<i>0</i>	<i>0</i>
<i>Sub-total per year</i>		<i>5.000</i>		<i>2.000</i>	
<i>Activity</i>	2002		2003		2004
Season	1. part	2. part	1. part	2. part	1. part
Education, information and tourism					
Education of custodians and guides	100	100			
Paths for visitors	0	300			
Information boards	0	0	200		
Information	0	0	0	200	500
<i>Sub-total</i>	<i>100</i>	<i>400</i>	<i>200</i>	<i>200</i>	<i>500</i>
<i>Sub-total per year</i>		<i>500</i>		<i>400</i>	<i>500</i>
Expert visits					
Conservation, from Norway		9.500			
Management, from Norway		2.500		2.500	2.500
<i>Sub-total</i>	<i>0</i>	<i>12.00</i>	<i>0</i>	<i>2.500</i>	<i>2.500</i>
<i>Sub-total per year</i>		<i>12.00</i>		<i>2.500</i>	<i>2.500</i>
Costs	8.215	28.320	20.370	18.850	14.505
Total costs per year		36.535		39.220	14.505

Expected Kazakh national and regional contribution is not evaluated

Total Costs 2002-2004: 90.260 US \$

UNESCO Programme Support Cost 13%: 11.730 US \$

**GRAND TOTAL — UNESCO contribution
through the Norwegian donation: 101.990 US \$**

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P. Stett

WHC REGISTRATION
Date 27/05/04
Id N° C 1145
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MANAGEMENT PLAN
FOR
THE ARCHAEOLOGICAL LANDSCAPE
OF
TAMGALY

STATE INSTITUTE FOR SCIENTIFIC RESEARCH AND PLANNING ON
MONUMENTS OF MATERIAL CULTURE

MINISTRY OF CULTURE

GOVERNMENT OF THE REPUBLIC OF
KAZAKHSTAN

Almaty 2004



ЮНЕСКО ЖАНЫНДАҒЫ
КАЗАКСТАН РЕСПУБЛИКАСЫНЫҢ ТҰРАҚТЫ ӨКІЛДІГІ

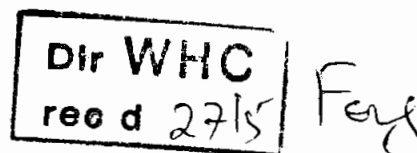
DELEGATION PERMANENTE
DE LA REPUBLIQUE DU KAZAKHSTAN AUPRES DE L'UNESCO



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N° 31/U-138

Paris, le 26 Mai 2004



Monsieur le Directeur,

Je suis heureux de vous faire parvenir le Plan de Gestion du bien : « Pétroglyphes du paysage archéologique de Tamgaly » approuvé par le Ministère de la culture de la République du Kazakhstan. Je vous prie de bien vouloir le transmettre à l'ICOMOS dans les plus courts délais afin qu'il soit dûment examiné pour la 28^e session du Comité du Patrimoine Mondial.

Veillez accepter, Monsieur le Directeur, les assurances de ma très haute considération.

Annexe: susmentionné (en 4 exemplaires)

Olzhas SULEIMENOV
Ambassadeur, Délégué Permanent

M. Francesco BANDARIN
Directeur
Centre du Patrimoine Mondial
UNESCO

The Management Plan, consisting of a Master Management Plan and three Management Sub-Plans, was approved by:

Ministry of Culture of the Republic of Kazakhstan

Date of the approval: **23 May 2004**

Signature on behalf of State Party:

Dusen K. KASEINOV

D. Kaseinov

**Minister of Culture
of the Republic of Kazakhstan**

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In addition, other Kazakh specialists, national institutions and organizations, both governmental and non-governmental, have contributed in the preparation of the Management Plan.

Scientific supervision and advice was provided by:

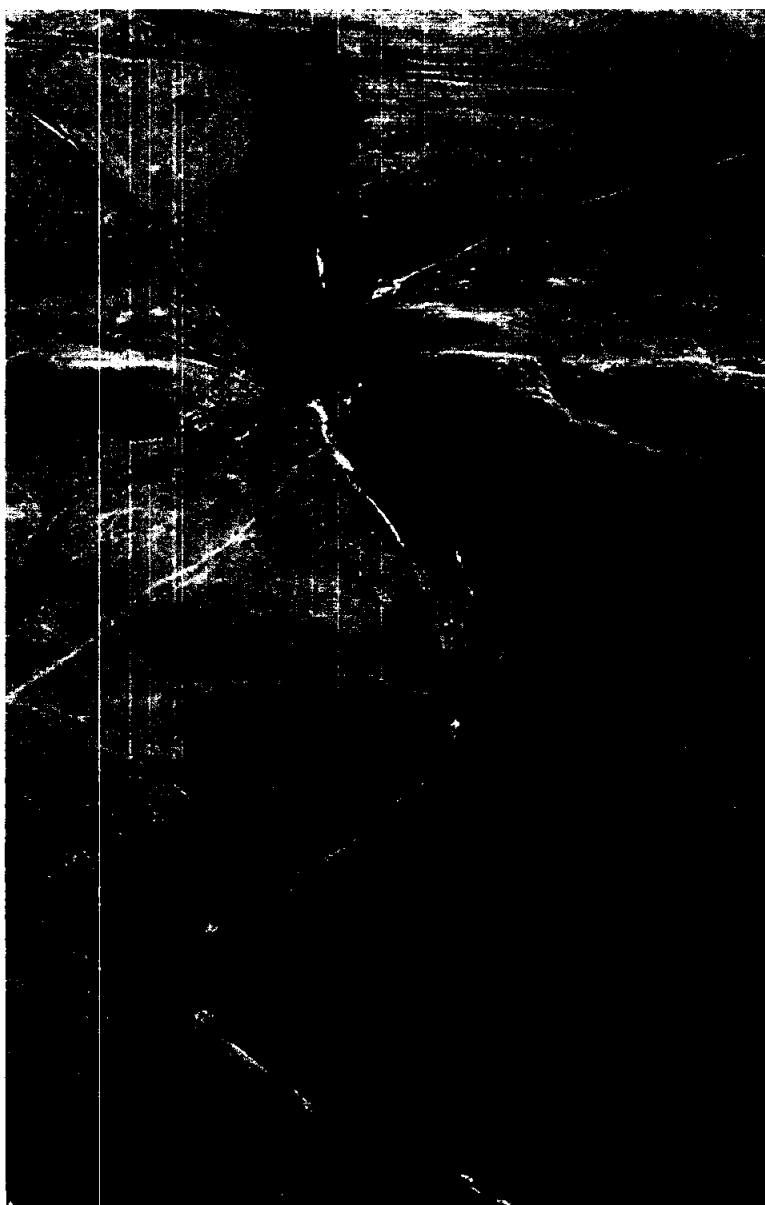
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Photographs by courtesy of:

Bolat B. Aubekerov	Institute of Geological Sciences, Almaty
Kjartan Gran	Tromsø, Norway
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Tamgaly Gorge with the concentration of the main and most important groups of petroglyphs; groups I-V on both sides of the river.

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Management Sub-plan 1: Documentation, Conservation and Safeguarding

Management Sub-plan 2: Management, Care and Monitoring

Management Sub-plan 3: Education, Information and Tourism

1. Preface

Realizing the importance of the Tamgaly Archaeological Landscape, the Republic of Kazakhstan nominated it to the World Heritage Tentative List in 1998, and a close co-operation with UNESCO has since been established and further developed. The global importance of the site was confirmed through the initiation of the co-operation with the Norwegian Government and a donation from the Norwegian Ministry of Foreign Affairs for 2001, later extended to financial support of a three-year project to be finished in 2005, through a UNESCO/Norwegian Trust Fund. Riksantikvaren – the Norwegian Directorate for Cultural Heritage – acts as advising partner for the project. The nomination dossier for the inclusion of the Tamgaly Archaeological Landscape in the World Heritage List was submitted to UNESCO in the beginning of February 2003, and accepted for further consideration in 2004. The dossier, as well as this Management Plan, has been prepared by the State Institute for Scientific Research and Planning on Monuments of Material Culture (NIPI PMK, Almaty) in co-operation with the State Cultural and Natural Reserve-Museum of Tamgaly. The latter was established by Governmental Order in October 2003.

The Tamgaly Archaeological Landscape became a *Property of National Significance* in 2002. This was the first cultural heritage reserve in Kazakhstan to be provided with physical protection and management mechanisms after the independence. In the Soviet times, only 8 sites in Kazakhstan reached this high status. Tamgaly is the second case in the country of a mixed natural and cultural site to become such a property. The Reserve-Museum of Tamgaly is established as a consequence of the Site's status as Property of National Significance.

This Management Plan consists of four inseparable parts:

- Master Management Plan
- Sub-Plan 1: Documentation, Conservation and Safeguarding
- Sub-Plan 2: Management, Care and Monitoring
- Sub-Plan 3: Education, Information and Tourism

The plans are developed through a close multi- and cross-scientific co-operation between several persons, institutions and parties, under the project leadership of Dr Alexey Rogozhinsky, NIPI PMK.

NIPI PMK is in charge of the implementation of the Management Plan (Master Plan with three Sub-Plans) in the period of the duration of the Kazakh-Norwegian project, i.e. until the end of 2005. As of 2006, the Reserve-Museum will take over the responsibilities, although in close co-operation with NIPI PMK.

2. The aims of the Master Management Plan

The main aim of the Master Management Plan is to identify and describe the premises and preconditions for the comprehensive management, conservation, preservation and presentation of the Tamgaly Archaeological Landscape with its cultural and natural values. These topics are closely interconnected, and influence and are influenced by each other. Based on status, premises, policies, co-operation structures and available resources, the Master Plan gives the general bases for actual short-, middle-and long-term

management practice. Also, in the Master Plan the basic guidelines and strategies for the preservation and management of the Site are outlined, based on a statement of its values and qualities and the issues to be dealt with. In addition, the Master Plan defines the roles, responsibilities and obligations of the different co-operative partners, in relation to the tasks and issues to be dealt with.

While the Master Plan represents the superior framework for the management, conservation and presentation of the Site, the Management Sub-plans are plans for how issues and challenges are to be dealt with in the short-, middle- and long-term perspectives, in a practical and goal-oriented way. Consequently, the three Management Sub-plans follow and are inseparable parts of the Master Management Plan. All strategies, recommendations and planned actions stated in the Management Sub-plans are based on the principles of sustainability, minimum intervention, preservation of site integrity and authenticity, and respect for all inherent site qualities and values past and present. Therefore, the main objective of the Master Plan is to clearly describe and define these values and qualities, what has been done to identify, document and research them, and to function as the superior framework for practical implementation.

3. Site characteristics

3.1 Location information

The Archaeological Landscape of Tamgaly is situated in the Zhambyl District of Almaty Oblast in the southeast part of Chu-Ili Mountains in southeast Kazakhstan, 4km northwest of Karabastau Village and 170km northwest of Almaty, the former capital of the country. The geographical coordinates of 43° 48' 12" North, 75° 32' 06" East show the exact location of the most significant petroglyphs in the core zone of the Site – Group IV, surface 118 with the anthropomorphic solar images.

The Cultural and Natural Reserve consists of the Archaeological Landscape of Tamgaly with a total area of 900 hectares proposed for inscription, plus the Buffer Zone of 2900 hectares. Together they constitute a Protection Zone/Area with a total area of 3800 hectares.

In the following, descriptive cultural-geographical terms will be used according to these definitions:

- The Territory of the Tamgaly State Reserve-Museum = the protected area = the protection zone, covering 3800ha = [the Site (900ha.) + buffer zone (2900ha)];
- The Site = Tamgaly = Tamgaly Gorge = the Archaeological Landscape of Tamgaly = the archaeological complex = the nomination area = 900ha.

Different terms will be used according to context relevance.

3.2 General natural and cultural features

The high cultural significance of the Archaeological Landscape of Tamgaly derives from several factors making it outstanding amongst all the most important rock art sites of Central Asia. The landscape features particularities of the geological and neo-tectonic development of the area of Tamgaly and the Chu-Ili Mountains. The climate and the

relief were the main preconditions for the living conditions and for how the natural environment was organized. The cultural and historical development of Tamgaly has also been defined by its geographical location at one of the crossroads of the ancient Central Asian communication lines stretching along the North Tien Shan.

In the vast arid area in the central part of the Chu-Ili Mountains, almost deprived of sweet water and places suitable for dwelling, the Tamgaly Gorge is distinguished by its favorable conditions for long-term settlement. This is due to springs and waterways, pastures rich in vegetation, and wind protected depressions and valleys making the Gorge suitable for habitation of small groups of people. In this respect, Tamgaly represents an ideal landscape for traditional Central Asian arid zone pastoral dwelling.

A small canyon is formed by the S-shaped meander of the Tamgaly River, surrounded by cuneiform hills with rocks covered by black desert varnish (patina), constituting surfaces for several thousand petroglyphs dating to the Bronze Age and all the following prehistoric and historic periods.



*Parts of the Tamgaly Gorge from the southwest. Group IV center left,
Group V upper right.*

Within the whole of the archaeological complex of Tamgaly, concentrated in an area of 900 ha, there are remains of more than one hundred well preserved sites of different types, dating from the middle of the XIV c. B.C. to the beginning of the XX c. A.D. Apart from the petroglyph sites, the archaeological monuments consist of the remains of stone structures – dwellings, enclosures for pasturing cattle, burial fences and burial mounds. The area was most actively used by the pastoral tribes of the Early Iron Age and then later by Kazakhs in modern times (XIX – early XX c.). The present level of knowledge allows us to regard the archaeological landscape of Tamgaly as a representative example of the

development, within a limited area, of the traditional forms of husbandry, land use and social organization of the pastoral peoples in the arid zone of Central Asia.

Tamgaly is a brilliant example of how human being uses natural landscape features in cultural strategies, and clearly demonstrates the interplay between nature and culture. The combination of streams, gorge, low hills, wind protected hill slopes and plains within the same restricted area constitutes the ideal preconditions for the fulfillment of different human requirements: cultural, social, economic and ritual.

3.3 Archaeological features

The archaeological complex of Tamgaly consists of petroglyphs, graves and settlement sites in addition to cult structures and stone quarries. Together with the natural features of Tamgaly and the way in which they comprise the cultural landscape, they demonstrate a multiple human use of the landscape through several thousand years.

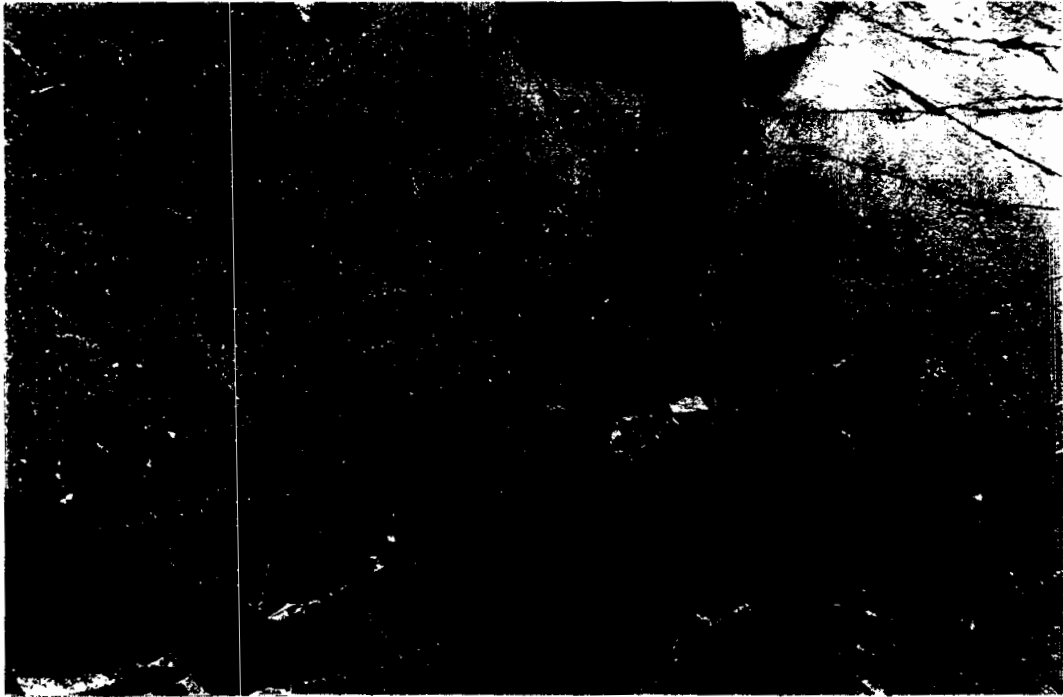
The about 5000 petroglyph images, spread more or less all over the landscape, constitute the most important part of the archaeological landscape of Tamgaly. Their location is determined by natural, cultural and functional conditions. The larger groups of petroglyphs of all periods are concentrated in the canyon. There are rather limited conditions for settlements in the canyon itself, but it is most suitable for the production of rock images and for collective rituals connected to them. Smaller groups of petroglyphs and patrimonial signs (*tamga*) are found on rock panels in the vicinity of settlements, in the periphery of the canyon. The third category is represented by single images and simple compositions. They are found on individual panels close to sources of water, along the transit mountain routes and on hilltops above the pastures.

The oldest images in the complex, created at the interface between the XIV-XIII cc. B.C., are the most outstanding. These date to the early stages of the occupation of the territory of Semirechie (the historic area in the southeast of modern Kazakhstan) by the pastoral tribes of the Andronovo community associated with the historical Indo-Iranians.

The Site is representative of the artistic mastership and conceptual contents of the petroglyphs of this period, but also of the role they played in the formation of cultural landscapes. The special traits of the rock images – their size (from 25-75 cm to 1,0 m), technique, style, iconography and repertoire, and the narrative construction in compositions and scenes, allow the definition of a particular *Tamgaly type*. A poly-figural scene of unique motifs at a 7 x 4m rock panel constitutes a conceptual center of the ancient sanctuary. Besides, the Tamgaly Site consists of many original and masterly made scenes and images.

Most probably, the *Tamgaly type* of petroglyphs as a phenomenon originated from the merging of certain local traditions with outside ones. These syntheses may have taken place during the tribe migrations from Central Kazakhstan in the middle of XIV – XIII cc. B.C.

The petroglyphs are mainly concentrated to five main sites (called Groups I-V) located in the canyon of Tamgaly. They all consist of multi-figured scenes. The petroglyph gallery as a whole seems to be a thematically integral system of compositions constituting the ancient sanctuary, defining the sacred area in the landscape.



Images of the Tamgaly Type, Group II.

The burial grounds and settlements in Tamgaly are located around this area and are clustered in groups according to their functions. The topography of the sites of all periods demonstrates a sustainable functional structure of the cult complex with the isolated sacred zone, and the peripheral residential area. At all stages of the historical development the main function of the periphery seems to have been to protect and serve the cult zone. The large scale of the sanctuary and its exceptional ideological content emphasize the significance of cult activities.

A large number of later period petroglyphs both on the rock panels of the main sanctuary and in the proximity of settlement sites illustrate a gradual transformation of the content and the function of the rock art. Although there are still many artistically designed images, they basically constitute a part of the common repertoire of the later rock art.

4. Description of the Site

4.1 Environment and context

4.1.1 Landscape

Because the landscape of Tamgaly Gorge is situated in a semi-desert area with inland climate, it is poorly inhabited today. There are a few streams, but for the most part they dry up during summer when only salted springs and rivers can provide water for animals and people.

The most impressive and important parts of the landscape are the rock canyon with the S-shaped meander of the Tamgaly River and the large isolated hill mound on its left bank at the north entrance of the gorge, at the border between the plain and the mountainous

zone. Both of them – the hill mound and the canyon – possess a visually legible connection, while at the same time being autonomous parts of the internal organization of the landscape. Both have certain natural features which were practically and symbolically recognized and used by the population of the Bronze Age and later periods. Besides these central natural features, the landscape is dominated by cuneiform hills, constituting a harmonious and varied landscape on the steppes.

The remains of settlement sites and burial grounds are not visible from the canyon or from the plain. But from any elevated point within the complex there is a good overview of the rock canyon and the plain, making the spatial interconnection of the main functional zones understandable.

The western part of the protected area, in the buffer zone, is of particular natural interest and importance; it is called *Shashkaly Gorge*. This pristine area is included in the buffer zone. Shashkaly is characterized by a meandering valley surrounded by cuneiform hills. Surfaces with petroglyphs are proved on the hillsides. The valley bottom is rich in grass, which is cut for winter fodder by ecological friendly means (horse-driven equipment). Parts of the valley are privately owned.

4.1.2 Geology

Tamgaly is located in the southeastern part of the Chu-Ili Mountains which divide the catchments basin of the Balkhash Lake to the east from that of the Chu River to the west, on the border between the piedmont-plain and desert-steppe zones of the north Tianshan region.

The Chu-Ili Mountains (max 1500m a.s.l.) stretch out as a 200km northwestern extension of Northern Tianshan. They share the same geological history, both being generated from neo-tectonic movements; although the Chu-Li Mountains show less neo-tectonic activity and lifting amplitude.

The neo-tectonic movements that gave rise to the Chu-Ili Mountains happened during the last 2 million years, the period from the end of the early Pleistocene, through the whole of the Quaternary period until the Holocene (today); and formed the modern relief: a system of low mountains and small hills located along tectonic faults, and of piedmont-plains. The displacements which occurred at the border of tectonic faults have visibly marked elevations with terraces. The original surfaces of these small hills and piedmont-plains, after the tectonic genesis were transformed by alternated phases of erosion and depositions.

Prior to the neo-tectonic events producing the Chu-Ili Mountains the Tamgaly region displays a very complex geological structure including various kinds of geological layers. These layers were generated alternatively through sedimentary and tectonic processes during an interval of 600 million years, from the Cambrian and Ordovician periods until today.

The most ancient layers (550-400 million years) were generated by the Cambrian proto-erosion processes and by the following Ordovician-Silurian tectonic faulting. The Ordovician layers comprise a combination of micaceous slates and conglomerates penetrated with quartz veins including mineralized copper; and are in tectonic contact with the following layers of Silurian type.

In Tamgaly the types of rock resulting from these ancient layers are not equally distributed. The most ancient types are situated in the north part of the Gorge and in the area of the Tamgaly I settlement site in the southwest.

A significant part of the surface of the Tamgaly complex is composed of Devonian layers (400-350 millions BP) of sedimentary origin. A combination of sandstones, aleurolites and slates has accumulated above these layers and today they lie at an inclination of over 40°. It is on their surfaces that most of the petroglyphs of groups I-V are located.

The late paleozoic, mesozoic and tertiary layers (350-1.6 million B.P.) do not emerge in the Tamgaly Gorge. They are represented by remnants of an ancient eroded peneplain preserved at the borders of the watershed of the Tamgaly Valley or underground in depressions covered by friable deposits. Only during the quaternary period (1.6 million BP - today), under the forces of neotectonic movements and related sedimentary processes, the layers characterizing the main geomorphological traits of the site were generated: the alluvial layer of the river valleys, the deluvial of the hills slopes, the proluvial of the fan deposits of the river outputs on the plain, the eluvial layer of the flat tops of positive forms, the soil vegetative layer, and the anthropogenic technogenic layer.

In the Chu-Ili Mountains the neotectonic geological phase (1.6 million BP - today) started with the Anrakhai fault: it reshaped the tertiary peneplain block; lifted it into a ridge that stretches east-west along a foothill plain; sedimented the latter with deluvial-proluvial layers accumulated over the surface of the underground denuded plain; and then favored in the ridge the erosion of valleys which ended up in shaping the present landscape of small hills.

Tamgaly is placed on the main fault of this process at the intersection with two secondary perpendicular faults oriented SW-NE. The tectonic ridge displays a high density of fractures and other attributes of an active tectonic rise, most relevant in the northern and western parts where it strongly influences the relief determining the relative height of the area and the location of rivers.

The heights of these 'small hills' vary between 950-990m a.s.l. (Tamgaly Peak, 982,9 m); the plain is located between 850 and 900m with a slight inclination to the northeast, so the relative height of the hills is about 80-100m. Hills and valleys are grouped into massifs with rocky slopes and peaks that can be of two kinds: medium height averaging 50-100m and low height averaging 25-50m.

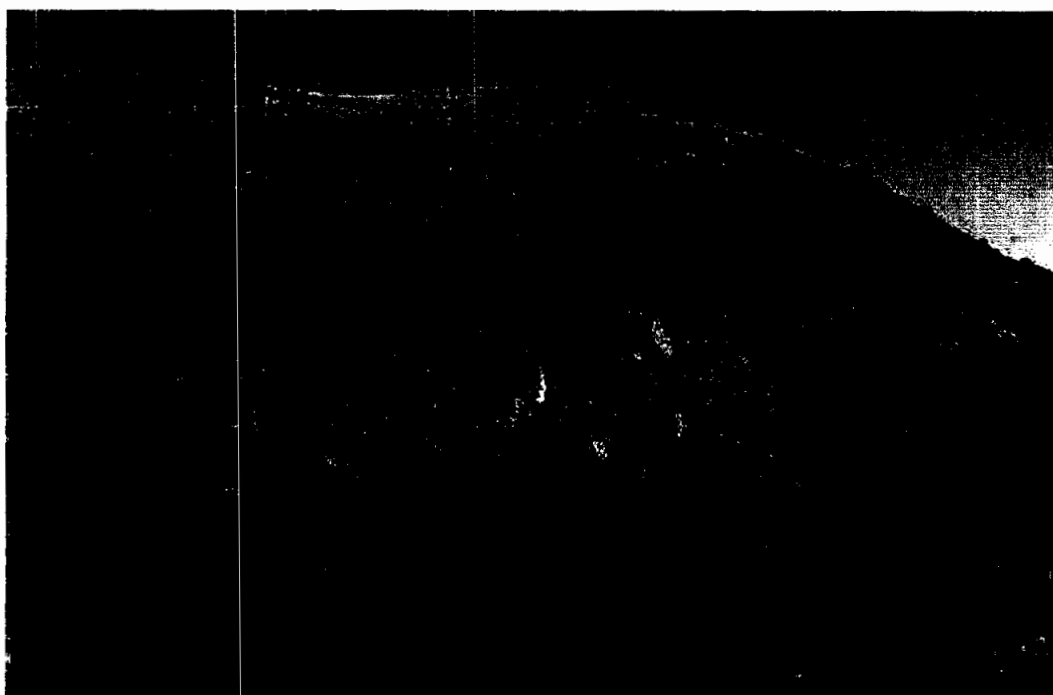
Almost all of the valleys have been cut along the weakened zones of breaks. Among them, the most important are the valleys of Tamgaly (River Tamgaly) and of Shoshkaly (River Oisu-Ashisu), formed along the two secondary but important tectonic breaks mentioned above. These valleys have a characteristic V-shaped cross-section; and, in some areas, present abrupt slopes like canyons (Tamgaly) or narrow gorges where the river occupies the whole width of the valley (Shoshkaly). In the valley of Tamgaly the river course has a turn of almost 90° (between the petroglyph groups IV and V) channeled by vertical slopes along the faults. The same phenomenon is also seen in the Shoshkaly Gorge of the river Ashisu.

In particular, the valley of the Tamgaly River is morphologically well marked in its central and lower parts with the appearance of large rocky groups of Devonian genesis. These rocks are densely covered by desert varnish.

The tectonic activity determines the alternate succession of phases of compression (strain) and phases of depression, provoking minor breaks (joints) in the rocks along planes of weakness (cleavage) not necessarily related with the original bedding.

In the southern part of the territory, near the spring of the Tamgaly River, the influence of the tectonic action and the presence of breaks are relatively weak; but in the Gorge these minor breaks represent an important feature of the site. There, around the main petroglyph groups of Tamgaly, breaks occur along cleavages characterized by a northeast and sub-meridional orientation. They play a major role in the formation of slopes by developing zones of intensive winds, landslides and taluses. Collapsed blocks can be seen in petroglyph Group II of the Tamgaly Valley and in the Shoshkaly Valley.

Moreover, in Tamgaly neo-tectonic movements still occur, causing an increase of fissures and crushing of layers of the mineral substratum. The cleavage process in the Gorge is today getting more active, causing destruction of blocks to happen much faster than in other places and during previous times.



Petroglyph Group II, to the east of and facing the river.

The processes leading to the fission of rocky blocks and surfaces played a positive role for ancient building activities, since the abundance of fragmentary material facilitated the use of large plates for construction of dwellings and burial monuments. Today, however, they can be fatal for the petroglyphs.

The region of Tamgaly is still an active seismic area where occasional earthquakes of a magnitude of 5-6 on the Richter scale occur.

The hydrographic network of the area is quite developed, but permanent streams are absent. The largest water-flow is represented by the river Ashisu. During spring, the

melting of snow provokes a short-term flow of violent streams in numerous broad gullies and otherwise dry channels. During summer the rivers dry up; some weak streams which flow all-year-round are only visible in the proximity of the few main springs. Ground water tables vary according to seasons and elevation, from very high to very low. Where low, zones of cleavage are located along cracks at the foot of alluvial fans.

A 2002-03 special study on the quality and composition of the rock patina in Tamgaly gave the following results (Aubekeroev 2003, unpublished report; cf. Hygen 2003:8-9):

- The rock patina in Tamgaly is multi-layered and consists of up to 15 chemical elements, of which Magnesium and Iron are of particular importance and magnitude and easily transported by water; others are Crom, Aluminum, Kalium, Natrium, Sodium, Potassium (distributed as Sodium), Silica (which is not transportable) and Oxygen.
- Patination is the result of a combination of factors: element migrations to, and rearrangement/redistribution in layers in, the rock surface; west-east wind-brought magnesium and iron particles from desert areas (where rocks are heavily patinated); and water, which brings the minerals out of the bedrock and to the surface;
- The weathering zone is extremely thin, <1-4mm. It is not created through mineral loss to patina. Minerals move from the stone, trough the weathering zone and are deposited in the patina. Even though the zone is more vulnerable than the stone underneath it, it is still monolithic and hard enough;
- Patination also depends on altitude and solar radiation (strong radiation – strong patination). Tamgaly receives very strong radiation;
- Bacteria play an important role in the redistribution of the chemical content of patina, especially carbon layers;
- The thickness of the patina differs between 75-100 and 200 milli-micron (i.e. maximum 2/10 mm). Differences in deepness and strength of patination in petroglyphs can only to a certain degree indicate differences in age of production (there are forces and counter-forces);
- The patina is soft and may be scratched with a knife;
- The patina equals out unevenness in the surfaces and reduces the abrasive action of wind and sand. Therefore, patina protects the surfaces:
- Plagioclase and Mica disintegrate along cracks within the rocks.

So far, equipment and expertise are not available to answer what kind of bacteria occurs in carbon layers of the patina. Another question is whether lichens influence the creation of patina. If lichens appear on already patinated surfaces, they use or absorb some of the iron and magnesium in the patina, in addition to themselves creating carbon layers. When the lichens disappear, new patination occurs fairly quickly because of the pores in the surface.

4.1.3 Climate

The climate of the area is sharply continental, partly softened by the proximity of the Tianshan range. It is characterized by large monthly and daily fluctuations of air temperature, by a small quantity of precipitation, and by its non-uniform distribution depending on yearly seasons and wind circulation.

The long-term average air *temperature* is around +7°-10°C. The average temperature of the coldest month (January) is -11,6°C; the registered record of absolute minimum is

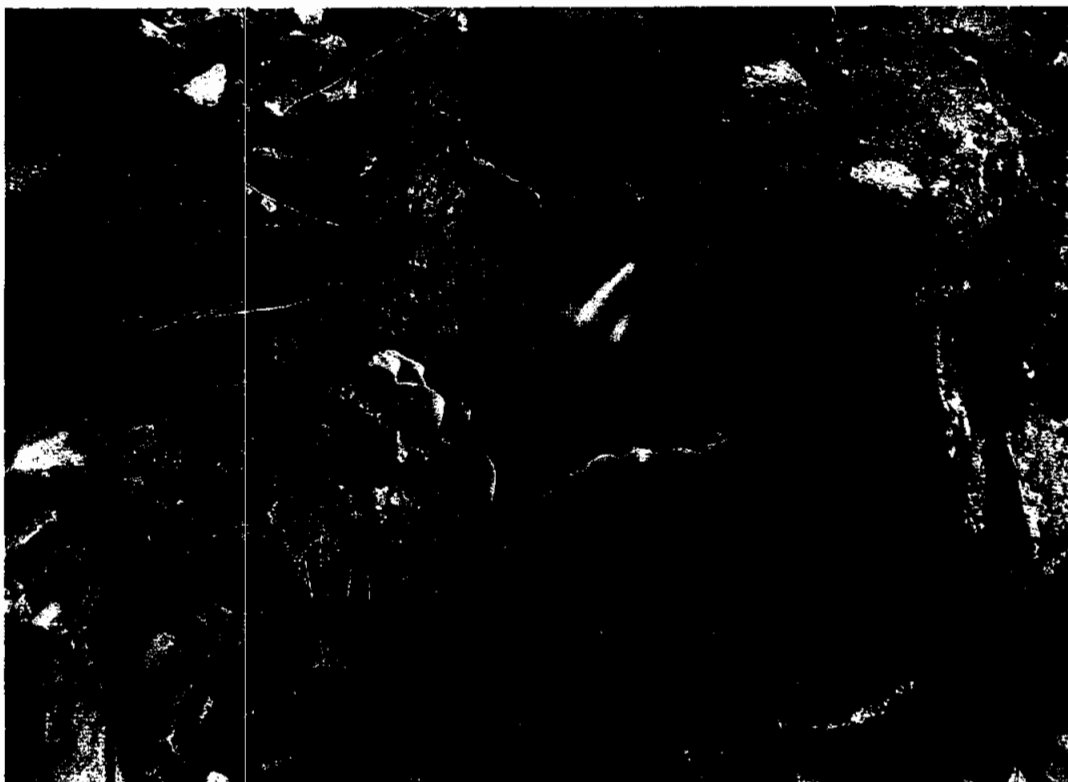
-40°C. The average temperature of the warmest month (July) is +25,2°C; the absolute maximum is +43°C, making a maximum temperature range of 83°C. The day-night temperature range sometimes reaches 25°C, with the sharpest differences in April and November. The duration of the non-freezing period is on average 169 days.

The mid-annual value of *precipitation* is 351mm. The maximum quantity of precipitation occurs during the warm season, with the most humid period in spring when an average precipitation of 126mm represents 36,8% of the total annual deposits. Snow regularly accumulates during the first half of December and collects in ravines due to wind. Snow totally disappears by the end of March. The yearly average depth of snow fluctuates between 9 and 27cm. The depth of frozen ground reaches 1,5-2m with snow cover and 2-2,3m without.

The prevailing directions of *wind* are northeast and southeast. The long-term mid-annual wind speed is 3,3-5,0 m/sec. During high summer temperatures, strong winds increase the evaporation and aggravate the dryness of the air. Maximal values of relative humidity recorded in winter are 70-80%; the minimal in summer 40-50%.

4.1.4 Flora and fauna

Flora



Tulipa Albertii Regel

The flora and fauna of the Gorge are quite varied. The Tamgaly area is located in a zone of piedmont cold deserts and in the shadow of the humidity of the Zailiski Alatau Mountains. Petrofit (stony) desert variants prevail over gravelly ones. The soil vegetation features belong to the arid steppe zone. Botanical preconditions produce pollen, feather-grasses and ephemeral associations. Intra-zonal soils with poorly developed horizons consist of meadow-grasslands distributed in valleys and on river terraces.

A 2002-03 study on the lichens and mosses on Tamgaly's rock surfaces gave the following results (Aubekeroev 2003, unpublished report; cf. Hygen 2003:9):

- Lichens do not create new perforations in the surface; they use existing cracks and openings and develop horizontally in openings in the rock;
- Lichen activity is much stronger under damp conditions (in Tamgaly along cracks and crevices where water seeps to the surfaces);
- There are no signs of lichen penetration into the weathering crust;
- Mosses grow in damp, shadowy spots. Since the petroglyph surfaces face the sun and receive sun radiation, mosses are not a big problem in Tamgaly.

The following landscape categories are recorded as important botanical areas within the protection zone:

Areas of botanical communities comprising rare and relict endemic plants of the Red Book of Kazakhstan

The vegetation in these areas is partly damaged due to grazing and an irregular network of roads and paths. Most threatened are parts adjacent to the Tamgaly Spring and the farm of Sakiev. Rare, decorative plants, especially tulips, are also endangered by visitors who pick them.

Areas of high biodiversity and aesthetic value

The Shoshkaly Gorge in the eastern part of the Buffer Zone is distinguished by the high biodiversity and the aesthetic value of the natural landscape. The complexity of its morphology is a precondition for the diversity and dynamics of its vegetation. The botanical features, concentrating in a rather limited territory, comprise: Petrofit communities characteristic of stony ground; fragments of desert steppe landscapes of the northern and eastern hill slopes; the patches of piedmont desert on the gravelly parts of slopes; and the valley vegetation along the stream.

Areas to be preserved for the protection of water sources

The water source areas are important for the sustainable preservation of the natural landscape as a whole, and must be protected. Otherwise, the springs will dry out, fostering a process of dehydration of the landscape, turning it into desert. Moreover, these areas are habitats for birds, amphibians and reptiles.

Areas of surviving botanical communities representative of the region

The "typical" plant communities are also of high importance. In Tamgaly, the most important in this respect are the areas of surviving piedmont desert. In these areas, adjacent to the low hills in the southeast, have preserved plants representative of the Tien-Shan piedmont deserts. It should be noted that most of the piedmont deserts in the region are ploughed or destroyed by grazing.

Fauna

In Tamgaly, several species of endangered animals can be found, such as birds, predators and reptiles. The ornitho-fauna is rich and varied. Birds of prey are numerous; on stony taluses and rocks it is possible to see 'kekliks' or rock partridges (*Alectoris kakelik*). Some birds are recorded in the Red Book of Kazakhstan, like the falcon-baloban (*Falco cherrug*, Saker falcon), the number of which has sharply decreased over the last years because they are caught for falconry.

A few mammal species are quite common. The spotted suslik lives everywhere, and so does the ground squirrel (*Citellus suslicus*), the wolf (*Canis lupus*), the red fox (*Vulpes vulpes*) and the steppe fox (*Vulpes corsac*), of which the latter three species are objects of hunt. The hedgehog (*Hemiechinus auritus*) lives in the plain.

Reptiles are represented by lizards and snakes: the pit viper (*Schitomordnik pallas*, Agkistrodon halys), the steppe viper (*Vipera berus*), and the arrow-snake or sand snake 'strelka' (*Psammophis lineolatus*).

Insects are numerous and some of them represent a potential danger to humans, like ticks (*Ixodidae*), the 'karakurt' spider (*Latrodectus tredecimguttatus*), the yellow scorpion (*Buthus eupeus*), and the sun scorpion (*Solifugae*).

4.2 The archaeological complex

The archaeological complex of Tamgaly Gorge consists of about one hundred monuments of different periods – settlements, tombs, ancient stone-quarries, petroglyphs and cult structures (sacrificial places) dated to a wide interval of time from the middle of the XIV-XIII cc. BC and to between the XIX and XX cc. AD.

4.2.1 Settlement sites

For the most part, the settlement sites are situated in the hilly relieves of the mountainous part of the gorge. These are small sites located within several areas the size of 300-1200m² where certain geo-morphological conditions are given: wide parts of valleys, flat slopes of small gorges (*sai*), or raised sites of so called "hanging" valleys. All the sites are oriented to the south, southwest or southeast. They have the following features: remains of one or two dwellings and housekeeping structures (like enclosures for cattle) made of natural stones; a cultural layer with fragments of utensils (ceramic, stone, metal, bone) and fragments of animal bones; the character of soil and vegetation (for example, hemp is present only near the settlements).

The permanent character of the settlement sites and the specific features of their location suggest their long-term seasonal (mainly winter) use by ancient cattle-breeders. Apart from more stationary settlements, there are small sites with remnants of stone enclosures, without constructions typical of a permanent dwelling; furthermore, they have insignificant cultural layers, which mainly carry bones of domestic animals. Such monuments are classified as temporary dwellings or camps, used in the context of spring-autumn transhumance by nomadic peoples during recent ethnographic times.



Eastern north-south profile of the excavated settlement site Tamgaly I.

Many of the presently known Tamgaly settlements are multi-layered containing cultural remains of several historical periods. Partial excavations have been carried out on two of them: Tamgaly I and V. In Tamgaly I cultural layers of four historical periods have been proved, the oldest of which contains stone structures of a Late Bronze Age house. Above this level there are remains of dwellings dating from resp. Early Iron Age (IV-I c. BC), late Middle Ages (XVI-XVII c. AD) and ethnographic period (at the transition between the XIX and XX c.). The chronology is supported by several ^{14}C and EPR datings. Furthermore, based on analyses of samples from two stratigraphical trenches, one in Tamgaly I and the other in the valley of the Tamgaly stream, the curve of the paleoclimatic changes in the region has been reconstructed from the Bronze Age and to the present. In the four cultural layers of Tamgaly I, rocks with petroglyphs have been found.

4.2.2 Burial sites

The burial sites constitute one of the basic elements of the Tamgaly complex. They are typically individual tombs incorporated in groups, located on the hilly parts as well as on the flat parts of the gorge. Judging from their shape, two types of burials can be identified: stone enclosures with boxes and cists, the walls of which are made by vertically placed stone slabs in several layers; and stone-and-earth mounds (kurgans) covering the tomb.

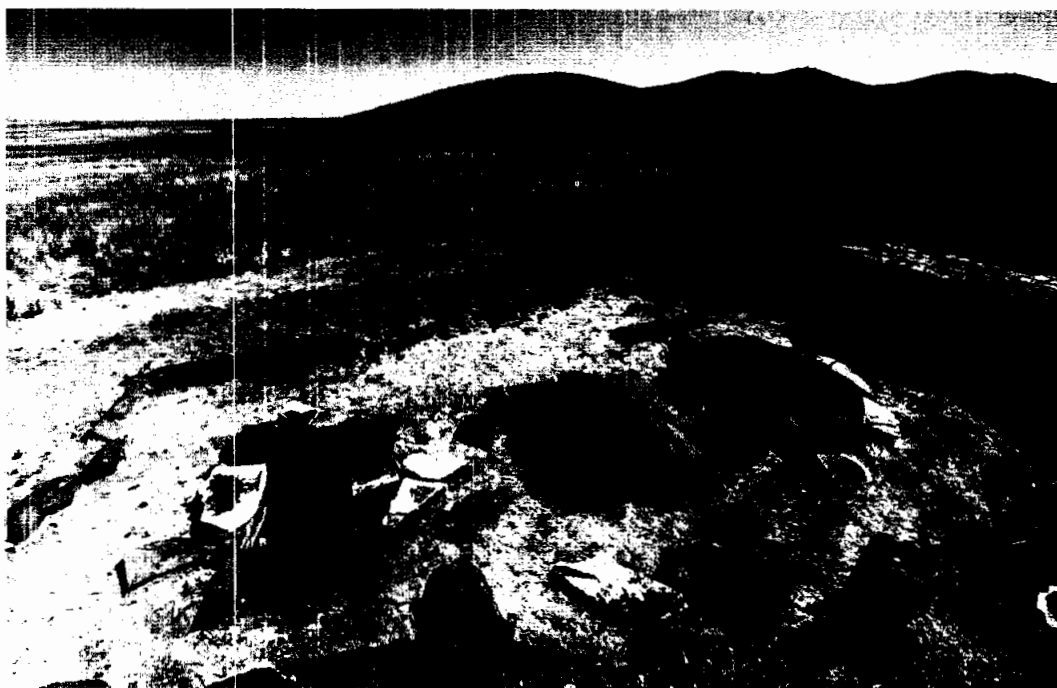
The monuments of the first type are the most ancient ones, attributed to the middle and late stages of the Bronze Age. Kurgans may significantly differ in design, representing characteristic features of each historical period from the Early Iron Age to the present.

Several years of excavations have particularly been dedicated to the Bronze Age cemeteries. In the territory of Tamgaly seven burial grounds have been studied: Tamgaly

I, II, IV, V, VI, VII and Karakuduk II, all grouped along the main valley, on the right and left banks of the river. The cemeteries of Tamgaly I, II and Karakuduk II are located in the

foothill plain where they occupy elevated areas of the relief, covered by an alluvial sediment layer of 10-15cm, making them hardly noticeable. The number of tombs in Tamgaly I, IV, V, VII, as well as the area occupied by them, are relatively insignificant: 15-20 tombs each on an area of 250-400m². The larger cemeteries of Tamgaly II, VI and Karakuduk II consist of 30-50 tombs, each group covering an area of 500-1500m².

The accumulated information, obtained through different dating methods including ¹⁴C, has allowed the cultural and chronological systematisation of the monuments. The tombs can be ascribed to the *Andronovo* and *Semirechie* types/cultures of the II Millennium B.C.



Grave tombs built of stone slabs, from the Bronze Age.

Built of soil and soil and found everywhere in the gorge, the following types of kurgans can be identified:

- kurgans with diameter 15-20m, height 1,0-2,0m;
- kurgans with diameter 4-10m, height 0,1-0,4m, with a ring encircling the basis, an oval stone in the centre, and with a tomb walled with vertical stones and covered by stone plates;
- kurgans of the same size as type 2, but with a line of stones encircling the basis.

The largest kurgans are found in the foothill plains, 1km from the mountain massif. These are groups of 20-30 structures, marking the east and northeast borders of the Tamgaly Archaeological Landscape. The kurgans located in the mountain part of the gorge are clustered in small groups (from 2 to 5-6 structures). These occupy various forms of the relief: raised areas of valleys, deposition cones, hilltops, watersheds, etc. In most cases they are close to ancient settlements.

In the cemetery of Karakuduk II three ritual stone enclosures have been excavated, and in one of them a "deer stone" has been found: a stone stele with images of weapons (bow and battle axe) dated to the V-IV cc. BC.

Even though the cultural-chronological attribution of the majority of the Tamgaly kurgans still remains unclear, most of them seem to belong to the Early Iron Age (III-I cc. BC).

Medieval burial sites of the Turkic period have not been clearly localized in Tamgaly. Probably, they constitute a part of the stone barrows and ritual fences located at the hilltops and low mountain passes. However, no excavations have been made of such monuments.

Kazakh Moslem burial sites are characterised by a quite small mounds, 0,2-0,5m high, made of stones and usually close to the ruins of stationary settlements.

4.2.3 Ancient stone quarries

Stone quarries or mines in Tamgaly have been found close to the Bronze Age cemeteries of Tamgaly I, II and VI. Large stone slabs were recovered from tectonically disturbed rock boulders and widely used for different kinds of constructions. In such stone-quarries there are evident depressions (up to 0,5m) partially filled with alluvial sediments and surrounded by fragments of slabs of different size. These monuments have not yet been excavated or further studied.

4.2.4 Cult structures

In Tamgaly, cult structures consist of a kind of stone altars located near rocks with petroglyphs. They are interpreted as places for sacrificial offerings. Their use up to the beginning of XX c. AD indicates the persistence, in the traditional Kazakh culture, of the ritual importance of petroglyph sites.

Stone fences can be found on the top of some hills or on flat slopes of dominant hills near permanent Kazakh settlements. The cultural layer is usually insignificant; inside such fences scattered animal bones are found on the surface together with fragments of utensils or metal objects. Large and well-aligned stones make fences with a diameter from 3-5 up to 10m, with an aperture on the east or southeast side. A natural rock wall constitutes the side opposite the door. Petroglyphs can be found on individual stones of the structures, with motifs including images of objects like cauldrons and Kazakh inscriptions in Arabic.

A sacrificial place ("altar") with fragments of a large iron cauldron accurately and deliberately buried under flat stones has been found near the petroglyph Group IVa. Excavations of such cult monuments have not been performed in Tamgaly.

A type of kurgan, typical of the steppe region, consists of a barrow from which two curved stone ranges ("moustaches") lead towards the east. Excavations other places in Kazakhstan show that they are not graves; they do not contain human remains, however a horse skeleton and remains of fire and pottery, and can be interpreted as ritual or cult structures. In Tamgaly one such monument was partially excavated in 1957.

4.2.5 Petroglyphs

The petroglyph sites represent the most important and most abundant monuments in Tamgaly. Almost all the images are pecked on unsheltered rocks. Engravings are uncommon, and no painted images have been found on the site.

Within the Tamgaly complex, the present number of petroglyph sites is more than 50. Groups I, II, III, IV, V – the most important ones – consist of about 3000 images. 22 sites have 50-100 images each, and smaller sites with 1-50 images are distributed practically all over the territory. In the Tamgaly complex the total number of petroglyphs is around 5000.

3 types of petroglyph sites can be defined:

- The main sites represented by Groups I-II-III-IV-V with motifs from various periods, located on the rocks of the Tamgaly Gorge itself;
- Sites with petroglyphs of one or two historical periods, usually located near ancient settlements or tombs in the mountain zone peripheral to the gorge;
- Small sites including images of one or two periods, located far away from the other monuments of the complex, on the slopes or tops of hills along traditional walking or horse-riding tracks.

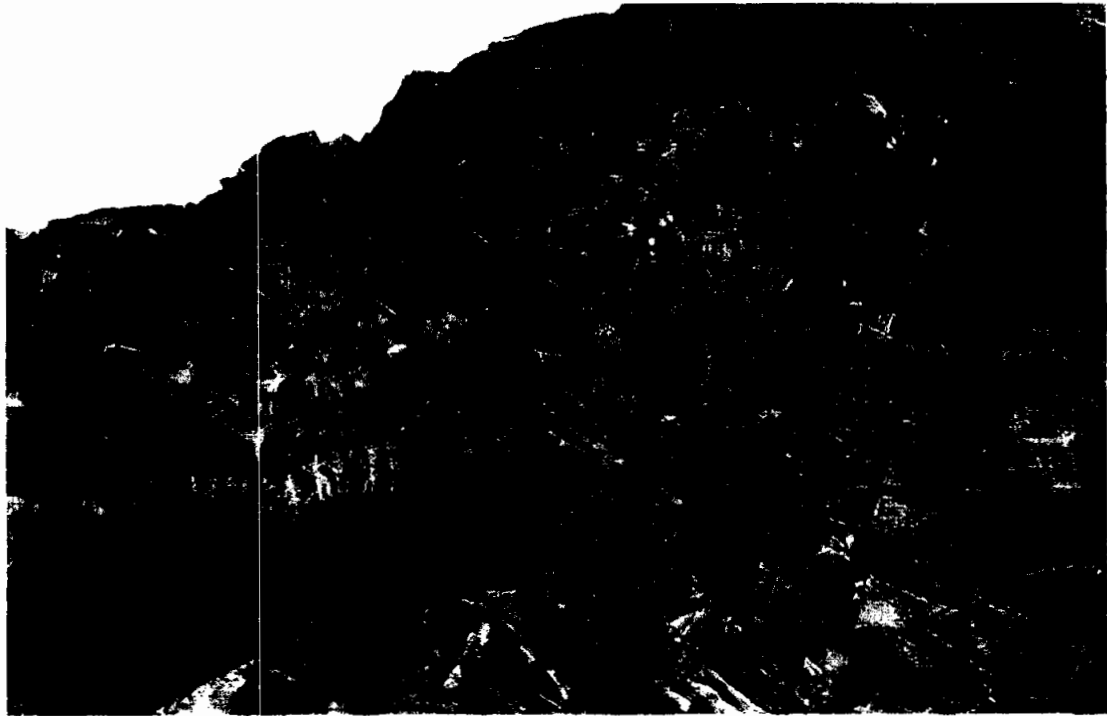
The petroglyphs date to several periods, from the second half of the II millennium BC until the beginning of XX c. AD: Middle Bronze (Tamgaly type petroglyphs), Late Bronze, transitional period, Early Iron (Sakae and Wusun), Middle Ages (ancient Turks) and Modern times (Dzungarians and Kazakhs).

Middle Bronze Age

In Tamgaly the most ancient petroglyphs of the Middle Bronze Age are the most expressive ones and the ones with the greatest scientific, aesthetic and cultural value. They have specific features, which allow the definition of them as petroglyphs of *Tamgaly type*:

- Images of large size are prevailing, averaging about 25-30cm, with exceptional images reaching 0,7-1,0m;
- The pecking technique is dominant, with an average depth of 3-5mm;
- The images are of high naturalistic quality;
- The motif repertoire is extremely rich and includes several rare and unique anthropomorphic, zoomorphic and combined figures: solar anthropomorphs ("sun-heads"), disguised personages, anthropomorphs with clubs, archers with wolf mask, 'worshippers', armed warriors, scenes of animal and human sacrifices, erotic scenes, women giving birth, chariots, footprint, 'lattices', points and other marks, images of bulls, wild asses, horses, camels, wild boars, wolves, deer, etc.;
- The iconography of the main images and subjects is defined;
- The arrangement of compositions is made in close interrelation with the landscape of the surfaces, which constitutes the frame of the whole illustrative-narrative construction and representational patterns.

The petroglyphs of Tamgaly type are dated to between the second half of the XIV c. and the XIII c. BC. The chronology is based on stratigraphy, motif compositions, styles and similarities with the dated images found in the tombs of Tamgaly II, Karakuduk II and in the settlement of Tamgaly I.



Group IV, surface 118; “the Sun-heads” and the procession.

By their characters, motif interrelations and the dynamics of the subjects, the petroglyphs of the Tamgaly type represent a regular system of compositions that comprise narrative ‘texts’. The features of some fantastic anthropomorphic and zoo-anthropomorphic images seem to refer to mythological subjects of the Indo-Iranian narrative cosmology.

The petroglyphs of Tamgaly type represent a special cultural phenomenon, which spread within a limited geographical territory. At the present state of knowledge, it seems to be limited to the southern part of the Chu-Ili Mountains and the foothills of Zailiski Alatau, where some sites with few Tamgaly type images have been found.

Late Bronze Age and Transitional Period

Late Bronze Age: The motif repertoire of the Late Bronze Age is more restricted than in the previous period, and also differs in technical performance, style and localisation in the Tamgaly complex.

In the treatment of images there is less concern for the natural representation of animals, anthropomorphs are schematic and much smaller (max 15cm), and the technique is that of small points pecked to a dept of 1-2mm, with details sometimes done by engraving.

Furthermore, complex images and motif combinations become rare. Horses, bulls and wild animals are still central motifs, but now new scenes of pastoral life filled with elements emphasizing dynamics and conflicts accompany the theme of the hunter. On the surfaces of the main groups, the Late Bronze Age petroglyphs superimpose former images or are located between them, increasing the compositions created before. Small groups of petroglyphs of this period are found not far from settlements and burials in the periphery of the complex.



Late Bronze Age; Group V surface 89.

The Late Bronze Age petroglyphs reflect significant changes in social life and ideology among the steppe tribes roaming the territory of Kazakhstan and Central Asia at the transition between the II and I millennium BC. These changes are due to the rise of nomadic cattle breeding activities, to the increasing mobility of large human groups and to the expansion of geographical communications. Rock art repertoire, style and techniques become analogous over a very large territory, so the Tamgaly Late Bronze Age petroglyphs have similarities with many sites from Western Mongolia and Altai to Western Tien-Shan.

Transitional: A particular set of petroglyphs represents the transition from Bronze to Early Iron Age at the beginning of I millennium BC. It is not numerous but is characterized by quite specific features of style and iconography. The most expressive compositions are located in Tamgaly groups IV and V.

Anthropomorphs are totally absent, and stylized images of different kinds of animals are prevalent: deer, wild goats and predators like wolves, wild boars and panthers. Scenes of hunting and of chase of herbivorous animals by predators become the main themes. Moreover, the choice of stele-like vertical surfaces, otherwise atypical, makes it possible

to relate these petroglyphs to the pictographic tradition of the so-called 'deer stones' of Western Mongolia and Altai. In Tamgaly, such images are quite often roughly superposing older images. The petroglyphs of the transitional period witness a wider circulation of new aesthetic ideas and of the beginning, among the ancient nomads of Central Asia, of the formation of military-political unions and of large regional expansions and migrations.

Early Iron Age

Early Iron Age images are the most numerous in Tamgaly. They are found on the rocks of the larger five groups (mainly Group IV and Group V), besides at the periphery of the complex near the settlements, kurgans and tombs and also on hilltops, where stone surfaces are strongly patinated.

These petroglyphs are not homogenous in style, quality or subjects. They were created by different peoples and tribes (Sakae, Wusun, Yueche, Huns) which inhabited Semirechie during the end of I millennium BC and the first half of I millennium AD; the time of mass movements and military campaigns of nomadic confederations.

The images in Sakae 'animal style' represent the most brilliant petroglyphs of this period, although there are not many of them. For the most part they are found superimposed or as a reworking of Bronze Age petroglyphs of groups III, IV and V.



Images of the Sakae animal style, Group II.

The Sakae style is related to the animalistic artistic tradition which characterizes Central-Asia during the VI-IV cc. BC. The hunt of wild animals and the chase of deer and goats by predators are still the main themes of the rock art, supplemented by individual and serial images of camels. Other motifs are horse riders and warriors, wild animals in

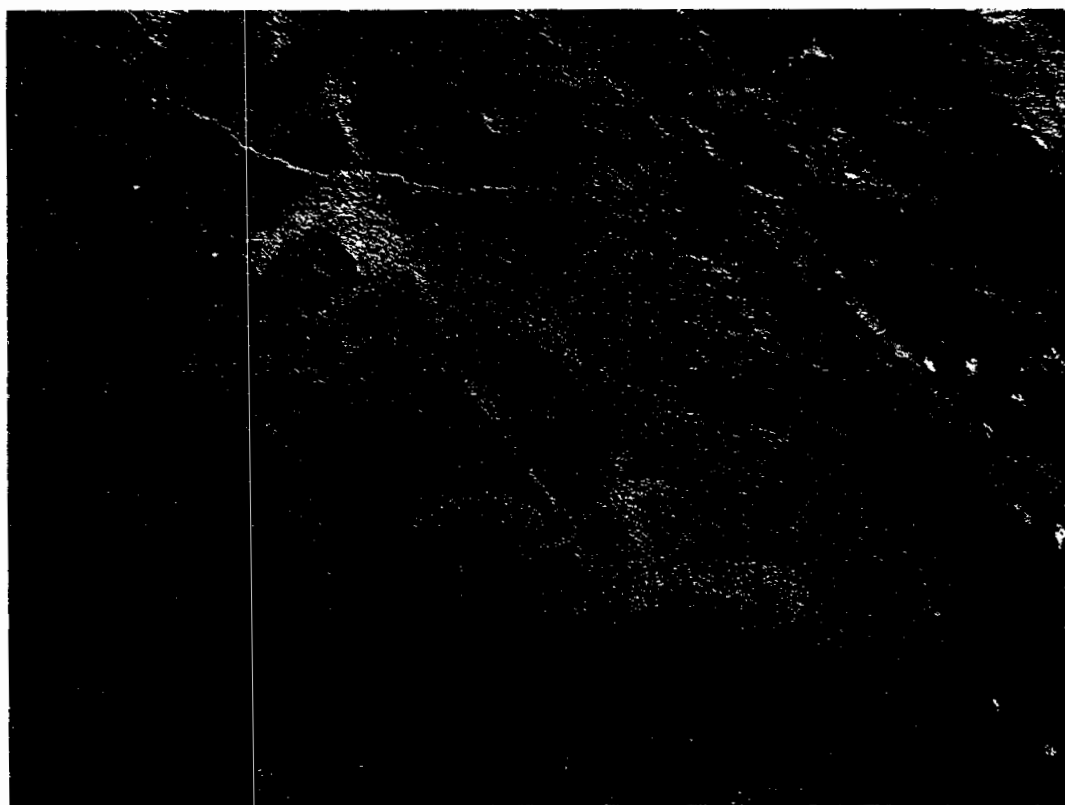
different graceful attitudes, and contour figures filled with decorative elements such as spirals, lines, etc.

There are also a number of images created in the same period but in different styles and by other tribes and peoples. It is not always possible to determine precisely their age and their cultural provenience, since they are mainly homogenous, schematic and rather roughly made images of animals (for the most part goats). Still, there are some exceptional images of very high quality representing wild and domestic animals and anthropomorphs in scenes of hunting or of defending the herd against the attack of predators.

A special category of petroglyphs is represented by the so-called 'tamga', symbols of tribal and clan property. Most often they can be found on rocks near ancient settlements. Some of these symbols are related to Yueche and Sarmatian tribes and can be seen on the whole extension of the Eurasian steppes, marking the historical routes of the ancient Central Asian nomads.

In this way, the petroglyphs of the Early Iron Age represent complex processes of interaction between ancient Central Asian tribes. Also, they demonstrate the continuation of the petroglyph tradition from the Bronze Age.

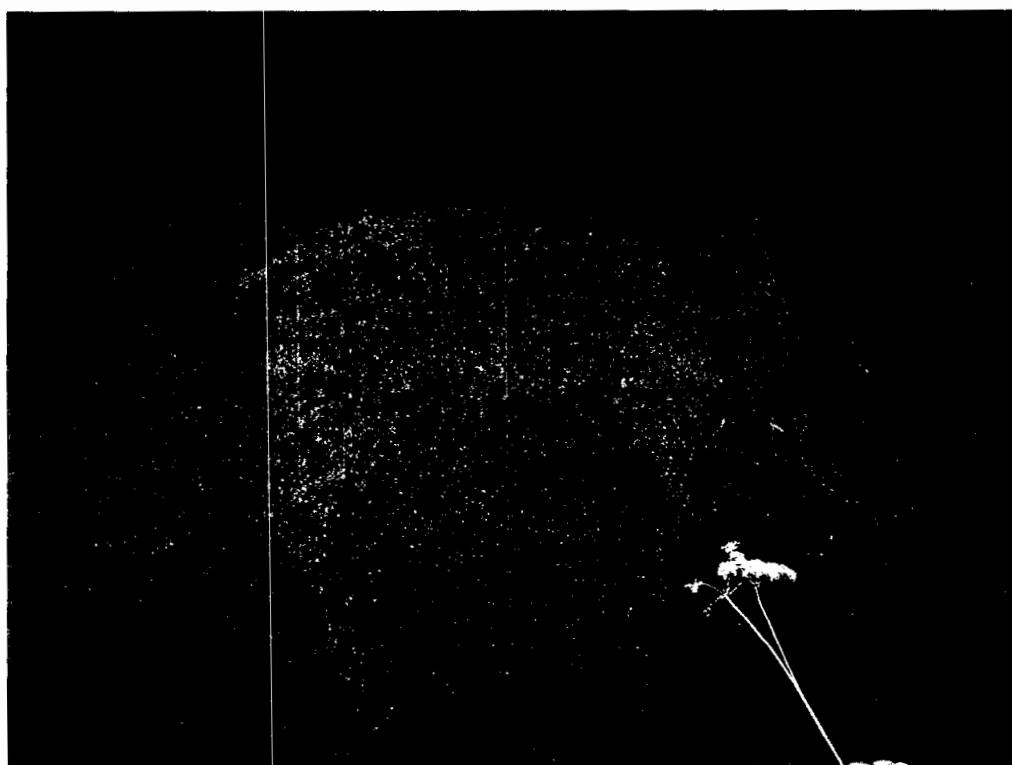
Middle Ages and later periods



The standard-bearer motif of the Middle Ages; Group VI.

The Middle Ages: The petroglyphs of the Middle Ages are, like the Early Iron Age ones, found everywhere in Tamgaly, though their total number does not exceed ca. 300. For the most part they are located within groups IV and V, but the best samples are found at a few peripheral sites located along roads and mountain paths.

Medieval petroglyphs differ from all the older ones by the special repertoire and artistic originality of the nomadic rock art of the Turkic time (VI-XII cc. AD). This is the period of huge steppe empires and the main character of the rock compositions becomes the standard-bearing rider, the archer and the warrior with heavy weapons. New figurative scenes are duels between a warrior on horse and a warrior on foot, collective hunting, and nomadic displacements. While in the older hunting scenes the most relevant image was that of the animal, now the focus is on the anthropomorphic hero with his military attributes: banner, weapons and horse equipment. Together with representations of the life of a rich cattle-breeding society, the themes of the Turkic rock art reflect the rise of the epic creativity and the establishment of an aristocratic military aesthetic.



The unique elephant image of the Middle Ages; a little away from Group IVa.

In spite of opportunities for better choice, even the most imposing compositions are made on narrow and rough rock surfaces out of view. The images are quite superficially made, with unevenly removed or scratched patina. Several ancient images are renewed and added to.

Some Medieval petroglyphs in Tamgaly are unique in the Central Asian rock art repertoire, such as the comparatively large image of an elephant with rider, located near the Tamgaly I settlement; another example is a sitting anthropomorph in Group V, of which an analogue is found in Western Mongolia. An inscription of six letters of the Turkic runic alphabet is found in Group IV, dated to the VIII c. AD.

Later periods: The centuries following the Mongolian conquest (XIII-XVI cc. AD) represent a 'dark age' in the history of Tamgaly, and the events of this period have not been reflected in the petroglyphs of the site. Not earlier than XVII c. AD a Buddhist prayer was inscribed in Mongolian alphabet on a surface of Group IV, together with a small series of rather schematic anthropomorphs and animals that can be connected to the establishment in Semirechie of the Dzungarian (Oirat) political control.

Popular Kazakh figures are made during the XIX and the early XX c., some of which are excelling in elegance and represent the last burst of rock art creativity. Others are roughly pecked with a stone or softly scratched with a metal tool. Their repertoire is extremely limited with images of goats, horses and riders, besides patrimonial marks (tamga) of the Kazakh tribes 'dulat' and 'alban'. A significant part of Kazakh petroglyphs is located near stationary settlements, and some of them are made on isolated stones of dwelling constructions.

4.3 History and Development

The monuments of Tamgaly Gorge constitute a whole cultural complex, i.e. a system of archaeological sites interconnected in a territorial and functional unity, characterizing the important aspects of the social and cultural life of its inhabitants from the Bronze Age to the early XX c.

In general, the Gorge, with its particular features, represents the original environment which in many senses defined the ways of life and practices in different historical periods. The groupings of contemporary monuments according to their functional and typological types can be observed in the spatial organization of the cultural landscape. This principle was maintained during all historical periods.

The canyon with the five main groups of petroglyphs was the core of the site during all periods. No remains of dwellings or other structures are found here. The ancient tombs and cult structures of the largest burial grounds of the site are concentrated around the dome-shaped mound in the neighboring piedmont valley. The separate ensembles of monuments, including settlements, burial grounds and smaller petroglyph sites are scattered in the mountainous periphery surrounding the core area. The topography of the site allows one to distinguish its functional parts – cult zone and residential area. They are isolated from each other by a kind of "buffer zone" that contains no cultural remains or any other signs of past use.

The formation of the complex took place in the Middle Bronze Age, when its main structural components were shaped: the sanctuary with petroglyphs and the burial ground (cult zone), and, to the south, in the hilly area – the residential periphery. Then, during the following periods, the boundaries of the residential area subsequently altered, finally resulting in the isolation of the core of the sanctuary between groups IV and V and in the reduction of the role of the other parts of the original cult zone. However, the residential area grew exclusively in the periphery and never touched the cult zone.

In the Late Bronze Age, petroglyphs spread all over the territory, and new burial grounds appeared both in the cult zone and in the periphery. Within the sanctuary smaller series of

new petroglyphs appeared on the rocks, only partially preserving the continuity of repertoire and iconography of the oldest petroglyphs of Tamgaly. The petroglyphs of the transition period show the most innovative character. In total, the sites of the late II – early I millennium B.C. reflect the considerable cultural influence of the different population groups related mainly to the eastern parts of the region – Dzungaria, Altai and South Siberia.

In the Early Iron Age, the residential area grows considerably, occupying the major part of the suitable – in relation to the natural conditions – places within the periphery zone of Tamgaly and in the neighboring gorges of Shoshkaly and Bes-shal. The topography of the cult zone is still kept unaltered in this period. The kurgan burials occupy free spaces of the ancient burial grounds, concentrating near the Bronze Age burials. A number of new ensembles, including settlements, kurgan burial grounds and smaller sanctuaries with petroglyphs appear in the mountainous area adjacent to the cult zone. However, in their composition and partly in their contents they sometimes reproduce the structure of the Bronze Age sanctuary with its clearly defined centre and subsequently grouped compositions.

In the core cult zone and in the periphery some superimpositions, damages and alterations of the Bronze Age images and scenes can be observed. In addition, some separate groups of kurgan burials of the nomadic elite appear in the piedmont valley. A few excavated Bronze Age burials show the evidence of plundering in the second part of the I millennium B.C., and at the sites of the Bronze Age settlements there are contemporary traces of strong fires. These phenomena can be interpreted as violent external political commotions – armed and ideological conflicts – which at a certain historical point destroyed the traditional way of life of the Tamgaly inhabitants. Still, despite of the considerable social, economical and ideological changes, Tamgaly preserved its ritual significance.

The archaeological data of the Middle Ages do not offer much information. Burials of that time are not yet found in the area. The settlements occupy the same sites as before, but their number is considerably reduced. The small groups of Turkic petroglyphs appear mainly in the periphery, but also in the sanctuary, often as “renovations” and alterations of older motifs according to new ideological codes. The epical content of the Medieval rock art with its military esthetics marks a loss of the ritual mythological meaning of petroglyphs, as well as the beginning of the reduction of their main communicative function.

The topography of the sites related to the latest historical period of Tamgaly is of high importance. Many of the Kazakh winter abodes of the late XIX c. occupy the sites of the Early Iron and Middle Ages, but some also appear in new places in Tamgaly and neighboring gorges. The grouping of the sites in the residential area corresponds with the system of the patronymic setting (by large families) mentioned by Russian and European researches concerning the nomadic and semi-settled peoples (Kazakh, Kyrgyz, Turkmen, Altai, etc) of Kazakhstan, Central Asia and Siberia in XIX – early XX cc. At that time, the periphery of the gorge was actually embraced by a chain of settlements approaching the territory of the ancient sacred area. The series of rather schematic and uniform rock carvings, and also the *tamga* (kin signs) and inscriptions of the Arabic scripture, appeared in the immediate vicinity of some large settlements.

The sacred centre of the gorge, by now having got its modern Kazakh name *Tambaly*, still kept some significance in the local inhabitants' life. While a further weakening of the tradition to peck, change or repair the petroglyphs is evident, small altars appeared near the rocks with the already existing petroglyphs. The ancient burial grounds were not used any more, but a new cemetery appeared in the same territory as the ancient sanctuary, at the foot of the Group IV rocks.

The considerable reduction of the sacred area and of new images on the Group I-V rocks was, probably, caused by a lack of understanding of the function and semantics of the ancient petroglyphs, and, moreover, by a final loss of the social and ritual significance of rock art.

The 1930-40s represents a break in the modern history of Tamgaly. As a result of the enforced collectivization and the subsequent migration of parts of the population from Semirechie, the area of Tamgaly became uninhabited. By 1956 the territory of the Gorge had been occupied again as a part of the lands of the "Roslavlsky" Soviet farm. The demographic situation had changed when new people came from Russia and Ukraine, and later some Kazakh people migrated here from China. These major migrations caused the assimilation of the few local people who in some sense were the keepers of the old tradition of respect for Tamgaly.

The traditional functional topography of Tamgaly does not exist anymore. The newly constructed country track stretched through the gorge, and heavy vehicles drove near the rocks with petroglyphs until 2001, causing some disintegration of the rocks. In addition, modern graffiti appeared on the rock surfaces of the groups IV-V, and some new structures have been built on the top of the burial grounds of Tamgaly V-VI. Some stones with petroglyphs have been used for the building of constructions

Still, the respect for Tamgaly as a sacred place of the ancestors' burials still survives in the local Moslem population. In spring and autumn, the traditional festivals with the horse race (*kokpar*) take place here, and pilgrims still pray and perform rites in the gorge and leave textile strips on the branches of prickled shrubs (*shenghel*) near Group IV. The local Kazakh population has preserved some "protective" legends, telling that a fatal punishment from heaven will reach anyone who disrespects this sacred place. However, these rites and this respect for Tamgaly as a sacred place have no relation to petroglyphs, and the very fact of their existence was a new experience to the local people who learned about them from scientists, educators and the media.

4.4 Ethnology and tradition

The characteristics of the present day population in Tamgaly are a result of the XX c. development of the area as well as of the country as such. Its formation is related to main historic processes and events which took place in the 1930-50s. As a result of the collectivization and sedentarisation of nomads in the early 1930s, the aboriginal population of the Tamgaly area were moved to other areas or migrated to Western China (Xianzan). Consequently, the population in the Tamgaly area was dramatically reduced and stayed very low until the late 1950s.

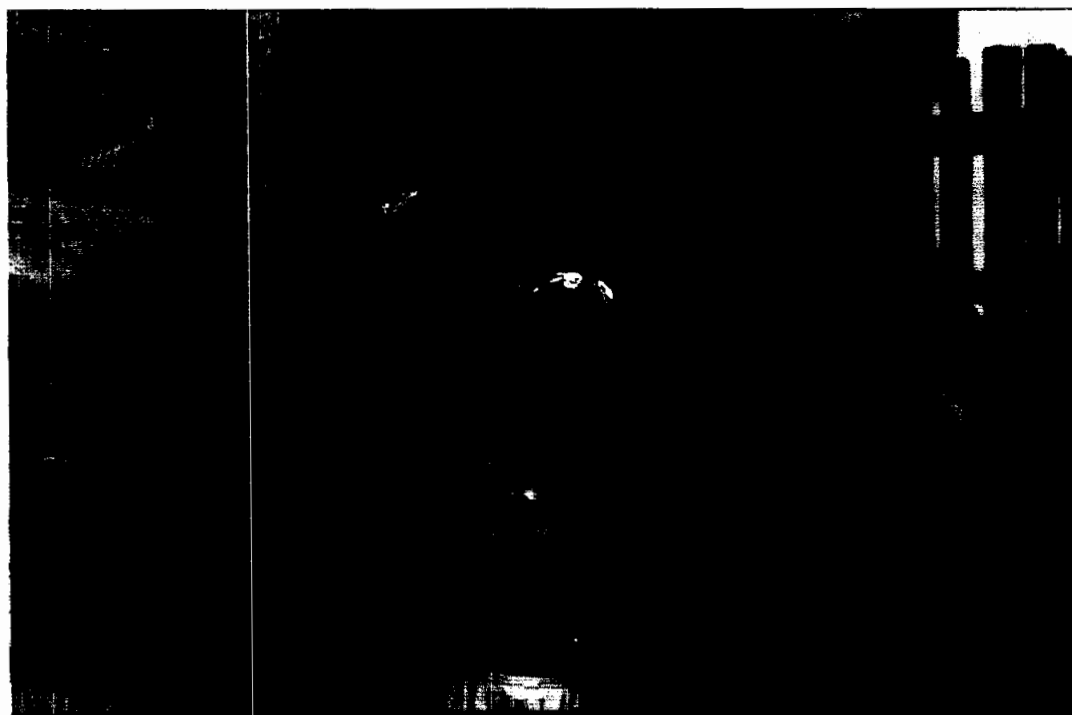
The Tselina Programme – the state policy on the development of virgin pastures for agriculture – was in its last stages in 1957-58. At that time, one of the state enterprises – *sovkhos* (state farm) – in the Tamgaly area was established 30 km south of the Tamgaly Gorge. The Karabastau village appeared in 1957 as a department of that *sovkhos*. This

framework of national agricultural policies of that period attracted immigrants from Russia and Ukraine. The name of the center of this *sovkhos*, which is Roslavl, is not a Kazakh name, but a name of a small town in the Poltava region in Ukraine. Simultaneously, the descendants of Kazakh immigrants to China got permission to return to Kazakhstan. They were settled under the control of state agencies, all over the territory of Kazakhstan, not following the traditional settlement patterns which would be based on kinship and tribal territories.

The result of these policies was a lack of balance between the aboriginal population and the immigrants. The immigrants played a more important part in both politics and economy and as a majority it got predominance over the original local population. The most part of the present population in the area descend from the immigrants from China, whose nickname among the locals is “the Chinese”.

Until the 1970-early 1980s, the Russian and Ukrainian population remained in the area (about 30 %). By the end of the 1970s they started to migrate to other places, and finally, in 1990s all of them had moved out.

All these changes in the local population have, therefore, also caused traditions to change. There are several versions of legends related to Tamgaly and its surroundings. The *basmachs* (bandits), who protested against the policies of sedentary collectivization used to stay the area, and one group was hiding in Tamgaly. South of Tamgaly there is a gorge actually called Bandit-sai. One of bandits is said to have shot at an airplane from petroglyph Group IV, and actually grounded it.



Other legends relate to certain characteristic of Tamgaly as a sacred place, in particular the bushes near petroglyph groups IV and V. Certain animals in this area, such as fox-*oboroten*, a fantastic figure that can change from animal to human and back again, are said to punish those causing damages to these bushes. The origin of such legends is

aboriginal in the area, but the newcomers also supported them. The knowledge about the rock art is, however, minimal. The only survived tradition related to Tamgaly is the habit of tying strips of textile to bushes at a certain place near the petroglyph groups IV-V. This tradition does not relate to the petroglyphs themselves, rather to graves which are considered holy (heroes?) and which, they believe, are located here. They respect this place, but the respect is not connected to specific objects.

According to information, this tradition was still living until the 1970s. The rituals were observed not only by the locals, but also by people from remote areas coming to pray for help against ailments like barrenness and mental diseases. At present, this tradition is rather continued by people coming to visit the site than by the locals.

The contradictory character of this ethno-cultural situation is best described by two contradictory phenomena; on the one hand, the place is still respected – strips of textile; on the other hand, the rock images themselves are not respected – graffiti. The oldest graffiti inscriptions are dated to 1957.

5. Documentation and recording

5.1 Landscape, topography, geology and botany

Topographical maps for Tamgaly and parts of the Buffer Zone have been made in scales 1:100, 1:200, 1:500 and 1:1000 for different documentation purposes: general, special and combined, covering several topics. In the period 1992-94 geological, geomorphological, hydrogeological, neo-tectonic, landscape and anthropogenic impact maps were made in scale 1:25 000, covering the whole protected area. Several maps were updated in 2002 and 2004 within the framework of the preparation of the Nomination Dossier and the Management Plan. In 2002 the neo-tectonic, geo-morphological, landscape and anthropogenic impact maps were up-dated, and geo-morphological and archaeological mappings combined. In April 2004 the anthropogenic impact map was again updated to document changes after the transit possibilities through the area were stopped. This same year identification and mapping of botanical and endemic species, besides of animals, birds etc. were also further up-dated and developed, and special landscape maps with marked areas for special protection of natural values (vegetation, flora and fauna habitats) are produced which will be correlated with archaeological mapping. In addition, in 2004 natural values in the core area (the road in the north to petroglyph Group V in the south) are mapped in more detail.

In 2002-03, a special study was carried out by on the quality and composition of the rock patina in Tamgaly (Aubekerov 2003, unpublished report; cf. Hygen 2003:8-9). Methods applied were x-ray diffractometrical, hydrogeological and paleogeological analyses of thin sections and polished cubes, and output was fed into data models for the creation of diagrams.

In this connection a study on the growth of lichens on the rock surfaces and their possible impact was also initiated (Aubekerov 2003, unpublished report; cf. Hygen 2003:9), based on experiences and questions during the fieldwork of 2002 (cf. Hygen, Bjelland, Gran 2002:39-40). There are still a lot of unanswered questions connected to the different forces acting with or against each other, and further studies by a lichenologist familiar with this specific lichen flora would be an advantage.

5.2 Archaeological structures

5.2.1 Petroglyphs

On topographical plans at scale 1:100, 200, 500 1000, panoramas photos and drawings of petroglyph groups' surfaces are indexed according to petroglyph photos, rubbings (on micalente paper) and tracings. Photos and tracings are mainly finished of surfaces within groups I-V, to a less extent of surfaces within groups IIIa, IVa, VI, VII or separate peripheral groups.

Scaled parallel photos are made of each rock surface. In addition, rubbings and tracings are made when it is difficult to get good photos or for special purposes. The images differ in visibility, and the principle of recording is to always choose optimal recording methods in order to catch all features.



The rubbing technique with the use of micalente paper; demonstrated during the CARAD workshop in Tamgaly, September 2003.

Even though surface recordings are not finished, more than 300 rubbings and 120 tracings are made, and in addition there are ca. 200 image recording photos from 1957, 185 photos from 1992-94 and more than 100 from 2001-04.

Standard written archaeological documentation descriptions are brought up to date (99%). Besides being basic image documentation material, the records also constitute information for conservation and monitoring.

5.2.2 Other archaeological sites

All archaeological structures other than petroglyphs (graves, settlements, other) are also marked on the topographical, combined and special archaeological maps and plans.

Archaeological excavations in Tamgaly started in 1957, continued in 1975-75 and then again in 1988. Several of the graves are excavated, and in addition part of the settlements I and V in the eastern periphery of the Tamgaly Complex. While all excavated material and documentation from the 1998 excavation is cataloged, researched and published (Rogozhinsky 1999, 2001, 2002). this is not so for the earlier excavations, although the reports, photos, drawings, plans and stratigraphical plans are archived. However, the previously excavated archaeological material dating to the Bronze Age has been systematized.

There are altogether 30 ¹⁴C datings from Tamgaly excavations, of which more than 14 EPR and 10 calibrated: from the Bronze Age cemeteries I, II, IV and VI, and settlements I, II and IV.

More than 100 soil samples have been collected and analyzed for pollen content. Preliminary paleo-climatic reconstructions have been prepared on the bases of pollen profiles (Aubekerov, Sala, Nigmatova 2003).

5.3 Damage identification and documentation

In connection with the UNESCO/Norwegian Trust Fund Project for the Management, Conservation and Presentation of the Tamgaly Petroglyph Site, two Norwegian specialists – one conservationist and one lichen botanist – joined the Tamgaly project group in 2002. An important objective was to introduce and apply methods for petroglyph damage identification and documentation (Hygen, Bjelland, Gran 2002:33-36). The conservationist continued his work together with Kazakh and Uzbek colleagues in 2003. During the Central Asian workshop later in 2003, the conservation group of participants co-operated on further sophistication and application of the field registration form. The damage documentation data are to be included in the Central Asian petroglyph database, and will comprise the precondition for conservation and management practice (cf. ch. 5.7).

The method used for damage documentation is based on the adding of color signatures to reduced and scaled rubbings or to photos. The signatures indicate specific damages and geological phenomena. This method, based on the Norwegian Documentation Standard but further developed to suit the Central Asian conditions, makes the monitoring as well as the adding of new conservation information manageable.

Another 2002 fieldwork goal was to collect information and experience on different conservation methods and materials suitable to the recorded damage situations. Several test panels without petroglyphs were established in the vicinity of Group IVa. After the recording of lichens, cracks, damages etc., different cleaning and conservation materials were tried out (Hygen, Bjelland, Gran 2002:36-39). The Tamgaly conservation team is systematically and regularly monitoring the surfaces, and the results and experiences will set the premises for further conservation activities.

5.4 Ethnology

In 1989-92, ethnological surveys and studies were conducted in the area and some information was collected by ethnologists; and then again in 2001-2003. A systematic survey was initiated in 2004 when a questionnaire was made especially for the purpose of interviews of the local population in the Tamgaly area. The questions address a wide range of topics, related to personal data, ways of life, traditions, handicrafts, etc., and also to their understanding of the Tamgaly Site.

The aim of this survey is not only to study the ethno-historical and socio-ethnological context of the area, but also to obtain detailed social information: on employment and level of employment, and the economical and educational levels of the population. Further, they are asked about their awareness of the values and importance of the Tamgaly Site and the impact the Site and its new uses have on their lives – positive or negative. They are also asked about expectation, desires and how they conceive of opportunities, related to their present and/or possible future involvement in activities related to the Site; like maintenance, presentation and tourist services or other.

The results of this survey will be presented in a scientific report to be completed in 2004.

5.5 Documentation connected to site presentation and visitation

5.5.1 On-site visitation and presentation

For all measures connected to visitation and presentation, these principles are followed:

- Surveys connected to planning;
- Consultations with and advice from archaeologist, geologist and botanist in the planning process;
- Documentation before, during and after implementation (photos, scaled drawings at topographical maps and panorama plans, written descriptions);
- Documentation also to serve as a tool for monitoring, repairs and further planning and development;
- Minimum physical and visible intervention;
- Detailed drawings of all constructions;
- Reversibility.

As of today, only the minimum necessary measures are carried out.

Barriers closing the Gorge

In order to stop vehicles from driving through Tamgaly Gorge, barriers closing the road at the north and south entrances were planned and implemented as an emergency measure in 2001. Following surveys, geological consultations and discussions of alternatives, it was decided to construct discreet rows of small stone piles, which are visually and physically non-intrusive, reversible and very effective.

Foot-paths

Suggested plans for the visitors' route were sketched and proposals mapped and discussed in 2001-02, and implemented in 2002. Geological advice was essential in order to avoid landslides and erosion of paths where strengthening of paths and adding of stone

steps in steep parts were necessary. Botanist advice was sought in order to use vegetation as natural barriers. All measures are documented before and during implementation, and the results are drawn and marked on scaled topographical maps and panorama drawings. If damages occur, they are described and marked on the maps and photographed, before, during and after repairs.



Signs painted on stone slabs at strategic places on-site, are discreet but clearly visible.

Signs and information boards

Provisional information boards were set up at the north and south entrances in 2001, and the same year also single poles by the road with discreet arrows pointing to the petroglyph groups. All other signs in the area are painted on stone slabs placed above ground (2002): signs for STOP, visitation is not permitted, arrows, images of snake, and an image of binoculars signing a view point. Every signed rock slab is photographed, and the positions and photo numbers are drawn on panorama maps.

Parking lot

The parking area is close to the north entrance to Tamgaly and the site established in 2002. Its boundaries are marked with stone and broken bricks above ground, painted with lime wash for better visibility. There are no archaeological remains in this area.

Toilets

Two toilets were constructed by the parking lot close to the north entrance in 2001. Sketches were provided and the drawings corrected and detailed after construction. The site was chosen for its dryness (flooding during the rainy season; melting of snow) and lack of archaeological remains. The actual site with access paths is mapped. The toilets can be removed without dismantling.

Winter shelter for guardians

The site for the winter shelter/house is on top of the hill above petroglyph Group IV. The choice of this site was based on the following criteria:

- The guardians must have good overview over the whole canyon;
- The ground must be firm and stony in order to avoid foundations;
- There must be no archaeological remains.

Sketches were provided and the drawings corrected and detailed after construction in 2002. The house is totally above ground and can be removed without dismantling, and its position is mapped.

5.5.2 Monitoring of visitors

The systematic monitoring of visitation started in Tamgaly in June 2001, when a daily horse guard service was established as a part of the emergency protection measures. The monitoring program, developed by NIPI PMK, is being implemented on site mainly by the guards/guides.

The purpose of the visitors' monitoring program is to collect the data necessary for the short- and long-term planning for sustainable tourism in Tamgaly.



The horse guards in Tamgaly are on duty every day, all year.

The objectives of monitoring are:

- To collect data on the use of the site (number, age and social status of visitors, aims and organization of visits);
- To detect sources of information (where from the visitors learned about the site and its value);
- To survey visitors' needs and requirements concerning on-site services and facilities.

The following monitoring methods are applied:

- Regular recording of visitations in special log books (by the guards/guides);
- Interview (through questionnaires) of visitors, besides of guides and some managers of Almaty tourist firms and agencies;
- Photographic recording and marking of the pattern of visitors' behavior and movements on the maps of visitors' routes and paths (periodically, by NIPI PMK).

The collected data are stored, systematized and processed by NIPI PMK for the purposes of decision-making, further analysis and for the import into the site management database.

5.6 CARAD: Central Asian Rock Art Database

Based on a Kazakh initiative and the need of a database for the Tamgaly complex, the idea was developed to create a common database for Central Asia. Supported by UNESCO, a workshop was arranged in Almaty and Tamgaly in September 2003 to further develop the database structure and the forms for the recording of archaeological and conservation data to be fed into the base. The database is to contain data suitable for research, conservation and management purposes, and is structured into the following levels or "layers":

- Central Asia
- Country
- Oblast
- Site/complex
- Local site/group (petroglyphs, cemetery, settlement site, other)
- Surface (or other elements)
- Image

At each level archaeological, geological, conservation, management, monitoring and other relevant contextual data are connected, in addition to historical data ("archive"). Photos and drawings are connected to each level, and the system is equipped with a search motor for easy access to combined data. The database is created in *Access*, which offers a simple although comprehensive model.

The next CARAD workshop is planned to take place in Bishkek, Kirgizstan, in 2005.

6 Evaluation of the Site

6.1 State of conservation

The rocks with petroglyphs are the most vulnerable of the monuments in Tamgaly. The sandstone bedrock is characterized by a system of narrow cracks and wider crevices running in all directions, crossing the entire rock surface and penetrating deep into the

parent rock. Water circulation within the cracks causes growth of plants and lichens causing increased weathering and the widening of cracks, resulting in the loosening and falling out of small and larger blocks of rocks. A particularly damaging situation can be observed in Group IV, where a whole rock section with the highly significant scene of the "sun-head" images (surface 118) is separated from the rock massif and seriously damaged by structural cracks.

The stratification of the bedrock is parallel to the surface, making the surface extremely vulnerable to exfoliation, flaking and falling out of stone fragments, especially where cracks cross each other. There are many examples of large exfoliated sections 2-3cm thick. Some seemingly undamaged panels have open spaces between the surface layers and the solid rock underneath ("bom"). Any external pressure on such a surface may cause it to crack.

The first major conservation works were started in 1990 on the rocks of the Group II, in order to reduce damage caused by water running from the slope and penetrating into the cracks of the fragile sandstone. Some wide cracks were cleaned and filled with crushed stone, then closed with a thin layer of a crushed stone and organo-silane mixture. The water distribution scheme was carefully designed and implemented in order to prevent it to penetrate into the rocks with petroglyphs. In addition, some loose stones were glued to the parent rock. Unfortunately, all the works were stopped because of lack of finance.

During the period 1991 to 2001 the site was neglected. Visitors climbing the rocks caused damage to some of the fragile surfaces. During this period many graffiti inscriptions appeared on the rock surfaces, especially in the parts of groups IV-V which are easily accessible to visitors.

To protect Tamgaly and to prevent further deterioration, NIPi PMK prepared a project proposal for the safeguarding, management and conservation of the site and forwarded it to UNESCO. Based on international funding (Norway) from 2002, a project for the Management, Conservation and Presentation of the Tamgaly Petroglyph Site was initiated and will be finalized in 2005.

At presently, the Site is much better protected due to the established guard and guide service and to the construction of a protection barrier, preventing vehicles from entering the canyon. The damage to the rocks caused by visitors is more or less eliminated due to the construction of visitor paths along the main routes and to the further improvement of the guard and guide service. New graffiti has not appeared since the permanent guard service was established in June 2001. Nevertheless, the rocks with petroglyphs are still subject to deterioration by weathering.

Between 2002 and April 2004, about 10% of the rock surfaces with petroglyphs in the main groups (59 of a total of 543 surfaces) were examined by conservationists and damage records were provided. The statistics of causes for deterioration show that the prevailing affecting factor is anthropogenic, constituting 61% of damage (mainly graffiti). The second most affecting factor is the development of cracks and cavities, 57,6% of the cases. The next factors are flaking, 20,3%; loosening and falling out of rock fragments, 6,8%; microflora, (lichens and moss covering images), 3,4% of the surveyed surfaces. The survey is to be continued.

The conclusion is that the easiest way of elimination of the main problem, is visitors' control, which is already established. However, the problem of cracks and flaking requires special conservation and monitoring measures.

6.2 Authenticity and site integrity

In spite of some intrusions in the Soviet period, the Archaeological Landscape of Tamgaly still keeps its pristine character and essential natural and cultural features intact. There are well-preserved cultural layers, representing the evidence of all the stages of development of this important landscape.

The main elements of the cultural landscape are petroglyphs of different levels of visibility. Because of different rates of patination, the images from the Bronze and Early Iron Age are bluish black, while the later ones are light brownish gray. The low stone and earth mounds and stone tombs are hardly visible on the surface, while the ruins of stone dwellings and enclosures are visible in the landscape. Despite of the fact that some parts of the rock massifs show traces of ancient destruction (groups II-III) as well as of modern graffiti (groups IV-V), as a whole the site has preserved its integrity, significance and characteristic features.

The archaeological sites other than the petroglyph sites are for the most part covered. The traces of previous archaeological excavations (waste piles, shallow depressions at the burial sites) are inconsiderable in the total context. The modern ruins on the top of Bronze Age burial grounds have disturbed only a minor part of the archaeological remains, since a layer of soil has protected them. The high water table here and its salinity affect the bones and artifacts (grave goods) in the burials and most of the archaeological remains are well preserved.

In the northern part of the site, parts of the plain have been ploughed in Soviet times, though without disturbing the buried archaeological remains. The main road is at a distance from the hills, and the concrete posts – the remains of the former electric line, along with some ruins of modern sheepfolds, only insignificantly disturb the natural character of the landscape. These structures will be removed.

In conclusion, the rate of integrity, authenticity and the level of preservation of the landscape – in general and of its particular components – is high.

6.3 Site values

Cultural values

Outstanding Universal Values

Cultural Heritage values (artistic, scientific, historical) constitute the Site's world significance in accordance with the *criteria adopted by the World Heritage Committee*. The following *outstanding universal values* of the Archaeological Landscape of Tamgaly should be preserved in order to provide the eligibility of the Site for its inclusion and further survival in the World Heritage List:

- Outstanding universal value of the Bronze Age petroglyphs as a creative and artistic masterpiece (*Criterion i*);
- Outstanding universal value of the archaeological landscape with petroglyphs as a whole, representing exceptional evidence testifying to the important interchange of human values over a long time span (*Criterion ii*);
- Exceptional testimony to the steppe civilization which has disappeared, and whose important characteristic feature was an extremely high adaptability to the natural environment and the use of natural landscapes in an ecologically friendly and non-intrusive way (*Criterion iii*);
- Outstanding example of a type of landscape illustrating significant stages of human history (*Criterion iv*);
- Outstanding example of a traditional land-use representative of a pastoral steppe culture which developed from prehistoric times until the industrial era, demonstrating a sustainable way of life. This land-use tradition became vulnerable under the impact of modern irreversible changes (*Criterion v*);
- The site is authentic, and the distinctive character and components of cultural landscape are well preserved.

Other Cultural Values

- Tamgaly has a special local cultural significance and cult function as a sacred place of worship and traditional rites.

Natural values

Within the Archaeological Landscape of Tamgaly there are some areas comprising botanical communities with rare and relict endemic plants on the Red book of Kazakhstan. Besides, the Site has surviving unspoilt patches of the typical Tien Shan piedmont desert landscape with its characteristic vegetation, which in most other parts of the region is destroyed by ploughing and grazing. Also there are the zones of a high level of biodiversity and natural beauty.

Aesthetic values

Archaeological sites and monuments in their natural setting make a major contribution to the aesthetic quality of the landscape, giving it historic depths, significance and interest. The prehistoric remains in the delimited area of Tamgaly Gorge represent an outstanding possibility for not only archaeological and multi- and cross-scientific study, but also for experience and enjoyment. The harmony of the landscape, the colors, the smells of plants and herbs, the sound of wind in the bush branches, the imagery on stone, the realization that people have lived here for thousands of years turn a visit to Tamgaly into a stimulus for many senses.

Educational values

The Site is a major source of information about our ancestors, the evolution of their society, and the characteristics of past environment. It provides a means for new generations to understand the past and their own culture. We can also use archaeology to learn about the long-term impact - sustainable or otherwise - of past human activity and development, and to use this knowledge when we plan our future.

Social values

The Site represents a source of pride and a symbol of identity of the modern Kazakh nation.

Economic values

The Site is an important source of economical development in Kazakhstan, through sustainable tourism and related local activities (agriculture, handicrafts, services) providing local employment and benefiting the national and local economy.

Recreational values

The cultural landscape provides for people's recreation and enjoyment. Increasingly, the past, and its remains in the present, is becoming a vibrant part of people's life and experiences.

7. Preconditions, structures and factors affecting the Property

7.1 The World Heritage nomination process

Under the name of "Archaeological Complex and Petroglyphs of Tamgaly", the Site was included in the first World Heritage Tentative List of Kazakhstan, submitted to the World Heritage Centre in 1998. The List, comprising 10 cultural and mixed properties, was prepared under the invitation of the Committee of Culture (no longer a separate body), by a multidisciplinary special target team of experts from a number of organizations, both public and private. The State Institute for Scientific Research and Planning on Monuments of Material Culture (NIPI PMK) has been in charge of the co-ordination of the work.

Even though the Site was included in the Tentative List as one of the most significant properties of Kazakhstan, during the period between 1991 and 2001 it was actually neglected. To protect Tamgaly and to prevent it from further deterioration, NIPI PMK prepared a project proposal for the safeguarding, management and conservation of the Site and forwarded it to UNESCO. To try funding possibilities for the Project, UNESCO Division of Cultural Heritage approached the Nordic World Heritage Foundation in Oslo, Norway, who sent it on to Riksantikvaren – the Directorate for Cultural Heritage in Oslo for consideration. The first mission of Norwegian experts took place in April 2001, resulting in the design of a revised project proposal, followed by the decision of the

Norwegian Ministry of Foreign Affairs to award a grant of USD 101.990 for the implementation of a UNESCO/Norwegian Trust Fund Project for the Management, Conservation and Presentation of the Tamgaly Petroglyph Site (Appendix IV). The Project was supposed to start in 2002, but due to the delays of signing the Plan of Operations between UNESCO and the Government of Kazakhstan, its proper start was not until late in 2003. However, emergency works in Tamgaly started in 2001, thanks to a special grant from UNESCO Almaty, and then continued in 2002 due to the financial support of the Committee of Culture and a separate donation from Riksantikvaren – the Directorate for Cultural Heritage.

Emergency works implemented by NIPI PMK contributed to the promotion of the Site and to the building of public awareness of cultural heritage protection and conservation. Both the local community and different authorities have been actively involved in these works. They have welcomed the protective measures undertaken, the intention to nominate the Site for inclusion in the World Heritage List as a property of world significance, and the visit of the UNESCO Director-General to the Site in August 2001.

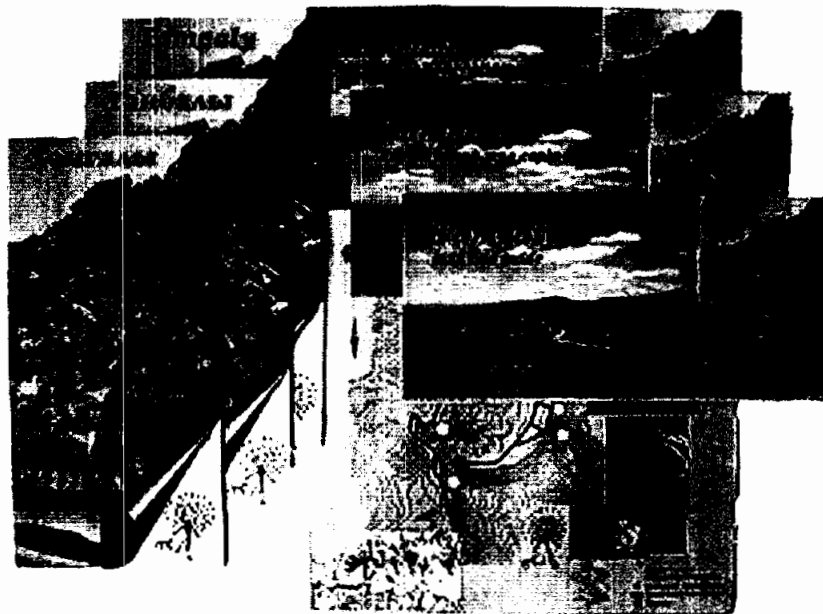
The nomination preparatory process also had a character of emergency. The Request for Preparatory Assistance was submitted under the invitation of the World Heritage Centre in October 2001, and in February 2002 the Fee Contract between the World Heritage Centre and NIPI PMK was signed. While the compilation of materials for the nomination started immediately after that, the main fieldwork could not start until August 2002 when the first installment of USD 6000 USD reached NIPI PMK. The shortage of time required prompt actions, and the whole of the multidisciplinary team worked simultaneously and interactively. Even the site guardians and workers (local young people from the Karabastau village) contributed in the preparatory work, recording the data for the visitor statistics and assisting the experts and technicians during archaeological, geological, topographical and photographic surveys. Three Norwegian experts contributed with on-site technical advice on conservation and management issues in June-July 2002 together with the national expert team.

The nomination dossier was completed and submitted to the World Heritage Centre in January 2003. The ICOMOS evaluation Site mission took place in November 2003, carried out by Dr. Antonio Martinho Baptista (Portugal).

The Management Plan was not yet completed by that time. Its preparation was foreseen within the framework of the UNESCO/Norwegian Trust Fund Project, which for the above mentioned reasons could not seriously start until January 2004. This is why this work, though started by the Project team in early 2003, is completed as late as by the end of May 2004; in time for the Nomination dossier to be considered by the World Heritage Committee during its 28th Session in July 2004.

7.2 Infrastructure

Parts of the information in this chapter and the next one is taken from the report *Technical and economical justification for the establishment of the State Historical-Cultural Reserve-Museum "Tamgaly" in Almaty Oblast, Djambul District* (Ecoproject 2003), submitted to the Government of Kazakhstan in 2003.



A site map and informative booklet was produced in 2002 through the financial support of UNESCO Almaty.

Roads

Within the territory of the Reserve-Museum there is a developed network of dirt roads which have been used until recently by the local population for their activities. In order to have better control of the territory, it was recommended to close the roads for preservation reasons. Exceptions are the dirt road from the main road to the north entrance of Tamgaly and another road going south of the Site, serving private farmers. These recommendations have already been implemented. No new roads are planned within the territory.

Since Tamgaly is a tourist destination, it is decided to repair and partly reconstruct the main road leading from the Almaty-Bishkek highway, via Kopa to Tamgaly. This is prescribed through the Governmental Order of 14th October 2003, obliging the Almaty Oblast Government to solve the question of road repairs, besides to provide a bypass road north of the northern prehistoric cemetery in Tamgaly; a highly important measure. The sum of 17.4 mill Tenge (USD 126.800) has been provided by the Ministry of Finance for the period 2004-2006. Money has not been set aside for the bypass road yet.

Telephone

In the beginning of 2004, the Karabastau village was provided with a telephone communication line. There is no mobile phone coverage in the area.

Water

Presently, the people of Karabastau use water from the natural spring south of the village. In summer the amount of water decreases below village requirements, and consequently cannot serve the Reserve-Museum in addition. Because of high saline levels in the water and also a high content of bacteria, the water does not meet drinking standards. The technical report recommends that a hole is drilled near the Reserve-Museum, in order to serve both the village and the Museum. This will be implemented in parallel with the further development of the Reserve-Museum.

Sewage and garbage

A sewage system does not exist within the territory of Karabastau/Tamgaly. Since the ground water level seasonally is high, it is recommended to collect all garbage and human waste and send it off to Uzun-Agash, the district center about 130km from Karabastau.

Electricity and heating

The electricity supply to Karabastau is provided from Kopa railway station, 40km away. To provide electricity for the Reserve-Museum, a transformer station was set up in April 2004. In order to avoid air pollution, electric heating of the Museum buildings is recommended

Buildings

To create the preliminary Visitors' Centre/Office for the Reserve-Museum, a modern ruin of a former Soviet concrete building near Karabastau is under reconstruction, to be completed in 2004. It will serve as temporary premises, providing four office rooms for the museum staff and one exhibition room for visitors, with a separate entrance.

7.3 Demography

According to information provided by the Zhambyl District Government, the population of the District is at present 107.803 people of 56 nationalities. Of these, 79.800 (74,9%) are Kazakh.

The territory of the Tamgaly Reserve-Museum (nominated area and Buffer Zone) is uninhabited today. The settlements which are closest to Tamgaly are:

- The village of Karabastau, 4km to the northeast, 99 inhabitants, 132,6 ha.;
- The village of Ashisu, 2km to the north, 1 family/4 people;
- The village of Tarnakty, 3km to the northwest, 4 families/16 people;
- The farm of Sakiev, immediately to the southeast of the Site, one family/5 people.

There are 62 settlements/villages in the District and the population density is 5.5 per sq. km. 4606 people of the work force is unemployed (11,5%). Economic activities are mainly connected to agriculture, mostly cattle breeding. The only industrial enterprise in the District is Zhartas Ltd. where they extract barites, situated in the Gorny village, which has its own Administration. The other settlements/villages are organized in 23 local Administrations, covering agricultural areas. The territory of the Reserve-Museum belongs to the Matybulak Agrarial Area with 4275 inhabitants.

7.4 Policies

7.4.1 Legal and State policies concerning the Cultural Heritage

The Tamgaly Site was denominated a *Property of National Significance* in 2002. Article 37 of the Republic of Kazakhstan law, "About protection and use of the historical-cultural heritage", reads:

"Ensembles and complexes of monuments, the territories representing a special historical, scientific, artistic or other cultural value, can be announced as historical-cultural reserves, the protection of which is to be carried out on the basis of a special rule concerning them."

According to this Article, the *State Cultural and Natural Reserve-Museum of Tamgaly* was formally established 14th October 2003. This status implies appreciation, protection and preservation of the cultural and natural values of the Landscape; further that the Site will be provided with adequate physical protection and management mechanisms. The State Reserve-Museum will, when fully developed, carry out the functions of the State body on protection and use of the Site, according to the principles, guidelines and recommendations of this Management Plan (Master Plan with three Sub-Plans).

7.4.2 Ownership and legal status

The Archaeological Landscape of Tamgaly is basically in the ownership of State, except a part of the spring valley of Shoshkaly Gorge which is privately owned. The Landscape is covered by the provisions of 1992 *Law on the Protection and Use of Historical and Cultural Heritage*. According to Article 11 of the Law, the rights of owner on behalf of the State are exercised by the Ministry of Culture. The Ministry of Culture plays the part of State Agency for Protection and Use of Historical and Cultural Heritage.

The Archaeological Landscape of Tamgaly is a Property of National Significance. It is inscribed on the Kazakh List of Monuments of History and Culture of National Significance by the Governmental Decision No 1282 of 5th October 2001 (Appendix III) as an archaeological site under the name *The Complex of Tamgaly*.

7.4.3 Guiding principles for site management

All acts, measures and practices of management, conservation and presentation of the Tamgaly Archaeological Landscape shall be carried out within the principles of:

- Sustainability
- Respect for site integrity
- Preservation of site authenticity
- Minimum intervention
- Ecologically friendly methods
- Non-intrusive development and use

Environment and context

Cultural heritage monuments and sites are intimately inter-woven with the landscape and its different natural features, species and resources, to the extent that they cannot be separated. Neither human beings nor nature are independent cultural determinants; the peoples and the landscapes formed and were formed by each other. This fact makes it unacceptable as well as unreasonable to treat the monuments separately from their environment – past and present, and vice versa. Everything is part of the same contexts, meaning that everything which is done with the monuments and their surroundings must be treated within the same context.

The local community

Motivation, understanding and active participation on the part of the local community are necessary factors for the success of any cultural heritage project. This means that short- and long- term local involvement and commitment must be of high priority, preferably based on active collaboration and the taking part of the decision-making. Sustainable development in this connection means that the project should not in any way cause threats to or destruction of local traditions, values and social rules but serve as a positive factor

for the sustainable development and well being of the community.

Minimum intervention

Any conservation and management project implies certain interventions. Without them, no preservation and protection measures or scientific work could be performed, and the site could not be open for visitation. Regardless of what their causes are, interventions (visual, physical and material) should be as unobtrusive, invisible, minimalist, reversible and environment friendly as possible. Samples should never be taken from surfaces with petroglyphs, and experimental conservation and tests should always be performed on test surfaces in safe distance from petroglyph surfaces. No measures should compromise or threaten the values and qualities of nature or landscape.

Maximum expertise, knowledge and experience

Multi- and cross scientific research constitutes the basis for all activities connected to management, conservation and presentation of the Archaeological Landscape. Research activities can never be considered finished but should continuously be carried out and further developed within fields like documentation, scientific methodologies and archaeological interpretation. All practical activities must be confronted with interpreted data in the landscape before they are carried out in order not to destroy or reduce the scientific evidence. Documentation and interpretation must set the premises for conservation and presentation.

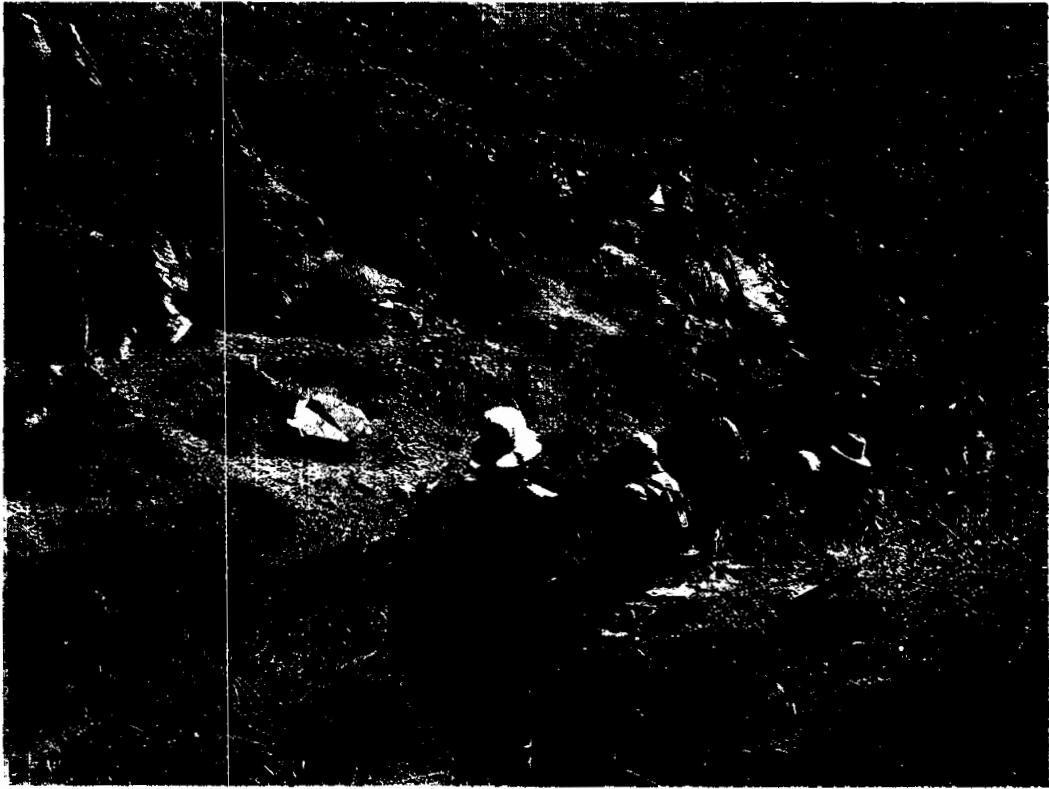
Experience from conservation work at other sites (nationally and internationally) should continuously be evaluated and compiled in basic methodologies to be applied and modified to the site in question. Intimate knowledge and understanding of the particular site and its characteristics, and methodological adaptations based on experience and cross- and multi scientific research, must be combined to the best for the site, the present inhabitants and visitors.

Ethics, respect and site integrity

Ethics in the Cultural Heritage means that no cheating and shortcuts are acceptable in any part of the work being done. Prehistoric sites, and in particular sacred sites, must be treated with respect for the peoples who created them, and for their ways of life, acts and beliefs. Since they are not any longer alive and present, we in the present must care for their manifested values. Life on earth would be impossible without our predecessors who created what comprises our physical, social, technological and spiritual platforms. Treating a prehistoric site with integrity, as holding its own integrity, means to continue to carefully enhance qualities that are indispensable to any society.

Using the site without damage

People living in the present have a right to experience, enjoy and learn about previous cultures, expressions, manifestations and natural and cultural environments. Presumably, sustainable use of cultural and natural heritage sites, monuments and landscapes, based on principles of ethics and integrity, will affect visitors positively. Through appreciation, understanding and respect for prehistoric expressions and the values involved they will also get a higher understanding of the necessity of preservation and modern use of heritage sites without major intrusions. How the site is managed regarding instalments and other infrastructure measures will, hopefully, influence and set an example for visitors' proper behaviour.



Visitors looking at Group III from the viewing point opposite.

Documentation, monitoring and maintenance

All measures must be systematically monitored for their short- and long-term effects, reported and evaluated. The experiences obtained through monitoring must set the premises for possible necessary changes or modifications of the management program, formulated in yearly activity plans.

No measures are to be performed without proper documentation. This implies to document before, during (i.e. process documentation) and after their implementation.

At no point of time can measures ever be considered finished and over. Initiation of programs of cultural heritage management, conservation and presentation implies a continuous, long-term commitment; commitments are scientific, economic, administrative and basically ethical.

Practical implications are that the site is always kept clean, presentable and under control; that remedying measures are performed as soon as problems arise (before they have developed into big problems); that economic recourses are sufficient to reach and sustain stated goals and objectives; and that management agencies and staff loyally follow the stated management guidelines and principles without compromises.

8 Factors affecting the Property

Development pressures

Some parts of the Buffer Zone are presently rented by local farmers and used as pastures. This does not cause major damage to the Site. Nevertheless, the botanical specialists have recommended limiting cattle grazing within the territory of the Reserve-Museum in order to preserve valuable botanical species. It will be recommended to give special protection to selected areas of high importance and allow grazing on specifically defined others.

Environmental factors and pressures

Rain and thaw water, emerging from the slopes, seep through deep cracks of the sandstone rocks. Freezing processes within cracks cause exfoliations to develop, cracks to widen and bits of rocks to fall out. Vegetation and lichens grow in the wet cracks causing not only mechanical but also chemical damage. Major changes in daily temperatures, typical for this area with its inland climate, represent one of the most serious causes of rocks deterioration. High water table and soil salinity affect the archaeological sites in the lower parts of the relief.

The weathering of the rock massifs of Tamgaly Gorge is caused by a combination of atmospheric factors. The air absorbs 15% of the solar radiation, the earth 43%. The temperature of the lower air layers depends upon the quantity of heat reaching the ground surface. In the desert and semi-desert areas of Kazakhstan the total solar radiation constitutes 12-150 kilo-cal. per sq.cm in one year. The intensity of solar radiation also depends upon the height above sea level and upon the cleanness of air, and it changes not only from season to season but even during the course of the day. The air is in permanent movement and this movement causes rain and wind erosion of the rock. The destructive action of wind is most intensive in areas not protected by vegetation. The wind enters cracks, breaking off rocks and blowing and bombarding the rocks with loose material and other products of previous rock destruction, causing an abrasive effect. The action of rain and thaw water on the one hand the removes loose material; on the other hand precipitation carries carbon acid, and oxygen and other agents chemically impact the rocks as well as the ground water. There are no natural underwater supplies; all water comes from above.

Natural disasters

The Almaty region lies in an earthquake zone. Past neo-tectonic processes and activities are the main factors for the development of cracks and displacements of rock (cf. ch. 4.1.2). Continued neo-tectonic processes lead to the further widening of cracks and crevices, and these are continuously exposed to weathering actions of rains and winds. Even though the Chu-Ili Mountains are considered to be an area of a low seismic activity, any movement is enough to represent a threat to the fragile sandstone rocks of Tamgaly.

Visitation/tourism pressures

During the period of ten years from 1991 to 2001, there were no possibilities or resources available to control and limit visits to the Site. Cars and even tourist buses drove into the canyon and parked there. Visitors climbed the unstable rocks to see the petroglyphs, causing loose stones and gravel to be dislocated and to fall out. Graffiti became a big problem, and some separate stones with petroglyphs were stolen. To prevent the Site from further damage, emergency protection measures started in 2001, with a financial support from the UNESCO Almaty office, and then continued in 2002, due to the

contribution from the Committee of Culture. The construction of a stone barrier against vehicles entering the canyon and the establishment of the permanent guard service, along with the creation of the first-need temporary visitors' paths and facilities, have stopped the negative visitors' pressures and damage to the site.

At present, the number of visitors is growing, and Tamgaly has a potential to become an important destination for tourism. The canyon with the main concentration of petroglyphs is the main attraction. Appropriate preventive measures are to be undertaken, in order to protect the especially sensitive parts within the canyon from possible encroachment and damage.

9 Monitoring

As of April 2004, permanent monitoring of the Site has been established. The Site is monitored by conservation experts from NIPI PMK, with the participation of two previous guides/guards, now especially trained for monitoring, from Karabastau village. The staff of the Reserve-Museum is gradually being involved in monitoring activities. The guards/guides of the Reserve-Museum are already involved in the monitoring of the main petroglyph groups.

The monitoring program has been further developed since its beginning in 2002. For the further descriptions of the monitoring programs and plans, see Sub-plan 2.

10 Management

10.1 Management objectives, aims and goals

Safeguarding the cultural and natural values of the Tamgaly Archaeological Landscape

- Establish binding maintenance and monitoring routines;
- Establish binding regulations, which serve to protect the Landscape and its surroundings from any intrusive visual or physical interventions;
- Based on continuous documentation and monitoring of deterioration and damages, implement safe and preferably non-intervention conservation techniques and monitor implementations.

Stable and reliable Site management

- Further develop the Tamgaly Reserve-Museum into a permanent, responsible and effective management agency for the protection, conservation and presentation of the Landscape, based on a stable management team and long-term funding;
- Accomplish and implement monitoring and reporting programs for the regular short- and long-term maintenance of the cultural and natural values of the Landscape;
- Establish a functional Management Center for the use of the management team and scientific staff and visitors when working on-site, with suitable and non-interventional location.

General and wide spread appreciation and respect for prehistoric art, rituals, values, landscape use and expressions as part of the Kazakh heritage

- Continue the development of minimum-intervention on-site installations and regularly monitor the quality, functionality and effects of such installations;
- Continue the development of facilities for visitors to the site (toilets, rest areas, information, café, relevant souvenirs and handicraft products) based on traditional and minimum intervention methods;
- Co-operation with educational institutions and employees for high quality cultural heritage information and education connected to Tamgaly;
- Co-operation with tourist agencies for gradually increased, balanced, sustainable and ecologically friendly visitation and cultural tourism;
- Continuous education and updating of guards and guides;
- Production of popular-scientific publications;

Sustainable development of and co-operation with the local community

- Work towards a reduction of the unemployment rate in the local community through the employment and training of the inhabitants when possible;
- Encourage the development and implementation of plans and ideas concerning facilities for visitors (production and selling of products, boarding, etc.).

10.2 Management issues

Legal protection

Due to the fact that the State Natural and Cultural Reserve-Museum of Tamgaly is a recently established institution, there is a need to further develop the legal instruments for site protection. The first steps to respond to this issue, are the following:

- The excursion plan for tourist groups – submitted to the Ministry of Culture in May 2004;
- The updated temporary regulations for visitors – will be sent to the Ministry of Culture for approval in June 2004;
- The proposal for the establishment of additional zones for legal protection is to be prepared in 2005 for areas outside the Buffer Zone in order to prevent new developments within Site visibility. In addition, zones for planning and development control should be established for the territories of the closest villages and settlements (Karabastau, Ashisu, Sakiev's farm and the Reserve-Museum) in order to prevent disturbing structures. Special permissions will be required for physical development within these zones.

Physical protection, management and maintenance

The present number of Reserve-Museum guides/guards is considered sufficient to provide physical protection of the Site as of today. Very soon, however, it will be insufficient due to the rising number of visitors. By the beginning of July 2004 the proposal for the increase of the number of guides/guards and the structure of guardianship will be submitted to the Minister of Culture, along with a general proposal for the improvement of the organization structure and staffing of the Reserve-Museum.

The number of maintenance staff will be increased to enable the Reserve-Museum to implement the maintenance program. The areas for visitation will be rather limited during the period (2004-05) until the Reserve-Museum staff is trained and up-graded and the

Reserve-Museum itself is fully operational. The training through participation in current projects will continue, and a special training program will be developed and implemented, to upgrade the knowledge, experience and understanding necessary for their responsibilities of site management, monitoring and maintenance.

Inventory, documentation and scientific research

The recording and documentation of the Site and its specifics will continue. The management database must be loaded with all site information and data in 2005, and thereafter continuously be maintained and kept up to date.

The disciplinary and inter-disciplinary scientific research program will continue in order to further develop the scientific knowledge of the specific site values and qualities and the processes impacting it. The research results provide bases for future conservation and presentation decisions.

Natural factors affecting cultural values

The petroglyph rocks are suffering from a number of pressures: erosion and weathering of slopes, archaeological structures and the rock surfaces, structural cracks in rocks and the falling out of stones, plants growing in cracks, and others, represent threats to the cultural values of the Site. Such factors are to be further studied to find optimal measures to counteract and reduce their negative impacts, in an ecological friendly way and without endangering positive natural processes.

Monitoring

Systematic site monitoring routines are already established. The monitoring program should be further developed as soon as additional affecting indicators and factors are identified and systemized.

Conservation

The existing plans and strategies for conservation are based on systematic monitoring and evaluation, but should be further developed in detail for the long-term conservation of the specific character of the landscape, groups of petroglyphs and the other monuments.

Experimental testing, analyses and evaluation of results will continue for the selection of optimal conservation techniques and materials that should be ecologically friendly, reversible, minimum interventional and effective. Particular natural features and values must be respected and preserved.

Presentation

Based on the upgraded knowledge of the particular qualities and features of the different parts of the Site and its surroundings, areas of special cultural and natural interest have been defined and mapped. This provides the basic material for the further design and development of the network of visitors' paths and facilities, the site presentation programs and the infrastructure of the Reserve-Museum.

Tourism

To improve public access to the Site, roads and public transport should be improved and developed. Also, the careful development of non-intrusive paths and other facilities within the area should be continued. The established co-operation with tourist agencies and oblast local authorities should be further developed in order to integrate Tamgaly in the plans and programs of tourism at national and local levels, with the objective of

achieving sustainable tourism development. The carrying capacity of the different parts of the Site should be further studied for its non-destructive use.

Information

The plans for the promotion of the Site and public awareness building are to be elaborated and implemented through co-operation with different responsible agencies and the media. Effective strategic plans and programs will be elaborated.

Educational programs for schools

School and university programs exist, but they should be updated and further developed in accordance with the State programs concerning the Cultural Heritage and other ongoing State programs. Such programs will be used to promote Tamgaly. For this achievement, target agencies should be provided with upgraded and reliable popular scientific information, material and assistance, and invited to co-operate on the development of educational materials.

Publications

Further publications – folders, booklets and popular scientific literature – should be developed to meet the growing public demand.

Local involvement

The links between the institutions and specialists involved in site management, conservation and presentation and the local community should be further developed and the local population should be kept informed and involved in as many activities as possible. The social-ethnological studies should continue to identify cultural, social, employment and economical impacts on the local population of the activities in Tamgaly, and to study the possibility to further involve them without affecting their lives in a negative way. Another important issue is to find out how local traditions can be used to the benefit of the Site, and vice versa.

10.3 Protective measures and their implementation

The history of the legal protection of the Site started in 1982 when the separate archaeological monuments of the petroglyph groups I-V and the cemeteries I, II and VI were included in the List of Properties of Local Significance through the decision of the Almaty Oblast Government. This did not, however, imply any physical protection of the Site as such or the establishment of any protection zones. Until the end of the 1980s the Site was not visited by tourists and major parts of the site were used as pastures.

Systematic archaeological research started in Tamgaly in the end of the 1980s, when the public interest also started to grow. In the beginning of the 1990s studies and surveys were initiated, and parts of the scientific works were conducted with the special purpose of defining the site boundaries and the necessary zones of legal protection. The first conservation efforts were also related to that period.

After the independence all works in Tamgaly came to a halt due to the lack of financial possibilities, and the Site was neglected. All agricultural activities also stopped, while the use of the road through the gorge continued to cause vibrations and disturbances to the rocks. Visitation to the Site was growing, although slowly. By 1997 the situation became critical; the site suffered from uncontrolled visitation calling for emergency protective measures.

In 1997 NIPI PMK approached the Ministry of Culture and the Almaty Oblast Administration concerning the physical protection of the site and provisions of financial means to conduct emergency measures and continue scientific research. The authorities were in principle positive, but lacked funds. In 1998 the Site was included in the World Heritage Tentative List of the Republic of Kazakhstan. Due to external financial support in 2001, emergency physical protection measures were implemented; including the construction of the stone barriers closing the gorge for traffic and the establishment of the permanent horse guard. Simultaneously, efforts were undertaken to establish adequate legal and physical protection of the site. This initiative resulted in the Governmental Orders on the inclusion of the Tamgaly Complex in the List of Properties of National Significance in October 2002 and the establishment of the State Cultural and Natural Reserve-Museum of Tamgaly in October 2003. This implies the formal recognition of the Site's highest national legal status and the completion of the administrative mechanisms for the protection of not only the cultural but also the natural values of the Tamgaly Archeological Landscape.

The territory of 3800ha within the boundaries of the buffer zone, with the additional separate plot of 24ha for the Reserve-Museum office/Visitors' Center near Karabastau, has been formally approved. The responsibility for the Site's protection, management and maintenance were, therefore, passed from NIPI PMK as a temporary agency to the Reserve-Museum, which started to function on site in January 2004. With this, the formal provisions for the protection of the Site were concluded.

10.4 Expertise and training in conservation and management

Four of a total number of six guides/guards were trained by the specialist of NIPI PMK from June 2001 until the end of 2003. These were transferred to the responsibility of the Reserve-Museum in beginning of January 2004 and continue their work on site protection.

An agreement for co-operation between NIPI PMK and the Reserve-Museum has been signed, to transfer knowledge and experience from the Institute to the Reserve-Museum staff together with their scientific and inventory materials. It is decided that the first training of the Reserve-Museum specialists and guide/guard personnel will be given by NIPI PMK through the involvement of the Reserve-Museum in all on-going activities under the UNESCO/Norwegian Trust Fund Project for the Management, Conservation and Presentation of the Tamgaly Petroglyph Site. The special programs for the training of guards/guides is prepared and submitted (spring 2004) to the Almaty Department for Tourism. Training of newly accepted guards will start in June 2004, coinciding with the start of this year's field works. The further plans for a training program for Reserve-Museum staff will be developed in 2005, and international support will be sought, for the organization of a training workshop in 2006.

A UNESCO supported CARAD (Central Asian Rock Art Database) training workshop took place in Almaty/Tamgaly in 2003, and a following-up workshop will be arranged in Bishkek/Cholpon-Ata, Kirgizstan in 2005. A management workshop, covering several Cultural Heritage topics, will take place in Samarkand/Sarmishsai, Uzbekistan in the fall of 2004.

NIPI PMK has conservation, monitoring, management planning and research expertise but need more people. Plans are to train students. Regional and sub-regional courses will be organized under different programs during the next several years, in conservation and management of archaeological sites, in particular World Heritage Sites. Professional education in conservation and management of the Cultural Heritage is planned to be included in the curricula of national educational institutes, universities and academies.

10.5 Visitors' facilities

There are no hotels in the local villages yet, and the visitors' paths and other facilities, made as a part of the emergency works implemented in 2001-2002, are not sufficient and require further development. The work plan with the budget of the UNESCO/Norwegian Project as well as the contribution of the Kazakh governmental contributions for the implementation of the Project, covered the most necessary facilities. The creation of the Reserve-Museum gives additional possibilities for improvement of visitors' services and facilities.

Some locals have suggested using their private premises as guest houses for visitors, and providing additional services like cafes (*tshai khana*) to serve traditional food. One house in the village is planned to be turned into a hotel. At the premises of Reserve-Museum office, a Visitors' Center will be created. Concrete platforms are already made close to the provisional office building, for yurts.

10.6 Agencies, staff and co-operation

10.6.1 Agencies with management authority

- i. *Ministry of Culture, Division for Cultural Heritage protection and use*
The Ministry provides administrative work, co-ordination of Oblast inspections of the protection of the Cultural Heritage, and co-ordination and monitoring of the work of the subordinate Cultural Heritage organizations and institutions in charge of the protection, research, planning and implementation of management and conservation activities (9 Reserve-Museums, NIPI PMK, the scientific Institute for Culture, and the State enterprise for repair and restoration of historic buildings). They also develop and submit for Government approval plans and propositions for future activities related to the Cultural Heritage.
- ii. *State Cultural and Natural Reserve-Museum of Tamgaly in Karabastau*
The recently established institution for the protection, management and maintenance of the Tamgaly Archaeological Landscape with its Buffer Zone. Besides, it plays an important part in educational, promotional and tourism activities and developments of Tamgaly and adjacent areas and sites. This institution will become a fully operating Permanent Management Agency under the Ministry of Culture in 2006.
- ii. *State Institute for Scientific Research and Planning on Monuments of Material Culture (NIPI PMK)*
Until the Reserve-Museum is in full operation by 2006, this institute is in charge of the finalizing of the UNESCO/Norwegian Trust Fund Project, all responsibilities in this connection included.

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10.6.2 Staff

Ministry of Culture, the Division for Cultural Heritage protection and use

The present staff of this Division consists of Head of the Division and four assistants.

State Cultural and Natural Reserve-Museum of Tamgaly

The staff of the Reserve-Museum consists of 29 people allocated to 4 divisions. The number of the presently appointed staff (April 2004) is given in brackets:

- *Division for administration and management:* 6 people, including Director, 2 Deputy Directors, chief accountant, assistant chief accountant, judicial adviser (6);
- *Division for scientific research:* 4 people, including Head of division, senior scientific collaborator, 2 scientific collaborators (3);
- *Scientific division related to the Site and the Site Museum:* 4 people, including Head of division (chief custodian), 1 senior scientific collaborator, 1 conservationist for archaeological artifacts, 1 engineer (3);
- *Site personnel division:* 15 people, including Head chief guardian, 8 site guardians, 1 worker for the tending of horses, 1 maintenance worker for the buildings, 2 maintenance workers for the Site, 1 cleaner, 2 drivers (4).

NIPi PMK

The Institute consists of 52 people. Presently, people from 3 divisions are involved in work related to Tamgaly:

- *Division for scientific research and conservation of archaeological sites,* 8 people;
- *Division for scientific experimental laboratory for conservation,* 4 people;
- *Division for management planning for Cultural Heritage sites,* 4 people of which 2 participate in the Tamgaly Project.

These are not fully occupied with Tamgaly, except for two local Site monitoring inspectors. In addition, through this Institute other institutions are involved for laboratory testing and other special tasks.

10.6.3 Co-operation structure

An advisory committee exists in practice although its members are not formally appointed. It consists of representatives of the organizations and institutions which are directly involved in the work on-site, and in addition advisory support is given from the District Government and the administration of the Agricultural Area.

While the contacts and co-operation partners from the Institute of Botany, the Institute of Geology and the Department of Tourism are brought into the work through NIPi PMK, the Reserve-Museum bring in their contacts and partners from District Government and the administration of the Agricultural Area. A formal contract of co-operation is signed between NIPi PMK and the Reserve-Museum.

Co-operation structures must be further developed in order to include additional relevant partners and stakeholders.

10.7 Sources and levels of finance

At national level

After the establishment of the Reserve-Museum the annual allocations over the State budget are 6,835 mill Tenge for Site protection, management, monitoring and maintenance; including salaries and maintenance of buildings and site facilities. Funds for additional necessary financing like building construction, development of facilities and other separate projects can be obtained through specific applications to the Ministry of Culture, to be estimated and submitted one year before implementation.

At on-property level

Entrance fees are not introduced yet, but will be when the visitors' center and museum exhibitions are established. Existing regulations provide for all future income from on-property activities to be kept by the Reserve-Museum for further site development, maintenance and activities.

Other sources

In 2001 UNESCO Almaty granted to NIPi PMK USD 9000 for the implementation of on-site emergency measures, plus an additional USD 2400 for the preparation and publishing of the visitors' map and guidebook. UNESCO also provided for a CD-Rom and the establishment of a Web-site.

At the end of 2001 the Government of Norway donated USD 101.990 for the implementation of the UNESCO/Norwegian Trust Fund Project for the Management, Conservation and Presentation of the Tamgaly Petroglyph Site. In 2002, an additional USD 2700 for preparatory works before the start of the Project was granted.

After the signing of the Plan of Operations (Agreement) between UNESCO and the Government of the Republic of Kazakhstan 02th December 2003, money was allocated for the implementation of the Project, to be finalized by the end of 2005. NIPi PMP has requested an additional amount of 6,5 mill Tenge over the State budget for the year 2005 as the Kazakh contribution to the finalizing of the Project.

UNESCO Almaty contributed USD 25.000 to the initiation of the CARAD (Central Asian Rock Art Database) Project in 2003; and a further USD 30.000 for the years 2004-05. The support is directed at computer equipment investments, development of database structure, collection of primary documentation material and data, entering of data into the database, and the organization of international workshops.

Further financial sources for special purposes will sought for, such as the training activities (cf. ch. 10.4).

10.8 Management goals by the end of the UNESCO/Norwegian Trust Fund Project for the Management, Conservation and Presentation of the Tamgaly Petroglyph Site

The Tamgaly Project, supported by the Kazakh authorities as well as through the UNESCO/Norwegian Trust Fund, will be finalized by the end of 2005, when the following goals should be reached:

- The Tamgaly Cultural and Natural Reserve-Museum is fully developed and operational, and supplied with clear and obligating guidelines for all staff categories for implementation of all tasks and duties;
- Functional principles and structures of co-operation between the Reserve-Museum, NIPI PMK and other partners are further developed and operational;
- The Management Plan with Sub-plans are being implemented, and the activity plan for 2006, together with the 2005 report, is submitted to and accepted by the Ministry of Culture;
- Multi- and cross-scientific documentation and recording continues;
- Programs for research and development within relevant scientific fields are created, accepted and operational as a precondition for safe management, conservation and presentation, and students are involved in the programs;
- The Rock Art Database is fully developed and operational, and is being supplemented and maintained by a special team;
- Local, national and international training workshops within relevant activities are being arranged;
- Monitoring-, evaluation- and maintenance routines are systematized and operative within all activities;
- The settlement site is safeguarded and ready for safe visitation; the safeguarding of the gravesites is finished, monitored and maintained;
- The number of visitors is gradually increased according to the gradual development of on-site and village facilities and infrastructure, within principles of minimum intervention, sustainability and environment friendly methods;
- The local population are involved in the continued development of plans and programs, the number of local employees is increasing, and the local economic capacity is improved;
- The Central Asian co-operation network is continuously being developed, and other international contact- and co-operation relations are being maintained;
- Plans for a Management Center for on-site management work (staff and temporary working visitors) are approved and financed;
- Popular-scientific books and other informative formats within relevant topics are in preparation.

11 Management Sub-plans

The Management Sub-plans are plans for active and practical implementation of tasks and policies outlined in the Master Plan.

When the Tamgaly Cultural and Natural Reserve-Museum is fully operational and developed, this agency will be in charge of the implementation of the plans. However, being an important expert agency within the fields covered by the Management Plan (Master Plan with Sub-plans), NIPI PMK will provide premises, support and expertise and collaborate with the Reserve-Museum.

The time perspectives for the Sub-plans are:

- *Short-term:* 2004-2005, i.e. until the end of the UNESCO/Norwegian Trust Fund Project, and when the Reserve-Museum will be fully operative;
- *Middle-term:* 2006-2008, i.e. until the periodic reporting of World Heritage Sites in Central Asia;
- *Long-term:* 2009 ->: Since revisions are to be expected following a major evaluation in 2008, further plans are only very schematically and generally outlined.

All three Sub-plans are created according to the same basic structure, with the following main chapters:

- Background (present situation; issues and objectives; expected outcome)
- Recommended strategy and actions
- Timeframe and responsibilities for implementation

All activities, measures, practices and recommendations in the Sub-plans are based upon the principles and guidelines for safe site management outlined in this Master Plan.

The Sub-plans are to be regarded as obligatory for any agency or agencies in charge of their implementation. Based on the Sub-plans, yearly activity plans together with yearly reports are expected to be submitted to the Ministry of Culture and accepted before the end of each year previous to the year of their implementation.

11.1 Management Sub-plan 1: Documentation, Conservation and Safeguarding

Documentation serves a manifold of purposes. First of all it constitutes the primary scientific material for further interpretation and research within a number of fields and across and between them. Secondly, the identified, collected and systematized documentation material serves as the description of the *status quo*, before implemented acts and measures change the situation. Thirdly, it represents the background bases and scientific premises for plans and decisions and their implementation, and finally, it serves as reference material for future monitoring.

All documentation, conservation- and safeguarding activities are to be conducted according to high-standing ethical and scientific principles and norms. The basic objectives for the activities outlined in the Sub-plan are to obtain the maximum control over all possible present and future factors affecting the Tamgaly Landscape: to promote the positive and sustainable factors, and to be able to foresee, counteract and delay the negative ones.

11.2 Management Sub-plan 2: Management, Care and Monitoring

The main objectives of site protection, management, care and monitoring activities are to provide the premises and platforms for the continuous daily and yearly routines of preservation and maintenance of the Site in order actively to be able to control and counteract all negative physical and visual processes before they have time to develop. Such routines cover the whole spectre of issues: from the identification and monitoring of the numerous factors affecting the preservation of the Site with its many different cultural and natural elements, to the development, choice and implementation of optimal methodology and technology within all relevant fields, the maintenance of the already implemented facilities, to the behaviour of visitors, and to the emptying of toilets and garbage bins. In order to fulfil such objectives, measures and tasks are outlined for maximum efficiency within concepts of sustainability, reversibility and ecological friendly methods.

11.3 Management Sub-plan 3: Education, Information and Tourism

The objectives of activities connected to education, information and tourism are to promote widespread

- Understanding, knowledge and appreciation of the Tamgaly Landscape and its values and qualities;
- Understanding of and respect for the issues of protection, presentation and sustainable use of Tamgaly and other heritage sites;
- Understanding of the vulnerability of petroglyphs and other archaeological, cultural and natural heritage sites and monuments and the need for respect and proper behavior;
- Motivation to visit and revisit Tamgaly and other heritage sites for learning, enjoyment and leisure, and to spread the words to others.

12 Roles and obligations

At present (2004), NIPI PMK on behalf of the Ministry of Culture is responsible for plans and measures connected to the Management Plan, including its development. The work is performed within the frames of national policies and support and the UNESCO/Norwegian Trust Fund Project. The Tamgaly State Cultural Natural Reserve-Museum is scheduled to be fully operative by the end of 2005. As of 2006, it is necessary to have functional and agreed structures of responsibilities, co-operation and roles in place, up-dated and operative.

The following parties are and will be the primary active partners in the implementation and further development of the Management Plan:

- Ministry of Culture
- NIPI PMK
- The Tamgaly State Cultural and Natural Reserve-Museum in Karabastau
- The local community

Ministry of Culture

- National policies, legislation and general guidelines;
- Adequate funding and funding policies;
- Rules, regulations and effectuation of policies regarding the tourist industry and public transport;
- Solving of possible conflicts.

NIPI PMK

- Planning and implementation of the Management Plan, 2004-2005;
- Implementation of the UNESCO/Norwegian FIT Project, 2004-2005;
- Assisting the Reserve-Museum in the preparation and evaluation of the implementation of the annual Plans of Activities on behalf of the Ministry of Culture, 2004-2005;
- Resource-, expert-, consulting- and training center for the development and implementation of short-, middle- and long-term plans and the further sustainable development of Tamgaly;
- Following up, support and technical supervision of the development and operations of the Reserve-Museum and its activities on behalf of the Ministry of Culture;

- Conditioned upon the inscription of Tamgaly on the World Heritage List, be in charge of periodical reporting regarding the issues of this Management Sub-Plan to UNESCO.

The Tamgaly Reserve-Museum in Karabastau

- Implementation of the Management Plan, including evaluation, yearly reporting and yearly plans from 2006 onwards;
- Suggest, plan and implement improvements. Detailed plans for further long-term site development and implementation of measures from 2009 onwards shall be made and approved before the end of 2008;
- Develop the Reserve-Museum into an interesting, modern and out-reaching institution for the promotion of understanding, appreciation and experience of the Tamgaly Site with its values and qualities, and of the Kazakh Cultural Heritage;
- Co-operate with the local community, recruit and train participants and promote interest and motivation for the best sustainable development of the community.

The local community

- Development, production and sales of relevant products;
- Be in charge of production and sales of consumption goods for sale to visitors to Tamgaly;
- Co-operate in making bed-and-breakfast/hotel facilities available to tourists;
- Take part in the development and implementation of relevant site activities and education and information strategies.

Other important partners are:

- The Department of Tourism
- The Association of Tourist Agencies
- Public transport agencies

Roles, tasks, responsibilities and obligations of these actors must be further developed when basic co-operation structures are discussed and accepted routines in place.

Oblast Government

- Communications, roads, building construction, infrastructure of oblast significance;
- Electric lines and communications of oblast significance;
- Issue licenses;
- Approval of land use and development projects;
- Approval of zones for legal protection of areas of cultural and natural significance;
- Integration of plans related to Tamgaly into the Almaty Oblast perspective plans of development.

District Government

- Preliminary considerations of land use and development projects;
- Preparation of plans for social, economical and cultural development in the district, and consideration of plans related to Tamgaly, for submission to the Oblast Government for approval;
- Implementation of policies approved by the Oblast Government.

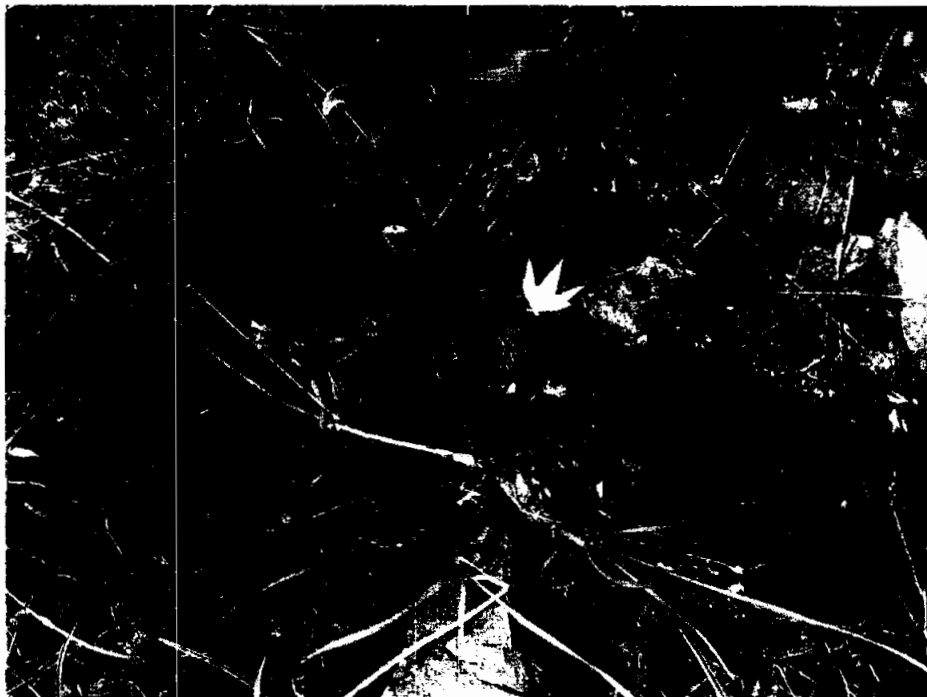
Local Agricultural Area Authority

- Co-ordination and control of local agricultural and other economic and social activities within the area, and report to the District Government.

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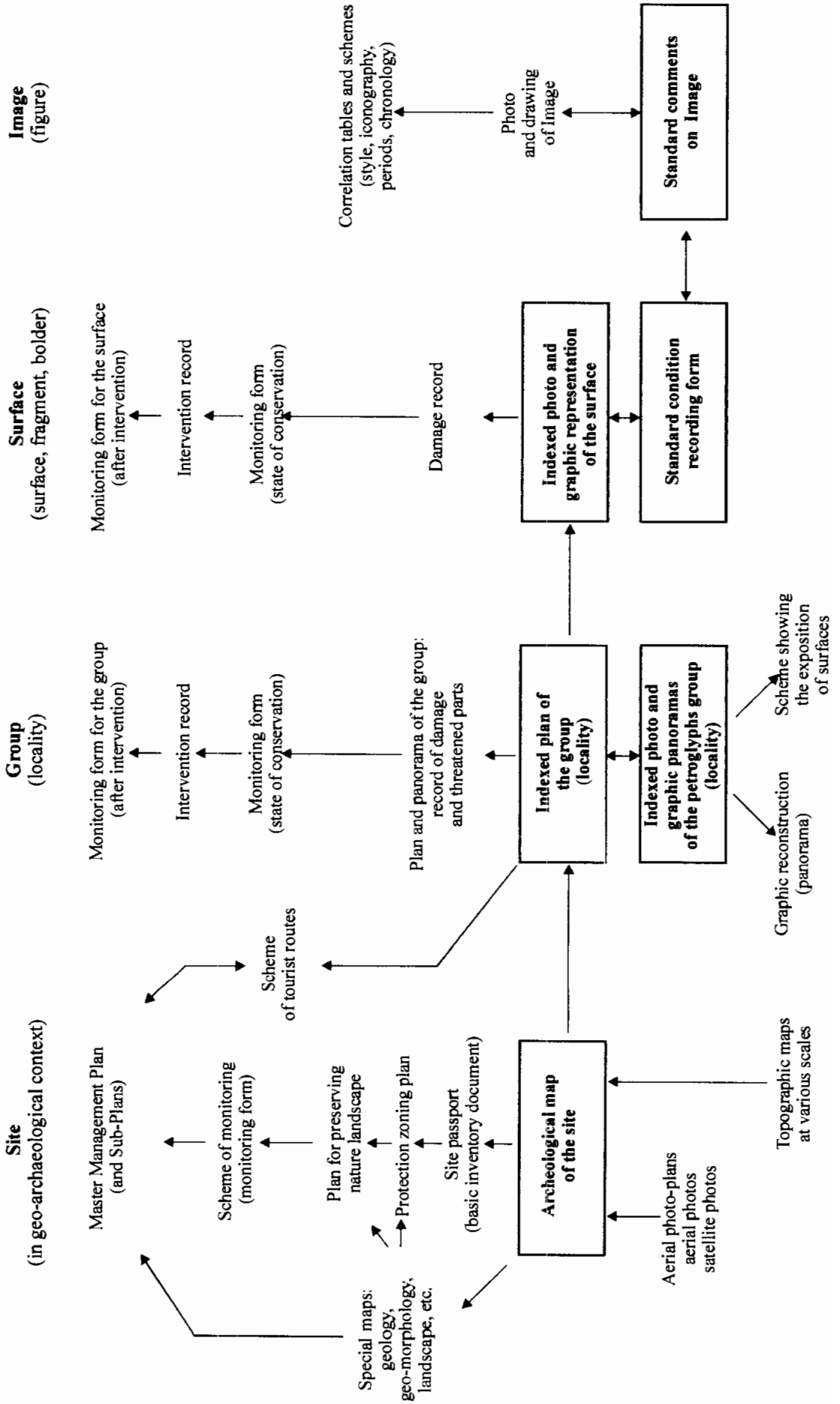


Juno kuschakewiczii (left) and Tulipa kolpakovskina Regel (endemic; right).

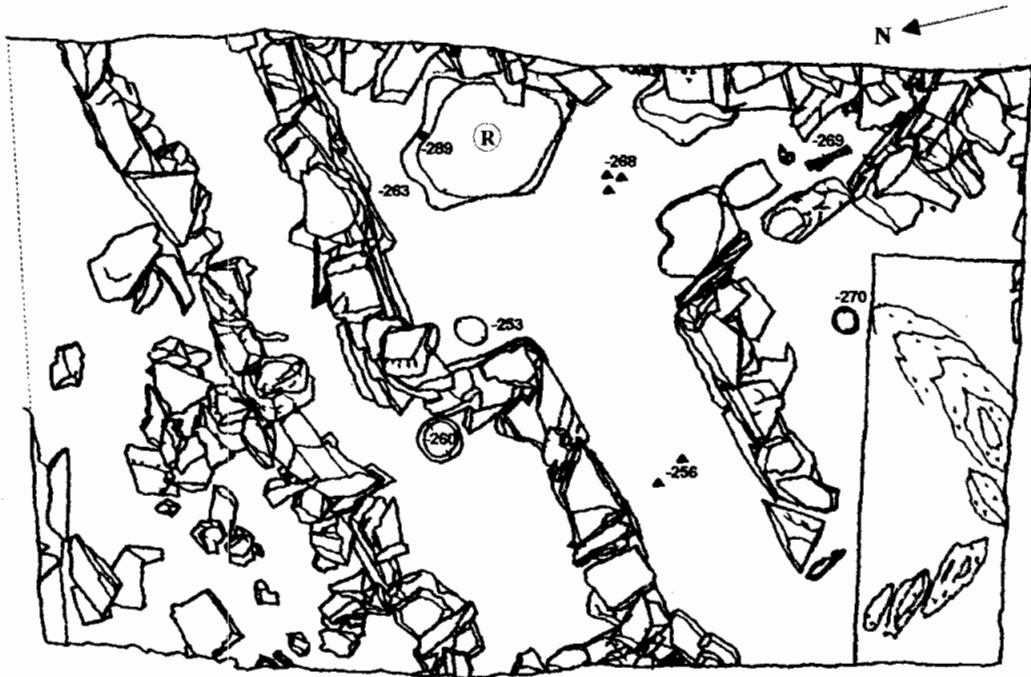
Appendix 2. Drawings, figures and tables

- 2.1. The documentation Structure Chart of the Rock Art Site|**
- 2.2. Tamgaly Site. Petroglyphs of Group II. Panoramic view of existing visitors' paths**
- 2.3. Tamgaly Site. Petroglyphs of Group III. Panoramic view of existing visitors' paths**
- 2.4. Tamgaly I settlement. Plan, Stratigraphy and Paleo-climatic Trend**
- 2.5. Tamgaly IV Burial Ground. Cist 1. Plan, Stratigraphy and Artifacts**
- 2.6. Example of Standard Documentation Form. Group III, Surface no. 52**
- 2.7. Present State of Documentation of Petroglyph Groups I-V, Surfaces**
- 2.8. Structure of Local Tourism in Tamgaly**
- 2.9. Local and International Tourism in Tamgaly**
- 2.10. Database Structure**
- 2.11. Structure of Interrelationship between the Government and different Stakeholders**
- 2.12. Organizational Chart of the Tamgaly State Cultural and Natural Reserve-Museum**
- 2.13. Organizational Chart of State Institute for Research and Planning on Monuments of Material Culture (NIPI PMK)**

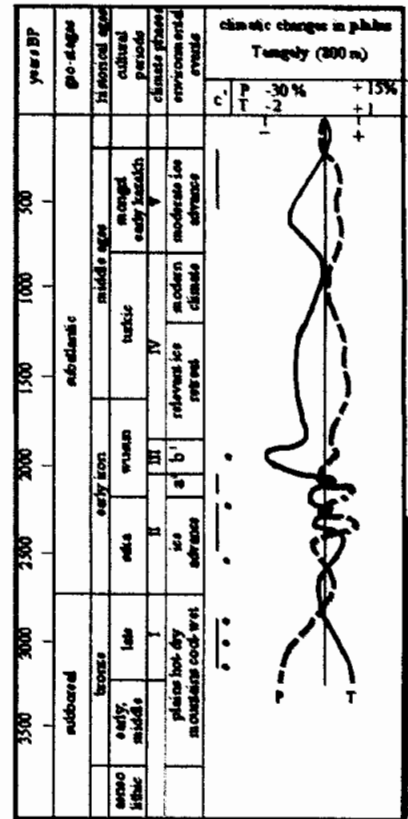
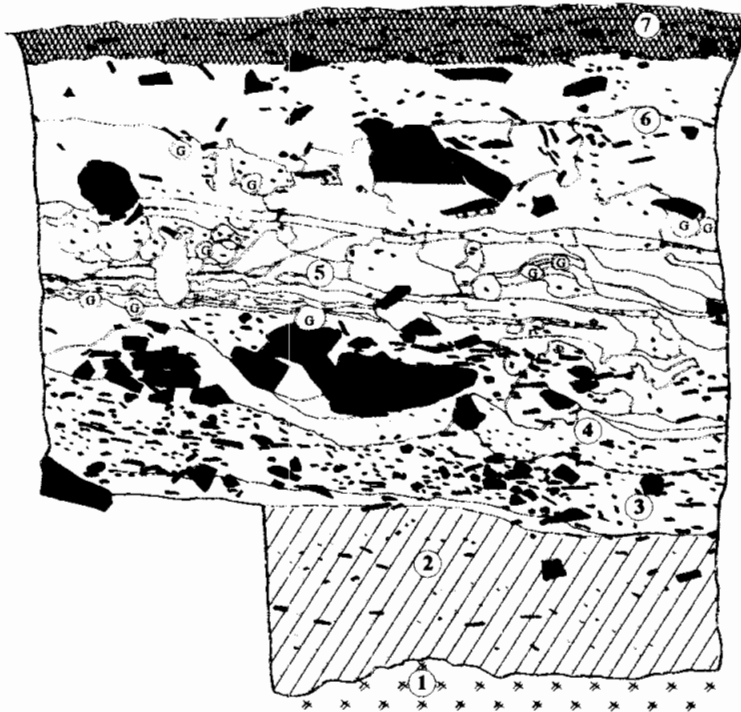
2.1. The documentation structure chart of the Rock Art Site



2.4. Tamgaly I settlement. Plan, Stratigraphy and Paleo-climatic Trend.



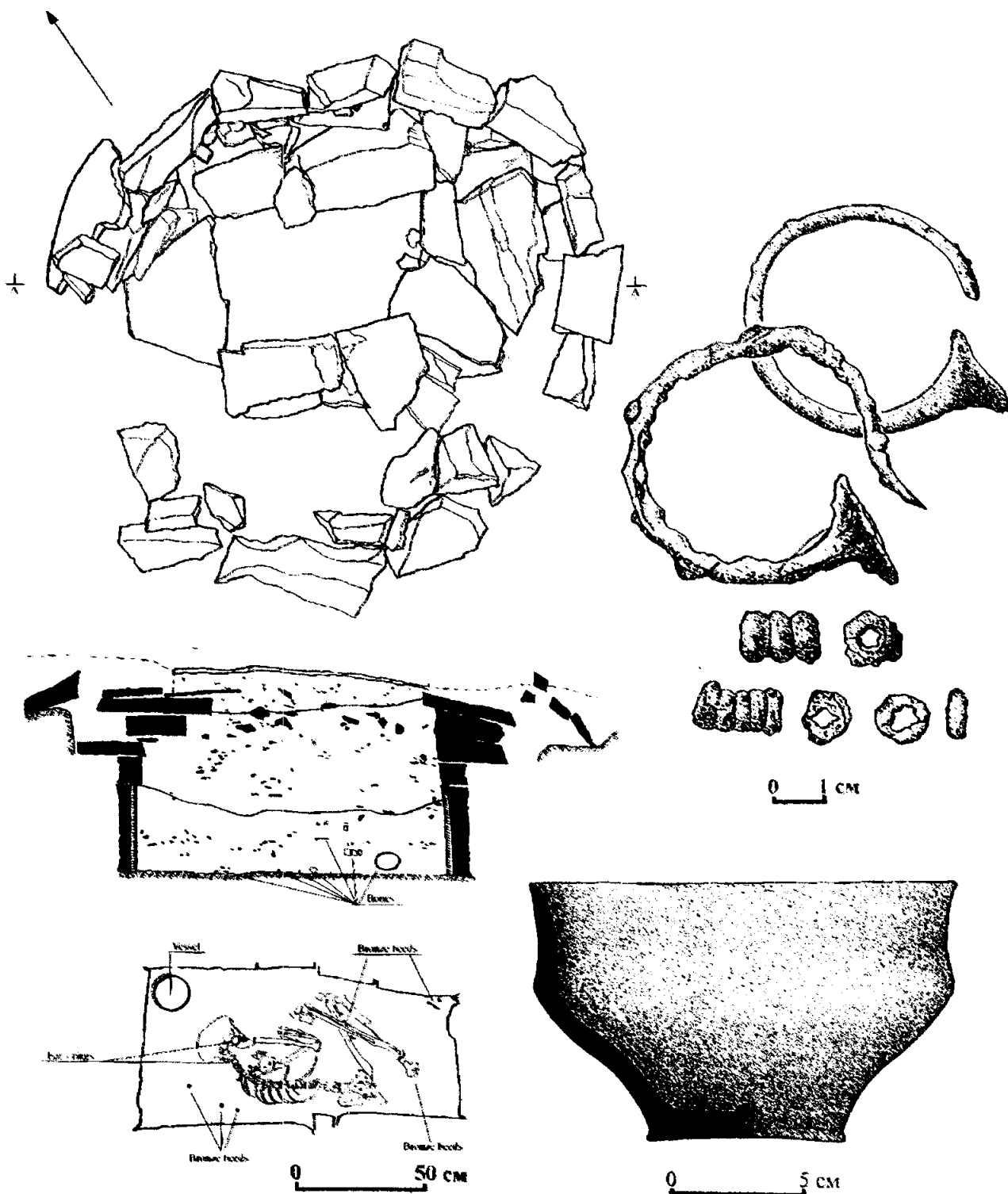
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Legend

- ① Rocky matrix, sandstone, Devonian
- ② Loamy sand, sterile layer, deluvium
- ③ Loamy sand and gravel; cultural layer of Late Bronze Age (remains of house, ceramics, animal bones)
- ④ Loamy sand; cultural layer of Early Iron Age (remains of stone construction with few petroglyphs)
- ⑤ Clay; sterile layer with 2 strata of coal from fire and criolitic formations
- ⑥ Loamy sand; cultural layer of Late Middle Ages (remains of stone construction with few petroglyphs)
- ⑦ Loamy sand, deluvium; cultural layer XIX-XX AD
- (R) Ritual burial of sheep
- ▲ Ceramics
- G Rodents galleries

2.5. Tamgaly IV Burial Ground. Cist 1. Plan, Stratigraphy and Artifacts.



2.6. Damage recording

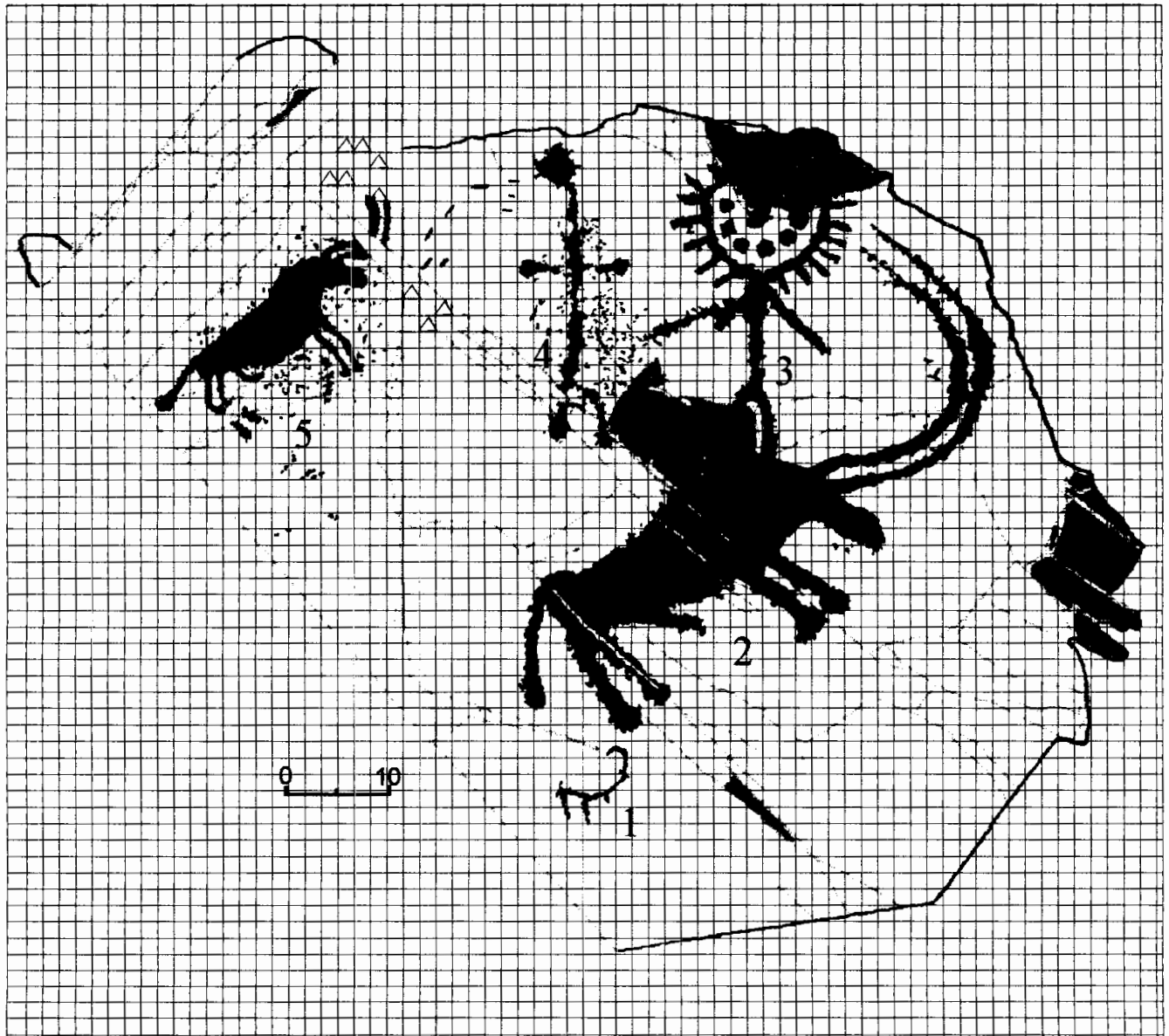
Site: Tamgaly

Group: III
















Surface: 52

Date: 08.07.2002

Prepared by: Charlina Lubov, Fadeeva Yelena



Legend

- | | | | |
|---|--|---|----------------------------|
|  | Surface contour |  | Hollow parts (bom) |
|  | Previous intervention |  | Missing parts |
|  | Damage to earlier conservation | | Loose parts |
|  | Areas with micro cleavage |  | Exfoliation / Flaking |
|  | Cracks, cleavage |  | Threatened hollow parts |
|  | Soil in cracks and / or cavities |  | Detaching of cracked crust |
|  | Higher plants/ macro-vegetation |  | Crumbling |
|  | Lichens, moss, algae/ micro-vegetation |  | Anthropogenic damage |

Site: Tamgaly

Group: III

Surface: 52

Date: 08.07.2002

Prepared by: Lubov Charlina, Yelena Fadeeva

1. General data													
Type of a rock surface	Type of Rock	Demensions		Area, %	Compas orientation		Time of exposure to sunlight	Temperature changes	Exposure to water action	Patina			Note
		Horizontal, m	Verticals, m		Vertical angle	Horizontal angle				Type	Color	Photo/drawing no.	
Surface in the rock massif	песчаник	1,55	1,4	2,17					Atmospheric water		T-31		

2. Biological agents									
High plants									
Kind	Height, m	Location		Shadow area %	Is the damage active		Photo/drawing no.	Note	
		On the rock surface	Distance from the rock surface		Yes	No			
Grass	0,1	1	0	1	0	1			

Law plants					
Kind	Area %	Adhesion		Photo/drawing no.	Note
		Strong	Weak		
Lichens	3	1	0		Crast-like

Animals					
Type	Kind	Area, %	Distance	Film/picture no.	Note
0	0	0	0	0	0

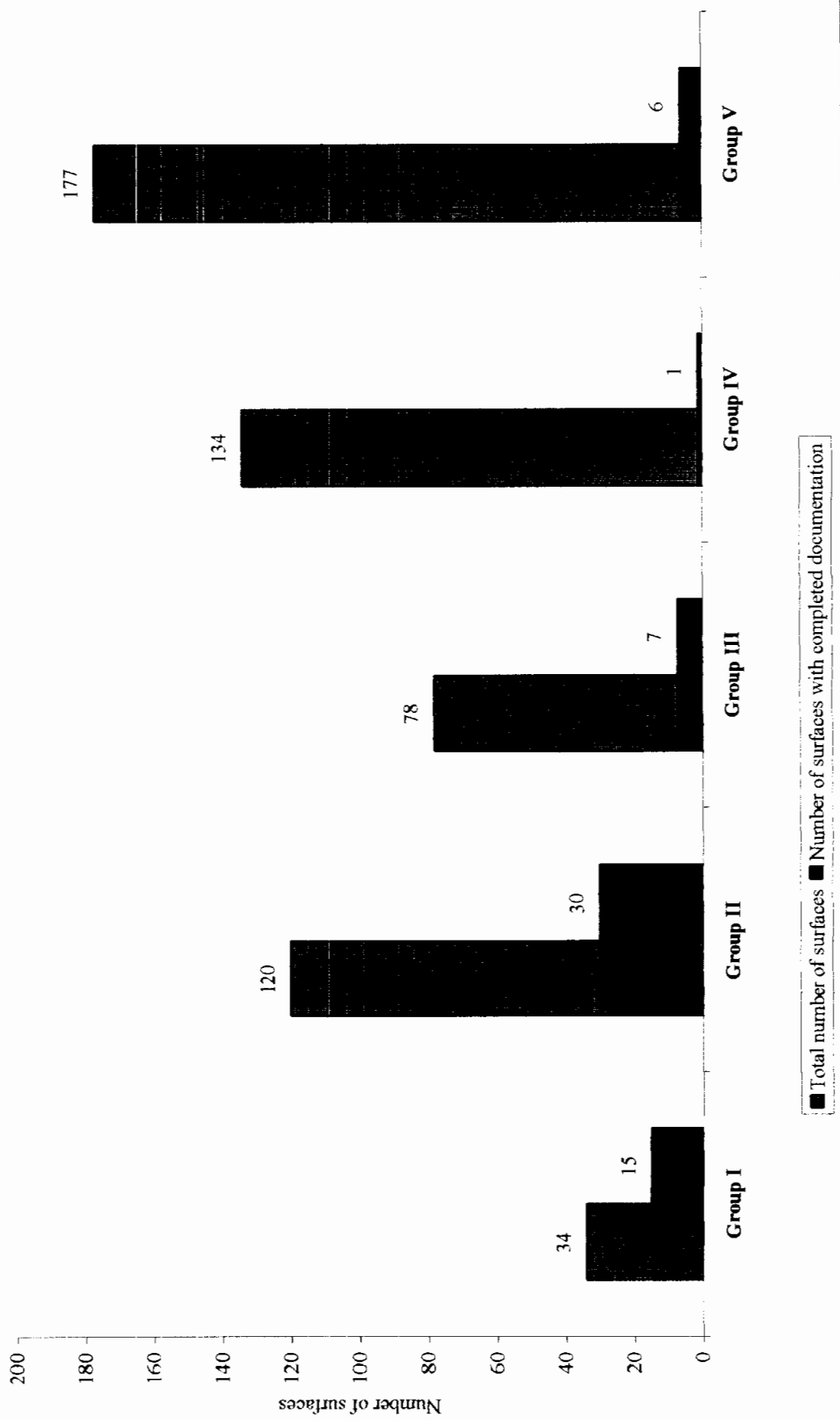
5. Antropogenous damage to surface				
Kind of damage	Dimention (length, width, depth)	Distance from image cm	Film/picture no.	Note
Graffiti	9x7x0.1	on image		Pecked

6. Previous researches		
Kind	Date	Result
0	0	0

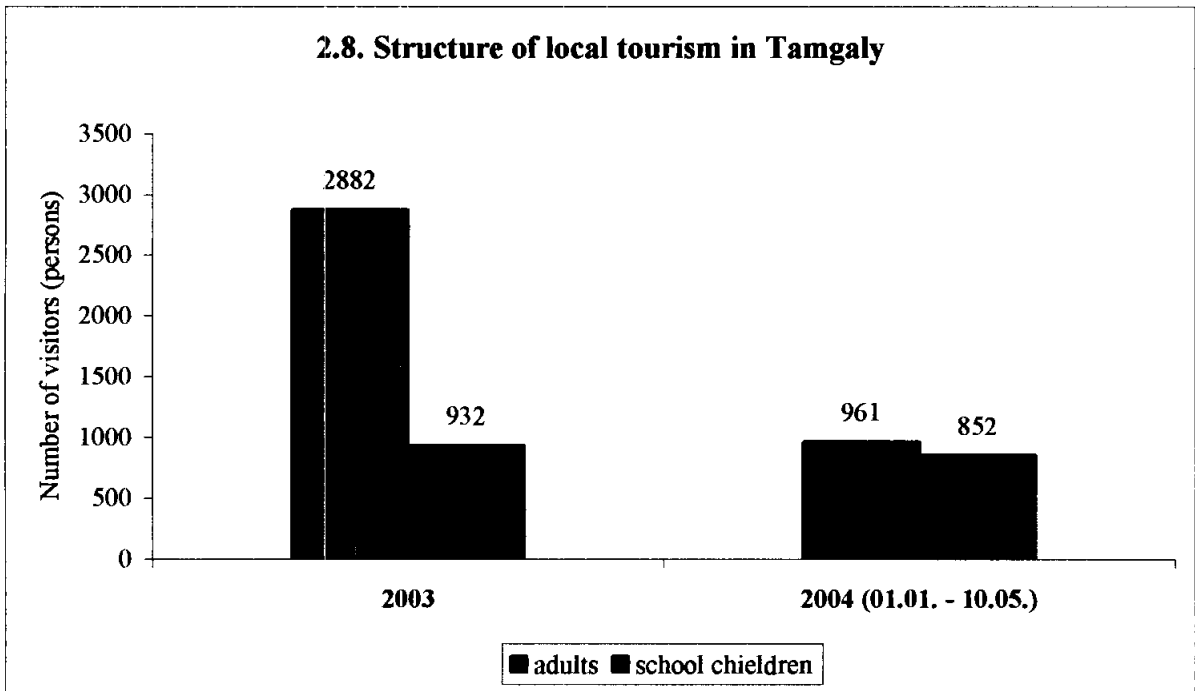
7. Conclusions on the rock surface state of conservation, recomendations					
State of conservation			Recommended measures of passive conservation	Recommended measures of active conservation (treatmens to the surface)	Note
Good	Satis factory	Poor			
0	1	0	Regular cleaning of crack from soil and cavities		

8. List of implemented works						
Date	Name of conservator	Name of activity	Materials	Thechnique	Film/picture no.	Note
0	0	0	0	0	0	0

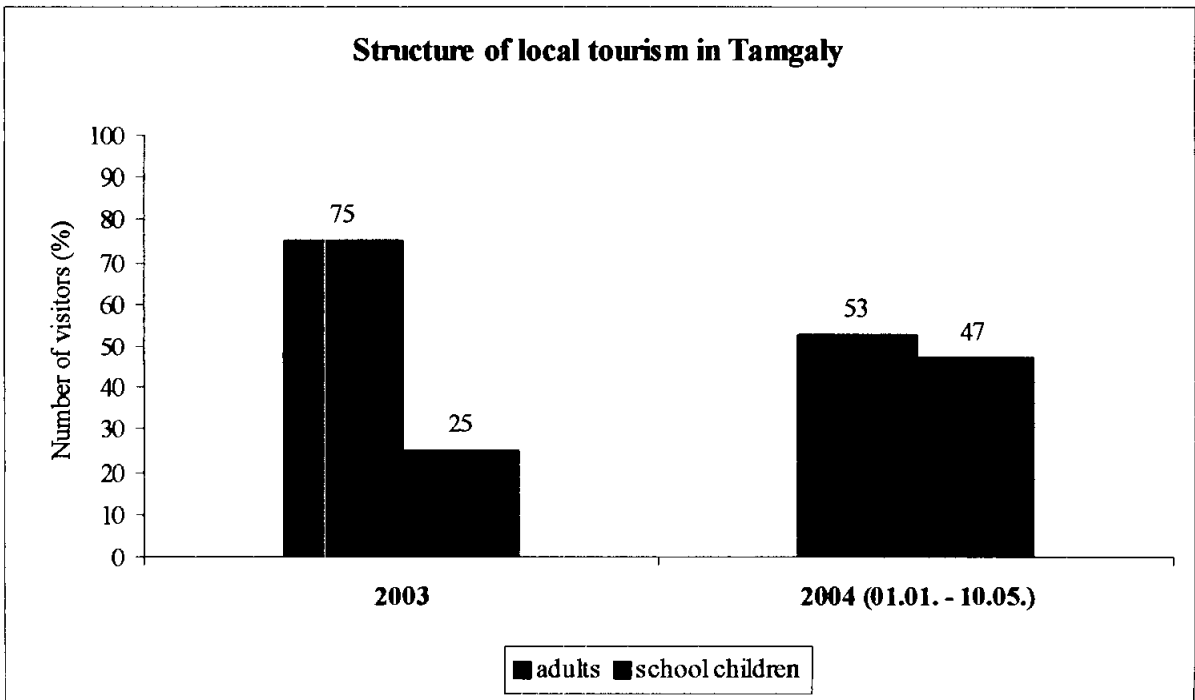
2.7. Present State of Documentation of Petroglyph Groups I-V, Surfaces (by May 2004)



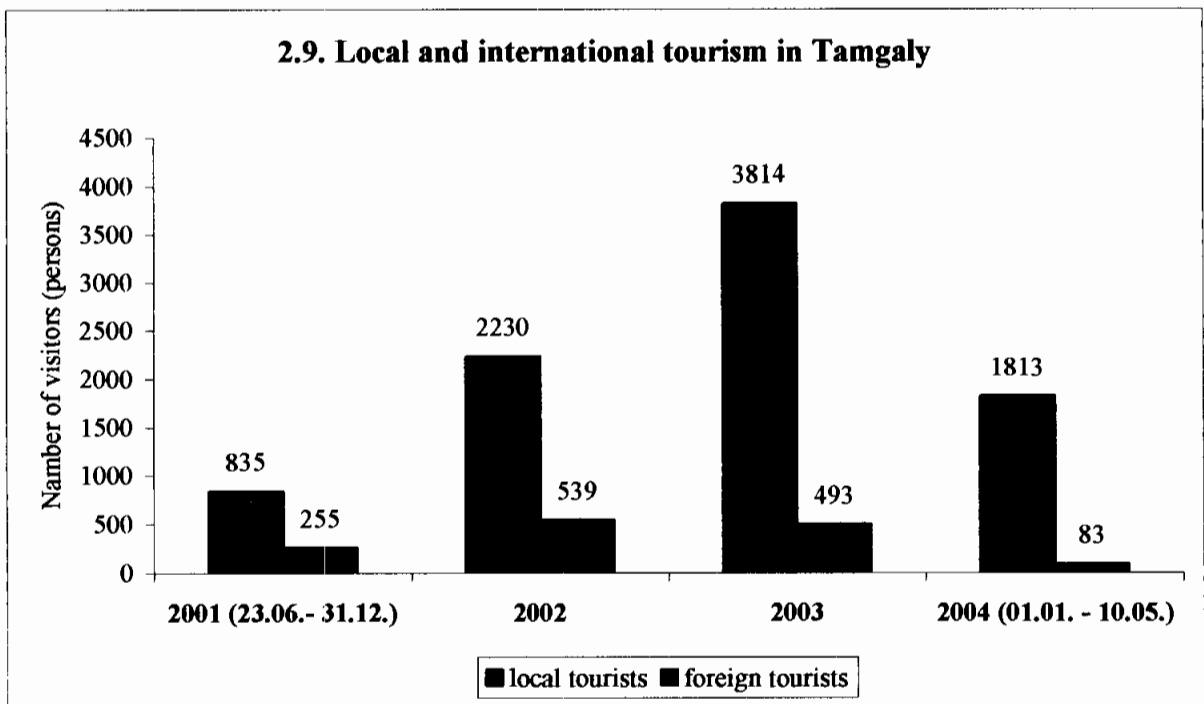
2.8. Structure of local tourism in Tamgaly



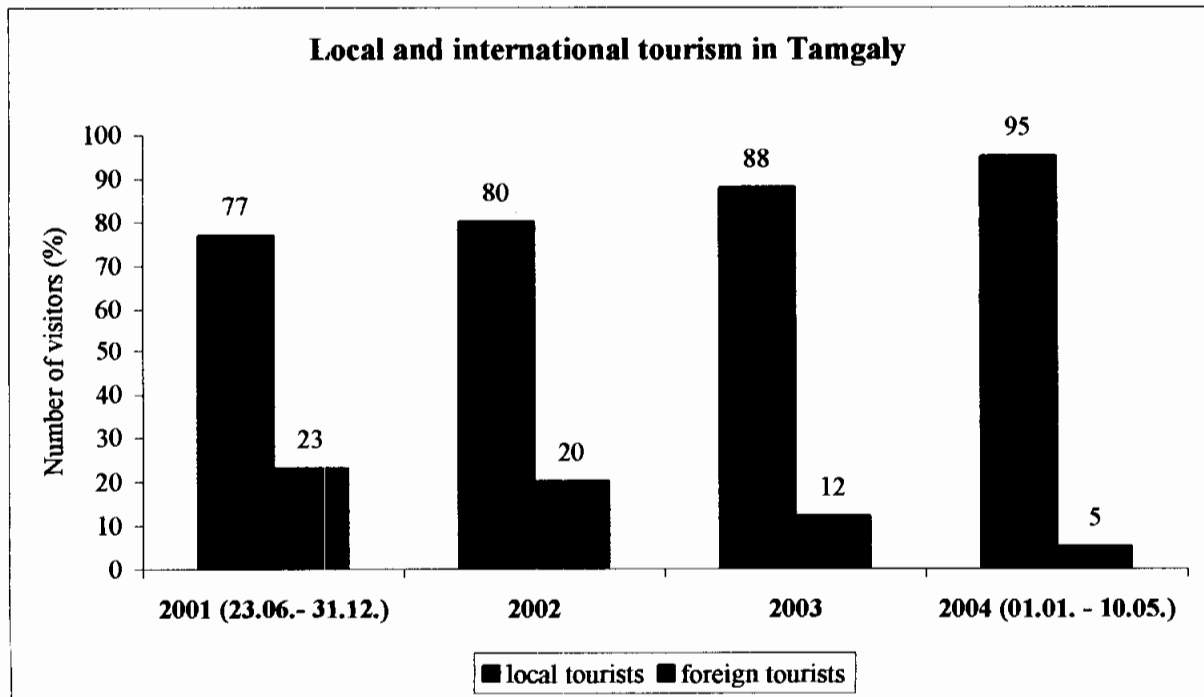
Structure of local tourism in Tamgaly



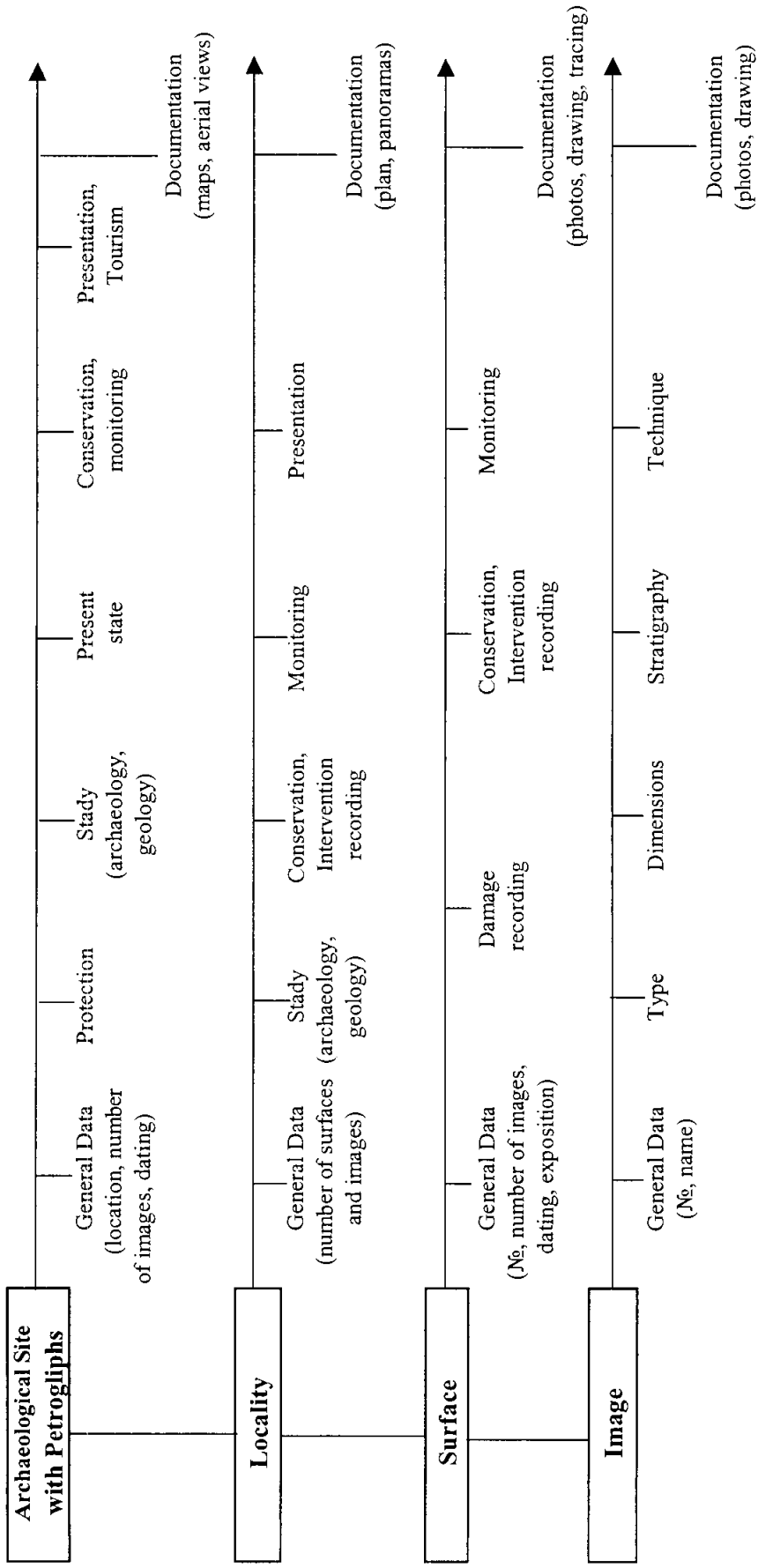
2.9. Local and international tourism in Tamgaly



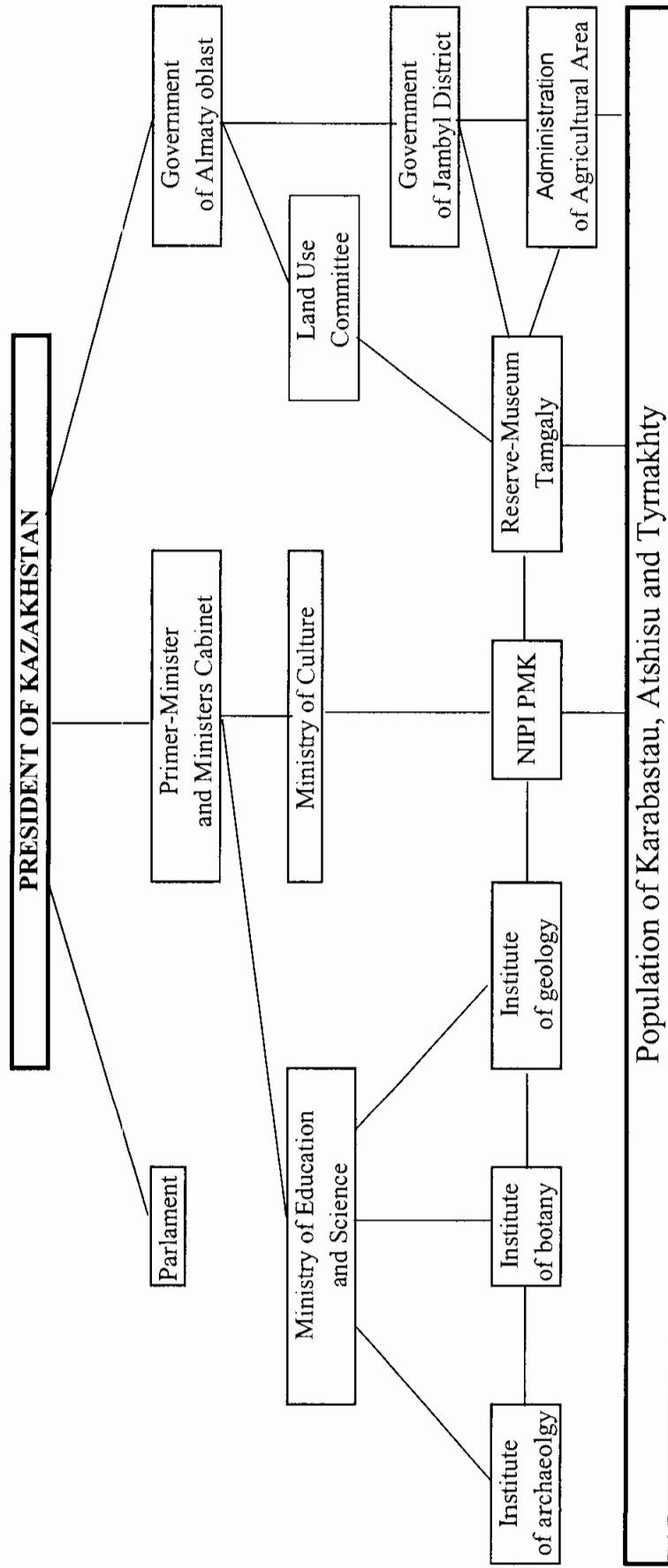
Local and international tourism in Tamgaly



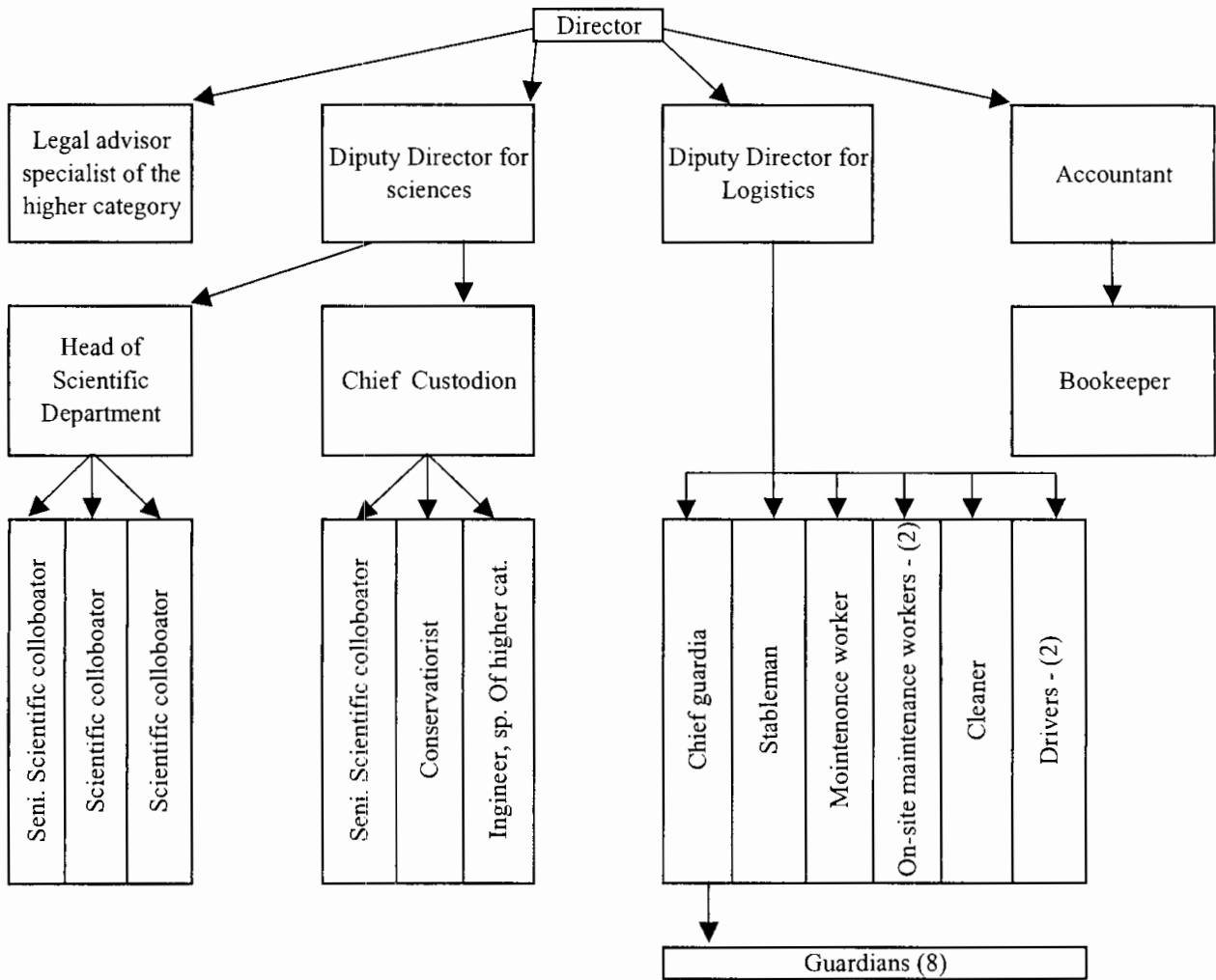
2.10. Database Structure



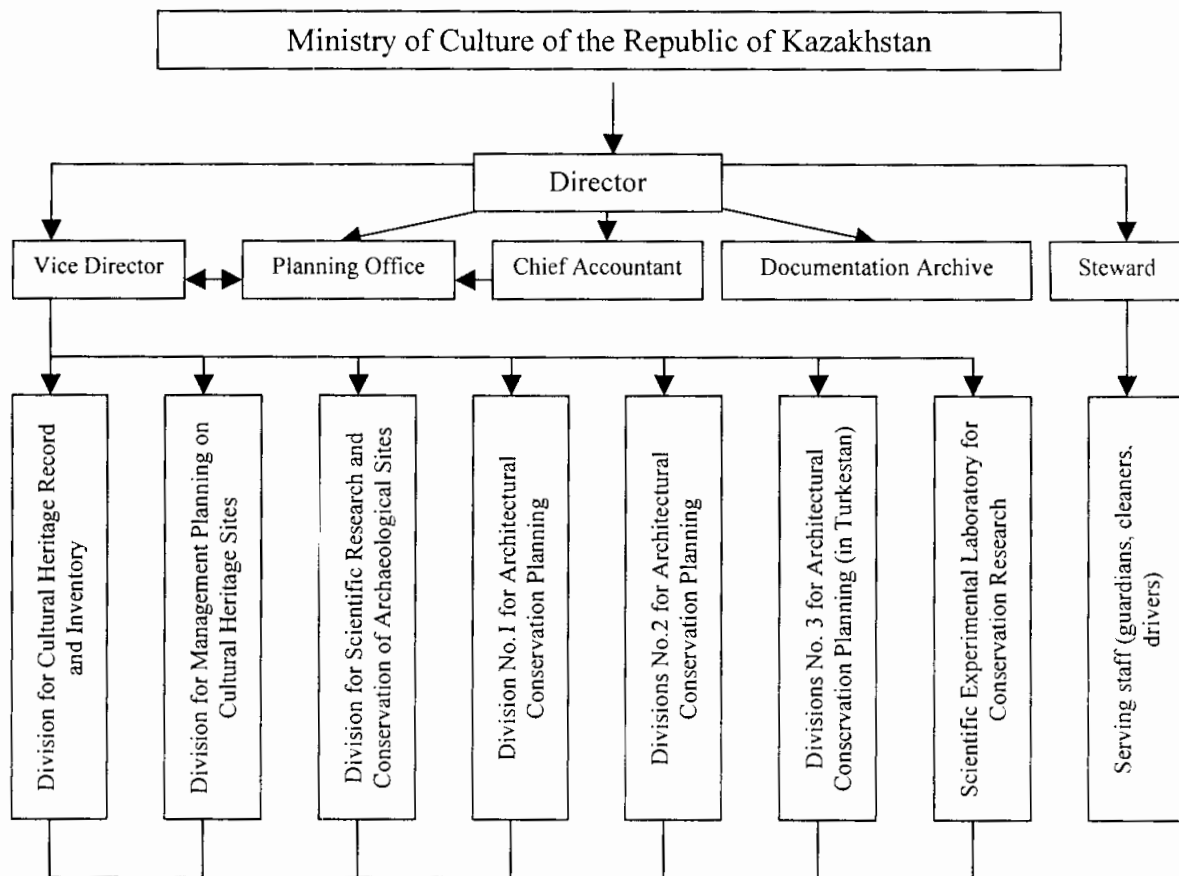
2.11. Structure of Interrelationship between the Government and different Stakeholders



2.12. Organizational chart of the State Cultural and Natural Reserve-Museum Tamgaly



2.13. Organizational Chart of State Institute for Research and Planning on Monuments of Material Culture (NIPI PMK)



Appendix 3. Legal texts and agreed plans

- 3.1. The Law about the Republic of Kazakhstan on the Protection and Utilization of Historical and Cultural Heritage**
- 3.2. Governmental Order No. 1282 of 05th October 2002**
- 3.3. Governmental Order No. 1052 of 14th October 2003**
- 3.4. Plan of Operations/Agreement between UNESCO and the Government of the Republic of Kazakhstan of 02th December 2003**
- 3.5. UNESCO/Norwegian Trust Fund Project Document**
- 3.6. Plan for Collaborative Activities in Tamgaly to be Implemented by the Reserve-Museum and NIPI PMK during 2003-2005, of 12th Desember 2003**

THE LAW OF THE REPUBLIC OF KAZAKHSTAN

About protection and utilization of historical and cultural heritage

The historical and cultural heritage, as the major evidence of historical destiny of the people, as a basis and indispensable condition of its present and future development, as a component of all human civilization, demands constant protection from all dangers. The maintenance of it in the Republic of Kazakhstan is the moral debt and duty, determined by the present law, for all legal and physical persons.

Section I.

GENERAL PROVISIONS

Clause 1. The legislation of the Republic of Kazakhstan on protection and utilization of the historical and cultural heritage.

The legislation of the Republic of Kazakhstan on protection and utilization of the historical and cultural heritage includes the present Law and other acts regulating questions in the given area of the public relations.

Clause 2. The purpose and tasks of the legislation of the Republic of Kazakhstan about protection and utilization of the historical and cultural heritage .

The purpose of the present Law is the regulation of the public relations ensuring safety and successive development of the historical and cultural heritage, namely:

- Definition of concepts of the historical and cultural heritage, its protection and use;
- Attaching of the legal status of objects of the historical and cultural heritage;
- Regulation of the rights and duties of the bodies of state authority, enterprises, institutions and organizations, public associations and also separate persons before a society and people in sphere of preservation of the historical and cultural heritage;
- Differentiation of the competence of the state bodies in the field of protection of the historical and cultural heritage;
- Establishment of measures of the responsibility for action or inactivity causing direct or indirect damage to the historical and cultural heritage.

Clause 3. The historical and cultural heritage

All kinds of archaeological objects, structures and subjects connected to the historical past of the people, development of the society and state, historical and cultural landscape, unique objects of a nature representing rare geological, physiographical formations, works of material and spiritual culture having historical, scientific and art value concern to the historical and cultural heritage.

Clause 4. Protection and utilization of objects of the historical and cultural heritage

The protection, preservation and utilization of objects of the historical and cultural heritage includes system of measures directed on:

- Exposure (discovery), research and propagation of the historical and cultural heritage;
- Establishment to the historical and cultural values of the status of monuments of history and culture;

- Maintenance of protection of monuments from destruction, acts of vandalism, falsification, mystification, distortion, entering of unreasonable changes, withdrawal from a historical context;
- Preservation and revival of monuments by preservation, restoration, regeneration and facsimile edition;
- Maintenance of monuments according to norms ensuring their safety;
- Utilization of monuments during revival of the ethno-cultural environment and also for scientific and educational purposes.

The stipulated system of measures is distributed to all the historical and cultural values of Kazakhstan recognized by monuments, without dependence from their kind, degree of safety and from what property they are in.

Clause 5. The legal status of objects of the historical and cultural heritage

The objects of historical and cultural heritage get the status of monuments from the moment of recognition of them by those in the order established by the present Law.

The recognition of historical and cultural value by monuments is fixed by inclusion of them in the state lists of monuments of history and culture subject to obligatory publication. All kinds of archeological monuments initially have historical, cultural and scientific value and status of monuments of history and culture.

The monuments of history and culture of the Republic of Kazakhstan are subject to obligatory protection and preservation in the order stipulated by the present Law, the changes of the property right on them and deprivations of their legal status have the special legal regime of their utilization. The deprivation of a monument of history and culture of its legal status and exception from the state list of monuments of history and culture is supposed only in exclusive cases (at destruction as a result of acts of nature or loss of historical-cultural value) by the decision of Government of the Republic of Kazakhstan on presentation of the appropriate local body of authority coordinated with a special commission of the State Body of the Republic of Kazakhstan for the Protection and Utilization of the Historical and Cultural Heritage, on the basis of the conclusion of scientific examination.

Clause 6. Kinds of objects of historical and cultural heritage

Objects of historical and cultural heritage can be recognized as (wholly or in the stipulated part):

The material historical evidences:

- 1) immovable, including:
 - Individual objects and works of architecture, of monumental art, elements or structures of archeological character, epigraphic materials, works of science and engineering, building, structures or other objects having historical or memorial importance;
 - Complex objects - works of town-planning art (architectural ensembles and complexes, historical towns and populated areas, parts of towns, quarters, streets, elements of town-planning structures), works of garden-park art, historical necropolis, historical territories and places;
- 2) movable, including:
 - Individual objects – archeological finds, subjects of antiquity, elements of the immovable monuments which have undergone partition, anthropological and ethnological materials, historical relics, works of art (painting, graphic, applied art, art of cinema and photo), hand-written and rare printed documents, cinema, photo and video-documents, sound recording;

- Complex objects - historically usual complexes, funds and collections of the specified individual objects taken as a single unit, and also complexes, funds and collections of naturally-scientific value having as the whole historical importance.

The non-material historical evidences:

- Traditions of human communities - historical, cultural, religious, household, economic;
- Local dialects and languages of the small peoples, historical toponymys.

Clause 7. The competence of the Republic of Kazakhstan on protection, preservation and utilization of objects of the historical and cultural heritage

The Republic of Kazakhstan on behalf of the appropriate bodies has complete authority on protection, preservation and utilization of monuments of history and culture recognized by those in the order established by the legislation of the Republic and located on its territory.

To protection, preservation and utilization are subject also monuments being the property of the Republic of Kazakhstan, but located on territory of other states.

The protection, preservation and utilization of monuments located in territory of the Republic of Kazakhstan, but being the property of other states, their legal persons and citizens, is established according to the treaties.

The Republic of Kazakhstan accepts the responsibility for the location, organization of the account, and preservation and returning to the historical native land, objects of cultural value which are outside the Republic, recognized by the historical and cultural property of the Kazakh people and peoples living in the Republic of Kazakhstan.

Section II.

FEATURES OF REALIZATION OF THE PROPERTY RIGHT ON OBJECTS OF HISTORICAL AND CULTURAL HERITAGE.

Clause 8. Regulation of the relations of property

The relation of property on monuments of history and culture are adjusted by the Law "About the property in Kazakh SSR" and other acts of the Republic. The features of realization of the property right on monuments of history and culture are established by the present Law.

Clause 9. Objects of the property right

Objects of the property right on monuments are the material and spiritual historical and cultural values recognized by monuments in the order established by the present Law.

Clause 10. The subjects of the property right

The subjects of the property right on objects of the historical and cultural heritage of the Republic of Kazakhstan can be: the Republic of Kazakhstan, legal persons of various patterns of ownership and citizens of the Republic of Kazakhstan.

Clause 11. The state property on monuments of history and culture

All monuments of history and culture located in the territory of the Republic of Kazakhstan and which are not the property of other subjects, and also historical and cultural landscapes recognized as monuments in the order established by the legislation, are the exclusive property of the Republic of Kazakhstan.

On behalf of the Republic of Kazakhstan, the power of the proprietor of monuments of international and national importance will be carried out by the State Body of the Republic of Kazakhstan for the Protection and Utilization of Historical and Cultural Heritage, and appropriate local bodies of authority protect monuments of local importance.

Clause 12. The rights of the subjects of the property

The proprietor possesses the rights of possession, usage and disposal of monuments of history and culture as for objects of property, except for the right of their independent destruction.

The proprietor keeps the property right to an object at its final recognition as a monument of history and culture.

The citizen having in the property the monument of history and culture, has the right to demand the maintenance of the privacy of its contents or inaccessibility to researches and public survey for the term of 30 years, if the object of the property belongs to him on the rights of the inheritance and on the origin or contents is connected to the person who composed his will or the ancestors of the proprietor.

The proprietor has the right of extraction of the profit (receipt of the income) as a result of utilization and operation of monuments limited by the obligations on their protection.

At change of the property rights on immovable monuments, their territories take over of the new proprietors gratuitously.

Clause 13. Duties of the proprietors

The proprietors of monuments of history and culture carry out activity on their preservation and are obliged:

- 1) to arrange the maintenance and safety of monuments;
- 2) to register monuments with the authorized state bodies for the protection of monuments in the place of presence of monuments (immovable) or on a residence of the proprietor (movable);
- 3) to notify state bodies for the protection of monuments on the prospective or realized changes of the property rights;
- 4) to notify state bodies for the protection of monuments on the prospective or realized changes of site, conditions of the maintenance and utilization of monuments;
- 5) to notify state bodies for the protection of monuments on works on repair, preservation, restoration of monuments;
- 6) to provide availability to a monument in scientific, cultural and other purposes in the order and limits established by the special contracts with state bodies for the protection of monuments.

The obligations of the proprietors of monuments of history and culture are fixed in the security documents signed by the proprietor and an authorized state body for the protection of monuments, and containing besides the aforesaid general obligations the special obligations with reference to physical monuments.

The obligations mentioned in items 1, 2 of the present clause, equally concern to the owners and users of monuments.

The actions listed in items 1, 3, 5 of the present clause, are not subject to realization by the owners and users without the certified consent of the proprietors of monuments.

Clause 14. Compulsory deprivation of the property rights on objects of the historical and cultural heritage

The compulsory deprivation of the property rights for monuments, on fault of the proprietor destructions, exposure to threat, or damage is carried out only on the basis of the decision of court.

In default of the individual, collective proprietor will take up the obligations on protection of monuments stipulated by clause 13 of the present Law, the decision is accepted by court under the claim of the State Body for the Protection of Monuments.

The compulsory deprivation of the individual proprietor of the monument, being his apartment house or dwellinghouse, cannot be carried out without granting to him another dwellinghouse in the order established by the law, and appropriate compensation under the contract.

Thus the obligations for the protection of monuments are subject to transfer on the contractual basis to other legal persons or citizens of the Republic of Kazakhstan; or the monument in the compulsory order is subject to public sale. On revealing the impossibility of sale the monuments, under the decision of the State Body for the Protection of Monuments, are transferred to the property of the state with payment to the former proprietor of compensation at a rate established by the contract, and in case of dispute – by court.

In default of state bodies from acceptance of the obligations on maintenance of safety of monuments taking place or acting in state ownership, the specified monuments are subject on the contractual basis to transfer the property to other subjects undertaking to ensure safety of monuments according to the present Law.

Clause 15. Advantages to buying the property rights to the monument

The proprietors of parts of the monument, which is located in the common share property, have the right of priority of purchase other parts of this monument in the property.

The right of priority of purchase of other parts of monument stipulated in the first part of the present clause is distributed also to cases, when the property of the buyer has not the status of monument.

At public sale of monuments the state has the right of their primary purchase for the market (auction) price except for cases stipulated in the first and second parts of the present clause. In these cases the state has the right of priority after the proprietors specified in the first part of the present clause. The same rights, as well as state, have the legal persons and citizens getting monuments for passing them to the state if they have legalize obligation.

Section III.

STATE MANAGEMENT IN THE FIELD OF PROTECTION OF HISTORICAL AND CULTURAL HERITAGE

Clause 16. System of bodies of state management in the field of protection, preservation and utilization of the historical and cultural heritage.

State management in the field of protection, preservation and utilization of monuments of history and the culture of the Republic of Kazakhstan carry out:

- Government of the Republic of Kazakhstan;
- Local bodies of authority;
- State Body of the Republic of Kazakhstan for the Protection and Utilization of Historical and Cultural Heritage;
- State Body for the Management of Archives of the Republic of Kazakhstan.

Clause 17. The competence of the Government of the Republic of Kazakhstan in the field of protection and utilization of the historical and cultural heritage

Government of the Republic of Kazakhstan:

- Forms and carries out state policy in the field of protection and utilization of the historical and cultural heritage;
- Approves the regulation of state bodies and structures on protection and utilization of historical and cultural heritage;
- Establishes the order of the state registration of objects of historical and cultural heritage and also their discovery, research, maintenance, preservation, restoration, regeneration, interpretation, propagation and utilization, import and export, and rate of rent payment for utilization of historical and cultural heritage located in national property.

Clause 18. The competence of local bodies of authority in the sphere of protection of the historical and cultural heritage

Local bodies of authority in the own territory:

- Provide revealing, registration, protection, restoration and utilization of objects of historical and cultural heritage;
- Provide observance of the legislation about protection and utilization of the historical and cultural heritage;
- Provide measures on organization of the registration, protection and restoration of monuments of local importance by way of economic and social development of the appropriate territories, and also finance their realization at the expense of means of their own budgets;
- Promote the organizations of patronage of the enterprises, organizations and establishments above monuments;
- Involve the public in the realization of measures on protection and propagation of monuments;
- Solve the problem on granting use of buildings and structures being monuments located in lands of state ownership and in agreement with the State Body of the Republic of Kazakhstan for the Protection and Utilization of Historical and Cultural Heritage;
- Establish the rates of rent payment for utilization of monuments of local importance which are located in lands of state ownership;
- Provide the implementation of measures on the discovery, study, and preservation of monuments of all categories, drawing up of the historical-building basic plans and maps; in agreement with the State Body of the Republic of Kazakhstan for the Protection and Utilization of Historical and Cultural Heritage by development and statement of the projects of layout, building and reconstruction of cities and other populated areas;
- Carry out allotment of the ground areas under development for economic-building and defensive purposes only at presence of the conclusion of the State Body for the Protection and Utilization of Historical and Cultural Heritage;
- Resolve problems concerning delay and also prohibition of building and other works creating danger to monuments upon presentation of the State Body for the Protection and Utilization of Historical and Cultural Heritage;
- Carry out other powers stipulated by the legislation of the Republic of Kazakhstan.

Clause 19. The competence of the State Body of the Republic of Kazakhstan on Protection and Utilization of the Historical and Cultural Heritage

State Body of the Republic of Kazakhstan on Protection and Utilization of the Historical and Cultural Heritage:

- Develops the state programmes and participates in formation and realization of state policy in the field of protection, preservation and utilization of monuments of history and culture;
- Carries out the state control of condition of utilization and order of the maintenance of monuments, execution of works on preservation and regeneration of monuments;
- Provides location, registration, preservation and observance of rules of utilization for monuments of history and culture which is located in the territory of the Republic of Kazakhstan;
- Carries out protection and utilization of natural monuments and other objects of the environmental/natural environment connected to monuments of history and culture in agreement in necessary cases with other interested organizations;
- Sanctions work permits on realization of any kind of research, design and restoration - preservation works on monuments of history and culture;
- Stops or forbids activity which may pose a threat to the safety of monuments of all categories;
- Carries out the control of observance of the legislation about the order of import and export of cultural values;
- Petitions for calling to account of the officials, enterprises, institutions, public associations, organizations and citizens breaking the norm of the legislation (law) concerning protection, preservation and utilization of monuments of history and culture;
- Carries out other powers stipulated by the relevant Regulations.

Clause 20. The competence of the State Body for the Management of Archives of the Republic of Kazakhstan in the field of protection and utilization of historical and cultural heritage

State Body for the Management of Archives of the Republic of Kazakhstan:

- Participates in the formation and realization of state policy in the field of protection and utilization of historical and cultural heritage and funds of rare manuscripts, and develops the appropriate state programs;
- Supervises work concerning state archives of the Republic of Kazakhstan on revealing and collecting documentary monuments, their registration, protection, restoration, utilization and propagation;
- Carries out the control of maintenance of safety of documentary monuments which are not located in the state archives;
- Provides access to study of documentary monuments located in the state archives, to experts, to representatives of mass media, and to scientific and other researchers.

Section IV.

FINANCING THE SPHERE OF PROTECTION AND UTILIZATION OF THE HISTORICAL AND CULTURAL HERITAGE

Clause 21. Funds of protection and utilization of the historical and cultural heritage

Within the State Body of the Republic of Kazakhstan on Protection and Utilization of the Historical and Cultural Heritage is created the State Fund for the Historical and Cultural Heritage of the Republic of Kazakhstan at the expense of financial assets of: the republican budget, percentage deductions, in roubles and currency, state, cooperative, public and other organizations which are carrying out building, reclamation, agricultural and other works in zones of protection of monuments of history and culture; tourist-excursion measures connected to visiting of monuments, release of souvenir production, advertising editions with the images of the registered monuments, cinematography, television and video-films filming on location at monuments of the scale/size established by the Regulation about reserves (funds) confirmed by the Government of the Republic

of Kazakhstan, and also voluntary donations of public associations, citizens, other enterprises, institutions and organizations.

At the expense of fund the financing is carried out:

- The state programs in the field of protection, restoration and utilization of historical and cultural heritage;
- The programs on professional training of the staff - restorers, strengthening and development of industrial bases of restoration organizations, equipment by their modern engineering, equipment and tools, creation of social conditions for the workers of these organizations;
- Other measures stipulated by the Regulation about reserves (funds).

For financing local programmes and measures in the field of protection of monuments the local bodies of authority create at the expense of means of the local budget, and also voluntary deductions of the enterprises, public associations and payments of the citizens funds of protection of monuments. Thus part of the means from local funds is sent to the state fund for needs of protection and restoration of monuments of international and republican importance located in the territory of the appropriate areas.

The sums of the taxes and not tax payments acting in the local budgets from the proprietors and the users of monuments, and also from excursions, tourist organizations and their enterprises are enlisted in the specified funds according to the Regulation about funds confirmed by local body of authority.

Section V.

PARTICIPATION OF PUBLIC ASSOCIATIONS, ENTERPRISES, INSTITUTIONS, ORGANIZATIONS AND CITIZENS IN REALIZATION OF MEASURES ON PROTECTION AND UTILIZATION OF THE HISTORICAL AND CULTURAL HERITAGE

Clause 22. Participation of public associations, enterprises, institutions, organizations and citizens in realization of measures on protection and utilization of historical and cultural heritage.

The enterprises, institutions, organizations, educational institutions, public associations and citizens participate in propagation and popularization of monuments, promote to the state bodies of protection of monuments in realization of measures on protection, preservation and utilization of monuments.

The enterprises, institutions, organizations and citizens can establish patronage above monuments of history and culture with the purposes of maintenance of their safety, to render to the state bodies of protection of monuments the financial and material and technical help in the execution of works on repair, preservation and restoration of monuments.

The public associations carry out activity on protection, preservation and utilization of monuments of history and culture according to their regulations and also to the legislation of the Republic of Kazakhstan.

Clause 23. Participation of the Kazakh Society for the Protection of Monuments of History and Culture in the realization of measures for the protection and utilization of historical and cultural heritage.

The Kazakh Society for the Protection of Monuments of History and Culture promotes the involvement of the population to participate in the realization of measures connected to protection,

preservation and utilization of objects of historical and cultural heritage, carries out propagation of monuments, and co-operates in the activity with the state bodies on protection and utilization of historical and cultural heritage.

Clause 24. Participation of the National Academy of Sciences of the Republic of Kazakhstan in protection and utilization of historical and cultural heritage

The National Academy of Sciences of the Republic of Kazakhstan:

- Participates in the revealing and studying of objects of historical and cultural heritage and in summarizing information concerning monuments of history and culture;
- Together with the State Body of the Republic of Kazakhstan on Protection and Utilization of the Historical and Cultural Heritage and local bodies of authority, gives conclusions on various questions of monument-protection at allotment of the ground areas under development by civil and military departments, and at the expense of their means carries out necessary prospecting works.

Section VI.

THE STATE REGISTRATION OF MONUMENTS OF HISTORY AND CULTURE

Clause 25. Organization of the state registration of monuments of history and culture

The monuments of history and culture located in the territory of the Republic of Kazakhstan, irrespective of the ownership of property where they are located, are subject to state registration.

Clause 26. Reference of monuments of history and culture to categories of monuments of international, republican and local importance

With the purposes of effective organization of the registration and protection of monuments of history and culture the monuments are subdivided into monuments of international, republican and local importance.

Clause 27. The order of the confirmation of the lists of monuments of history and culture

The list of monuments offered for inclusion in the World Heritage List is represented by the Government of the Republic of Kazakhstan in an established order.

The lists of monuments of history and culture of republican importance are affirmed by the Government of the Republic of Kazakhstan on presentation of the State Body of the Republic of Kazakhstan on Protection and Utilization of the Historical and Cultural Heritage.

The lists of monuments of history and culture of local importance are affirmed by local bodies of authority on presentation of territorial state and public bodies of protection of monuments coordinated with the State Body of the Republic of Kazakhstan for the Protection and Utilization of the Historical and Cultural Heritage.

The exception of objects on the lists of monuments of history and culture of republican and local importance is supposed only under the decision of the Government of the Republic of Kazakhstan.

Clause 28. The order of formation and structure of special commission of state bodies on protection and utilization of the historical and cultural heritage

For preparation of the conclusion about the recognition of historical and cultural values for monuments of history and the culture and also about depriving them of this status, the State Body of the Republic of Kazakhstan for the Protection and Utilization of the Historical and Cultural Heritage will create authorized commissions, whose structure will include scientists, experts, figures of culture and art, representatives of creative unions and other public associations.

Section VII.

THE ORDER OF UTILIZATION OF OBJECTS OF THE HISTORICAL AND CULTURAL HERITAGE

Clause 29. Utilization of objects of the historical and cultural heritage

The objects of historical and cultural heritage are used for the purposes of revival and development of spiritual and cultural traditions of the peoples of Kazakhstan, and also for scientific and educational purposes.

Utilization of objects of historical and cultural heritage in other purposes is supposed only from the sanction of the state bodies of protection and utilization of historical and cultural heritage.

The mode of use of monuments of town-planning art for both historical centres of cities and other populated areas is determined in the projects of their zones of protection confirmed by the Government of the Republic of Kazakhstan or the State Body of the Republic of Kazakhstan for the Protection and Utilization of the Historical and Cultural Heritage within the limits of their competence.

Clause 30. The order and conditions of granting the use of monuments of history and culture

The granting of monuments of history and culture for use by organizations, public associations, enterprises and citizens for scientific, cultural, educational, tourist and other purposes is carried out in the order determined by the present Law.

The buildings, structures being monuments of history and culture, are permitted use under the decision of local bodies of authority in the preliminary coordination with the appropriate state bodies on protection and utilization of historical and cultural heritage.

Clause 34. Restoration, preservation and regeneration of monuments of history and culture

The restoration, preservation, and regeneration of monuments of history and culture is carried out only with knowledge of state bodies of protection of monuments and under their control.

The restoration, preservation and regeneration of monuments of history and culture is carried out at the expense of means of funds of protection of monuments, and also at the expense of means of the proprietors and users of monuments.

The works of restoration, preservation and regeneration of monuments of history and culture are to be made by specialized scientific restoration organizations, other organizations and citizens, on the basis of the license for the right of such activity and special sanction which is given out by the State Body of the Republic of Kazakhstan for the Protection and Utilization of the Historical and Cultural Heritage.

Scientific, restoration, and other organizations and citizens are involved with the proprietors or users of monuments for realization of the appropriate works on the basis of the contracts.

Clause 35. Coordination with the bodies of protection of monuments for the projects of layout, building and reconstruction of cities and other populated areas having monuments of history and culture

The projects of layout, building and reconstruction of cities and other populated areas and also maps of land using having monuments of history and culture, are subject to the coordination with the state bodies of protection of monuments, local bodies of authority and National Academy of Sciences of the Republic of Kazakhstan.

Clause 36. Zones of protection of monuments of history and culture

With the purposes of maintenance of protection of monuments of history, archeology, town-planning and architecture, and monumental art are established security zones, zones of regulation of building and zones of protected natural landscape in the order determined by the legislation of the Republic of Kazakhstan.

The borders of security zones, zones of regulation of building and zones of protected natural landscape are determined by the appropriate local bodies of authority in agreement with the State Body of the Republic of Kazakhstan for the Protection and Utilization of the Historical and Cultural Heritage.

Within the limits of security zones, carrying out of (excavation) ground, building and other works and also economic activity without the sanction of the appropriate bodies of protection of monuments is forbidden.

The zones of protection of monuments are included in the general plans, projects of detailed layout and buildings of the populated areas.

If the movement of transport on roads adjoining the monuments or running through security zones, creates a threat to existence of monuments under the decision of the local body of authority the movement of transport on such roads is limited or is forbidden.

Clause 37. Protection of the historical and cultural reserves

The ensembles and complexes of monuments, territories representing special historical, scientific, artistic or other cultural value can be announced by historical and cultural reserves, whose protection is carried out on the basis of special regulations about them.

Clause 38. Prohibition of demolition, moving, change of monuments of history and culture

Demolition, moving, or changing of immovable monuments of history and culture is forbidden.

The exception of this rule is supposed only in the special case from the sanction of the Government of the Republic of Kazakhstan at the destruction of an object as a result of act of nature and loss of historical, scientific, art value.

The enterprises, organizations, institutions, public associations or citizens who have received such sanction, at realization of demolition, moving or change of monument are obliged to ensure observance of conditions stipulated by the legislation of the Republic of Kazakhstan and the appropriate state body on protection and utilization of historical and cultural heritage is obliged to carry out works on scientific study and fixing of monuments.

The charges connected to realization of the specified works are made at the expense of the enterprises, organizations, institutions or citizens who have received the sanction on demolition, moving or change of monuments.

Clause 39. Maintenance of safety of objects of the historical and cultural heritage at development of territories

In all kinds of development of territories for the period of allotment of the ground areas the research works on revealing objects of historical and cultural heritage should be made at the expense of means of land users. The realization of all kinds of works that pose a threat to the existence of monuments is forbidden.

The enterprises, organizations, institutions, public associations and citizens in case of detection while conducting similar works on archaeological and other objects having historical, scientific, art and other value, are obliged to inform the State Body of the Republic of Kazakhstan for the Protection and Utilization of the Historical and Cultural Heritage about their work and to suspend the further conducting works.

Clause 40. Conducting excavation and investigations of monuments of archeology

The conducting of excavations and investigations of monuments of archeology is supposed at presence of the research permit sanction (permission for excavations).

The sanction to conducting excavation and investigations in the territory of republic is given out by the State Body of the Republic of Kazakhstan for the Protection and Utilization of the Historical and Cultural Heritage under the recommendation of Field Committee of the National Academy of Sciences of the Republic of Kazakhstan and with agreement of local bodies of authority.

All materials and finds received by the legal and physical persons of the Republic of Kazakhstan and other states in result of archeological researches in the territory of Kazakhstan are transferred in state museums of the Republic of Kazakhstan after scientific fixing and processing. Their export outside the borders of the Republic of Kazakhstan is forbidden.

Clause 41. Import and export of monuments of history and culture

The order of import of monuments on the territory of the Republic of Kazakhstan and export them from the territory of the Republic of Kazakhstan is determined by the legislation of the Republic of Kazakhstan.

Section VIII.

THE RESPONSIBILITY FOR INFRINGEMENT OF THE LEGISLATION OF THE REPUBLIC OF KAZAKHSTAN ABOUT PROTECTION AND UTILIZATION OF HISTORICAL AND CULTURAL HERITAGE AND CONTROL OF ITS EXECUTION

Clause 42. The responsibility for infringement of the legislation of the Republic of Kazakhstan about protection of historical and cultural heritage

The officials and citizens guilty of infringement on the legislation on protection, preservation and utilization of monuments of history and culture found expression in activity or inactivity, bear responsibility according to the legislation of the Republic of Kazakhstan.

The enterprises, organizations, institutions, public associations and citizens, who have done harm to monuments of history and culture or their corresponding security zone(s), are obliged to restore to a former condition the monument or its security zone, and at impossibility of it they must compensate the caused losses according to the legislation of the Republic of Kazakhstan. The restoration of the monument or its security zone is carried out with observance of the established order of registration of monuments and under the control of state bodies of protection of monuments.

Clause 43. The control of execution of the legislation of the Republic of Kazakhstan about protection and utilization of objects of the historical and cultural heritage

The control of execution of the legislation of the Republic of Kazakhstan concerning protection and utilization of historical and cultural heritage is carried out by:

- Local bodies of authority;
- State Body of the Republic of Kazakhstan for the Protection and Utilization of the Historical and Cultural Heritage;
- State Body for the Management of Archives of the Republic of Kazakhstan.

Section IX.

THE INTERNATIONAL TREATIES AND AGREEMENTS

Clause 44. Alignment of the legislation of the Republic of Kazakhstan about protection and utilization of the historical and cultural heritage and international treaties and agreements

If the international treaty or agreement, in which the Republic of Kazakhstan participates, establishes rules other than those contained in the legislation of the Republic of Kazakhstan on protection and utilization of historical and cultural heritage, those rules of the international treaty or agreement are applicable.

The president of the Republic of Kazakhstan
N. NAZARBAYEV
Alma-Ata, July 2, 1992
№. 1488-XII

**The Decision of the Government of the Republic of Kazakhstan
of 05 October 2001, No 1282
about the amendment and supplement to the Decision of the Council of Ministers
of the
Kazakh SSR of 26 January 1982, No 38**

In accordance with the Law of 02 July 1992 “About protection and utilization of historical and cultural heritage”, the Government of the Republic of Kazakhstan
DECIDE:

1. To amend and supplement the “Alma-Ata Oblast” Chapter of the List of Monuments of National Significance, approved by the Decision Decision of the Council of Ministers of the Kazakh SSR of 26 January 1982, No 38, as follows:

To substitute the Name “Alma-Ata” by the name “Almaty;

To add the line of the following contents:

The Complex of Tamgaly Archaeological of the Bronze Age	Zhambyl district, 4 km from the Karabastau village	site
--	---	-------------

2. To enforce the present Decision since the date of its signing.

The Prime Minister of the Republic of
Kazakhstan K. Tokaev
Astana, 05 October 2001

The decision of the Government of Republic of Kazakhstan from October 14, 2003 N 1052 about creation of official body " State historical - cultural and natural reserve - museum "Tamgaly" in Almaty area.

With a view of preservation of a unique archeological complex and petroglyphs in Tamgaly natural boundary of Zhambyl region of Almaty area, the Government of Republic of Kazakhstan DECIDES:

1. To create official body " State historical - cultural and natural reserve - museum "Tamgaly" of the Ministry of culture of Republic of Kazakhstan (further - Establishment) with the total area of 3,8 thousand hectare in Tamgaly natural boundary of Zhambyl region of Almaty area.

2. To the Ministry of culture of Republic of Kazakhstan in the order established by the legislation:

- 1) to ratify the Charter of Establishment and to assure its registration in judicial authorities;
- 2) to take other measures following from the present decision.

3. To recommend to Almaty area Mayor to consider and solve questions of carrying out of major overhaul of road from Kopa station up to Karabastau village and an access road to Tamgaly complex, and also to carry the site of road running through Establishment, clearing of its territory of the rests of inhabited and economic constructions.

4. To determine, that financing of Establishment is carried out for the account and within the limits of the means stipulated in the republican budget.

To the Ministry of culture of Republic of Kazakhstan:

5. To bring to the decree of the Government of Republic of Kazakhstan from February 12, 2000 N 229 " About approval of staff limits of the official bodies subordinated to the central agencies of Republic of Kazakhstan " the following changes and additions:

Within the staff limits of the official bodies subordinated to the central agencies of Republic of Kazakhstan, financed due to the means of the republican budget authorized by the specified decision:

in section 6:

the title " the Ministry of culture, information and the public consent of Republic of Kazakhstan " to state in the following edition: " the Ministry of culture of Republic of Kazakhstan ";

to add with line of the following contents: " State historical - cultural and natural reserve - museum "Tamgaly" 29 ".

6. The present decree inures from the date of signing.

The Prime minister of Republic of Kazakhstan

D. Ahmetov



PLAN OF OPERATIONS

AGREEMENT

between

THE UNITED NATIONS EDUCATIONAL,
SCIENTIFIC AND CULTURAL
ORGANIZATION

And

THE GOVERNMENT OF THE REPUBLIC OF
KAZAKHSTAN

(hereinafter called 'UNESCO')

(hereinafter called 'the Government')

Introduction

WHEREAS the Government has requested assistance from UNESCO for the **Project on the Management, Conservation and Presentation of the Tamgaly Petroglyph Site, the Almaty Region, the Republic of Kazakhstan;**

WHEREAS the Director-General of UNESCO is authorized by the General Conference to receive funds from donors for the purpose of carrying out activities which are consistent with the aims, policies and activities of the Organization;

WHEREAS by virtue of an agreement with UNESCO, the Government of Norway will make funds available to UNESCO to enable UNESCO to assist the Government in implementing the project;

NOW THEREFORE, the Government and UNESCO hereby agree as follows:

Article I

Purpose and description

1. With a view to contributing to the safeguarding and development of the Tamgaly Petroglyph Site, the Almaty Region, the Republic of Kazakhstan, by ensuring the protection, conservation and sustainable presentation of the Site and its maintenance by enhancing national and local capacity for the management and conservation of cultural resources and by contributing to the development of sustainable economic activities in the region through the preservation and promotion of cultural tourism assets, the present project intends to carry out the following activities:
 - (a) Carry out complex scientific investigations including: archaeological, historical and cultural, geomorphic, dendrological, topographic, and others;

- (b) Draw up projects on the historical design of the Tamgaly complex, the conservation of the damaged petroglyphs, the reinforcement of the damage and terraces and the historical atmosphere and landscape;
- (c) Carry out legal and physical protection work in order to prevent further rock slabs to the Tamgaly petroglyphs, through effective and prolonged safety measures;
- (d) Enhance co-operation between national and international specialists and students in conservation and site- and visitor management, and train national specialists to international standards;
- (e) Encourage, facilitate and increase gradual and controlled tourism at the Tamgaly Petroglyph Site, and enhance national and international awareness of this and of other Kazakh cultural-heritage sites;
- (f) Involve the local population in the care of the Site.

Article II

Obligations of the Government

Within the framework of the present project, and in accordance with the project description and the work plan, the Government shall make all necessary arrangements and provide, when needed, appropriate assistance to the project, in particular by:

- (a) The appointment, in consultation with UNESCO, of a team of national experts to implement the project at the Tamgaly Petroglyph Site;
- (b) Making all necessary arrangements for providing logistical and all necessary institutional support, including multiple entry visas, which are not included in UNESCO's contribution;
- (c) Making contributions from the national budget to fund necessary activities and investments that cannot be covered by the Norwegian grant;
- (d) The safeguarding, management and maintenance of the Site during project implementation, including both legal and physical protection; the approval and on-site demarcation of the Site's boundaries;
- (e) Ensuring observance of sanitary and epidemiological norms within the boundaries of Tamgaly complex in accordance with the national legislation (permanent waste removal; the removal of modern refuse, rubbish dumps, archaeological spoil tips and concrete lighting posts from the site);
- (f) Creating favourable conditions for conducting field work and equipping the project executers with technical support and means of communication;
- (g) Providing support and facilitating contacts and co-operation with national and international tourist organizations;
- (h) Developing a transport root and tourist pilgrimage infrastructure to the Tamgaly complex.

Article III

Obligations of UNESCO

1. During the period of the project, and within the framework of the budget estimated at US\$ 101,990 (including 13% programme support costs), as outlined in the Annex to this Agreement, UNESCO shall:
 - (a) prepare the contractual arrangements for the execution and supervision of project activities;
 - (b) monitor the implementation of the project;
 - (c) provide technical and administrative backstopping, make all necessary arrangements to facilitate the project execution, and co-ordinate the work carried out by the related institutions and authorities of Kazakhstan, as well as those done by other organizations at the same project site.

2. The assistance of UNESCO as described in para. 1 above shall be subject to the availability of funds from the Government of Norway and to the decisions of the General Conference of UNESCO, and shall be provided in accordance with the regulations, rules and procedures of UNESCO.
3. Any UNESCO funds not applied by the Government in accordance with this Plan of Operations, or remaining unspent on the completion or termination of the project, shall be returned to the Government of Norway together with any surplus funds held by UNESCO.

Article IV
Equipment, materials and supplies

1. All equipment, materials and supplies provided in accordance with this Plan of Operations shall be devoted exclusively to the execution of the project. Non-expendable equipment with an individual value exceeding US\$1,000 shall remain the property of UNESCO and shall be recorded in its inventory register. On termination of the project, UNESCO shall, in consultation with the Government of Norway, decide on the transfer of the official title of such equipment. The title to all other equipment, materials and supplies is considered to have been transferred to the Government when they are delivered to the project site.
2. In the case of aid furnished by UNESCO in the form of materials and supplies, the Government, in consultation with the UNESCO experts, shall take all necessary measures to arrange for, and bear the cost of, its importation and customs clearance, reception, transportation, handling and storage from the port of entry to the project site, and, after delivery to the project site, its safe custody, maintenance and insurance and, if necessary, its installation, erection and replacement.

Article V
Other conditions

1. Assistance by UNESCO shall not preclude the Government from receiving supplementary assistance from other United Nations Agencies, bilateral programmes, or private foundations.
2. The Government shall give UNESCO information on such assistance applied for or received.

Article VI
Information and reports

1. The Government shall furnish UNESCO with such information as UNESCO may request on the project.
2. Without limiting the preceding statement, in the event that the Government be the project executor, the Government shall submit six-monthly progress reports, including a financial statement, details of the work carried out during the period and of the work planned for the succeeding period.
3. For the purpose of inspecting and verifying the nature, quality and extent of the execution of the project, the Government shall accord to UNESCO or its designated representative(s) access to the project site and to any relevant financial records and documentation. Such records and documentation shall be made available to UNESCO by the Government and preserved for at least five years after the completion or termination of the project.

Article VII

Privileges and immunities

1. The Government of the Republic of Kazakhstan shall apply to UNESCO, its property, funds and assets, and to its officials, and experts performing services on its behalf, the provisions of the Convention on the Privileges and Immunities of the Specialized Agencies, dated from 21 November 1947, and Annex IV thereof, it being understood in particular that no restriction shall be imposed on the right of entry into, sojourn in, and departure from the territory of the Republic of Kazakhstan of UNESCO officials, experts, and other persons performing services on its behalf in connection with this project, without distinction of nationality, if these will not entail threats for the national and economical security of the Republic of Kazakhstan.
2. In order to facilitate UNESCO activities in the framework of the given project, the Government undertakes to exempt UNESCO from:
 - a) any taxes and duties for UNESCO activities and buildings (premises), even if stipulated by the legislation of the Republic of Kazakhstan;
 - b) customs duties and prohibitions and restrictions on imports and exports in respect of articles imported or exported by the UNESCO for its official use and in particular with regard to the equipment or materials, supplies and services necessary for the execution of the project;
 - c) prohibitions and restrictions on imports and exports on such articles as vehicles, office equipment, office furniture, laboratory and special equipment (needed for preservation and restoration of petroglyphs of Tamgaly complex in Kazakhstan), and also spare parts and consumable materials, which will be delivered by UNESCO.
3. The Government of the Republic of Kazakhstan shall take such measures which may be necessary to facilitate the activities under this Plan of Operations and shall grant UNESCO and its personnel or other persons performing services on its behalf such facilities as may be necessary for the speedy and efficient execution of the project. It shall, in particular, grant them the following rights and facilities:
 - a) the prompt issuance without costs of necessary visas, licenses, or permits;
 - b) access to the sites of work and all necessary rights of way ;
 - c) free movements, whether within or to and from the country, to the extent necessary for proper execution of the project and in accordance with the national legislation of the Republic of Kazakhstan;
 - d) any permits necessary for the importation of equipment, materials and supplies in connection with this Plan of Operations and for their subsequent exportation;
 - e) any permits necessary for the importation of property belonging to, and intended for the personal use or consumption of, officials of UNESCO or other persons performing services on its behalf, and for the subsequent exportation of such property.
4. The Government of the Republic of Kazakhstan undertakes furthermore to make appropriate administrative arrangements for the remission or return of the amount of duty or tax when UNESCO makes important purchases for official use of movable or immovable property in the state of Kazakhstan, on which such duties and taxes have been charged or are chargeable.
5. The Government of the Republic of Kazakhstan shall be responsible for dealing with any claims which may be brought by third parties against UNESCO, its property and its personnel or other persons performing services on behalf of UNESCO and shall hold harmless UNESCO, its property, personnel and such persons in case of any

claims or liabilities resulting from activities under this Plan of Operations, except where it is agreed by UNESCO and the Government of the Republic of Kazakhstan that such claims or liabilities arise from the gross negligence or wilful misconduct of such personnel or persons.

Article VIII

Final provisions

1. This Plan of Operations shall enter into force upon the signature of both parties. The Kazakh authorities will notify UNESCO in writing on completion of all relevant Kazakh governmental formalities.
2. This Plan of Operations may be terminated by UNESCO or by the Kazakh Government upon written notice to the other party and shall terminate ninety (90) days after receipt of such notice provided that such termination shall not affect the obligations of the parties under this Plan of Operations in regard to liabilities incurred *bona fide* by either of them under this Plan of Operations prior to any such termination.
3. The obligations assumed by UNESCO and the Kazakh Government under this Plan of Operations shall survive the expiration or termination of this Plan of Operations to the extent necessary to permit the orderly withdrawal of personnel, funds and property of UNESCO and the settlement of accounts between the parties hereto.
4. Disputes, if any, on the interpretation of the Agreement and the implementation of its articles, will be considered and agreed sympathetically by both sides by means of consultations or negotiations.

Done in _____, in duplicate, in English and Russian languages, all texts being equally authentic.

In case of any disputes on the interpretation of this Agreement, the English version shall be considered as the reference text.

Signed on behalf of the United Nations Educational,
Scientific and Cultural Organization:

Signed on behalf of the Government of the Republic of
Kazakhstan:

Name Ms. Birgitte Møller

Name..... Mr. D. Kaseinov.....

Title Director, Division of Cooperation with
Extrabudgetary Funding Sources

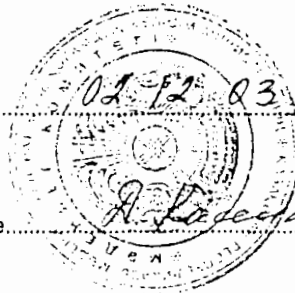
TitleMinister of Culture of the Republic of Kazakhstan..

Date..... 15 Dec 2003.....

Date..... 02.12.03.....

Signature..... .....

Signature..... .....



Drafted November 2001 by
The Directorate for Cultural Heritage
Oslo, Norway, by A-S. Hygen and G. Mandt
Revised by Division of Cultural Heritage, UNESCO

**UNESCO / NORWEGIAN TRUST FUND FOR THE MANAGEMENT,
CONSERVATION AND PRESENTATION OF THE
TAMGALY PETROGLYPH SITE, THE ALMATY REGION,
THE REPUBLIC OF KAZAKHSTAN**

Country / Region: Kazakhstan / Central Asia

Title of Project: Management, Conservation and Presentation of the
Tamgaly Petroglyph Site, Almaty Region, Kazakhstan

International Executing Agency: UNESCO, Division of Cultural Heritage, in
collaboration with UNESCO Almaty office

National Implementation Agencies: The Ministry of Culture, Information and Public Accord
The State Institute for Scientific Research and Planning
on Monuments of Material Culture
Tamgaly Gorge Temporary Management Agency

Donor: The Government of Norway, the Ministry of Foreign
Affairs

Adviser: The Norwegian Directorate for Cultural Heritage

Total Donor's Contribution: US \$ 101 990 (Including 13% Programme Support Cost)

Duration of the project: 2002 – 2004 (3 years)

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Executive Summary

For 4000 years, maybe longer, Tamgaly Gorge has been a sanctuary, a sacred place for human ritual activities. In this gorge, people have lived, found a refuge, performed their ritual acts, and died. They left their careful marks on the landscape in the form of settlement sites, graves and not the least, the carvings in the rocks.

For natural as well as anthropogenic reasons weathering and deterioration seriously threaten the rock carvings of Tamgaly, also the other archaeological remains and the very sensitive landscape itself. Undoubtedly, Tamgaly is a site of major global importance. The purpose of the project is to save it for present and future generations.

The Tamgaly Gorge is an oasis on the Kazakh steppe covering around 30 km², 4 km from the village of Karabastau and 180 km north-northeast of Almaty. The for the most part unspoiled landscape is dominated by coniform hills around a small riverbed, dry for most of the year. While the vegetation is rich and green with flowers, herbs and bushes in spring, it becomes dry and yellow in mid summer. In the gorge, there are rich and varied traces of prehistoric habitation from the Bronze Age – around 4000 years ago - to the Middle Ages: settlement sites, graves and several thousand rock images.

Since the first petroglyphs were discovered in 1957, an impressive amount of multi-scientific work has been very professionally performed within topics like archaeological and geological/paleo-geological surveys, image documentation and recording, excavations, paleo-botanical and –climatic studies, and ethnology. Emergency conservation activities have been tried out in the beginning of the 1990ies, however with little or no success¹.

The condition of the carved rocks is varied; some places not too bad, some places seriously critical, most often gravely worrying. The sandstone is extremely cracked in the rock surfaces as well as deep down in the rocks; there are crevices under the surface threatening to crack open and fall out; there are open exfoliations; and there are lichens and vegetation growing in and out of the wet cracks. Extreme sun exposure and quick and frequent temperature changes, freezing and thawing cycles within and behind the cracked surfaces, neo-tectonic activity and human impact are serious threats to the preservation of the rock art at the site. Immediate as well as long-term measures are vitally necessary in order to save and to be able to present the cultural heritage of Tamgaly Gorge.

The Tamgaly Petroglyph Site represents a vital part of Kazakhstan's Cultural Heritage. The purpose of the project is not only to preserve this rich heritage but also to present it to visitors – national as well as international. The site's sustainable development will be emphasised, notably through protective and prophylactic measures, through improving controled visitor access to the site, through promoting the site as an interesting and beautiful tourist destination, and through the development of the skills and expertise of Kazakh and Central Asian professionals involved in the safeguarding and conservation of Cultural Heritage sites.

The project will thus serve as a focus for the sharing of expertise between international specialists and those from all over Central Asia, building national capacity and acting as a pilot project for other Cultural Heritage conservation projects in the region.

¹ It should be mentioned that this is not particular to this area. In most parts of the world, rock art conservation has gone through several phases of trial and error.

1. Project Background

For the past 15 to 20 years there has been a growing global concern about the difficult preservation conditions for prehistoric and historic rock art – rock carvings / petroglyphs and rock paintings. Not covered by protective layers of sand, soil and turf like many other prehistoric remains, the rock art is openly exposed to the dangers of erosion, weathering, deterioration and human impact. Rock imagery represents a source of knowledge different to that of settlement sites, graves and other constructions. It represents a possibility to create interpretations connected to the mythological, cosmological and ritual world; therefore it also represents a different path to the interpretation of peoples' social, cultural, economic, political and ideological ways of ordering their world.

At the same time, rock art is one of the most attractive cultural heritage categories of all to visitors and tourists. Symbolic imagery is an expression common to mankind, and rock carvings and paintings can be found in all corners of the world. The use of symbols, signs and imagery – regardless of the media in question – is a form of expression which ties people together across time and space. Without proper protective measures, the popularity of rock art represents a danger in itself: the danger of wear and tear, wilful or insensible damage, and overexploitation. Conservation, preservation and conscious short- and long-term management are necessary preconditions for presentation and development.

The combination of the great value of the site, the grave worries about its present and future condition, and a strong wish to present it to the public is the direct background for this project. Realising the global importance of the Tamgaly Petroglyph Site the Republic of Kazakhstan nominated it to the World Heritage Tentative List in 1998, and a close co-operation with UNESCO has since then been established. Through UNESCO, a contact was made with the Nordic World Heritage Office in Oslo in 2000, resulting in a first mission to Almaty and Tamgaly in April 2001 by two archaeologists/researchers/cultural heritage managers representing the Norwegian Directorate for Cultural Heritage. The Norwegian Ministry of Foreign Affairs financed the mission. A Senior UNESCO official from the Division of Cultural Heritage in Paris also joined the mission for its final days.

Tamgaly is a mountain gorge of the Chu-Lli mountains in the Almaty region, 43°48'12" N, 75°32'06" E. The gorge, oriented north-south, is situated 4 km from the village Karabastau and 180 km from Almaty. It is a semi-desert oasis and refuge for many species of rare plants and animals as well as for human beings. The main road to Almaty closes the gorge to the north and a dirt road leads through the gorge itself in a southerly direction to the farm of Mr. Samat Sakiev and his family. A small river, dry for most parts of the year, flows through the gorge between the low, coniform hills. The vegetation consists of grass, flowers, herbs and bushes. There is some neo-tectonic activity in the area.

Over an area of ca. 3 x 10 km there are around 4000 petroglyphs in 7 main groups, groups I, II, III, IV, IVa, V and VI, on both sides of the centre of the gorge. The petroglyphs are found on flat, bare, sandstone panels and slabs in the hill slopes, for the most part facing south, southeast and southwest. In the outskirts of the main groups there are a number of scattered petroglyphs, single motifs here and there, and minor clusters.

Six stylistic and chronological phases can be distinguished: Middle Bronze Age, 14th - 13th cc. BC, Late Bronze Age, 12th – 10th cc. BC Transitional Period (Final Bronze Age, 9th c. BC, Early Iron Age (Saka, 700-200 BC), Wusun and Ancient Turkic Period (until c. 400 AD) and

Medieval². The motifs consist among others of anthropomorphic figures, bulls, mountain goats, horses, chariots, and concentric circles. Several motifs seem to be combined in lively and beautifully composed scenes and narratives. Some are superimposed others, some are retouched and recarved and changed over time. Even though most of the motifs are very shallowly carved, they are for the most part clearly visible since they are made in rock blackened by desert varnish.

Rock carvings are not the only prehistoric remains in the Tamgaly Gorge. There is at least one settlement site and a number of graves from the Bronze Age. The settlement sites in the gorge are difficult to locate since they are covered by thick, deposited fluvial layers; the only one so far identified, in the middle of the western part of the gorge, was found after an intentional search and has been partly excavated. Several of the graves - chambers and cists constructed by stone slabs - have been excavated and studied. The excavated ones are located in the northwest part of the gorge. Some of the grave slabs are carved.

The rock art in the Tamgaly Gorge - in the context of the other archaeological remains, the landscape and the natural and cultural surroundings - is without doubt of high interest and significance, not only in Central Asia, but also in a global perspective.

2. Project Justification

Most of the cultural remains in the Tamgaly Gorge can be dated to the Bronze Age. The settlement site, the excavated graves and most of the rock carvings are dated to this period. Some of the motifs are unique to Tamgaly, some are more or less common to several sites in Kazakhstan and Central Asia, and some are typical motifs belonging to the different chronological phases. The rich and lively scenes and compositions in Tamgaly seem to constitute narratives, most probably connected to myths, rituals and cosmology. As a source material for further studies the Tamgaly material is of undisputed importance.

Two terms may be used to characterise the Bronze Age: communication and change. Bronze items changed hands, salt and foods were bartered, metallurgy spread, ideas, beliefs and symbols shared. There seems to already have existed connections between East and West in the Bronze Age, and there are indications that certain technological as well as cosmological traits were common to the steppe regions and Europe. Close scientific/archaeological contacts between the Central Asian and European countries will obviously be a benefit to all.

The Tamgaly Gorge is a site of universal importance as a human sanctuary for at least 4000 years. Through its combination of settlement sites, graves and petroglyphs in a beautiful natural and cultural landscape, Tamgaly represents a unique combination of high scientific interest and strong potential as a visitor's site. The combination of protection, preservation and conservation on the one hand, and visitation, presentation and tourism on the other, is in many respects a very difficult and critical one. In order to overcome the inherent difficulties, careful consideration, solid short- and long-term planning, flexible and multiple solutions, tailor-made monitoring models, regular management routines and local support are of vital importance.

² The Central Asian chronology differs from the northern European one: Early Bronze Age: ca. 1800-1000 BC, late Bronze Age: ca. 1000-500 BC. The other periods mentioned cover the early Iron Age (500 BC-550 AD) and the beginning of the late Iron Age.

Tamgaly can be translated into English as “the signs”, meaning that the gorge is named after the rock symbols and signs. Except for the small dirt road leading through the gorge Tamgaly is an entirely authentic site in a beautiful natural setting. With its unique combination of nature and culture, Tamgaly could be an ideal target for tourists seeking “the real thing”.

Tamgaly has a large tourist potential, but it needs to be prepared for such an influx. Being located only a few hours drive from Almaty, the country’s commercial and cultural capital, the visitor flow, already increasing year by year, could very soon be quite substantial. Considering the present condition of the petroglyphs, a continued – and even increased – influx of visitors and tourism will be disastrous. The rock art is in urgent need of attention, and the whole site is in need of conservation and protection according to an overall management plan since:

- There is a threat of natural and anthropogenic disturbances to the structure and the surfaces of the engraved stones, which already require emergency action to be taken.
- As the site it is within easy reach of Almaty it is becoming more and more popular, and as its reputation grows, so does the flow of visitors. The development of private tourist agencies bringing visitors to the site has been very rapid, followed by a rise in the rate of deterioration. The regional and local authorities are planning further development of tourist activities here. The need for protective measures and active management of the site is urgent.
- Some of the engravings have been cut out and stolen, consequently a market for stolen pieces has appeared. At least 20 fragments of the petroglyphs have been removed in the last 2 years.
- Some of the visitors, out of ignorance more than malice, carve their own graffiti – often their names and declarations of love on masterpieces over 3000 years old. Some of these have been made directly on top of the ancient carvings. In the last 2 years more than thirty new inscriptions have appeared.
- The question of access also creates other problems – the lack of set footpaths means that tourists can and do clamber all over the rocks, which has resulted in some of them being dislodged, besides the dislocation of loose deposits.
- The quality of the sandstone on which the petroglyphs are carved makes it vulnerable to weathering, and practically all the panels are more or less densely cracked. The surface patina tends to exfoliate from the parent material, and crevices under the surfaces threaten to crack open. One of the most significant of the petroglyph sections, with seven anthropomorphs with rayed heads (group IV), is separated from the rock massif, and is gravely damaged by structural cracks. There is an urgent need to consolidate and conserve this stone face. The loss of important images will inevitably reduce the cultural and scientific value of the site, also its potential for tourism
- The natural weathering processes are speeded up by the growth of plants and lichens, extreme temperature changes and mechanical deterioration caused by frequent freezing- and thawing cycles.

3. Objectives and Goals

There is an urgent need of attention, management and conservation to prevent further damage to the Tamgaly petroglyphs, which represent an important part of Kazakh, Central Asian and World heritage. In addition, the excavated structures – settlement site and graves – need

conservation and protection. In order to be able to combine protection with a growing number of visitors, the following project objectives may be formulated:

Through the protection, conservation and sustainable presentation of the Petroglyph Site of Tamgaly strengthen and increase the national capacity for the management, safeguarding and promotion of the of Kazakh Cultural Heritage.

In order to reach these objectives, the following goals can be formulated:

- Prevent further deterioration of the Tamgaly petroglyphs through active and passive emergency and long-term protective measures
- Provide protection for the other archaeological sites in Tamgaly
- Co-operation and training of national and international specialists and students in conservation and site- and visitor management
- Document the site, the environment, the art, the damage to the art and the causes of it, besides all measures taking place in the area for future evaluation and experience
- Creation and implementation of a Long Term Management Master Plan for the site's conservation, preservation and management including three thematic sub-plans:
 - Management, care and monitoring
 - Documentation, conservation and safeguarding
 - Education, information and tourism
- Gradually and in controlled forms encourage, facilitate and increase tourism to Tamgaly and consciously feed the national and international awareness of this and other Kazakh cultural heritage sites
- Involvement of the local population in the care of the site

4. Expected outputs

At the end of the project, the following outputs are expected:

- A. One of the most important petroglyph sites in the world, testifying to a long period of archaeological and historical interest across several thousand years, will have been secured for future generations
- B. A national strategy and Management Master Plan including sub-plans for the conservation, management and presentation of the Tamgaly Petroglyph Site will have been drawn up and implemented
- C. A Technical Report and inventory concerning the Tamgaly Petroglyph Site, including the training and updating of the skills of the local professionals involved in the safeguarding of the Cultural Heritage, will have been drawn up
- D. National capacity for the preservation of the Kazakh Cultural Heritage will have been greatly developed and strengthened
- E. Local, regional and national awareness of and interest and pride in the Cultural Heritage, not the least among schoolchildren and young people
- F. Promotional activities concerning the value of the Kazakh Cultural Heritage will have been undertaken, notably in the publication of special issues and articles through the UNESCO Media - including those of its International Partners
- G. A lasting, fraternal relationship and collaboration between UNESCO, Kazakhstan and Norway/Scandinavia to the benefit of all, extending to other Central Asian countries and regions.

5. Activities

While most of the activities listed below are directly part of the project, some have to be solved at a level other than the project level – administratively and/or financially, i.e. by Kazakh national and regional authorities.

To obtain the above-mentioned objectives and goals, the following activities are foreseen:

Activity 1: Administration and planning

- Establish national legal protection
- Establish a Temporary Management Agency
- Design and implementation of a Management Master Plan
- Design and implementation of three Management Sub-Plans
 - Management, care and monitoring
 - Documentation, conservation and safeguarding
 - Education, information and tourism
- Contacts and discussions with regional and national tourist organisations (should be facilitated by regional and national support)
- Annual reports, project evaluations, necessary project revisions
- Annual Review Mission (one representative from UNESCO, one from Norway) for an overview of management planning, project accomplishments, problem solving, and annual work plan review (preferably February each year)

Activity 2: Infrastructure, Tamgaly

- Close the gorge at north and south entrances (accomplished 2001)
- New road (750 m) north of the farm property (accomplished 2001)
- New road (3,5 km) north of the protection zone
- Repair of and clearing of rubbish along the entrance road to the site (ca. 5 km) (accomplished 2001)
- New roadsigns from the east and west
- Removal of modern ruins, deserted structures (not worthy of protection)
- Provide electricity
- Drilling of well
- Permanent mud brick building at the farm

Activity 3: Field work – geology, documentation, conservation

- Geological/geo-morphological surveys
- Finish image documentation
- Finish stereo-photogrammetry and panorama overviews (partly accomplished 2001)
- Systematic observation and monitoring of vegetation incl. lichens, damage, cracks, loose parts of rock, human impact
- Report on present over-all condition and give recommendations incl. involvement of the local population
- Damage documentation (cavities, cracks, exfoliations, vegetation, lichens in cracks and on surfaces, human impact)
- Test panels for removal of vegetation in cracks
- Creation and implementation of monitoring models
- Direct conservation

Activity 4: Documentation, office/archive work

- Prepare for damage documentation (photos of rubbings w/. scale)
- Compilation of all documentation and archive information
- Comparisons btw. photos from different years – study development of damage and establish weathering rates
- Multi-scientific, international advice and conservation re: big crack in group IV

Activity 5: Protection of archaeological structures

- Settlement site - plans, decisions, preparations, implementation
- Graves - consolidation, fencing, information boards

Activity 6: Database

- Equipment
- Data input - archaeological, image, archive and damage information, conservation, management and monitoring information

Activity 7: Custodians and guides

- Involvement of the village population (already started)
- Education and training (already started)

Activity 8: Facilities for visitation

- Parkinglots by farm and at camp
- Toilets
- Provide yurtas (the movable houses of the steppe) for sales and food

Activity 9: Education, information and tourism

- Information boards
- Establish visitor's paths with signposts (started 2001)
- Provide binoculars for visitors
- Program for school teachers
- Establish regular bus connections from Almaty
- Plan, prepare and develop sales products

Activity 10: Training and Kazakh national capacity building

- Visit from Norway – 2 experts. Training in conservation, damage documentation and lichenology (preferably with involvement from Khyrgyzstan, Uzbekistan and Russia/Siberia)
- Visit to Norway and Sweden (Alta, Vingen, Tanum plus Oslo) – 3 persons (not included in this budget)
- Yearly visit from Norway, management planning and project support – 1 person

Activity 11: Publications

- Produce an information leaflet in Russian, Kazakh and English
- Produce a guidebook in Russian, Kazakh and English
- Publish a Technical Report on the project activities and its execution
- Publish a Final Report with evaluation of the project

6. Roles, obligations and responsibilities

Committee of Culture

- Implementation Agency with responsibility for the project, through NIPI PMK
- Supervision of the project
- Approval of plans, proposals and solutions
- Quality and budget control
- Annual progress reports

Temporary Agency for the Management of the Petroglyph Site of Tamgaly, at NIPI PMK

- Organisation and administration of the project
- Planning (Master Management Plan with sub-plans)
- Implementation of the plans
- Reports to the Committee of Culture, through NIPI PMK

NIPI PMK

- Co-ordination of the project and keeping account
- Communication with all institutions and individuals involved
- Organisation of expert meetings for discussions of current scientific and technical matters, plans and proposals
- Quality control through monitoring and periodical evaluation

The Norwegian Ministry of Foreign Affairs

- Funding, based on periodic reporting and approved accounts

The Norwegian Directorate for Cultural Heritage

- Provides expertise and advice
- Collaborates with UNESCO on annual programs and reports
- Reports on request to the Donor on the progress and the quality of the project

UNESCO, Division of Cultural Heritage in collaboration with UNESCO Almaty Office

- Serves as Executing Agency
- Technical, administrative and logistic programme support
- Quality and budget control
- Collaborates with the Directorate for Cultural Heritage on the preparation of annual program and progress reports
- Annual Review (with donor) with examination of the project's progress and achievement
- Preparation and publication of the final report

7. Reports and Monitoring

The Kazakh National Project Co-ordinator, who will be appointed by UNESCO in consultation with the Kazakh and Norwegian authorities, shall submit an Annual Progress Report to UNESCO through the UNESCO Almaty Office, and UNESCO shall then submit an Integrated Report to the Norwegian Government. At the end of the project, UNESCO, in close collaboration with the Kazakh authorities, will organise a Norway – UNESCO Joint Mission for the evaluation of the Project and a tripartite meeting shall be held on site and in Almaty during the mission.

8. Work Plan³

Activity	2002		2003		2004
	1. part	2. part	1. part	2. part	1. part
Administration and planning					
Establish legal protection					
Establish Temporary Management Agency					
Design of Management Master Plan					
Design of 3 management sub-plans					
Contact with tourist organisations					
Evaluation and reports					
Visit to Norway, project participants					
Visit from Norway, management					
Permanent management structure and org.					
Conference					
Infrastructure, Tamgaly					
Toilets					
Well					
Road works					
Parking lots					
Removal of modern ruins					
Electricity					
Plan and build permanent brick building					
Scientific- and field work					
Geology and geo-morphology					
Compilation of documentation etc					
Archaeological documentation					
Establish test areas, models for monitoring					
Report on condition					
Monitoring					
Visit from Norway, conservation					
Damage documentation					
Direct conservation					
Protection of archaeological structures					
Management database					
Facilities for visitation					
Information boards					
Visitors' paths					
Binoculars					
Development of sales products					
Yurtas					
Regular bus connections					
Education, information and tourism					
Involvement of local population					
Training of custodians and guides					
Information leaflet					
Guide book					
Devel. And implement. of school's programs					

³ The items listed are those which are recognised as necessary work and investments. The list cannot be directly compared with the budget for the Norwegian support.

9-1. Budget

The following necessary activities and investments, which cannot be covered by the Norwegian donation, are expected to be solved by the Kazakh national/regional administrations and/or by other possible donors:

- New road north of the protection zone
- Road signs
- Electricity
- Permanent water supply
- Infrastructural measures
- Certain expenses connected to documentation work and materials
- Conservation of Group IV (very high priority)
- Scientific conference
- Work and materials connected to visitation to and marketing of the site

Income from visitors should be directly fed back into the project from the start

Within the frame of the Norwegian donation no room has been found for a visit to Norway and Sweden for three Kazakh project participants, preferably in 2002. If additional funding can be found by the parties involved, such a visit, at an estimated cost of ca.8-9.000 US \$, should be given high priority. Should the visit be possible, it will be arranged directly by the Directorate for Cultural Heritage.

9-2. Budget Details in US\$

BL	Activity	Total	2002	2003	2004
10	PROJECT PERSONNEL				
11	International experts	17,000	12,000	2,500	2,500
19	<u>Sub-total</u>	<u>17,000</u>	<u>12,000</u>	<u>2,500</u>	<u>2,500</u>
20	SUB-CONTRACTS				
21	Activity Financing-contract -1 (Project co-ordination, administration, management, planning, etc...)				
		17,500	7,000	7,000	3,500
21	Activity Financing-contract -2 (Conservation and geological field work, etc...)				
		30,700	12,520	12,120	6,060
21	Activity Financing-contract - 3 (Activities for Education, information and tourism capacity building)				
		1,300	800	0	500
21	Activity Financing-contract -4 (Activities on site for Emergency protection of archaeological structures, etc ...)				
		23,760	12,000	9,760	2,000
29	<u>Sub-total</u>	<u>73,260</u>	<u>32,320</u>	<u>28,880</u>	<u>12,060</u>
.....					
	Total	90,260	44,320	31,380	14,560
	Support Costs 13%	11,730	5,760	4,080	1,890
	Grand Total	US\$ 101,990	50,080	35,460	16,450

Appendix 3.6. Plan for collaborative activities to be implemented by the State Cultural and Natural Reserve-Museum Tamgaly and the State Institute for Scientific Research and Planning on Monuments of Material Culture (NIPI PMK) during 2003-2005

№	Activities	Years			Organizations
		2003	2004	2005	
I	Organization and planning of activities of the Reserve-Museum Tamgaly				
1	Implement the co-operation Plan for the Collaborative Activities of the Reserve-Museum and NIPI PMK				NIPI PMK and Reserve-Museum
2	Participate in the work of the ICOMOS evaluation mission (6-12 December 2003). Finalize the Plan for Collaborative Activities aiming to prepare the Site for the inclusion in the WH List				NIPI PMK and Reserve-Museum
3	Discuss, finalize and agree on the Management Plan (Master Plan and 3 Sub-plans and submit it for approval by the Ministry of Culture; and submit it to the WH Centre				NIPI PMK and Reserve-Museum
4	Organize the temporary offices in Uzun-Agash and in Almaty				Reserve-Museum
5	Complete the staff of the Reserve-Museum				Reserve-Museum
6	Elaborate and sign the Agreement on co-operation between Reserve-Museum and NIPI PMK for the years 2003-2005.				
7	Implement the collaborative activities to improve the Site's safeguarding and protection				NIPI PMK and Reserve-Museum
8	Transmit a part of the site personnel from the staff of NIPI PMK to the staff of the Reserve-Museum				NIPI PMK and Reserve-Museum
9	Prepare the list of necessary equipment for the Reserve-Museum				NIPI PMK and Reserve-Museum
10	Provide the logistic basis of the Reserve-Museum				Reserve-Museum
11	Elaborate the Regulations of the Reserve-Museum in accordance with the existing national legislation and with the World Heritage Convention				NIPI PMK and Reserve-Museum
12	Prepare the annual reports with work-plans for the following year of the Reserve-Museum for the Ministry of Culture				Reserve-Museum
13	Elaborate and implement the Plans of Training Activities for the capacity building of the Reserve-Museum's staff				NIPI PMK and Reserve-Museum

14	Define the boundaries of, and the specific regulations for the additional Zones of Legal Protection around the territory of the Reserve-Museum, and submit it for approval by the Almaty Oblast Government					NIPI PMK and Reserve-Museum
II	Development of infrastructure for the Reserve-Museum Tamgaly					
1	Complete the formal designation of land of the protection area (3800 ha; plus an additional plot for the Reserve-Museum office and visitor centre near Karabastau)					Reserve-Museum
2	Demarcate on-site the boundaries of the Reserve-Museum territory					NIPI PMK and Reserve-Museum
3	Work out and discuss alternatives for the architectural design of the Reserve-Museum office and visitors' centre					NIPI PMK and Reserve-Museum
4	Clear the territory from the modern ruins and remains, restore the landscape					NIPI PMK and Reserve-Museum
5	Design the visitor routes in conformity with the protection zoning and regulations					NIPI PMK and Reserve-Museum
6	Work out a project design for the equipping of the Site with services, facilities and utilities; in accordance with the Management Plan and the protection zoning and regulations					NIPI PMK and Reserve-Museum
7	Work out and implement the maintenance program for all the territory of the Reserve-Museum					NIPI PMK and Reserve-Museum
III	Conservation					
1	Create the conservation laboratory within the Reserve-Museum					Reserve-Museum with the advice of NIPI PMK
2	Revise, improve and implement the conservation monitoring program					NIPI PMK and Reserve-Museum
3	Continue the preparation of the damage record on the petroglyph surfaces					NIPI PMK and Reserve-Museum
4	Complete the emergency conservation activities on petroglyphs and other archaeological sites, and continue the conservation					NIPI PMK and Reserve-Museum

	experiments at the trial site					
IV	Scientific Research & Documentation					
1	Become acquainted with materials and documentation on the Tamgaly Site (inventory, WH Nomination dossier, UNESCO/Norwegian FIT Project Document, technical reports)					Reserve-Museum
2	Continue the documentation of the archaeological sites (mapping, photo, panoramic drawings, verbal)					NIPI PMK and Reserve-Museum
3	Load data into the Management & Conservation Database					NIPI PMK and Reserve-Museum
4	Elaborate and start implementation of the program for further scientific research and studies (incl. archaeological, geological/geo-morphological, botanical and conservation research) related to the needs for site conservation and presentation					NIPI PMK and Reserve-Museum
V	Tourism, Education, Public Awareness and Local Involvement					
1	Work out a Plan for Tourism for the Reserve-Museum for the years 2004 – 2005					NIPI PMK and Reserve-Museum
2	Revise, improve and implement the visitors' monitoring program					NIPI PMK and Reserve-Museum
3	Work out and implement the program for the gradual increase of local involvement in the safeguarding and maintenance of the Site					NIPI PMK and Reserve-Museum
4	Evaluation of visitor guidebook and map; publication of other materials					NIPI PMK and Reserve-Museum

12th December 2003

Director
State Institute for Scientific Research and
Planning on Monuments of Material Culture
A.B. Konusbaev

Director
State Cultural and Natural Reserve-Museum of Tamgaly
S.B.Kemelbaev

MANAGEMENT PLAN

FOR

THE ARCHAEOLOGICAL LANDSCAPE

OF

TAMGALY

Management Sub-plan 1:
Documentation, Conservation and Safeguarding

Management Sub-plan 2:
Management, Care and Monitoring

Management Sub-plan 3:
Education, Information and Tourism

MANAGEMENT PLAN

FOR

THE ARCHAEOLOGICAL LANDSCAPE

OF

TAMGALY

Management Sub-plan 1

Documentation, Conservation and

Safeguarding

2004

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1 Introduction

Several years of scientific excavations, documentation and research in and related to Tamgaly within a variety of scientific fields, have yielded a number of reports and publications, besides a lot of primary documentation material. Still many questions need to be answered, and the necessary documentation material is not yet complete. Continued data catchments and scientific treatments are of high importance in order to provide the necessary background for all future activities in Tamgaly. Therefore, research strategies and actions play an important part in this Sub-plan.

Special attention is given to documentation related to conservation issues and to safe conservation practices. Due to several negative natural and anthropogenic factors, the surfaces with petoglyphs need particular attention and care. Questions concerning conservation methods and materials are much debated in the international rock art community, and archaeologists and conservationists all over the world struggle with the same basic questions of deterioration and weathering causes and remedies. Even though experiences are compiled and of relevance, experiences from one site and one set of conditions cannot automatically be applied elsewhere. No site is exactly the same as another, and climate, geology, atmospheric and all other conditions vary from place to place. This basic fact implies that there are major difficult conservation challenges to face and deal with in Tamgaly.

The fact that Tamgaly is a landscape with both cultural and natural significance implies that sometimes incompatible factors of preservation and use have to be balanced and harmonized. The problem of holistic safeguarding is that activities within one field of activities, although positive in this particular field, may yield unforeseen or even negative consequences in another. In order to manage this situation in practice, the different parameters and processes must be recorded, combined, interpreted and understood – and met with practices of the highest scientific and ethical quality.

Natural deteriorating factors are also threatening the other archaeological structures in Tamgaly, in particular the excavated ones: graves and settlement site. Rain and frost cause erosion and degradation. Protective measures imply research, documentation, conservation, careful planning and implementation of measures.

Notice that documentation, issues and activities related to ethnology and sociology is included in Sub-plan 2 since this topic for the most part is relevant to site management.

2 Documentation

2.1 Background

2.1.1 Present situation

The documentation available today is represented by:

- Topographical and special maps;
- Drawings and written reports from archaeological excavations;
- Special reports concerning geology, botany, landscape studies, geo-morphology, geo-chemistry, etc.

The major part of the documentation is related to and/or correlated to petroglyphs. Mainly the main groups I-V are systematically documented, cf. the following table showing the present situation:

Types of basic documentation	Group I	Group II	Group III	Group IV	Group V	Group VI	Group IVa
Topographical plans with location of surfaces							
Indexed photographs (according to surfaces on the topographical plans)							
Graphical panoramas							
Photos* 1957	**	**	**	**	**	**	**
Photos* 1992-1994	14	107	33	2	26		3
Photos* 2001-2004	34						
Tracings based on rubbings of surfaces	17	37	23	13	25	2	3
Standardized verbal descriptions	111	432	444	751	1024	234	113

* All photos are scaled

** Not calculated, but altogether c. 200

Further descriptions of the basic documentation material are given in chapter 2.2.2.b.

The reports from studies within several fields of science give the premises for all on-site measures directed towards conservation and safeguarding of the natural and cultural values.

The multi-disciplinary geo-archaeological approach to scientific research and methodology applied in Tamgaly since the beginning of the 1990s, has allowed for the collection of a considerable amount of scientific material, without having to do a lot of excavations. Altogether, today this makes Tamgaly one of the best and most thoroughly studied sites in Central Asia. Besides, during the last 15 years, the cross- and multi-scientific contextual method for work was shaped and has now become the model approach. This experience, enriched through international participation and co-operation should serve as the scientific and methodological basis for the education and training of specialists in the field of research and management of rock art sites in Central Asia.

2.1.2 Issues and objectives

Issues

Management, conservation and presentation of rock art sites require documentation of high quality and completeness. The specialists need basic documentation not only for the recording of condition and interventions but also for monitoring and reporting purposes in order to be able to reveal possible changes of previous interventions. Proper documentation is of particular importance also for those specialists dealing with planning for visitors' facilities, the preparation of tourist access paths to monuments, site presentation, etc.

Although rock art is a particularly vulnerable cultural heritage category, in Tamgaly the situation is that not only the rock art but also the other archaeological monuments and natural

factors are in need of special attention and care. Both individual and contextual documentation and research is needed in order to provide the bases for sustainable protective measures.

The basic documentation consists of:

- Archaeological registration mapping;
- Topographical plans of the location of petroglyph groups, other archaeological structures and the distribution of natural features;
- Indexed photographic and/or graphic panoramas of groups with petroglyphs;
- Indexed parallel photographs and graphic representations of surfaces with petroglyphs;
- Standardized descriptions of the condition of petroglyph surfaces and images;
- Standardized descriptions of archaeological, geological, botanical, zoological, tourist related and other features.

Objectives

Through the supplementing and completion of all documentation materials within all relevant fields, the objectives are to obtain high quality documentation for the purposes of research, decision making and activities concerning conservation, safeguarding, monitoring, maintenance and presentation of the Tamgaly Archaeological Landscape.

2.1.3 Expected outcome

- Completion of field-work for primary data collection;
- Intra- and cross-scientific compilation, systematization, interpretation and database loading of all documentation material;
- Provision of standard reference material for the implementation of conservation, management, monitoring and safeguarding activities and routines.

2.2 Recommended strategy and actions

2.2.1 Research strategies

From the discovery of Tamgaly in 1957 and until the end of the 1980s, the archaeological studies for the most part consisted of surveys and the documentation of the main groups of petroglyphs, and in addition surveys and excavations of burial grounds and settlement sites. The scientific research got a more systematic contextual and cross-scientific character from the beginning of the 1990s, from which it further developed. Today, archaeological and geological perspectives are combined within the same framework of conservation and presentation of the Site.

The territory of Tamgaly is quite well surveyed and studied. There are 34 settlement sites, 30 burial grounds from different periods and about 50 localities with petroglyphs. Excavations have been conducted of 64 graves at 7 Bronze Age burial grounds and 20 kurgans at 5 Early Iron Age burial grounds. In addition, two multi-layered settlements, Tamgaly I and V (dated to Sakae period and 10-20th cc.), have been excavated. The total excavated area of settlements is 80m² (10%).

2.2.1.a. Geo-archaeology

The level of knowledge of the Tamgaly Archaeological Landscape, with its historical and cultural context of the natural environment in general is for the moment sufficient for the solving of present tasks related to preservation, management, scientific interpretation and elaboration of a basis for site presentation. Naturally there are a number of problems of scientific nature which are discussable and not solved, due to insufficiency of archaeological and historical data; in particular the Early Iron Age sites, which were mainly studied in 1950s and 1970s. Also, the burial grounds of the Middle Ages are not proved yet. Despite the fact that several Bronze Age burial sites in Tamgaly have been detected and at various levels researched, with the exception of the Tamgaly I settlement the locations of the most ancient settlement sites are not yet proved.

The above-mentioned questions and challenges, as well as many others, should be a part of the future program for the scientific research of the Tamgaly Site.

The strategy of scientific research in Tamgaly should be based on the following two preconditions:

- Priority should be given to the preservation of the Site in its present state, as primary source material;
- The presence of such important resources gives a good opportunity for, and should be used for scientific and educational purposes within a number of fields.

This implies:

- Limited application of any documentation and scientific methods causing damage to or degradation of the primary source material; whether connected to conservation, excavations or other activities;
- Excavations should be allowed only in special cases justified by the need to solve conservation or presentation problems of special importance; however, this should be in accordance with specially prepared and approved plans and safe and careful non-destructive techniques based on geo-archaeological methods and questions and with holistic aims;
- Combination of scientific, methodological and applied questions and tasks during the development and implementation of research programs, plans for the development of education and visitation to the Reserve-Museum and for site presentation;
- Involvement of Kazakh and international specialists, local and foreign recruits/participants, organization of scientific seminars and training activities conferences, etc.
- Founded on NIPI PMK and the Reserve-Museum, creation of a rock-art sites' center for scientific research and presentation.

2.2.1.b. Geology and geo-morphology

Continuation of the geological and geo-morphological surveys and studies is necessary for the further development of the existing knowledge and understanding of respectively destructive and favorable natural and anthropogenic forces. This will provide the basis for further decisions concerning preventive measures. Special attention should be paid to definitions of the most endangered parts from the point of view of their instability and possible destruction (for instance in the case of earth quakes).

2.2.1.c. Botany, zoology and ecology

Zoological studies, in combination with botanical and ecological investigations, will aim to provide the background for decisions concerning the preservation of the Site's bio-diversity and the sustainability of the landscape as a whole. The animal species inhabiting Tamgaly Gorge and its surroundings are typical for this kind of landscape, and preventive measures are necessary to counteract any reduction in their populations; for instance caused by the impact of increased tourism.

Ecological surveys and studies should be aimed to identify the potential threats to the water sources and other important parts of the natural and inhabited landscapes, with the purpose of creating threat prognoses.

2.2.1.d. Conservation

The basic objective of conservation research is to be able to choose the most efficient and non-destructive conservation techniques. Proposals for research activities related to the elaboration of conservation techniques for Tamgaly are:

- Testing of new conservation compounds and techniques at the trial site;
- Adaptation of the compounds developed by the State Institute of Scientific Research of Conservation in Moscow for rock art sites of Siberia, to local rock composition and conditions. This work should consist of laboratory research and testing, practical testing out at the trial site, monitoring, and further elaboration of technical recommendations for the Tamgaly petroglyph sites;
- Development of new non-toxic compounds, which are needed for conservation purposes in Tamgaly. This direction of research was selected already by the end of the 1990s. These new compounds should not consist of the synthetic polymers (the compounds applied in the 1990s were prepared with toluene, which is a toxic solvent), and should be water-soluble. The compounds made by the Conservation Institute in Moscow are mainly prepared with water, with only a small addition of toluene. In this respect, the Mowilith applied in Norway is good because it is water-soluble. Unfortunately, under the influence of strong sun heat it melts, and its possible use in Tamgaly must be limited to such parts where the sun impact is weak;
- Research related to destructive factors:
 - o Measuring of the speed of damp rising in the sandstone is necessary to make decisions concerning the water which collects in depressions close to rock surfaces with images;
 - o The pH-values of soil with higher plants and the measuring of the chemical effects of these plants, in order to decide whether they must be removed;
 - o Chemical analyses of the soluble salt content in the soil (at every petroglyph group, the settlement sites and the cemeteries);
 - o Definition of the salt content of rocks with petroglyphs;
 - o Chemical analyses of water running over rock surfaces;
 - o Microbiological analyses of samples taken from loose rock surface material;
 - o Elaboration of methods of measuring thermal deformations (changes of the width of cracks, in patina development compared with non-patinated rock, etc.).

2.2.2 Preparation of Site documentation

2.2.2.a. Scope and structure

(Management Master Plan Appendix 2.1: The documentation chart of the Rock Art Site)

The documentation material for Tamgaly is structured into four levels: *Site* (in geo-archaeological context) – *Group* (locality) – *Surface* (surface, fragment, boulder) – *Image* (figure). The scope of this structure is to include and combine all documentation data (archaeological, geological, geo-morphological, landscape, etc.), related to the four levels, of relevance to all questions, measures and practices (planning, interventions, monitoring). All existing data are about to be loaded into the database, for easy access, data correlations, research and practical application.

Site

The data consists of aerial photos, topographical and special topic maps at various scales, and different plans. Standard forms are included for the basic inventory (site passport) and management planning.

Group

The data consists of graphic reconstructions and photographic records (panoramas with the exposition and indexing of surfaces), records of damages and threatened parts and documentation of interventions. Standard forms are included for monitoring (state of conservation and after interventions).

Surface

The data consists of indexed photos and graphic representations of the surfaces with records of damages. Standard forms are included for monitoring (state of conservation and after interventions).

Image

Information is standardized and related to photos and drawings (based on tracings and/or rubbings). In addition, there are correlation tables and schemes for style, iconography and dating/chronology.

All four levels are interconnected for easy access and correlation.

2.2.2.b. Basic documentation

Archaeological site map

(Appendix 1.4: Map 4)

The archaeological site map is one of the most important scientific sources and this is the obligatory kind of documentation when one has to deal with defined site boundaries of a site. It gives the preconditions for planning of management and conservation measures within a number of issues and these interconnected, development for tourism, etc. Depending on the different aims and conditions, the maps may be more or less detailed.

Topographic plans of petroglyph groups

The topographic plans of petroglyph groups have great potential as a scientific source, offering a good possibility to study and analyze location, orientation data, the connections between the different groups, and the intentions behind their localization. In addition, this documentation provides the necessary background for the design of visitors' routes, and is

necessary for the preparation and implementation of conservation plans for the petroglyph groups, the organization of protection measures, organization of monitoring, etc.

Indexed photographic and graphic panoramas of the petroglyph groups
(Appendix 2.2 and 2.3)

This kind of documentation is also multi-functional and together with other documentation material (like plans, maps etc), they provide for the possibility to solve specific problems of management and monitoring

The main role of panoramas is the visual consolidation of the established petroglyph surface indexation. The photographic panoramas constitute an important addition to the topographic plans, where damaged and threatened parts can be mapped (water damage, movement/displacement of loose rock material, etc.). Monitoring and conservation plans are elaborated on the bases of this documentation, and in addition on the recording of previous interventions. The photo-panoramas are also very useful for the design of tourist routes

For the inter-disciplinary work of archaeologists, conservationists and architects, these panoramas give a possibility to define objects to be shown to visitors, or the opposite, the possibility to require limited or prohibited access. Optimal alternatives can be chosen and mapped for the organization of visitors' movements and places from where they can observe the petroglyphs, which are safe both regarding site preservation and visitors' requirements and safety.

Indexed parallel photographs and graphic representations of surfaces
(Appendix 2.6)

This category of documentation material represents the main type of documentation of images. On scaled photos both images and damages to the substrates are represented. Damages are detected and recorded during special surveys of surfaces. The practical damage documentation work in Tamgaly demonstrates, however, the necessity of both forms of documentation (photo and graphic representations). The drawing of damages must be prepared on the background of rubbings for maximum precision. The chart of legends is an obligatory attachment to damage documentation material.

Standardized descriptions
(Appendix 2.6)

Verbal descriptions of the condition of the petroglyph surfaces and images constitute a necessary addition to the previously described types of visual documentation.

The verbal description structure comprises all main important parameters characterizing the condition of the surfaces and the images. The standard definitions and measurements of such parameters, such as orientation, exposition, angle/inclination, development, condition and color of patina, character of superimpositions and re-pecking, image production techniques, etc. are implemented through methods which to a considerable degree reduce the dependence on the individuality of the recorder.

The table format for recording is simple and convenient for field work and also for the further loading of the data into the database.

2.2.2.c. Archaeological documentation

As the table in ch. 2.2.1 shows, the archaeological documentation of all surfaces of all the main groups and scattered minor groups is not fully completed. Its completion is a question

of available resources. It is of special priority to complete the archaeological documentation of the main groups.

Besides of verbal descriptions according to the standard format, the documentation consists of pictorial representation. The method/s are chosen according to the properties of the images and the quality of the surface: Photo, and or tracings based on rubbings (in this latter case the rubbings constitute the primary documentation material).

2.2.2.d. Conservation documentation

No conservation measures are performed on petroglyph surfaces without documentation before, under and after their implementation. The pictorial and verbal group-, surface- and image documentation serves as background material for damage documentation (Management Master Plan, appendix 2.6) and conservation decisions. Interventions are added to the records as primary documentation of the interventions, and acts as a starting point for regular monitoring. The same documentation methods are applied in connection with masking or removal of graffiti.

The same principle is and will be applied to the conservation and monitoring of the other archaeological monuments.

2.2.3 Documentation measures

Preparation of instruction manuals

- Preparation of a manual with instructions for the filling in of the standard documentation form for rock surfaces;
- Preparation of an instruction manual for damage documentation and the recording of interventions;
- Preparation of an instruction manual for monitoring, especially targeted at the Reserve-Museum staff.

Documentation of condition of whole petroglyph groups on panorama maps at scale 1:100

- Marking of parts to be specially monitored, including those with previous interventions;
- Marking of water distribution of the main petroglyph groups based on monitoring results;
- Marking of the movements of loose material at the main petroglyph groups based on the results of geological surveys;
- Panorama map of the trial site, marking the conservation test areas;
- Of first priority for documentation of condition are now groups IIa, IVa, VI and VII (north of the Tamgaly canyon) and two groups without names near the settlement Tamgaly I.

Documentation of condition of image rock surfaces

- Damage documentation, including the filling in of the standard description forms for all the main groups in order to define the most endangered parts and parts requiring special monitoring;
- Preliminary visual evaluation, recording and damage documentation of petroglyph groups which are potentially endangered: groups IIa, IVa, VI and VII and of two groups without names near settlement Tamgaly I.

Documentation related to proposals for the protection of settlement Tamgaly I

- Together with geologist, document degrading processes with the purpose of establishing a permanent protective structure, possibly a temporary protection until full implementation.

Documentation related to the protection of tombs at burial grounds

- Document degrading processes at burial grounds Tamgaly II and Karakuduk II with the purpose of protection.

2.3 Timeframe and responsibilities for implementation

Issues	SHORT TERM		MIDDLE TERM
	2004	2005	2006-2008
Survey			Remaining topographical survey of archaeological monuments
<i>Responsibility</i>			<i>NIPI PMK</i>
Indexing	Peripheral petroglyph sites		
<i>Responsibility</i>	<i>NIPI PMK</i>		
Basic documentation		Peripheral petroglyph sites	Peripheral petroglyph sites
<i>Responsibility</i>		<i>NIPI PMK and Reserve-Museum</i>	<i>NIPI PMK and Reserve-Museum</i>
Up-dating of stereo-photo, panorama and plans	Group IV, surface 118		
<i>Responsibility</i>	<i>NIPI PMK</i>		
Photo recording	Main petroglyph groups	Other sites	Other sites
<i>Responsibility</i>	<i>NIPI PMK</i>	<i>NIPI PMK and Reserve-Museum</i>	<i>NIPI PMK and Reserve-Museum</i>
Verbal documentation (standard form)	Petroglyph surfaces	Petroglyph surfaces	Petroglyph surfaces
<i>Responsibility</i>	<i>NIPI PMK</i>	<i>NIPI PMK and Reserve-Museum</i>	<i>NIPI PMK and Reserve-Museum</i>
Up-dating of indexes	Group IV and loose fragments at all groups		
<i>Responsibility</i>	<i>NIPI PMK</i>		
Database	Loading of data to database	Loading of data to database	Loading of data to database
<i>Responsibility</i>	<i>NIPI PMK and Reserve-Museum</i>		
Documentation materials 1957-2000		Preparation of all materials for loading in database; begin loading	Loading of data to database
<i>Responsibility</i>		<i>NIPI PMK</i>	<i>NIPI PMK</i>
Other material		Loading to database of excavated archaeological material, and other scientific material	Loading of all material to database
<i>Responsibility</i>		<i>NIPI PMK</i>	<i>NIPI PMK and Reserve-Museum</i>

Geo-archaeological, geological and geo-morphological research, related to conservation and presentation		Settlement Tamgaly I; burial grounds of Karakuduk II Tamgaly I	Elaboration and implementation of plans for further research; conservation of settlement Tamgaly I and burial grounds Karakuduk II and Tamgaly I
<i>Responsibility</i>		<i>NIPI PMK and Institute of Geology in co-operation with Reserve-Museum</i>	<i>NIPI PMK and Institute of Geology in co-operation with Reserve-Museum</i>
Conservation research related to burials and settlement		Settlement Tamgaly I; burial grounds Karakuduk II and Tamgaly II	Elaboration and implementation of plans for further research; conservation of settlement Tamgaly I and burial grounds Karakuduk II and Tamgaly II
<i>Responsibility</i>		<i>NIPI PMK</i>	<i>NIPI PMK</i>
Geological and geo-morphological research of main groups of petroglyphs, related to conservation and presentation	Group II, III, IV and specifically Group IV surface 118	Groups IV, V and IVa; specific geological studies on rock stability	Elaboration and implementation of plans for further research
<i>Responsibility</i>	<i>NIPI PMK and Institute of Geology in co-operation with Reserve-Museum</i>	<i>NIPI PMK and Institute of Geology in co-operation with Reserve-Museum</i>	<i>NIPI PMK and Institute of Geology in co-operation with Reserve-Museum</i>
Botanical, zoological and ecological studies and documentation		Continue studies and complete maps for vegetation, zoo-geography, land erosion and water resources; reports	
<i>Responsibility</i>		<i>Institute of Geology</i>	
Inter-disciplinary research for definition of additional boundaries	Compilation of data	Field surveys, analyses and reporting; mapping of proposals	
<i>Responsibility</i>	<i>NIPI PMK</i>	<i>NIPI PMK; local authorities</i>	
Damage documentation of petroglyphs		Group I: surface 9, 11, 12, 14, 17, 18, 21-30, 33	
		Group II: Surface 4, 6-8, 10, 12, 14, 19, 20, 23, 24, 26, 27, 29, 31, 33-35, 41-44, 47, 48, 50-57, 59, 61, 63-69, 71-84, 86-112	
		Group III: surface 1-10, 12-18, 20-22, 24-40, 42-60, 62-65, 67, 68, 70-75	
	Group IV: All surfaces		
	Group V: surface 1-8, 10-15, 17-29, 32-60, 62-85, 87-89, 91-102, 105-107, 109		
<i>Responsibility</i>	<i>NIPI PMK and Reserve-Museum</i>		

Monitoring of factors and causes for deterioration	Atmospheric factors		
		Distribution of loose material and water-flow over slopes of groups ii, III, IV, V	
<i>Responsibility</i>	<i>NIPI PMK and Reserve-Museum</i>		
Archaeological structures	Documentation of degrading factors, cemeteries Tamgaly II and Karakuduk II and settlement Tamgaly I	Proposals (see ch. 3.3.)	
<i>Responsibility</i>	<i>NIPI PMK, Institute of Geology</i>		

Long-term perspectives

- Continue to collect documentation material and continuously load into the database;
- Repeated comparative studies and research activities directed towards development, monitoring and evaluation of activities, measures and policies.

3 Conservation and safeguarding

3.1 Background

3.1.1 Present situation

Conservation of the Tamgaly Site has been carried out during two periods: the first in 1990-93 and the second in 2001 until present.

The works of the first period were implemented within a national project framework in Kazakhstan. The conservation activities comprised the following kinds of work:

- Gluing of broken fragments on some surfaces which were in a state of destruction;
- Consolidation of surface crusts;
- Filling of cracks;
- After laboratory analyses and testing, silicium-organic substances were selected for conservation;
- The experimental work was implemented in 1992. During the same period the geological and geo-chemical surveys and studies were performed for the main petroglyph groups.

In 1992, the following work was carried out at the northern part of Group II: cleaning of sediments from the surfaces; evaluation of the state of conservation when they detected some loose fragments with images; water draining through the elimination of water collecting in depressions, by adding some stone material on top levels to divert water flow, and through the separation of strong water flows by inserting stones; replacing loose fragments to their original positions; masking some of the modern graffiti; and filling in of a large number of cracks. The conservation compound contained silicium-organic substances to which crushed stone or clay were added: for long-term durability they added crushed stone, for short-term durability they added fired clay for the purposes of monitoring and reversibility (this last method was also applied for the redistribution of water flows).

In 2002 the treated parts were monitored and reported. Concerning the parts that were conserved for long-term durability, the state of conservation was found to be satisfactory. The temporary measures worked only for a short time and demonstrated the perfect reversibility of the use of toluene solvents.

Nevertheless, the conclusion was that such large-scale interventions should not be tolerated anymore – the interference was too large. Also, considerations were that too much was cleaned and too large parts of the surfaces were cleared. In 2002 the state of conservation of Group II was photographed and drawn onto a 1:100 topographical plan.

The second period of conservation works started in 2001. In connection with the UNESCO/Norwegian Project conservation activities got a more systematic and regular character. The works started with surveying, recording and monitoring of the condition of rock surfaces. Testing of new conservation material was implemented at the trial site where there are no rock carvings.

In 2001 the gorge was closed for vehicles and vibration as destructed factor was eliminated. The access for tourists to parts of the site was limited, which reduces anthropogenic impacts. Part of the vegetation was removed from cracks on image surfaces as a preservation measure. The immediate cleaning of bird dropping prevents color changes of surfaces.

3.1.2 Issues and objectives

The objective of conservation is to preserve the monuments of Tamgaly through the implementation of emergency- and long-term conservation measures while preserving the authenticity and integrity of the archaeological sites and monuments and the environment.

Issues

- Implementation of the agreed conservation plans;
- Implementation of emergency measures at some threatened petroglyph surfaces where threats are proved through damage documentation;
- Safeguarding of petroglyph Group IV;
- Stop erosion processes threatening petroglyphs, graves and excavated settlement site;
- The modern ruins covering burial grounds Tamgaly V and VI.

Flaking

The separation of patina from the rock substrate results from various physical agents; like the density, water penetration, temperature, etc., of the substrate and of the patina, and in addition the color of the patina, causing processes of exogenic, physical and chemical weathering. The patinated horizontal surfaces slice more intensively than inclined ones, because of more intense changes in temperature, exposure to precipitation, dynamic factors and chemical processes. Lichens and mosses also play an important part in the destruction of patina. They grow on the rock surfaces and cause biochemical processes. These processes have a negative and damaging impact on the rock surfaces.

Cracks

Natural dense soil filling of cracks does not play an important part in the destruction process; on the contrary. This natural filling material close cracks and constitutes a natural binding material.

However, when cracks are filled with a mixture of stones, pebbles and soil, plant root systems develop. Besides of the mechanical stress on the interior cracks, the roots produce acids, causing chemical impact. Layers of salts on the inner surfaces of cracks, and salination caused by capillary rise and drying out of ground water through micro cracks, may cause chemical and physical deterioration. The possible effects of salts, however, in this case need to be studied in more detail.

Petroglyph Group IV

The main rock panel of Group IV, with the very important “solar heads” and procession composition, was created as a result of a neo-tectonic breakdown of the rock followed by weathering during the Quaternary Period. A major vertical cleavage in the rock massive has developed, causing an inclined detachment of the whole of the front vertical panel from its parent rock, from top to bottom.

The separated block constitutes a wide monolith, which is 6,5m wide, 3,2m high and 1,2m thick. The western side of this monolith is totally detached from the parent rock, only resting on the top of the inclined ground surface, showing signs of active movement. The east side of the monolith is supported by another stone block, keeping this part stable. This situation defines the character of its destruction. Since the western part of the monolith is actively moving downwards and the eastern part is stable, a breaking point develops at the center vertical axis of the monolith. The evidence of quick destruction is particularly noticeable at the top and bottom parts of this breaking point. While in the lower part fragments of stone are detaching, in the top part the process is comparatively slower, shown by a loss of small stone fragments; some with petroglyphs.

Consequently, the central part of the monolith panel is the most endangered part. Reasons for its instability are the following factors:

- Periodical earthquakes;
- Vibrations due to heavy vehicles driving through the valley in Soviet times;
- Visitors walking on the top of the monolith, although this is a less active factor for the movements of the rock.

Consequences of such movements are ongoing further widening of cracks and loss of stone material in the lower and top parts of the vertical middle of the panel; it is not so visible in the center part. The vertical axis of movement is situated behind the main petroglyph scene, which threatens to brake down. Emergency measures are required (report, Aubekerov 2002).

Burial grounds

So far, conservation measures have been performed on one stone slab in a grave tomb at burial ground Tamgaly II. This and other tomb slabs at the excavated burial grounds Tamgaly II and Karakuduk II show visible signs of splitting parallel to the slab surfaces, and are monitored. These symptoms, and in addition the erosion of loose material behind the stone slabs of the cists, mostly develop during winter.

Settlement Tamgaly I

Based on landscape studies of fluvial fans and the hypotheses that there should be a settlement site deeply buried, a test-pit was excavated in 1991 and the Iron Age level of the settlement Tamgaly I was proved. In 1998 excavations continued down to the Late Bronze Age level, which was further excavated in 1999 and 2000. Erosion processes have caused degradation of the high central profile bench and the walls of the excavation pit.

Burial grounds Tamgaly V and VI

These burial grounds are located south of the Tamgaly Gorge. They were covered by farm buildings and other farm structures in the 1950s, which are now in ruin. Since a sufficient layer of soils protected the graves, and the constructions not dug into the ground, they are not destroyed.

The river banks west-southwest-south of groups II and V

The eastern river bank, consisting of loose soil and gravel material, is very close to the bottom parts of Groups II and V. Based on geological considerations, it is proved that erosion threatens the stability of the stone blocks of the foot of both hills. The further digging out of loose material, caused by the regular seasonal increase and decrease of the river water, will create a succession of falling out of stone blocks, from the bottom and further up-wards in the hillside, therefore threatening rocks with petroglyphs. The riverbank by Group II was reinforced by natural stone in 1991, but is now in need of repair.

3.1.3 Expected outcome

It is not to be expected that all problems of conservation in Tamgaly will be resolved within a reasonable time span. The perfect knowledge, understanding, methods and materials (and all the necessary funds) are still lacking, but is developing rapidly and systematically. Based on these existing preconditions, the following outcome is expected:

- Based on the experimental activities on the trial site, application of safe conservation methods and materials;
- The processes of flaking and cracking on the most critical surfaces are stopped through stabilization and consolidation;
- The movements and deterioration processes of the main panel of Group IV is stopped and the surface stabilized;
- Protective measures for archaeological structures (graves, settlement site) are proposed and implemented;
- The riverbank by petroglyph groups II and V are stabilized.

3.2 Recommended strategy and actions

3.2.1 Conservation strategy

The strategy of conservation is:

- Minimum and preferably reversible but effective intervention;
- Preference is given to indirect and preventive conservation measures;
- Continuous monitoring, maintenance and care on a permanent bases;
- In exceptional cases, emergency works may be carried out at rock surfaces (petroglyphs and tomb stone slabs) in accordance with agreed conservation plans and based on full documentation before, during and after implementation, monitoring and evaluation of the efficiency of measures undertaken;
- Ecologically friendly methods and materials.

3.2.2 Conservation measures

General measures

- Emergency measures should be undertaken on the following surfaces:
 - o Conservation of Group II, surface 19;
 - o Gluing of broken stone of Group V, surface 11;
 - o Consolidation of weak fragments of Group III, surface 42, where it is suggested to use the compound of 1992;
- Implementation of the agreed conservation plans (cf. ch. 2.2.2.d);
- Testing of new materials and techniques at the trial site;
- Measures resulting from the monitoring of destructive factors, with special attention to the development of cracks and flaking processes;
- Removal of plants from cracks in petroglyph surfaces;
- Removal of lichens if they cover images;
- The water drainage works of 1992 had a temporary emergency character, and for the moment it is necessary to develop a plan for long-term measures for Group II as a whole, since water is the most important destructive factor and water control is vital for the conservation of this group.

Conservation planning for and implementation of the following measures:

- Conservation of certain endangered petroglyph surfaces (Group II, surface 21 and 22, Group V, surface 110, and others where problems are demonstrated through the damage documentation);
- Necessary measures for the protection of rock surfaces influenced by loose material and water (especially groups I and II);
- Survey of loose material in order to detect fragments with images;
- Removal or masking of modern graffiti;
- Stabilization of stone slabs in the tombs at burial ground Tamgaly II;
- Proposals for and implementation of winter protection of graves of burial ground Tamgaly II;
- Backfilling of all graves but one at burial ground Karakuduk II;
- Proposals for and implementation of protective measures at settlement Tamgaly I;
- Landscaping, following the removal of the modern ruins from the burial grounds Tamgaly V and VI (see Management Sub-plan 2);
- Strengthening of the river bank near Group II and Group V through reinforcement by ecologically friendly means;
- Unexpected necessary measures.

Special recommendations concerning petroglyph Group IV

- In order to preserve the rock panel from further destruction it is necessary to stop its sliding movements on the front slope. Engineering advice should be sought in order to find safe technical solutions for the support of the western and lower parts of the panel;
- Fill in open cracks to prevent water entering the panel, causing further destruction through freezing and thawing of water during the cold season;
- Limit or prohibit walking on the top of the rock massive;
- If possible, glue back detached stone fragments, especially in the lower and top part of the panel.

3.3 Timeframe and responsibilities

Issues, Conservation	SHORT TERM		MIDDLE TERM
	2004	2005	2006-2008
Masking of pecked graffiti		Group I: Surface 1, 5, 6, 7, 10, 15, 20	
	Group II: surface 11, 12, 14, 17, 90		
	Group III: surface 25, 40, 41, 52, 53, 61, 62, 65, 69		
	Group IV: surface 119		
	Group V: surface 8, 9, 16, 30, 31, 58, 103, 104, 112, 161, 166, 167		
<i>Responsibility</i>	<i>NIPI PMK</i>	<i>NIPI PMK</i>	
Removal of painted graffiti	Group II: surface 33	Group I: surface 20	
<i>Responsibility</i>	<i>NIPI PMK</i>	<i>NIPI PMK</i>	
Consolidation of detached fragments		Group I: surface 20 Group II: surface 58	
<i>Responsibility</i>		<i>NIPI PMK</i>	
Consolidation of flaking crust	Group III: surface 19, 23, 41	Group I: surface 5, 9, 19, 31	
		Group II: surface 8, 21, 39, 58, 62	
<i>Responsibility</i>	<i>NIPI PMK</i>	<i>NIPI PMK</i>	
Removal of plants from cracks		Group II: surface 37, 40	
<i>Responsibility</i>		<i>NIPI PMK</i>	
Gluing of fallen fragments	Group V: surface 110		
<i>Responsibility</i>	<i>NIPI PMK</i>		
Cleaning out of surface cracks and cavities	Group I: Surface 2, 5, 6		
	Group II: surface 1, 9, 25, 28, 30, 36, 37, 38, 60, 62, 70, 11, 15, 16, 17, 18, 21, 22, 40, 45, 46, 49, 51, 57, 58		
	Group III: Surface 24, 41, 69		
	Group V: Surface 31, 61, 86, 108, 110		
<i>Responsibility</i>	<i>NIPI PMK and Reserve-Museum</i>		
Excavated cemeteries		Cleaning of loose material; monitoring of cracks; proposals for winter protection of tombs, Tamgaly II	Re-conservation; monitoring and if necessary, stabilization of cracks; winter protection of tombs, Tamgaly II; backfilling of tombs, Karakuduk II
<i>Responsibility</i>		<i>NIPI PMK and Reserve-Museum</i>	<i>NIPI PMK and Reserve-Museum</i>
Protection of settlement Tamgaly I		Preparation, planning and financing; if possible, temporary protection	Implementation: building of a protective structure
<i>Responsibility</i>		<i>NIPI PMK</i>	<i>NIPI PMK and Reserve-Museum</i>

Burial grounds Tamgaly IV and VI		Start landscaping of the ground, following the removal of modern ruins	Finish landscaping of the ground, following the removal of modern ruins
<i>Responsibility</i>		<i>NIPi PMK and Reserve- Museum</i>	<i>NIPi PMK and Reserve-Museum</i>
The riverbank at petroglyph groups II and V	Following geological advice, stabilize the river bank		
<i>Responsibility</i>	<i>NIPi PMK and Reserve- Museum</i>		

MANAGEMENT PLAN

FOR

THE ARCHAEOLOGICAL LANDSCAPE

OF

TAMGALY

Management Sub-plan 2

Management, Care and

Monitoring

2004

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1 Introduction

This Management Sub-plan addresses the safeguarding of the Archaeological Landscape of Tamgaly and its values through legal protection and overall management practices. The goals of site management are to preserve, protect and safeguard the cultural and natural values of the Site through non-intrusive, minimal interventions. All the recommended management measures are proposed on the premises of respect for the surviving traditions and beliefs of the native Kazakh population. Tamgaly is regarded as a sacred place by the local population, traditional beliefs are still alive and ritual acts are performed there. Despite major and irreversible changes in their way of living due to the rapid development of the modern Kazakh society, most of them still live in a harmony with nature, and this harmony is a characteristic feature of the traditional living. Therefore, *integrity*, related to both the Site and its evidences from all periods until the present, and to the Kazakh population, is a key concept for the management of the Tamgaly Landscape.

The management practices are to a large degree directed towards concrete measures of daily physical protection and care of the Site. Such practices imply co-ordination, balancing and regulation of various on-site activities, systematic monitoring and evaluation of the condition of the Site, and safe and effective application of methods resulting from the scientific studies.

Approved plans and regulations are necessary, also that these are loyally respected and followed by the involved partners and site personnel. Regular revisions of plans as well as further planning are also necessary in order to meet new or changing preconditions. However, neither plan revisions nor new plans must at no point of time be in conflict with or in any way challenge the basic principles and guidelines for safe, sustainable, non-intrusive management.

Considering the present situation, consisting of a number of recognized positive as well as negative aspects and factors that must be dealt with through practical management measures, this Plan provides the premises for the preparation and implementation of annual Action Plans related to Site management, maintenance and monitoring.

2 Management

2.1. Background

2.1.1. Present situation

Under the name of *Tamgaly Complex*, the Site is on the List of Properties of National Significance since October 2002, under a category of *archaeological sites*. The specific status of the State Cultural and Natural Reserve-Museum of Tamgaly, since October 2003, implies the obligation to preserve both cultural and natural assets within its territory. The recently created State Cultural and Natural Reserve-Museum

of Tamgaly is the institution, which is subordinate to the Ministry of Culture and devoted to the protection, management and maintenance of the Site.

The territory of the Reserve-Museum, with a total area of 3800 ha, fits the boundaries of the Buffer Zone proposed in the Nomination for inclusion of the *Petroglyphs within the Archaeological Landscape of Tamgaly* in the World Heritage List. Mainly the boundary follows the natural relief and can be easily recognized. Nevertheless, non-intrusive signs are necessary to mark the boundary at the key points of the landscape (e.g. near all roads and paths). The territory is uninhabited, but some parts are still used by the local people from the nearest villages as pastures and watering places for domestic animals, and also for haymaking. Some adjacent areas are privately owned and used for cattle grazing. Time by time the Site is visited by hunters and bullet holes can be observed on the rocks. The vast valley northeast from the Site is not used for agriculture any more.

The number of visitors to Tamgaly continuously grows, representing a potential danger to the Site. The measures of physical protection (stone barriers preventing vehicles from entering the main canyon with petroglyphs and the permanent horse guard service, established since June 2001) need to be strengthened. At present, most people regard only petroglyphs as being of cultural importance: they are largely unaware of the other archaeological monuments, of the natural features of the Site, and of the integrity and value of the landscape as a whole. New routes and facilities are necessary to reduce the pressure on the main presentation area. At the same time, today the introduction of new routes is impossible, due to a limited number of guardians. The apparent conflict between conservation and presentation of the archaeological landscape of Tamgaly is one that will need to be addressed.

In April 2004 the interdisciplinary team of specialists carried out the preliminary field survey in order to evaluate the present condition of the Site and its context for finalizing the Management Plan. The geo-archaeological and botanical surveys allowed identification of the areas of particular cultural and natural value within the territory of the Reserve-Museum, providing the important additional information for the planning of future activities aiming on the improvement of the protection, management and presentation of Tamgaly.

The preliminary ethno-sociological survey, conducted in Karabastau and its surrounding areas gave the following results:

The inhabitants appreciate the creation of the Reserve-Museum. They hope that this will help improve the living conditions; concerning road repairs, regular transport communications, and the re-opening of the library, club, school, and medical services. Many of them expressed a wish to participate in the provision of services for tourists. The representatives of the older generation suggested building a new hotel; the middle-aged population prefers to reconstruct the existing abandoned buildings and reuse them as hotels, cafes and shops; the younger generation expresses their wish to have a profession. They are concerned with employment, the development of crafts and other activities related to tourism, besides participation in activities connected to site protection and maintenance.

All those completing the questionnaires consider Tamgaly a holy place requiring special preservation and maintenance. They find it necessary to visit the Site regularly

on Thursday evenings to pray, but also to rest and to communicate with each other. The older and middle age generations believe that they must be physically clean to visit this place, while they clean themselves spiritually through being there. All of them know, believe in and tell the legends about punishments to those who tried to cut the bushes of the *chengil* bushes near petroglyph Group IV, or to those who tried to hunt the fox living there. They say that one may drive near Group IV, but only very slowly.

A report from these surveys has been submitted, with preliminary recommendations on how to support and promote the social, economic and social life conditions.

2.1.2. Issues and objectives

Objectives

- Improvement of the actual protection of the Site and its setting, using the possibilities provided within the existing national legislation framework;
- Development of effective management mechanisms through partnership, co-operation, sharing of knowledge and experiences, capacity building, continued monitoring and evaluation of results;
- Continuing of geo-archaeological, ecological, botanical and zoological studies, to define more precisely the boundaries of the specific areas of cultural and natural value, to elaborate effective measures for their preservation and use, and also to select the supplementary areas of public access;
- Define and indicate factors of risk-preparedness;
- Continuation of the ethnological studies, in order to be able to combine and harmonize the interests of the local populations with the requirements of the other involved partners in the plans, processes and implementation of all acts and measures directed towards the management, protection, maintenance and use of the Tamgaly Archaeological Landscape.

Issues

Landscape and its Context

Ensure the protection and preservation of the Archaeological Landscape and its setting through the additional protective measures related to the areas of particular cultural and natural significance and/or of particular vulnerability within the territory of the Reserve-Museum, and through the establishment of the additional zones of legal protection around it, to prevent the appearance of insensitive modern structure in the area of visibility from the Site;

Rocks with petroglyphs

Preservation of the rocks with petroglyphs through the careful planning, implementation and maintenance of non-intrusive visitors' paths, development of the additional tourist routes, supplementary presentation areas, recreation zones and alternative activities.

Management

- Gradual improvement of the management mechanisms through co-operation of the Reserve-Museum with NIPI PMK and participation of its staff in all on-going activities within the Site under the UNESCO/Norwegian Trust Fund Project,;

- Development of this recently created institution into an operational and effective management body with a capable and knowledgeable staff;
- Establishment of effective management systems and protocols for the implementation of the Plan;
- Development of systems for coordination and regular exchange of information between all agencies, bodies and stakeholders involved;
- Risk-preparedness in case of earthquakes and fire;
- Risk preparedness in the case of immediate medical crises.

Regulations

- Establishment of Temporary Regulations to provide adequate protection for the Site and its setting from any intrusive visual or physical interventions;
- Increasing of the guard/guide personnel;
- Drafting of the Permanent Regulations by the end of the short-term period.

Local community

- Development of training opportunities for the local population to enable them to take advantage of local employment and other economic opportunities provided by the Site and its sustainable use;
- Work towards a reduction of the unemployment rate in the local community through the employment and training of the inhabitants when possible;
- Encourage the development and implementation of plans and ideas concerning facilities for visitors (production and selling of products, boarding, etc.);
- Foster community acceptance of the Plan objectives;
- Studies of the modern demographic situation in the surroundings areas of the Site and the district as a whole for the elaboration of a program for the involvement of the local population in the tourism development and in the maintenance and care of the Site;
- Creation of a database on the ethnology and demography of the Tamgaly area, to be attached to the main database; elaboration and implementation of the program for regular studies and research;
- Studies of national and local traditions and customs, including those connected to the worshipping of the Site, with a purpose of making recommendations on their preservation, promotion and use in a modern context;
- Elaboration and implementation of training programs on traditional crafts for the local population, representative and valuable from the point of view of employment of the local population.

Monitoring and evaluation

Establish appropriate monitoring arrangements to measure the successful implementation of the Plan, and of a system of regular evaluation, leading to identification, prioritization and programming of necessary work.

2.1.3. Expected outcome

- The cultural and natural values of the Site and its setting are preserved;
- The principles of non-intrusive and sensitive development of the Site are kept;
- The Regulations are established and act effectively;

- The pressures on the Site and its environment, and on the local community are foreseen and met by adequate response;
- The tourism to the Site is considerably increased, but the tourists influx is controllable and managed in various ways;
- The balance between conservation and presentation of the Site is achieved and maintained;
- The Reserve-Museum is fully operational and developing, and the professional capacity of its staff is rising;
- The protection and management mechanisms and provisions are effective;
- The co-operation network is established and well-coordinated;
- The local community is involved in a wide range of the Site-related activities, well-motivated and interested in the Site preservation, and the conditions of their living are gradually improving;
- The Management plan for the next five years is developed and submitted for approval.

2.2. Recommended strategy and actions

2.2.1. Management strategy

To implement the established objectives, the overall site management will follow the strategy of gradual development and improvement of methods and practices, based on evaluation and re-evaluation. The strategic focus is on the further sustainable development of measures and mechanisms directed towards the Site protection, management and presentation, infrastructure, and on the maintaining of the partnership and co-operation network. Particular attention is paid to the involvement of the local community in a wide range of activities related to the Site.

The Site is a complicated one, with cultural and natural, tangible and intangible values. The strategic challenge is to regard and respond to the Site holistically, and make the holistic, balanced approach the foundation for all management acts and measures.

2.2.2. Activities

2.2.2.a. Short-term activities, 2004-2005

The recommended priority of short-term activities, are:

The territory

- Physical demarcation of the boundaries of the assigned territory of the Reserve-Museum by posts and signs;
- Closing of the secondary dirt roads for vehicles into the territory of the Reserve-Museum;
- Prohibit hunting within the territory;
- Delimitation of areas for grazing and watering of domestic animals.

The natural landscape

- Make a clause of “ecological protection” to hinder public access to the most fragile and threatened parts of the landscape, defined through the preliminary survey in April 2004, supported by the installation of explanatory information boards and stop signs;
- Prohibit collection of plants/flowers in the territory of the Reserve-Museum during the growth season;
- As an ecologically-friendly measure, plant bushes where people are not supposed to walk;
- Regulation of the local horse-riding services for tourists.

Regulations

- Elaboration of the Reserve-Museum’s Temporary Regulations on the Protection and Use of the Archaeological Landscape of Tamgaly and its Setting. This will be done after obtaining results of the interdisciplinary works on the definition of the boundaries of areas of cultural and natural value over all the territory of the Reserve-Museum;
- Elaboration of management guidelines for the guard/guide- and maintenance/monitoring personnel of the Reserve-Museum;
- Drafting of the formal State Regulations on the Protection, Conservation and Presentation of the Tamgaly Archaeological Landscape and its Buffer Zone;
- Preparation of the proposal for the improvement and development of the organizational structure and staffing of the Tamgaly Reserve-Museum. These are to be submitted to the Government by the end of 2005;
- Preparation of the Draft Proposal and Technical-Economical Justification on the establishment of the additional zones of legal protection around the territory of the Reserve-Museum, and of the relevant Landscape Protection and Planning Regulations, to be submitted to the Government for their consideration and approval. These aim to preserve the character of the Site’s natural setting and to prevent the local villages from the possible future encroachment and uncontrolled development under the pressures of growing tourism activities.

Planning

- In order not to impact the landscape, provide most services and facilities off-site, preferably in the Visitors’ Centre/Museum/Office area and in the villages Karabastau and Atshisu;
- Work out and discuss alternatives for the architectural design/town planning for the future construction and development of the Reserve-Museum’s Visitor Centre/Museum/Office Complex in Karabastau, for the development of infrastructure (primarily water supply, sewage and waste removal), for enhancement of the built environment, and for organization of public services in Karabastau, considering the local initiatives and following the proposed Landscape Protection and Planning Regulations.

Risk preparedness

- Design of plan for risk preparedness, concerning fires and earthquakes;
- Provide basic fire-extinction equipment on-site, and train the guards/guides for emergency situations;

- Provide first-aid equipment easily available and train the guards/guides for acute medical situations.

The local community

- Start elaboration of the first draft of the long-term Partnership Development and Local Community Involvement Program. This should be based on the conclusions and recommendations of the current ethnological/sociological surveys and studies, and on practical experience.

Infrastructure

- Repairs on the road connecting the Almaty-Bishkek highway with Karabastau via Kopa railway station, and the access road from Karabastau to Tamgaly;
- Removal of the ruins of the 1950s farm covering burial grounds Tamgaly V-VI;
- Dismantling of the poles of the former electricity line, and removal of the waste.

2.2.2.b. Middle-term activities, 2006-2008

The recommended priority of middle-term activities, are:

Regulations

- Approval and effectuation of the formal State Regulations on the Protection, Conservation and Presentation of the Tamgaly Archaeological Landscape and its Buffer Zone.

Infrastructure

- Construction of the by-pass road north of the northern boundary of the territory of Reserve-Museum, to prevent transit transport through the Buffer Zone;
- Further development of the Reserve-Museum (number and professional level of staff, premises, infrastructure, range of activities, co-operation network).

Development

- Creation of specialized sectors for the protection, management and maintenance of the Site's natural resources, for tourism, education and information, and for ethnology and sociology;
- Gradual and careful improvement of the non-intrusive on-site sign installments, visitor paths and facilities, as well as the structure of and techniques for the Site guard/guide services;
- Introduce entrance fees;
- Continued involvement of the local population in all activities and planning, including the preparation of the long-term management plan.

Risk preparedness

- Up-grade plan for risk preparedness, concerning fires and earthquakes;
- Maintenance of fire-extinction and first-aid equipment on-site, and repeated training of the guards/guides for emergency situations.
- Provide equipment easily available and train the guards/guides for acute medical situations.

2.3. Timeframe and responsibilities for implementation

Issue, Education	SHORT TERM		MIDDLE TERM
	2004	2005	2006-2008
Territorial measures	Physical demarcation of the boundaries of the territory; additional zones of legal protection around the territory of the Reserve-Museum		
	Close secondary dirt-roads; prohibit hunting; animal grazing- and watering restrictions		
<i>Responsibility</i>	<i>NIFI PMK and Reserve-Museum</i>	<i>NIFI PMK and Reserve-Museum</i>	
Landscape protection	Prohibit picking flowers; regulate horse-riding activities		
<i>Responsibility</i>	<i>Reserve-Museum</i>	<i>NIFI PMK and Reserve-Museum</i>	
Provide regulation documents	Guidelines for the guard/guide- and maintenance/monitoring personnel of the Reserve-Museum;	Regulations on protection and use; approved improved structure and staffing of the Tamgaly Reserve-Museum	Further development of the Reserve-Museum
	State Regulations on the Site Protection, Conservation and Presentation; proposal for the Sensitive Site Presentation Development		Approvals
<i>Responsibility</i>	<i>NIFI PMK and Reserve-Museum</i>	<i>NIFI PMK and Reserve-Museum</i>	<i>Reserve-Museum</i>
Planning	Planning and design for infrastructure measures (water, sewage, garbage, buildings); draft of the long-term Partnership Development and Local Community Involvement Program		
<i>Responsibility</i>	<i>NIFI PMK and Reserve-Museum</i>		
Risk-preparedness	First-aid training of guards/guides	Prepare and work out plan for all emergency situations	Up-grading and regular training sessions
<i>Responsibility</i>	<i>Reserve-Museum</i>	<i>Reserve-Museum</i>	<i>Reserve-Museum</i>
Infrastructure		Repair of the main-road; removal of modern ruins and electricity poles	Build by-pass road north of the northern part of the Territory
<i>Responsibility</i>		<i>NIFI PMK and Reserve Museum</i>	<i>Reserve-Museum; Oblast Government</i>
Development			Specialized sectors for the protection, management and maintenance of the Site's natural resources; improvement of the non-intrusive on-site sign installments, visitor paths and facilities; entrance fees
<i>Responsibility</i>			<i>NIFI PMK and Reserve Museum</i>
Ethnological studies	Collection of data; continue interviews	Analyses of data; creation of database	
<i>Responsibility</i>	<i>NIFI PMK</i>	<i>NIFI PMK and Reserve-Museum</i>	

Long-term perspectives

- Continuous evaluation of all activities;
- Revisions and improvements of all activities;
- Following up of plans and activities;
- Future plans, created with the active involvement of the local population, to be approved in 2008.

3. Care and maintenance

3.1. Background

3.1.1. Present situation

The regular maintenance program, established by NIPI PMK in 2001, was continued by the same maintenance workers who are now working in the Reserve-Museum. The steps at steep points of the visitors' paths and the existing installments (information boards and signs, the movable fences made of rope between low wooden poles) made in 2001-2002, are in a good condition, while some arrow signs need repainting. The visitors' paths and in particular the slopes at the Groups II-V need regular maintenance in order to prevent the slopes to erode. The same is the case with the stone and gravel which have been used to create almost invisible "bridges" over the river at some points and to make it possible to walk along it. Time by time some parts of the protective barrier closing the Gorge for vehicles need a repair, due to some damage caused by visitors. Garbage removal presents a problem, because of the long distance to the nearest place where garbage can be deposited.

3.1.2. Issues and objectives

Based on the monitoring programs and routines, the objective of the program for care and maintenance of the Tamgaly Landscape is to at any point of time keep the landscape itself, the archaeological monuments and the installations and facilities at a physical and visual standard which permits their preservation, visitation, enjoyment and use without damage or degradation.

Issues

- Preventive measures on archaeological sites and monuments;
- Preventive measures relating the natural values;
- Preventive measures to counteract wearing down of visitors' paths and facilities;
- Keeping the area clean and orderly.

3.1.3. Expected outcome

The Tamgaly Landscape is protected from negative natural and anthropogenic influences before problems occur.

3.2. Recommended strategy and actions

3.2.1. Care and maintenance strategies

The strategy for care and maintenance is based on the concept of “preventive maintenance”, which means: dealing with the problems before they occur or get really serious. Natural decay cannot be stopped, but the natural degrading processes can be delayed through conscious, conscientious management and care. To counteract anthropogenic degradation, however, is for the most part a question of policy and good routines.

Experience and good practical sense, well considered monitoring programs and routines, and regular reports and evaluations constitute the platform for the practical measures. Part of the strategy is to react quickly and effectively to unexpected degrading factors, but always within the principles of authenticity and sustainability, and to the best understanding of the factors and processes causing the problems.

3.2.2. Recommended strategy and actions

General maintenance

- Organization of regular preventive maintenance on all site components;
- Systematic inspection of the whole Site twice a year to control that maintenance programs and work according to their purposes.

Maintenance related to archaeological sites and monuments

- Regular removal of vegetation from cracks in rock surfaces with images to prevent expansion;
- Immediate cleaning of bird droppings from the rock surfaces to avoid discoloring;
- Removal of modern scratched graffiti from rock surfaces with water to prevent bad examples and habits;
- Removal of soil and gravel from the filled in (conserved) cracks at Group II to prevent grass to grow and destroy the fillings.

Maintenance related to nature

- Clean the sources of water, which partly are over-used and spoilt and polluted by animal manure. In particular the Tamgaly Spring, the origin of the Tamgaly River, needs to be cleaned;
- Regular cleaning of the river-bed to avoid flooding and erosion of the riverbanks;
- Prevent visitors from entering particularly sensitive areas of flora and fauna;
- Maintenance of and care for the bushes which were and will be planted to prevent visitors to go where they are not supposed to go;
- Measures to prevent gophers from digging holes between stone slabs in the cists of the burial sites; actual measures are under consideration;
- Inform people that they please must not tie the strips of fabric too tightly on the branches of bushes (a ritual practice), because it causes the branches to dry out.

Maintenance related to visitation

- Maintenance of all places where visitors are allowed to move, like paths, observation surfaces and sites where visitors groups are gathered for information about petroglyphs, and dirt platforms by the graves of the burial site Tamgaly II;
- Keeping the cafe- and sales areas clean and inviting at all times;
- Maintenance of painted signs, information boards, garbage bins, rope-fences and other site facilities;
- Regular cleaning and removal of garbage; the guards/guides should always react immediately to waste;
- Provide visitors with a plastic bag for self-service removal of their own garbage, since garbage removal is a big problem, and motivate them to use it;
- Regular emptying of the toilets and keeping them clean.

Guidelines and training

- Establish guidelines and checkpoints of regular routine site maintenance for the guards/guides;
- Training and motivation of the Reserve-Museum staff in maintenance and care of the Site.

Regular Site maintenance program

- Elaborate an obligating maintenance program related to time (daily, weekly, monthly, seasonally, biannually, annually), tasks and responsibility (responsible institution, profession, person/s);
- Approval and consent of the maintenance program;
- Regular follow-up, evaluation, re-evaluation and improvement of the maintenance program.

3.3. Timeframe and responsibilities for implementation

	SHORT TERM		MIDDLE TERM
Issues, maintenance and care	2004	2005	2006-2008
Organization	Systematic inspection twice a year; prepare guidelines and training program for guides/guards	Systematic inspection twice a year; approval and implementing of guidelines and training program for guides/guards	Systematic inspection twice a year; implementation, evaluation and improval of guidelines and training program for guides/guards
<i>Responsibility</i>	<i>NIPi PMK and Reserve-Museum</i>	<i>NIPi PMK and Reserve-Museum</i>	<i>Reserve-Museum</i>
Archaeological sites	Regular cleaning of rock surfaces (based on twice a year inspections)	Regular cleaning of rock surfaces (based on twice a year inspections)	Regular cleaning of rock surfaces (based on twice a year inspections)
<i>Responsibility</i>	<i>NIPi PMK</i>	<i>NIPi PMK and Reserve-Museum</i>	<i>NIPi PMK and Reserve-Museum</i>
Nature	Regular, basic maintenance; clean up spring and riverbed	Regular, basic maintenance; repeated follow-up cleaning of spring and riverbed	Regular, basic maintenance; repeated follow-up cleaning of spring and riverbed
<i>Responsibility</i>	<i>Reserve-Museum</i>	<i>Reserve-Museum</i>	<i>Reserve-Museum</i>

Visitation	Daily routines of keeping the Site clean and tidy; twice a year control and repair of facilities and installations (before and after the tourist season)	Daily routines of keeping the Site clean and tidy; twice a year control and repair of facilities and installations (before and after the tourist season)	Daily routines of keeping the Site clean and tidy; twice a year control and repair of facilities and installations (before and after the tourist season)
Responsibility	<i>Reserve-Museum; NIPi PMK</i>	<i>Reserve-Museum; NIPi PMK</i>	<i>Reserve-Museum</i>

Long-term perspectives

- Continue, evaluate and improve routines for Site care and maintenance.

4. Monitoring

4.1. Background

4.1.1. Present situation

In 2002 damage documentation was provided on the condition of some rock surfaces with petroglyphs, and monitoring routines for these surfaces and also for the treated (conserved) parts and the trial site have been established. In 2004 the specialists from NIPi PMK carried out photographic recording of surfaces with petroglyphs of high importance at the most visited parts of the Site. These photographs have been passed on to the Tamgaly Reserve-Museum as reference material for the establishment of daily monitoring, to ensure that possible damages caused by visitors, if the event, are identified immediately.

The reports from the Site monitoring inspectors are regularly passed on to the specialists of NIPi PMK for evaluation. In addition, monitoring programs for special parts of the site (cultural and natural) are carried out by the team of conservation, geology and botany specialists.

4.1.2. Issues and objectives

The aim of monitoring is to supervise, study, record and evaluate the relationship between the state of conservation of the archaeological monuments and of natural factors, to be able to evaluate changes and the possible causes for these changes; and in addition, the relationship between these and environmental, anthropogenic or other affecting or determining factors.

Issues

- Identification of affecting factors (causes of change, degrading and deterioration);
- Identification of endangered parts;

- Monitoring of the behavior of conservation materials at the parts treated in the past and at the trial site;
- Evaluation of the efficiency of conservation measures;
- Choice of conservation methods and materials.

4.1.3. Expected outcome

The monitoring of the affecting factors and of the condition of the Site and its elements will allow:

- To undertake measures aiming at elimination of or reduction of the causes for deterioration;
- To implement emergency actions on endangered parts in time;
- To choose most appropriate techniques and compatible materials proving their efficiency and compatibility at the previously treated parts of petroglyph sites and at the trial site.

4.2. Recommended strategy and actions

4.2.1. Strategy

- Regular and systematic recording of endangered parts;
- Evaluation and analysis of results;
- Seek control over the action of the affecting factors;
- Control the condition of the Site and its monuments.

4.2.2. Site monitoring program

4.2.2.a. Inspection

Systematic inspections of the Tamgaly Site condition are carried out twice a year, April and October, to be conducted by NIPI PMK.

Routine inspections are daily carried out by specially appointed site personnel.

4.2.2.b. Systematic monitoring of natural affecting factors

The following key indicators are proposed for the monitoring of the condition of rocks and of the degree of environmental pressures of them:

- Temperature and relative humidity of air – twice a day, at 8-00 AM and at 3-00 PM – NIPI PMK;
- Direction and strength of wind – daily – NIPI PMK;
- Quantity and chemical contents of precipitation water; quantity is to be measured every time during rain or snow – Reserve-Museum; the chemical analysis is to be carried out once a season – NIPI PMK;
- Distribution and concentration of rain water in cracks, cavities and over surfaces – NIPI PMK;

- Min-max temperatures on rock surfaces during the day; twice a day at 08.00 AM and 03.00 PM at selected surfaces – NIPI PMK;
- Min-max temperature les drilled in selected trial stones on a depths 5 and 10cm twice a day at 08.00 AM and at 03.00 PM – NIPI PMK;
- Distribution of water flow on slopes during periods of thawing and heavy rains – NIPI PMK;
- Development of micro- and macro-vegetation, once a month at selected slopes – NIPI PMK, twice a year – the Institute of Botany;
- Soil: pH rate – NIPI PMK/the Institute of Geology;
- Soil: water-soluble salts contents – NIPI PMK/the Institute of Geology;
- Evidence of sub-surface cavities (“bom”) – NIPI PMK;
- Duration of daily sun exposure of selected rock surfaces, every day during one year - NIPI PMK; and its connection with the behavior of cracks, of superficial layers of stone and of patina – the Institute of Geology;
- Sun heat impact on cracks; measurements should be made on the same stones and at the same time as the measurements of surface and in-depth stone temperatures – NIPI PMK;
- The development, movements and distribution of loose material in cracks and cavities, on surfaces and on path sides – the Institute of Geology.

4.2.2.c. Monitoring of the condition of rock surfaces and images

- Comparative analysis of photographs of different periods;
- Measuring the width of cracks threatening rocks with images, twice a year by the end of winter and summer seasons, especially in surfaces and stone locks of groups IV and V;

4.2.2.d. Special monitoring

Careful examination of selected rock surfaces and of the previously treated parts including at the trial site, twice a year by the end of winter and summer seasons. These surfaces should be marked in advance on the photo- and/or graphic panoramas.

4.2.2.e. Monitoring of anthropogenic influence

Monitoring of all important rock surfaces by comparison with reference photographs. Special albums with photographs are prepared for this purpose. Photographic recording will be carried out in the case of changes, at the time of when the Reserve-Museum guides/guards change turns. Special attention is directed towards wear and tear of the paths (loosening and falling out of stones and gravel).

Other monitoring indicators should be added in the future, based on the results of the research of affecting factors.

4.2.2.f. Evaluation

- Evaluation of the monitoring results;
- Analysis of the results of research on affecting factors;
- Strategies and implementation of counteracting measures.

4.3 Timeframe and responsibilities

Issue Monitoring	SHORT TERM		MIDDLE TERM
	2004	2005	2006-2008
Inspection	Every day, all year	Every day, all year	Every day, all year
Responsibility	<i>Reserve-Museum; NIPI PMK</i>	<i>Reserve-Museum; NIPI PMK</i>	<i>Reserve-Museum; NIPI PMK</i>
Natural affection factors	Established routines according to defined key indicators	Established routines according to defined key indicators; evaluation	Established routines according to defined key indicators; evaluation
Responsibility	<i>NIPI PMK; the institutes of Geology and Botany</i>	<i>NIPI PMK; the institutes of Geology and Botany</i>	<i>Reserve-Museum; NIPI PMK; the institutes of Geology and Botany</i>
Special monitoring	Selected rocks and surfaces of Group IV and Group V and other priorities; previously conserved parts and trial site	Selected rocks and surfaces of Group IV and Group V and other priorities; previously conserved parts and trial site	Selected rocks and surfaces of Group IV and Group V and other priorities; previously conserved parts and trial site
Responsibility	<i>NIPI PMK</i>	<i>NIPI PMK; Reserve-Museum</i>	<i>NIPI PMK; Reserve-Museum</i>
Anthropogenic factors	Daily routines of monitoring of visitors, rocks and paths	Daily routines of monitoring of visitors, rocks and paths	Daily routines of monitoring of visitors, rocks and paths
Responsibility	<i>Reserve-Museum; NIPI PMK</i>	<i>Reserve-Museum; NIPI PMK</i>	<i>Reserve-Museum; NIPI PMK</i>
Counteract negative forces	Evaluation, analyses, strategies and implementation	Evaluation, analyses, strategies and implementation	Evaluation, analyses, strategies and implementation
Responsibility	<i>NIPI PMK; institutes of Geology and Biology</i>	<i>NIPI PMK; institutes of Geology and Biology; Reserve-Museum</i>	<i>NIPI PMK; institutes of Geology and Biology; Reserve-Museum</i>

MANAGEMENT PLAN

FOR

THE ARCHAEOLOGICAL LANDSCAPE

OF

TAMGALY

Management Sub-plan 3

Education, Information and

Tourism

2004

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1. INTRODUCTION

There is a growing interest and awareness of the Cultural Heritage all over the world, and “culture tourism” has become a fast growing industry. Rock art sites are particularly attractive visiting goals because of the visual and intriguing qualities of the imagery. At the same time, rock art is extremely vulnerable, precisely because the attraction itself is open and exposed to erosion and deterioration, human impact and general wear and tear. Opening a rock art site for visitation calls for a variety of protective measures in order to safeguard the cultural values themselves and at the same time offer visitors a high quality output.

The petroglyphs in Tamgaly represent the main attraction of the site, but they are not and cannot be regarded as a separate factor. The uniqueness of Tamgaly comprises the contextual setting of petroglyphs, cemeteries and settlement sites in the natural landscape. In total, Tamgaly is a demonstration of how past peoples furnished their landscape over time and divided it into zones of different activities: the ritual practices, funerary practices and habitation activities – all related to existing natural factors. This holistic context should comprise the core of all measures and activities connected to the presentation of the site.

The public has a right to take part in, learn about and enjoy the manifestations and interpretations of the past. Interpretations and knowledge of the past are not for scholars and scientists to keep for themselves. The great challenge is to be able to welcome and manage visitors to Tamgaly in ways which do not endanger the monuments, the environment or the interests of the host community, but are to the best for the site itself and for the local, national and international interests.

Sustainable management of a heritage site as well as of visitors means to preserve and present the site in ways that do not in any way endanger its inherent values. Managers and visitors have common interest in this matter. Visitors want to visit sites that are in a good condition, not reduced or destroyed by overexploitation or insensitive use. Experience shows that visitors to cultural heritage sites not only understand that restrictions and rules are necessary; they positively appreciate and respect it. Consequently, education and information should not only concentrate on the cultural and natural values and qualities of Tamgaly, but also on protection and conservation matters and on the meaning of and reasons for preservation and sustainable management of the cultural heritage.

All measures and activities connected to visitation to and presentation of Tamgaly shall be based on the following principles:

- *Sustainability*, meaning that all measures should be balanced against positive and possible negative impact on the archaeological monuments, the natural landscape and the environment, including the host community and its interests;
- *Respect for site integrity*, meaning that the peoples who thought, created and used what to us has turned into a cultural heritage site should have a voice, even though it cannot be heard;
- *Minimal interventions*, meaning that measures to as large extent as possible should be non-intrusive, reversible and environment friendly.

The objectives of activities connected to education, information and tourism are to promote widespread

- Understanding, knowledge and appreciation of the Tamgaly landscape and its values and qualities;

- Understanding of and respect for the issues of protection, presentation and sustainable use of Tamgaly and other heritage sites;
- Understanding of the vulnerability of petroglyphs and other archaeological, cultural and natural heritage sites and monuments and the need for respect and proper behavior;
- Motivation to visit and revisit Tamgaly and other heritage sites for learning, enjoyment and leisure, and to spread the words to others.

2. EDUCATION AND TRAINING

2.1. Background

2.1.1. Present situation

At present, visitors to Tamgaly have the following sources of getting education of site issues and its cultural and natural elements:

- Guides from Almaty, following buses to the site
- Guides from Karabastau, also acting as site guards
- Information booklet and informative map
- Scientific publications

At this point, bus tours organized from Almaty are arranged without guides having been educated by the qualified staff at NIPI PMK. Reactions from visitors indicate that they much prefer the very able local guides, who are trained by NIPI PMK. Visitors also appreciate some exclusive tours organized and guided time by time by the professional archaeologists from Almaty. Respect for the site as well as of visitors in this connection means to offer high quality information, knowledge and answers to all kinds of questions. Consequently, guides and guards must be properly trained and motivated for their important tasks. At present, English-speaking visitors come with their own guides from Almaty, since the on-site guides only give information in Russian and Kazakh.

In 2002-03, 4 guides/guards were trained through teaching sessions and through their own studies of relevant literature. In 2004 the number of on site guides/guards is increased to 9. They staff the site two at the time on a 24-hour watch, meet visitors upon arrival and follow them around the site. The guided tours are arranged in Kazakh and Russian.

By mid 2004, parts of the staff of the new Visitors' Center / Reserve-Museum Office in Karabastau are already appointed. It will be fully developed by the end of 2005.

2.1.2. Issues and objectives

By education is here understood:

- Dissemination of interpretation-based knowledge grounded in archaeological research and the relevant sciences (geology, botany, ecology, ethnology, the paleo-sciences, conservation);
- Fostering of interest and positive attitudes through the creation of understanding of activities, rules and regulations connected to the preservation and respectful use of the cultural heritage;

- Activities and training relevant to the understanding, experience, appreciation and sustainable use of the Tamgaly site and the cultural and natural heritage in general;
- Relevant education and training of management staff.

The main objectives

- *All staff in charge of site management are fully trained in all aspects of site management, monitoring and maintenance;*
- *General and widespread knowledge to increase appreciation of and respect for prehistoric art, rituals, traditions, values, landscape use and expressions as part of the Kazakh heritage;*
- *General and widespread knowledge to increase appreciation of and interest in nature and environment factors, their vulnerability to human impact and the interplay between nature and culture.*

Issues

a. Research and interpretation

Interpretation of past manifestations is never something that can be finished once and for all but is an on-going process. The information and knowledge emitted to visitors and the general public, whether through booklets, on site information boards or orally, must be based on up to date research processes and results. Therefore, research activities and up-date of interpretations should be part of the education program.

b. Training of Reserve-Museum personnel

The Reserve-Museum personnel are gradually appointed from 2004 onwards until it is fully staffed and operative by the end of 2005. It is an important task to make sure that all categories of staff are fully educated and up-dated in all aspects of site management, in general and specifically related to Tamgaly.

c. Training of on-site personnel

The group of guides is an important on-site personnel target group for education and training. They are the ones who meet and communicate directly with visitors and they represent the site and the knowledge and interpretation of the site to them. Besides being always well up-dated on the interpretations and scientific specifics of the site, they should receive training in graceful and polite reception and treatment of visitors, and how to handle unexpected situations, difficult questions and disrespectful visitors. A sufficient number of guides should be able to give guided tours in English and be trained to do so. Newly appointed guides should receive high quality training before starting their work, have a training period together with an experienced guide, and be followed up after the first training period.

Guards and other on-site personnel will need much the same training as the guides.

Guides following groups of visitors from Almaty should receive the same high-quality education and training as the on-site guides/guards.

d. School education

There is an on-going debate in museums and the Cultural Heritage which is the most important target group within the school system: The children while they are still open-minded, curious and hungry for challenges, or their teachers who can teach their pupils knowledge and attitudes and stimulate their un-spoilt curiosity. The most sensible is to say yes to both. Consequently, the schools should be approached in a multiple way for teachers'

courses and co-operation for the creation of pedagogical tools and specially designed programs for school visitation, including preparations ahead of visit and following-up after the visit.

2.1.3. Expected outcome

The expected positive outcome of the educational efforts, are:

- Knowledgeable, well qualified, motivated and conscious staff at the Reserve-Museum;
- Satisfied and knowledgeable visitors to Tamgaly who both wish to return and inform friends and relatives about Tamgaly;
- Competent and friendly guides and other site personnel making visitation to Tamgaly a success;
- Generations of Kazakh children bringing knowledge and appreciation of the past and positive attitudes to the cultural heritage with them into their lives as adults;
- Widespread understanding of the need for research and interpretation of the prehistoric past, and acknowledgement of cultural heritage preservation;
- The understanding, interest and appreciation of Tamgaly to be spread to other heritage sites in Kazakhstan.

2.2. Recommended strategy and actions

2.2.1. The educational strategy

2.2.1.a. Research, interpretation and development

Master and doctor students should be invited to do their theses and dissertations on topics related to the Tamgaly site; within archaeology, geology, ecology, botany, ethnology, paleo-studies and conservation. They should be encouraged and offered possible and suggested topics, and receive close and professional guidance during their work. Relevant institutions should co-operate for the recruitment and following up of students. Students should also be involved in the education of guards and guides, teachers and special interest groups, and in the development of pedagogical material at the Reserve-Museum.

All research reports and other scientific works should be published, preferably in English besides Russian and Kazakh in order to connect to international research and scientific networks.

2.2.1.b. Personnel

The Reserve-Museum will be in charge of the daily presentation issues when fully operative. Adequate and proper training of staff is necessary in order to fulfill the objectives of sustainable tourism, optimal high-quality information and non-intrusive use of the site (cf. ch. 2.2.5.a).

Besides receiving relevant training, the guides and guards should be invited to follow documentation and other scientific work on-site for a certain period of time, for increased knowledge, understanding and appreciation of the work being done. They should act as advisers in the development of pedagogical and information material, since they are the ones who meet the public face to face, know what they are concerned with and what questions they have (cf. ch. 2.2.5.b).

Other on-site personnel should be able to answer regularly asked questions about the site and its qualities besides the history and ethnology of the local community, and should be an active part of the development of interpretive pedagogical material. They should be involved in the choice and development of sales products like souvenirs, food and drink and bed and breakfast services, since they will be the ones who will best understand people's needs and wishes (cf. 2.2.5.d).

2.2.1.c. Schools

While Tamgaly already has become a kind of *chrestomathy* site included in school textbooks for the 5th and 6th forms as well as in all university textbooks on the history of Kazakhstan - the compulsory subject for the students of all specialties - the information given there should be updated up to reach the present scientific level.

The mid-term State Program on Cultural Heritage 2004-2006, approved by the Government in January 2004, foresees the integration of cultural heritage education into the existing school curricula, which implies the elaboration of relevant teaching programs. The responsible implementation agencies are the Ministry of Culture, the Ministry of Education and relevant scientific and professional organizations.

In the first instance, one school should be chosen for co-operating in developing school programs tailor-made for 3 target student groups: elementary school (10 year olds), middle school (14 year olds) and high school (17 years old). Teachers' as well as students' groups should be part of the development of programs and educational tools. The next step could be to involve these pioneer teachers and students in the further development, application and adaptation in other schools (students teach students; teachers' seminars and work groups; internet development; etc). Educational sessions should be arranged for school classes visiting Tamgaly, where they are met and followed up by personnel, specially trained for the task.

After the revival of the Secondary School in Karabastau, planned for the year 2006, a special plan should be developed for its partnership with the Reserve-Museum in educational activities.

2.2.2. General public

Treating the public with respect means to meet and deal with their needs and requirements in an open, friendly and professional way, but at the same time give them the opportunity to learn and experience more than they expected beforehand. The public should get the possibility not only to be passive receivers of ready-made, static knowledge. Many visitors have interesting, surprising and valid questions and comments, which should be met interactively and with respect. Response from the public should impact the educational strategies according to the different target group characteristics.

“The public” is a questionable term, since it consists of and can be classified into a number of different categories, like:

- the educated
- the open and interested
- the curious
- the hikers and nature-lovers

- the planners and those who come prepared
- the impulsive
- the active participants
- the passive on-lookers
- the ones who just follow the stream;

and according to different age groups:

- senior citizens
- middle aged people
- families with children
- teenagers
- young adults

Different program offers should be developed in order to serve as many of the different target groups as possible.

2.2.3. Special interest groups

2.2.3.a. Cultural heritage study groups

A lot of people can be expected to want to know more than others about Tamgaly, other heritage sites and the Kazakh cultural and natural heritage in general. They should be inspired to meet, discuss, study, visit museums etc, besides having regular excursions to Tamgaly and other heritage sites. Such groups represent an important resource, as “ambassadors” and supporters of cultural heritage activities, and should be followed up through educational sessions and excursions.

2.2.3.b. “Friends of Tamgaly”

Groups of “Friends” connected to museums and cultural heritage sites are formed in many countries. They sometimes contribute with work, sometimes with money, or they may support periodicals and publications, and they represent a valuable support of public heritage work. The possibility to create a group of “Friends of Tamgaly” should be looked into. If this is found to be a relevant issue, they should be followed up in much the same way as the study groups. Such supportive “Friends” can be recruited in other countries, too.

2.2.3.c. Volunteers

Being an active participant in a cause, and part of something valued as important is often considered more meaningful than being a passive recipient of something other people have done or do. With the gradual development of Tamgaly, there will be a need for many hands to follow up all the different tasks and responsibilities. Volunteers comprise active supporters, who can do different work according to abilities and wishes. One example is that retired teachers may help with school education programs in Almaty and Astana. Volunteers should receive much the same training as the guards and guides, but their contributions should never be used as an alternative to the regular responsibilities of the paid educational staff, but as a positive supplement.

2.2.4. Local community

The gradual development of Tamgaly will have impacts on the local community and all intentions are that these will be positive. The community should be involved in all aspects of the work and planning for Tamgaly, since without local participation – even enthusiasm – a cultural heritage development project will never be a complete success. Besides, it is a way of showing decency and respect for the host community. In addition to stimulation and motivation of the inhabitants to be in charge of production of goods and services, a specially developed educational program for those who want to take active part in the development of the site should be created and implemented.

2.2.5. Training of personnel

All on-site personnel should receive proper and up-dated high quality professional training and following up according to their different tasks and responsibilities.

In order to reach the foreseen outcome of sustainable development of the local community, service personnel should be recruited locally to as large an extent as possible. It is a priority to provide meaningful work for women and young people out of school. Offers of work connected to the development of Tamgaly should not in any way counteract or hazard the regular economic activities in the community or social and cultural traditions.

2.2.5.a. Reserve-Museum personnel

A training course/workshop should be arranged in 2006, focusing on theoretical, methodological and practical topics related to safe site and visitors' management, in order to bring the site management in accord with World Heritage standards. Within this framework, training should concentrate on:

- Practical implementation of the concepts of sustainability, site integrity, minimum intervention, reversibility and ethics;
- Monitoring routines;
- Maintenance routines;
- Training and following up of guides and guards;
- Presentation and pedagogic methods;
- Sustainable tourism management;
- Etc.

NIFI PMK should be in charge of the training course/workshop together with international experts. Later appointed personnel must be properly trained and followed up.

2.2.5.b. Guides and guards

Guides and guards should be recruited in the local community and get proper and relevant training. Already trained and experienced personnel should at the beginning of each season be brought up to date: on new interpretations and research results, new regulations, new practices and different tasks and responsibilities. New recruits should be encouraged, and they must attend a training program before taking over responsibilities. Guards and guides should be paid during their training.

The immediate action to be undertaken by the end of May 2004 is the on-site training of guides from Almaty tourist agencies, in order to update the information they offer to tourists and to make them aware of the newly established regulations for tourist groups visiting Tamgaly.

2.2.5.c. Teachers in the local community

Educated teachers in the community, and others with educational aspirations should receive special attention and be encouraged to take part in special programs, since they represent a particularly important asset in the educational program. The programs should be created in close co-operation with the users.

2.2.5.d. Other personnel

Local personnel should be recruited and trained to take active part in

- Regular site and infrastructure maintenance;
- Off-season site control with reporting on general condition of the site;
- Choice of and production of sales products.

2.3. Timeframe and responsibilities for implementation

	SHORT TERM		MIDDLE TERM
Issue, Education	2004	2005	2006-2008
Research and interpretation	Programs and preparation of co-operation structures	Recruiting of students; finalizing of programs; guidance	Implementation, evaluation and following-up; further development of programs
<i>Responsibility</i>	<i>NIPi PMK</i>	<i>NIPi PMK, Reserve-Museum, relevant scientific institutes</i>	<i>NIPi PMK, Reserve- Museum, relevant Scientific Institutes</i>
Training of Reserve-Museum staff	Training of the staff members through their participation in the NIPi PMK activities under the UNESCO/ Norwegian FIT Project	Continued on-site training of the staff through their participation in the UNESCO/Norwegian FIT Project activities. Planning of training course/workshop; apply to UNESCO WHC for funds	Arrange the training course/workshop in spring 2006; evaluation. new training course/workshop in 2008
<i>Responsibility</i>	<i>NIPi PMK</i>	<i>NIPi PMK/Norwegian Advisor</i>	<i>NIPi PMK/UNESCO</i>
Training of guards and guides	Elaboration and implementation of the on-site training programmes for the new guard/guide site personnel and for the guides from tourist agencies of Almaty	Education and training continue; recruit, and increase number according to needs; evaluation	Education and training continue; recruit, and increase number according to needs; yearly evaluation
<i>Responsibility</i>	<i>NIPi PMK in co-operation with-Reserve-Museum</i>	<i>NIPi PMK in co-operation with Reserve-Museum</i>	<i>Reserve-Museum in co-operation with NIPi PMK</i>

Training related to site and local facilities, sales, boarding etc.	Discussions with local community; plans and issues for sales and relevant products; information, motivation and training	Training of personnel; development of facilities and products; start sales in relevant facilities (yurts)	Further information and motivation; development of facilities according to priorities and needs; full implementation
<i>Responsibility</i>	<i>NIPI PMK in co-operation with Reserve-Museum</i>	<i>NIPI PMK in co-operation with Reserve-Museum</i>	<i>Reserve-Museum in co-operation with NIPI PMK</i>
School education	Collection of experience and relevant issues; establish interests and contacts	Plans and strategies for school engagement; involvement of teachers	Try out models; education of teachers; implementation of plans and models; evaluation and further development
<i>Responsibility</i>	<i>NIPI PMK staff</i>	<i>NIPI PMK staff in co-operation with Reserve-Museum</i>	<i>NIPI PMK staff in co-operation with Reserve-Museum</i>
Target groups	Definition and analyses of target groups	Strategies and development of educational programs; establish contacts	Implementation; establish special interest groups; further development and implementation; evaluation
<i>Responsibility</i>	<i>NIPI PMK staff</i>	<i>NIPI PMK in co-operation with Reserve-Museum</i>	<i>Reserve-Museum in co-operation with NIPI PMK</i>

Long-term perspectives

- Continuous evaluation of all activities;
- Revisions and improvements of activities;
- Following up of training;
- Future plans to be approved in 2008.

3. PUBLIC INFORMATION

3.1. Background

3.1.1. Present situation

While the number of scientific publications on Tamgaly and other rock art sites of Kazakhstan are rapidly growing, there is no popular-scientific literature yet. Due to the financial support of UNESCO, the booklet and folder map for visitors were produced by NIPI PMK in 2002, in Kazakh, Russian and English. These products are sold to visitors on site at a moderate price. The target groups are different nationality adults. In addition, a CD-Rom is produced by NIPI PMK in 2003, giving general as well as specialist information and archaeological background, history of research, geological, botanical and landscape information, etc, and rules for visitors' behavior. This CD also was financed and is distributed by UNESCO.

An interactive information CD-Rom on Tamgaly was produced in 2004, financed by the Ministry of Culture. It will be distributed and sold through the Ministry of Culture.

Several newspaper articles, television programs and news items have been made, giving much attention to Tamgaly. All this means that a lot people in Kazakhstan have become aware of the site and its qualities and attractions.

Provisional information boards were installed at the north and south entrances in 2002. Following careful documentation, small but obvious sign symbols were painted on stone slabs placed along the visitors' routes (stop signs, snake signs, arrows, etc.) the same year.

The present management staff has a clear understanding that the quality, volume and scale of site-information at all times should be in accord with the responsible level of visitation in order not to hazard the archaeological monuments, the natural landscape or the environment. Another principle is that all on-site information should be physically and visually unobtrusive.

3.1.2. Issues and objectives

By information is here understood measures and tools targeted at servicing relevant target groups with knowledge of the existence of the Tamgaly Site, of the attractions of the site, how to get there, the vulnerability of the site and the environment, protective measures and why they are necessary, and proper on-site behavior.

You cannot wish to know about something unless you have heard about it and get curious and interested enough to want to know more about it. Basic information, therefore, is to start the process of:

Information -> curiosity -> wishes for more information.

When on site, the information should be designed to further the following process:

Wonder -> appreciation and enjoyment -> curiosity -> interest -> wishes for more knowledge -> understanding -> new questions -> wonder -> and so forth.

The main objectives

- *Through relevant measures and channels make the national and international public aware of Tamgaly and create a wish to visit and know more about the site;*
- *Produce and emit information in pace with the gradual development of the site;*
- *Design information that may stimulate visitors' brains as well as hearts and senses.*

Issues

While information is necessary in order to make the public aware of the site and its attractions, the core of the experience is the actual visit to the Site. Information may be divided into 3 stages:

1. General information to make the public aware of the site, how to get there and what to experience;
2. On-site information and informative activities, directed towards giving visitors high-quality experiences and output without intrusive physical or visual on-site interventions. Information covers both popular-scientific interpretations and information about site vulnerability and conservation, and protection efforts;
3. Post-visit supplementing information, directed towards giving extended, long-term effects of the visit.

3.1.3. Expected outcome

The expected outcome of efforts connected to different channels and methods of information are:

- The general public, nationally and internationally, are aware of the existence of Tamgaly and its many qualities and attractions, of how to get there and what to expect;
- The Tamgaly Site is developed for sustainable visitation through non-intrusive information;
- Visitors as well as the general public are aware of the vulnerability of the Site and proper site behavior;
- Information materials are produced with special regard to different target groups;
- Widespread knowledge and appreciation of the Tamgaly Site and its qualities and condition, and of the Kazakh cultural and natural heritage.

3.2. Recommended strategy and actions

3.2.1. The information and awareness building strategy

3.2.1.a. Oral information

Oral information from person to person is an important channel of marketing. The clue here is that the Site, and the visit, is perceived as positive. Visitors to Tamgaly should be encouraged to “spread the word”. This is an important way of reaching the primary target groups – inhabitants of Almaty and surrounding areas, and Astana.

3.2.1.b. Media and Internet

Editors of newspapers, magazines and radio- and television programs should be invited to Tamgaly and in general be provided with up-dated information of what’s at all times new in Tamgaly, opening hours, attractions etc.

Travelers of today search the Internet for useful information and ideas for places to visit. Internet information should be easy to find and offer attractive, interesting and intriguing information in several languages.

3.2.1.c. Traveler’s books

Traveler’s books are sold in huge numbers all over the world. It is important to make sure that the given information is always correct and to the point. Relevant and up-dated information must reach the right addresses.

3.2.1.d. Flyers

Simple information flyers or leaflets are a good way of reaching potential visitors. Such information is inexpensive, can be distributed through hotels, shops and public offices and has a wide reaching capacity. Attractive design is of special importance.

3.2.2. Site presentation

All information should be based on on-going research and scientific interpretation of the Site and its different aspects. Through high-quality pedagogical treatment, scientific results are to be turned into popular scientific information, in the shape of leaflets, booklets and books for different target groups. Response from visitors should be carefully listened to in order always to improve and supplement the products.

All on-site information installations and signs are to be maintained and kept in a good condition at all times.

3.2.2.a. Road signs

Whether arriving from east, west or south, there should be no doubt where to turn to get to the entrance of Karabastau and Tamgaly. The road signs should be given the international design and symbols for attraction/site.

3.2.2.b. Information boards, number system and corresponding map/brochure

Information boards are the most usual way of giving information on site. The problem is that they per definition represent a physical and visual intrusion. A site like Tamgaly is particularly vulnerable to such intrusions. Consequently, information boards should in principle not be erected within the protected site. Exceptions to this basic principle may be considered where an information board will inflict no physical or visual harm:

- At the spot southwest of where the path to petroglyph Group IV meets the main north-south road through the gorge, panoramic information boards showing groups IV and V should be considered. These can be combined with a rest area (see ch. 4.2.2.d);
- At the view point opposite Group III, a panoramic information board of this group may reduce the need for visitors to climb the path to see the images from close distance since many of them are already visible from this spot;
- By the settlement site in the southwest area in combination with the protective structure.

New high quality information boards should be erected at the north and south entrances where they can do no physical or visual harm. On-site information related to the different attractions and phenomena can be solved by installing discreet number signs corresponding to numbered information in a separate information brochure/folder, given to visitors when they enter and pay their entrance fee. This means production of a supplement to the existing map/folder or revision of the existing map and booklet.

3.2.2.c. Sign symbols

The existing symbols marking non-access parts of the site (“STOP”), danger of snakes (snake image), good points for overview (image of binoculars) etc, are very discreet and serve their purpose well. The effects of these signs should be constantly monitored and evaluated, maintained and if necessary supplemented or replaced.

3.2.2.d. Guiding

Having positive and well-educated guides on site is the best way of providing good information to visitors, since they represent the primary face-to-face communication. At the same time, guides will be in control of visitor's behavior, can answer questions and be of general service and assistance. Guides should be well informed and knowledgeable about different archaeological interpretations, geological phenomena, botanical species, etc. Guided tours should be offered in Kazakh, Russian, English and ideally other languages according to need.

3.2.3. Publications

Publications may be divided into 3 categories, of which category 3.2.3.a and b represent publications especially targeted to Tamgaly:

3.2.3.a. Publications to be used on site

a-1. Map/brochure/booklet with marked numbers of attractions

The numbers corresponds to on-site numbers, and explanations and interpretations are given for self-service guiding (cf. ch. 3.2.2.b).

a-2. Booklet

The booklet for sale will provide information supplementing the above measures. The existing one serves its purposes well. The design and content is of high quality, but should be systematically evaluated, proofread and revised ahead of reprints if found necessary and visitors' responses indicate it.

3.2.3.b. Post-visit supplementing information

b-1. Popular-scientific publications

Many visitors to heritage sites want to bring more information home with them. There should be a considerable market for popular-scientific books. Such books must have high visual, scientific and pedagogical qualities and be produced in relevant languages.

b-2. Books for children

Activity books for children, based on doing things at home, are usually very popular. Children's books with stories connected to the site and its history is another relevant product.

3.2.3.c. Other relevant informative literature

c-1. Information on other sites and attractions in Kazakhstan

Information leaflets describing other sites to visits should be welcome.

c-2. Popular-scientific books

For the interested visitor, existing popular-scientific books on archaeology, geology and other relevant subjects should be available for sale.

3.3. Timeframe and responsibilities for implementation

Issue, Information	SHORT TERM		MIDDLE TERM
	2004	2005	2006-2008
Media and internet information, and different info-channels	Connect to media companies and prepare a step by step media info-program	Implementation of first step/s of the media program; continuous evaluation	Continued implementation of the media program; analyses of response from the public and visitors; evaluation, revision and full implementation of the media program
<i>Responsibility</i>	<i>Ministry of Culture, NIPI PMK</i>	<i>NIPI PMK, Reserve-Museum, relevant scientific institutes</i>	<i>NIPI PMK, Reserve-Museum, relevant Scientific institutes</i>
Road signs	Discussions with road authorities; design and planning	Production of road signs	Maintenance
<i>Responsibility</i>	<i>NIPI PMK in co-operation with Reserve-Museum</i>	<i>Reserve-Museum</i>	<i>Reserve-Museum</i>
Information boards at site entrances	Design and choice of information; production	Maintenance	Maintenance and evaluation
<i>Responsibility</i>	<i>NIPI PMK in co-operation with Reserve-Museum</i>	<i>Reserve-Museum</i>	<i>Reserve-Museum, NIPI PMK</i>
Other information boards	Considerations of necessity according to the principle of minimum intervention	Design and choice of information; production	Maintenance and evaluation
<i>Responsibility</i>	<i>NIPI PMK in co-operation with Reserve-Museum</i>	<i>NIPI PMK in co-operation with Reserve-Museum</i>	<i>Reserve-Museum, NIPI PMK</i>
On-site number system and map/brochure	Choice of stations; design of number signs; draft of text for brochure	Production and effectuation	Evaluation and maintenance
<i>Responsibility</i>	<i>NIPI PMK staff</i>	<i>NIPI PMK staff in co-operation with Reserve-Museum</i>	<i>Reserve-Museum in co-operation with NIPI PMK</i>
Popular scientific publications	Evaluation of booklet; plans for new publications	Booklet in new edition; preparation for design and productions of new books	Further development of topics for popular representation; production and sale
<i>Responsibility</i>	<i>NIPI PMK; relevant scientific institutes</i>	<i>NIPI PMK; Reserve-Museum; relevant scientific institutes</i>	<i>NIPI PMK; Reserve-Museum; relevant scientific institutes</i>
Children's books	Objectives, goals and possibilities; plans and possibilities	Establish contacts with teachers and pedagogical institutes	Development of topics for children; production and sale
<i>Responsibility</i>	<i>NIPI PMK staff</i>	<i>NIPI PMK staff in co-operation with Reserve-Museum</i>	<i>Reserve-Museum in co-operation with NIPI PMK</i>

Long-term perspectives

- Continuous evaluation of all activities, products and achievements;
- Maintenance and improvements of activities and products;
- Future plans to be approved in 2008.

4. VISITATION AND TOURISM

4.1. Background

4.1.1. Present situation

Since the Tamgaly Site was opened for visitation, the number of visitors has developed as follows:

2001: Counts starting in June: 1090

2002: Visitations starting in February: 2769

2003: Visitations starting in January: 4307

2004: 01 January-10 May: 1896, mainly in April (1151), of which 1044 are adults including 83 foreigners, and 852 school children).

At the entrance to Tamgaly, guides/guards have given visitors a form, which they were asked to fill in before departure. These are the main reactions from visitors in 2002, relevant to this Sub-Plan:

- The guards did a better guide job than the Almaty guides following their group – “they must be well educated”. The (Almaty) guides should tell more about the rock carvings
- The guided tour should be longer / the excursion is suitably long
- Please continue with the practice of no admission fee
- The road from Almaty is very bad
- Have heard about Tamgaly from television and newspapers
- Children learned about Tamgaly at school, they recognise some images when they see them on the rocks
- You should make this more public, people should know about it, Tamgaly deserves to be known to many people
- Will tell others about it and recommend a visit to others
- You must provide sun shelter and have a place for getting food and drink
- You should have more guards to protect the site from careless visitors; don't let people come too close to the carvings; restricted access to vulnerable places
- Good foot-paths / the foot-paths should be better
- Want more information and image descriptions and interpretations

Two toilets (male and female) are erected northeast of the north entrance to Tamgaly, where the main parking lot is planned. Paths to the main attractions are established, based on ecological and minimum-intervention principles. All landscape interventions, however minor, are documented and based on geological considerations and advice.

By spring 2004, the preliminary office/visitor centre building of the Tamgaly Reserve-Museum in Karabastau is under construction, and the Reserve-Museum will be fully operative in 2005. This implies the possibilities to present and care for the Tamgaly Site in the best possible way. A precondition is a close co-operation between the Reserve-Museum and NIPi PMK, since the staff at this institute represents high competence within relevant sciences and topics and they know and understand the site intimately.

4.1.2. Issues and objectives

As Tamgaly is receiving more and more attention and more people get to know about it, the number of visitors will increase. This process will further develop when the site is included in the World Heritage List.

Objectives

The infrastructure of Tamgaly is to be further developed to meet challenges of increased visitation before problems of over-use or misuse of the site and its natural and cultural values arise. This means to collect and analyze visitation and site sustainability data, plan and make strategies of sustainable development and carry out measures directed at maximum site and visitors' control.

- Continue the development of minimum-intervention on-site installations and regularly monitor the quality, functionality and effects of such installations;
- Continue the development of offers to and facilities for visitors to the site (toilets, rest areas, information, café, relevant souvenirs and handicraft products, activities) based on traditional and minimum-intervention methods;
- Co-operation with tourist agencies for controlled, gradually increased, balanced, sustainable and ecologically friendly visitation and cultural tourism;
- Establish methods and routines for monitoring of the development of visitation, visitors' behavior, the effects of visitation and the functionality of facilities, and effectuate necessary regulations and preventive measures.

Issues

a. On-site facilities

The following facilities must be developed in pace with increased visitation:

- Toilets
- Parking lots
- Rest areas
- Locations for sales

b. Safe access to cultural and natural site attractions

The question of further development of the access paths network and of possible or necessary installments (strengthened paths; pathways; stairs; platforms) is a difficult one in a sensitive landscape like Tamgaly. Based on the principle of ecological friendly minimum interventions, the question must be dealt with ideologically and practically where found to be necessary.

c. Off-site facilities

- Visitors' Center / Office of the Reserve-Museum: A suitable lot is being developed outside the protected area, close to the village of Karabastau. The development of this Center / Museum will imply that visitors and tourists should get a high quality, professional offer of increased knowledge, understanding and information, ahead of and after the actual visit to the site.
- Village facilities: Local bed and breakfast service means employment and increased income and that visitors get the possibility to increase their experiences of the site and its attractions, and can take part in different activities.

d. Infrastructure of tourism

- Co-operation with tourist agencies: At present, tourist agencies operate on an individual bases, without sufficient co-operation with the on-site management. Co-operation for better co-ordination of and control with guided tours is an important issue to be quickly dealt with and solved.
- Public transport: Visitors should be encouraged to use public transport to Tamgaly, and tourists basically have such transport as the only alternative if not choosing a formal guided tour. Co-operation with transport companies must be sought for and regular service established.

e. Other visitors' activities

“Learning by doing” is an old pedagogical principle of better quality knowledge and creation of positive attitudes. Activities for children, young people and adults should be designed, to increase the quality and interest of a visit to Tamgaly.

f. Monitoring of visitors

Objectives of monitoring of visitors are:

- To be in control of the anticipated increase of visitors, who they are, where they come from and their interests, expectations and reactions, in order to be able to serve them in the best of ways;
- To be in control of visitors' behavior and the functionality of facilities and installations, for evaluation purposes and for further improvement and control of sustainable development.

g. Tourist target groups

Like “the general public”, tourists do not represent a homogeneous group. They come from different countries; they differ in age, motivation and interests, and they have different economic capacity. As traveling to Kazakhstan by now is simplified, a growing number of tourists can be expected to want to travel in this and other Central-Asian countries. Young back-packers are usually pioneer travelers to new countries and regions of the world, and they should be defined as an important target group. More affluent tourist groups tend to follow in the wake of back-packers, and if offers and activities are satisfying, such groups represent valuable income to the community and the nation. Studies show that cultural heritage tourists spend more money than other tourists.

4.1.3. Expected outcome

The expected positive outcome of efforts connected to visitation and tourism, is:

- Increased but controlled and regulated visitation and cultural tourism, constantly met by sustainable and ecologically friendly minimum intervention development of the site and its facilities;
- High quality offers to visitors relating to access and on-site facilities, sales of relevant products and activities;
- Increased employment and income in and sustainable development of the local community;
- A functional, responsible and out-reaching Visitors' Center / Reserve-Museum office in Karabastau;
- Productive co-operation with and involvement of relevant institutions and organizations in the Kazakh society;
- Contribution to the strengthening of the economy connected to tourism in Kazakhstan.

4.2. Recommended strategy and actions

4.2.1. The strategy for sustainable tourism development

As of 2004, only a limited number of visitors to Tamgaly can be managed within existing means and structures, but already organized tourism has started. Sustainable development of tourism means that information, marketing and offers must always be kept at a level that suits the infrastructure and level of site development. It also means that marketing and level of visitation must be carefully monitored and met with adequate and relevant measures of regulation. Responsible management structures must be developed to handle and carry out measures effectively, quickly and according to agreed guidelines and national policies for Tamgaly and the Cultural Heritage in general. With the Tamgaly Reserve-Museum fully developed and functioning, this institution should primarily be in charge of the sustainable and balanced development of tourism in relation to the site.

According to the principle of sustainable tourism the number of tourists/tourist buses per day must be regulated according to the development of the on-site infrastructure. This calls for implementation of regulations and control:

- Limits must at all times be defined by the responsible Tamgaly management agency, and these must be respected by the tourist agencies;
- Bus tours to Tamgaly should be pre-booked according to the agreed daily limits. If fully booked, visitors must book a later tour.

The main challenge is to initiate co-operation with tourist agencies within agreed national regulations of the country's tourist industry, and this must start immediately. The responsible site management agencies and the tourist industry must function within the same framework of goals, concepts and ideologies. The parties must develop agreed marketing strategies and strategies of visitation. The question of adequate and satisfying public transport must be solved together with the relevant authorities.

All physical infrastructure measures must be documented before, during and after effectuation.

4.2.2. Development of tourism infrastructure

4.2.2.a. Parking lots

Parking should primarily take place to the northeast of the north entrance. Parking area should be well defined through ecological-friendly means. Areas should be set aside for extension according to increased visitation.

4.2.2.b. Multi-language services

Besides in Kazakh and Russian, the possibility of giving guided tours in English should be obligatory with increased international tourism. Guided tours in English should be arranged from Almaty, and at least some local guides should be made able to handle English-speaking visitors. The development of foreign visitation should be monitored and the necessity for additional languages considered.

4.2.2.c. Access to monuments

The basic visitors' route at present is as follows:

Cemetery – petroglyph groups II – III – V – VI – back to entrance. The settlement site will be added to the tour when it is preserved and protected.

In order to be able to have the maximum control during guided tours, each guide should never service a group consisting of more than 15-20 persons, maximum 25. Larger groups must be divided.

Background information about the petroglyph groups is to be given before the petroglyphs themselves are approached. Then the group must be divided again, and a maximum of 10 persons must be allowed to climb the paths to the images simultaneously. The guide will follow the first group, send it down and then welcome the rest of the group to approach.

- Group II: The information spot will be at the east bank of the road through the gorge, where a rest area will be provided (see ch. 4.2.2.d-3);
- Group III: The information spot will be at the elevated view point opposite the group of petroglyphs where a panorama information board may be installed;
- Group V and IV: The information spot will be southwest of the crossing of the paths to the two groups where panorama information boards may be installed at a rest area (see ch. 4.2.2.d-4).

4.2.2.d. Visitors' facilities**d-1. Toilets**

Additional toilets must be established at the north entrance and new ones at the south rest area (see 4.2.2.d-4). Toilets must at all times be clean and attractive.

d-2. Rest area at the north entrance

The following facilities are planned by the parking lot at the north entrance:

- Picnic ground
- Yurts for refreshments
- Yurts for sales of souvenirs etc.

d-3. Rest area by petroglyph Group II

When the visitors' groups are divided to ascend Group II (cf. ch. 4.2.2.c) the waiting part of the group will be invited to sit down on tree stubs placed somewhat irregularly by the east bank of the road.

d-4. Rest area by petroglyph Group V

When visitors reach the spot where the road through the gorge meets the path to Group IV, it may be time to sit down and have a rest. The chosen spot is immediately southwest of this crossing. The visitors' groups will be divided, and visit groups V and IV and rest in turns. Refreshments and sales will be provided in yurts, and in addition sun shade. Panorama information boards serving the two groups may be installed at the rest area (cf. ch. 4.2.2.c).

4.2.2.e. Access for disabled visitors

Access for disabled visitors to Tamgaly is possible to some of the monuments (cemeteries, part of petroglyph Groups III and V, possibly the settlement site) but for topographical reasons difficult or impossible to others. It should be a priority to simplify access for disabled

visitors to monuments where possible, and to other facilities (toilet, sales yurts, Reserve-Museum). Alternative access and viewing should be looked into and tried out (for instance available binoculars, etc.).

4.2.3. Protective measures for access to monuments

4.2.3.a. Access paths to monuments

Existing paths with sign system should be kept up and monitored in relation to functionality and maintenance, and visitors' behavior should be monitored. Access paths to petroglyph groups II, III and IV need to be strengthened, and safeguarding strategies relating to petroglyphs as well as to visitors must be considered and carried out to meet increased visitation.

4.2.3.b. The question of physical installations for protection and improved access

Basic protective structures are in place at some of the gravesites, and slabs with painted signs direct or stop visitors. These must be monitored for sufficient protection and visitors' behavior.

Measures for protections and improved access must be considered and prepared for ahead of anticipated increased visitation:

- Protection against erosion and landslide of paths;
- Protection of petroglyphs and the settlement site;
- Protection of visitors against accidents at dangerously steep or eroded points;
- Safe and easy access.

Physical installations can hardly be avoided if these requirements are to be met: for the strengthening of paths through inclined stepladders, safety measures at steep and dangerous viewpoints and platforms where necessary. Stone should be the preferred material for necessary installations. Besides, wood and metal should be chosen when appropriate. Metal constructions should be stone colored, non-corrugation metal (eg. stainless steel). In respect for the site, all installation should be well designed and of high quality.

All installations should preferably be non-interventional and reversible (can be removed without leaving physical traces), free of environmental poisons, functional, solid and reliable in the long term, easy to maintain, and discreet in color and design.

b-1. Graves

- The northernmost group of graves is protected by a surrounding rope, and visitors can watch the graves from slightly elevated soil platforms. The top layers tend to erode due to wear and loose pebbles must regularly be put back;
- The rope around the middle single grave should be moved further from the grave (3/4-1m.);
- Rope must be put up around the southernmost group of graves and the elevated soil platforms maintained.

b-2. Petroglyphs

- Group II: The natural soil and stone “platform” in front of the panels is fairly narrow at places and partly sloping, and it ends in a steep slope towards the west. Consolidation through a simple protective platform must be considered following geological and engineering consultations. A metal grid platform filled with surface pebbles with rails is a discreet possibility.
- Group IV: The panel is protected by rope, stopping visitors from getting close to the very sensitive rock panel. In order to protect visitors from falling down the steep eastern slope, stones and a rope should be placed along the edge. In addition, the guides tell visitors to be attentive and careful.

b-3. Settlement site

The protection of the excavated settlement site must fill the following requirements:

- Protection of the archaeological structures and the excavation pit against erosion and loss of material;
- Access to view and photograph for visitors, visualized interpretations and pedagogical explanations;
- High functionality and good architectural design combined with minimal physical and visual intrusion.

4.2.4. Sales and activities**4.2.4.a. Development and sales of products**

The local population should be encouraged to start production of relevant sales products and souvenirs, based on local and Kazakh traditions and what the site is all about. Vulgar and non-relevant products should not be considered. Popular-scientific books on Tamgaly and other relevant Kazakh archaeological sites and scientific topics should be produced and sold, covering different age and interest groups. Food and drink for sale should be rooted in Kazakh traditions.

4.2.4.b. Sales’ stations

When the Visitors’ center / Reserve-Museum is established in Karabastau, it may also function as a place for food and drink and sales of products. However, in order to catch impulsive wishes to buy sales products, and to cover immediate needs for food and drink, sales yurts should be set up on site as well, basically at the north entrance (see ch. 4.2.2.d-2, but also at the rest area by petroglyph Group V (see ch. 4.2.2.d-4), concentrating on tea, water and light snacks. With increased visitation, the number of yurts at appointed sites can be increased according to needs.

4.2.4.c. Activities

Children are usually happier with doing something than just passively seeing something. An activity-yurt or play-yurt should be considered, serviced by teachers or specially trained personnel or volunteers. Older children can get group assignments under the leadership of a guard/guide/volunteer. All activities should have relevance to the site, its history and its cultural and natural values.

Adults, too, enjoy unusual activities. The possibility of developing a bed-and-breakfast service in Karabastau and other villages and farms within a radius of 10km. opens for a two-day offer of guided tours with activities for tourists. Other monuments and attractions can be added, camp dinners with cultural elements arranged, etc. When visitors stay over night, night guiding to petroglyphs using artificial light is a very attractive activity. A number of other relevant activities can be imagined, and ideas should be developed and tried out.

4.3. Timeframe and Responsibilities for Implementation

	SHORT TERM		MIDDLE TERM
Issue, Visitation and Tourism	2004	2005	2006-2008
Monitoring of visitors	Recordings, interviews, behaviour; analyses and evaluation	Recordings, interviews, observation and monitoring of visitors' behaviour; analyses and evaluation	Recordings, interviews, observation and monitoring of visitors' behaviour; analyses and evaluation
Responsibility	<i>Guards and guides; other site personnel; NIPi PMK</i>	<i>Guards and guides; other Reserve-Museum site personnel; NIPi PMK</i>	<i>Guards and guides; other site personnel; Reserve-Museum</i>
Visitors' Center / Museum	Construction of the preliminary Visitors' Center / Office building in Karabastau. Developing further plans according to principles of minimum intervention	Approval and implementation of plans	Further development; evaluation; co-operation structures
Responsibility	<i>NIPi PMK, Reserve-Museum, Ministry of Culture</i>	<i>Reserve-Museum, NIPi PMK, Ministry of Culture</i>	<i>Reserve-Museum; NIPi PMK; Ministry of Culture</i>
Co-operation with tourist agencies; regulation and control of daily number of visitors / buses	Evaluation; plans and strategies for improved co-ordination and co-operation; immediate implementation, control mechanisms	Implementation of plans; evaluation and up-dating; further development	Further implementation of plans; regular evaluation and up-dating; further development
Responsibility	<i>NIPi PMK in co-operation with Reserve-Museum, national and local authorities</i>	<i>NIPi PMK in co-operation with Reserve-Museum</i>	<i>Reserve-Museum in co-operation with NIPi PMK</i>
Public transport	Evaluation; plans and strategies together with authorities	Implementation of plans	Implementation of plans; evaluation; further development
Responsibility	<i>NIPi PMK in co-operation with Reserve-Museum</i>	<i>NIPi PMK in co-operation with Reserve-Museum</i>	<i>Reserve-Museum in co-operation with NIPi PMK</i>
Infrastructure, site and village facilities, sales, etc	Monitoring and maintenance of existing facilities; design and implement further facilities; involve local population in plans for sales and boarding	Monitoring and maintenance of existing facilities; evaluation; further development and implementation	Monitoring and maintenance; evaluation; further development of facilities according to priorities and needs

<i>Responsibility</i>	<i>NIPI PMK in co-operation with Reserve-Museum</i>	<i>NIPI PMK in co-operation with Reserve-Museum</i>	<i>Reserve-Museum in co-operation with NIPI PMK</i>
Activities for visitors	Ideas, plans and choices of realistic activities	Try out different activities; evaluation	Implementation of special offers to visitors
<i>Responsibility</i>	<i>NIPI PMK in co-operation with Reserve-Museum and with local participants</i>	<i>NIPI PMK in co-operation with Reserve-Museum and with local participants</i>	<i>Reserve-Museum in co-operation with local participants</i>
Paths	Monitoring and up-keep of existing paths and signing system; monitoring of visitors' behaviour	Develop visitor routes pattern on site; Continue construction and strengthening of non-intrusive paths; monitoring	Continue monitoring, evaluation and development according to needs and non-intrusive principles;
<i>Responsibility</i>	<i>NIPI PMK</i>	<i>NIPI PMK in co-operation with Reserve-Museum</i>	<i>NIPI PMK in co-operation with Reserve-Museum</i>
Safe access to monuments; the question of instalments and physical structures	Observation and evaluation; ecological, archaeological, geological, engineering and ethical evaluation of possibilities; development of plans	Principal and practical decisions; implementation of plans	Monitoring, evaluation, maintenance and improvements
<i>Responsibility</i>	<i>NIPI PMK in co-operation with other scientific institutions</i>	<i>NIPI PMK in co-operation with Reserve-Museum</i>	<i>NIPI PMK in co-operation with Reserve-Museum</i>
Access for disabled visitors	Look into possibilities and solutions; involve users	Try out solutions together with users; evaluation	Further development if topographically possible; maintenance; and evaluation
<i>Responsibility</i>	<i>NIPI PMK</i>	<i>NIPI PMK in co-operation with Reserve-Museum</i>	<i>Reserve-Museum in co-operation with NIPI PMK</i>
Multi-language services	Monitoring of development of foreign visitations	Language courses offered to local guides according to needs	Evaluation; development according to needs
<i>Responsibility</i>	<i>NIPI PMK</i>	<i>NIPI PMK in co-operation with Reserve-Museum</i>	<i>Reserve-Museum</i>

Long-term perspectives

- Yearly analyses of recorded figures of visitation;
- Evaluation of the relationship between number of visitors / pressure on landscape and monuments, and protection of site integrity;
- Activities for visitors should become a regular offer, based on evaluation and development of new ideas;
- Continuous evaluation of all infrastructure measures and activities;
- Revisions and improvements of measures and activities;
- Yearly plans with yearly reports;
- Future long-term plan to be approved in 2008.

Tamgaly (Kazakhstan)

No 1145

1. BASIC DATA

State Party: Republic of Kazakhstan
Name of property: Petroglyphs within the Archaeological Landscape of Tamgaly
Location: Almaty Oblast (Region)
Date received: 28 January 2003

Category of property:

In terms of the categories of cultural property set out in Article 1 of the 1972 World Heritage Convention, this is a *site*. In terms of *Operational Guidelines for the Implementation of the World Heritage Convention*, paragraph 39, this is a *cultural landscape*.

Brief description:

Set around the comparatively lush Tamgaly Gorge, amidst the vast, arid Chu-Ili Mountains, is a remarkable concentration of some 5000 petroglyphs, associated settlements and burial grounds, which together provide testimony to the husbandry, social organisation and rituals of pastoral peoples from the Bronze Age right through to the early 20th century. The large size of the early petroglyphs, their unique images and the quality of the iconography sets them apart from the wealth of rock art in Central Asia.

2. THE PROPERTY

Description

Towards the western end of the Tianshan Mountains in the southeast of Kazakhstan, the Chu-Ili mountain spur forms a canyon around the Tamgaly Gorge. An abundance of springs, rich vegetation and shelter distinguishes the area from the arid mountains that fringe the border of Kazakhstan with Kirgystan to the south, and from the flat dry plains of central Kazakhstan to the north. The Gorge and its surrounding rocky landscape, where shiny black stones rise up rhythmically in steps, have attracted pastoral communities since the Bronze Age, and have come to be imbued with strong symbolic associations.

The site covers a roughly circular area of 900ha and includes the 982m peak of Mt Tamgaly. The Tamgaly river flows through the centre and out onto the plain below, to the north. Surrounding the site is a large Buffer Zone of 2900 ha which to the northwest and south east of the site includes outliers of the petroglyphs, and further burial mounds and ancient settlements.

The site consists of the following cultural qualities:

- *Over 5000 rock petroglyphs*
- *Ancient settlements, burial sites, and quarries*

➤ *Sacred sites*

Over 5000 rock petroglyphs

Petroglyphs on unsheltered rock faces are the most abundant monument. They are formed using a picketing technique with stone or metal tools. No painted images have been found.

Altogether over 5,000 images have been recorded in 48 different complexes. Of these five complexes are the most important, displaying about 3,000 images.

Overall the petroglyphs appear to cover a period from the second half of the second millennium BC right through to the beginning of the 20th century. The images have been associated with five distinct phases:

Middle Bronze Age – Tamgaly type petroglyphs

By far the most exceptional engravings come from the earliest period: large figures deeply cut in a sharp way with a wide repertoire of images including unique forms such as solar deities (sun-heads), zoomorphic beings dressed in furs, syncretic subjects, disguised people, and a wide range of animals.

The sequence for the rock art has been established from stratigraphic and illustrative analysis, and from comparisons with dated figures from tombs. The Tamgaly type engravings date from the second half of 14th and 13th century BC. All are similarly oriented on the rocks, and their large size allows them to be seen from 20-50m away.

One of the most characteristic images of Tamgaly is the sun-head, of which a total of 30 have been found, and 26 still survive. All date from the Bronze Age, but the most expressive ones are the earliest. The images seem to convey the qualities of deities through their size, disposition and anthropomorphic appearance. A large vertical panel holds what is called a 'masterpiece of rock art'. Its images show 6-7 divine subjects, 10 dancing men and worshippers, each in their own part of the picture, with solar deities at the highest level.

Late Bronze Age – transitional

These are much smaller, less well formed images than the earlier ones. The repertory is less varied, but with more scenes from life, particularly pastoral life, which reflects the rise of nomadic cattle breeding activities. The increasing mobility of people means that similar images are also found across a very large part of central Asia. The Tamgaly Late Bronze images have strong similarities with those in Western Mongolia, Altai and Western Tianshan.

Early Iron Age – Sakae, Wusun, peoples

These are the most numerous images in Tamgaly but they are not homogenous, their variety apparently reflecting their creation by different peoples such as Sakae, Wusun, Yueche, Huns, who inhabited the area between the end of the 1st millennium BC and the first half of the 1st millennium AD. The scenes still show the hunt of wild animals but camels also begin to appear. The most proficient drawings seem to have been done by the Sakae people with much rougher images created by other peoples. The petroglyphs reflect the complex process of interaction between the ancient central Asian tribes, with some of the earlier images overlaid or damaged.

Middle Ages – ancient Turks

These differ from all the previous images in reflecting the symbols of power of the emerging huge steppe empires in the 6th to 12th centuries AD., with their aristocratic military leaders and rich cattle breeding cultures. Warriors, standard-bearer, archer, military banners and horse equipment all appear.

Modern period – Dzungarians and Kazakhs peoples

After the conquest by Mongolia, 13th-14th century AD, engraving largely ceases until the 19th and 20th century when popular Kazakh figures display a burst of artistic creativity.

Ancient settlements, burial sites, and quarries

The settlements mostly occupy the flat areas of the lower hills. They all face to the south, southeast or southwest. The stone-built remains consist of clusters of one or two houses and animal enclosures. Some of the settlements were clearly used only seasonally in the winter months, by cattle breeders, while others were permanent dwellings. More modern buildings also exist in the area: these are temporary summer dwellings for shepherds who spent the winter lower down on the plains.

The earlier sites are multi-layered and show occupation over an extensive period of time. In one excavated site the earliest house dates to the Bronze Age. It is circular with a central hearth and a ritual burial of a sheep under the floor. Above it are Early Iron Age and late Middle Age dwellings.

A huge number of ancient burials are known on the site. These come in two basic types. The earliest is a stone enclosure with boxes and cists, dating from the middle and late Bronze Age, while the later types consist of mounds (*kurgans*) of stone and earth built above tombs. The latter seem to date from the Early Iron Age to the present day.

Seven of the early enclosures have been studied in the alluvial foothills. Detailed analysis of the remains, which include petroglyphs of the most ancient type, has defined a chronological sequence.

The *kurgan* structures are found all over the site with the largest in the foothills, where they are laid out in parallel lines. Up in the mountains they are arranged in small clusters.

Ancient quarries are found associated with the Bronze Age cemeteries – providing the large stone slabs used in the construction of cists.

Sacred sites

The central canyon is devoid of dwellings and also contains the densest concentration of engravings and what are believed to be altars, located near rocks with petroglyphs, which it is suggested functioned as places for sacrificial offerings. It seems that the central area as a whole was imbued as a sacred site or cult area.

Elsewhere, stone fences, some engraved, are arranged around the top of rocks or hills near permanent Kazakh villages. Within the roughly circular enclosures, between 3.5 and 10m in diameter, are usually found a rich cultural layer of animal bones, suggesting ritual associations. None of these sacred sites has been excavated.

History

The petroglyphs with their associated settlements, burial grounds and altars, reflect the social and cultural life of the inhabitants of the area from the Bronze Age to the early 20th century – as discussed above.

Throughout the whole period no dwellings were constructed in the canyon where the five major groups of images are found. The tombs and cult structures are found in the neighbouring valley, while there is a large scatter of settlements, burial grounds and small petroglyphs sites all over the mountain periphery. From this disposition, it has been posited that the central area was a cult zone and was separated from the residential periphery by a neutral area, containing no remains. In the early Iron Age the residential area was substantially enlarged but still didn't touch the cult zone. In the Middle Ages the residential area is reduced but still occupies the same sites. In the 19th century came a complete change: many Kazakh winter dwellings appear in new places and in neighbouring gorges, as well as occupying old sites. Many large patronymic groups of dwellings ringed the cult area – which still seemed to have significance.

The 1930s and 40s collectivisation removed people from Tamgaly. Only in 1956 did people once again live there as part of a Soviet farm. They came from Russia and Ukraine. Later Kazakhs migrated from China and together these newcomers absorbed the few local people who were the repository of ancient local traditions. A track was constructed across the site and until 2001 heavy vehicles drove right near the rocks.

Respect for the cult areas remains amongst the Muslim population who hold traditional festivals, which recall ancient traditions, such as hanging rags on bushes near the springs. Their direct relationship with the petroglyphs has, however, been broken.

The rock art site has been known since 1957. Archaeological research has been carried out under the supervision of Dr Alexey E. Rogozhinsky. The methodologies used by the research team are of the highest standards. The Tamgaly rock art can be considered as one of the best studied in central Asia. The Republic of Kazakhstan has created a Central Asian Petroglyphs Database and a workshop was held in the area in 2003 to develop this.

Management regime

Legal provision:

The majority of the site is owned by the State. There are a few private properties, mostly burial grounds. The site is protected by the 1992 Law on the Protection and Use of Historical and Cultural Heritage. The Archaeological Landscape is a Property of National Significance inscribed on the Kazakh List of Monuments of History and Culture of National Significance in 2001.

It is proposed that the boundary of the buffer zone, and the boundary of the nominated area, should both be legally established in the near future.

Both the site and its Buffer Zone are to become a 'territory' of the future State Archaeological Reserve of Tamgaly, a reserve museum to be established in 2003. This

will be a permanent management agency under the direction of the Ministry of Culture. Once this is established private use of the area will be forbidden.

Management structure:

A temporary management agency has been established by the State Institute for Scientific Research and Planning on Monuments of Material Culture (NIPI PMK), which has been responsible for the management of the site. This temporary agency will function until the Reserve is established.

The NIPI PMK and the Tamgaly Reserve have together developed a protocol to ensure cooperation between both institutions although this has yet no clear guidelines.

To date there is no agreed plan for the property, apart from the tourist development plan for Zhambyl District that mentions Tamgaly as an object of tourism.

The NIPI PMK has acknowledged the need to develop a specific management plan for Tamgaly. Norwegian advisers have been involved in preliminary meetings. The plan was due to be finished in 2003 and to be submitted to UNESCO by the end of March 2004.

A bilateral agreement between the governments of Norway and Kazakhstan was due to be signed in spring 2003 after which a project for the Management, Conservation and Presentation of Tamgaly would begin. However the dossier suggests that funding was halted after the preliminary mission in 2000 by the Norwegians. The report following the mission sets out a triennial action plan for the site covering reinstatement, visitor access, literature, conservation etc.

Resources:

Currently six security guards patrol the site – four in the day and two at night. These posts were established in 2001 and have contributed greatly to the stability of the site – see below under threats.

Under the order for the establishment of the Reserve, the staffing is set as 29 permanent members including: 6 Managers/ Administrators, 8 for Scientific Research, and 15 support workers. An Advisory Committee will also be set up with representatives from the State, from the Region, from the Academy of Sciences and other specialists.

The proposed annual budget for the new Reserve is 6 million Tenge (around US\$ 40,000).

The administration will be set up in the Buffer Zone where a visitor centre or Museum is expected to be built.

Justification by the State Party (summary)

The nomination puts forward the site as having outstanding universal value for the following reasons:

- The particularity of the landscape, related to its geological features, climate and abundance of springs and shelter, were the main pre-conditions for the use of the Tamgaly site by generations of pastoralists from early times

- Tamgaly is at the cross roads of Central Asian ancient communications along the North of the Tienshan mountains.
- The rock formations, and particularly the rocks covered in shiny black lichens, attracted human artistic efforts
- The rock petroglyphs, and their associated settlements, are a vital record of the pastoral lifestyle of people from the Bronze Age to the 20th century
- The collection of petroglyphs include an outstanding collection of Bronze Age images which demonstrate the highest levels of development for this kind of rock art in Central Asia

3. ICOMOS EVALUATION

Actions by ICOMOS

An ICOMOS mission visited the site in December 2003.

ICOMOS has also consulted its International Scientific Committee on Rock Art.

Conservation

Conservation history:

The site on sandstone rocks is vulnerable to weathering with the rock faces displaying images being prone to lamination from the underlying rocks. The first major conservation works carried out in 1990, aimed at reducing water ingress into cracks. Unfortunately this programme has been stopped through lack of finance.

Since then the major intervention has been in connection with preventative conservation. Security guards have been on site since 2001 to prevent unauthorised visitor access and to deter graffiti, and barriers have been installed to prevent vehicles getting into the canyon. In addition, visitor paths have been constructed to channel visitors away from the rocks.

The joint Norwegian-Kazakhstan project mission which took place in 2000 developed a project brief to tackle conservation, as well as management and presentation. Because of lack of funding this has not yet been progressed. Emergency work was undertaken in 2001/2 by the NIPI PMK.

State of conservation:

The main conservation threat comes from weathering in combination with the geological formation of the rocks. Water enters cracks and crevices. As the stratification of the bedrock is parallel to the surface, the rock faces are extremely vulnerable to exfoliation.

In places quite severe deterioration has been noted. For instance a whole section of rock with sun-head images is damaged by structural cracks and has separated from its underlying rock formation.

Management:

The management structure due to be put in place is discussed above. The Management Plan was due to be submitted in spring 2004. The NIPi PMK have acknowledged the difficulty in preparing such a plan, which is quite a new departure.

Between 1991 and 2001 there was no visitor control on the site and this led to some damage from graffiti and some rocks even disappeared. Since 2001 security guards patrol the site and guards with horse and radio systems help the security process.

The only access route is the road from Almaty. Under the proposed Reserve, visitors will be charged for access at one central point.

Risk analysis:

The following threats are identified in the nomination:

Development pressures: The lands currently in the hands of farmers will become the property of the State after the establishment of the Tamgaly Reserve.

Environmental pressures: Water ingress into the rocks is the major threat – as discussed above. Added to this is the extreme variation in temperatures daily and seasonally.

Natural disasters: There is also the threat of earthquake activity as the Almaty Region is acknowledged to be in an earthquake zone.

Visitor/tourism pressure: Between 1991 and 2001, lack of funds prevented the control of visitors on foot or in cars. Such uncontrolled access had severe consequences with visitor climbing on rocks and inscribing graffiti. Since 2001, visitor controls have been put in place and car access blocked.

Currently the number of visitor is low but the site is one of the key visitor attractions in the country and visitor number are growing slowly. Preventative measures are being put in place to ensure the carrying capacity of the sensitive areas is respected.

The following was not put forward:

Shortage of resources: The experience put forward in the nomination for the period 1991 and 2001, when resources were short, graphically illustrates the possible threats.

Authenticity and integrity

Authenticity:

The main intrusion into the site is a road across the northern part of the site constructed in the Soviet period. There are also concrete post, remains of a former electricity line, and some modern sheepfolds. The posts are planned to be removed in the next two years.

Also a threat to integrity is the graffiti – but management measures have now been put in place to stop further examples.

Integrity:

The natural landscape creates a discrete and finite setting for the rock art and the whole of the concentrated central

area and the immediate peripheral area is included in the nomination.

Comparative evaluation

There are a huge number of rock arts sites scattered across Central Asia which reflect differing social, economic and cultural traditions over the past 3 to 5 millennia. Taken as a whole this rock art, mostly in the form of petroglyphs, forms the most important cultural monument for the traditional steppes civilisations of Central Asia. It is currently not represented on the World Heritage list.

Much of this corpus of work remains poorly studied and therefore comparisons are difficult to make. Other than on a superficial level, it is impossible to say with certainty why Tamgaly is of greater significance than some of the other less well-understood sites. However, Tamgaly stands out as being particularly well documented and researched.

Other sites in Kazakhstan, such as Eshkiolmes and Saimlaly-Tash, have far more images than Tamgaly – amounting to tens of thousands, and similarly demonstrate a sequence of development from the Bronze Age to the Modern era. Being in a different geological and physical zone they reflect differing social and economic development. However Eshkiolmes has been quite severely eroded by the nearby river, and by recent agricultural activity, and taken as whole it doesn't seem to represent one coherent site- rather it is split into separate valleys, each with distinct characteristics. In addition, it is stated that the subject matter of the earliest engravings is far more 'trivial' than at Tamgaly, with fantastic images being rare.

Saimaly is the largest rock art site in Central Asia with around 100,000 petroglyphs. It is situated in the highland, alpine zone and displays a particular type of rock art linked to its position at the interface between agrarian societies on the plains and shepherds in the mountains. The images are unique in showing pictures of tillage. The site is notable for its lack of over-engraved rocks. Also there are little associated monuments such as dwelling sites and burial mounds. Both of these make it difficult to determine sequences and dates. However it is stated that the Saimaly-Tash engravings could date back to Neolithic times.

At Baikonur, a third area, the images are in a poor state of preservation and have been little studied. However they do contain sun-head images and, being in Central Kazakhstan from where the inhabitants of Tamgaly are thought to have come from, they could represent precursors for the Tamgaly petroglyphs.

The Tamgaly images appear to be differentiated from other sites in Kazakhstan, for their coherence, size, subject matter, state of conservation, and above all for their artistic proficiency and for their association with a cult centre to the site.

The nomination doesn't provide comparators across the wider central Asian region between the Pamirs and Altai. However it could be said that the inscription of Tamgaly, and furtherance of its database and research, could lead to it becoming a role model for other sites in the region, thus prompting more research and study, which could ultimately lead to a better understanding of the wider context of Central Asian rock art.

Outstanding universal value

General statement:

The nominated site is of outstanding universal significance for a combination of the following cultural qualities:

- Its dense and coherent group of 5000 petroglyphs, of which the earliest Bronze Age images, dating from around 1400 to 1300 BC, display deeply cut figures of high artistic quality
- The petroglyphs, together with their associated settlement and burial sites, together provide a substantial record of pastoral peoples of the central Asian steppes from the Bronze Age to the present day
- The delineation of the site into a sacred core and outer residential periphery, combined with sacred images of sun-heads, altars and enclosed cult areas, together provide a unique assembly, which has displayed persistent sacred associations from the Bronze Age to the present day

Evaluation of criteria:

The site is nominated on the basis of the *criteria i, ii, iii, iv and v*:

Criterion i: The earliest engraved images, such as those associated with sun-heads and anthropomorphic subjects, display a high level of artistic skill. Particularly singled out are the image of the solar deity on a bull and a cow with calf.

Criterion ii: This criterion is justified on the grounds that the continuing use of the site of several millennia shows how images become redundant and were overlaid with new images relevant to the changing society. Thus the sites reflect that development in society and in its social symbols. This is more relevant to criterion iii. To meet criterion ii the site needs to show how it has had an influence on values, technology etc, elsewhere.

Criterion iii: The rock art images, together with evidence from the surrounding settlement and burial sites, and the spatial division of the site into sacred and residential areas, provide a tangible testimony to the lives and beliefs of pastoral peoples in the area from the Bronze Age to the present day.

Criterion iv: The nomination acknowledges that in the current state of knowledge this is difficult to justify, but goes on to say that the 'creation' of the Tamgaly site could be linked to the consolidation of tribes in the southern half of what is now Kazakhstan. More evidence would be needed to fully justify this criterion.

Criterion v: The arguments put forward for criterion ii are equally applicable to this criterion.

4. ICOMOS RECOMMENDATIONS

Recommendation for the future

The road across the site and the buffer zone, constructed in Soviet times, is clearly a major intrusion into the site which impacts on its authenticity. Commitment should be given to moving this to the outside of the site in the medium term.

The conservation condition of the site is vulnerable because of water ingress into the rocks. The project outline agreed as part of the joint Norwegian-Kazakhstan agreement should if possible be progressed in the medium term.

In order to allow visitors to fully appreciate the site, and understand constraints put in place for access, it would be desirable if information and access strategies could be developed. These may be contained in the forthcoming Management Plan.

The nomination states that the Management Plan is to be completed by spring 2004. Given the complex management issues associated with the site and the need for best practice for the management of rock art sites to be developed, this Plan should be considered before a final decision on inscription is made and adopted by the Ministry of Culture.

This Plan had not been submitted by the end of March 2004.

Recommendation with respect to inscription

It is recommended that the nomination be *referred* back to the State Party to allow it to be re-submitted once the Management Plan has been completed and approved.

ICOMOS, March 2004

Tamgaly (Kazakhstan)

No 1145

1. IDENTIFICATION

État partie : République du Kazakhstan

Bien proposé : Pétroglyphes du paysage archéologique de Tamgaly

Lieu : Oblast d'Almaty (région)

Date de réception : 28 janvier 2003

Catégorie de bien :

En termes de catégories de biens culturels, telles qu'elles sont définies à l'article premier de la Convention du patrimoine mondial de 1972, il s'agit d'un *site*. Aux termes du paragraphe 39 des *Orientations devant guider la mise en œuvre du patrimoine mondial*, il s'agit d'un *paysage culturel*.

Brève description :

Aux alentours de la gorge de Tamgaly, relativement luxuriant par rapport aux vastes et arides monts Chu-Ili où il se situe, on trouve une remarquable concentration de 5 000 pétroglyphes environ, de peuplements associés et de sites funéraires, qui témoignent ensemble de l'élevage, de l'organisation sociale et des rituels des peuples pastoraux, de l'âge du bronze jusqu'au début du XXe siècle. La grande taille des premiers pétroglyphes, leurs figures uniques et la qualité de l'iconographie les démarquent du corpus d'art rupestre de l'Asie centrale.

2. LE BIEN

Description

Vers l'extrémité occidentale des monts Tien-Shan, dans le sud-est du Kazakhstan, l'éperon montagneux du Chu et de l'Ili forme un canyon autour de la gorge de Tamgaly. Des sources en abondance, une végétation riche et l'abri qu'elle procure distinguent cette zone des montagnes arides qui longent la frontière entre le Kazakhstan et le Kirghizstan au sud, et des plaines sèches et plates du Kazakhstan central au nord. La gorge et le paysage rocheux où elle s'inscrit, rythmé par de hautes pierres noires et luisantes, ont attiré les communautés pastorales depuis l'âge du bronze, et sont désormais imprégnés de fortes associations symboliques.

Le site couvre une zone à peu près circulaire de 900 ha et inclut le mont Tamgaly, un pic de 982 m d'altitude. La rivière Tamgaly coule au milieu pour s'écouler dans la plaine en deçà, au nord. Autour du site s'étend une grande

zone tampon de 2 900 ha, qui englobe au nord-ouest et au sud-est du site des avancées des pétroglyphes, et d'autres tertres funéraires et anciens peuplements.

Le site présente les caractéristiques culturelles suivantes :

- Plus de 5 000 pétroglyphes
- D'anciens peuplements, sites funéraires et carrières
- Des sites sacrés

➤ Plus de 5 000 pétroglyphes :

Les pétroglyphes, sur des parois rocheuses en plein air, constituent les monuments les plus nombreux. Elles ont été formées par piquetage, avec des outils en pierre ou en métal. On n'a retrouvé aucune image peinte.

Au total, plus de 5 000 images ont été inventoriées dans 48 ensembles différents, dont cinq majeurs, rassemblant environ 3 000 images.

Globalement, les pétroglyphes semblent aller de la seconde moitié du deuxième millénaire avant J.-C. au début du XXe siècle. Les images sont associées à cinq phases différentes :

Âge du bronze moyen – Pétroglyphes de type Tamgaly

Les gravures les plus exceptionnelles, et de loin, sont aussi les plus anciennes : de grandes figures taillées en profondeur, avec rudesse, constituant un large répertoire d'images, dont des formes uniques comme des divinités solaires (têtes solaires), des êtres zoomorphes habillés de fourrures, des sujets syncrétiques, des hommes déguisés et diverses espèces animales.

Une analyse stratigraphique et illustrative, ainsi que des comparaisons avec les figures datées de certaines tombes, a permis d'établir la séquence de l'art rupestre. Les gravures de type Tamgaly datent de la seconde moitié du XVe et du XIIIe siècle avant J.-C. Toutes présentent sur les roches une orientation similaire, et leur grande taille les rend visible à 20-50 m de distance.

Parmi les images les plus caractéristiques de Tamgaly, la tête solaire : on en a retrouvé 30 au total, dont 26 subsistent encore. Toutes remontent à l'âge du bronze, mais les plus anciennes sont les plus expressives. Les images, par leur taille, leur disposition et leur aspect anthropomorphe, semblent communiquer les qualités des divinités. Un grand panneau vertical présente ce qui est qualifié de « chef-d'œuvre de l'art rupestre ». Ses images montrent 6-7 sujets divins, 10 danseurs et adorateurs, chacun dans leur propre partie de l'image, les divinités solaires au plus haut niveau.

Fin de l'âge du bronze – Période intermédiaire

Ces images sont beaucoup plus petites et moins bien formées que les premières. Le répertoire est moins varié, mais dépeint plus de scènes de la vie quotidienne et particulièrement de la vie pastorale, reflétant l'essor des activités nomades d'élevage. Du fait de la mobilité

croissante des peuples, on trouve des images similaires dans une très grande partie de l'Asie centrale. Les images de Tamgaly datant de la fin de l'âge du bronze présentent de grandes ressemblances avec celles de la Mongolie occidentale, de l'Altaï et du Tien-Shan occidental.

Début de l'âge du fer – Peuples Saka et Wusun

Ce sont les images les plus nombreuses à Tamgaly, mais elles ne sont pas homogènes ; leur variété semble refléter leur création par différents peuples, comme les Saka, les Wusun, les Yue Tche, les Huns, qui habitaient la région entre la fin du Ier millénaire avant J.-C. et la première moitié du Ier millénaire après J.-C. Les scènes dépeignent toujours la chasse aux animaux sauvages, mais on voit aussi apparaître des chameaux. Les dessins les plus réussis semblent être l'œuvre des Saka, avec des images beaucoup plus grossières pour les autres peuples. Les pétroglyphes reflètent les interactions complexes entre les anciennes tribus d'Asie centrale, certaines des images les plus anciennes ayant été recouvertes ou dégradées.

Moyen Âge – Anciens Turcs

Ces images diffèrent des précédentes en ce qu'elles illustrent les symboles de pouvoir des immenses empires des steppes, en plein essor du VIe au XIIe siècle après J.-C., avec la noblesse militaire à leur tête et de riches cultures d'éleveurs. Des guerriers, des porte-étendards, des archers, des bannières militaires et des harnachements pour les chevaux font aussi leur apparition.

Ère moderne – Dzungars et Kazakhs

Après la conquête par la Mongolie au XIIIe-XIVe siècle après J.C., la gravure cesse largement jusqu'au XIXe-XXe siècle, époque à laquelle les figures Kazakhs populaires présentent une poussée de créativité artistique.

➤ Anciens peuplements, sites funéraires et carrières :

Les peuplements occupent essentiellement les zones planes des plus basses collines. Ils font tous face au sud, au sud-est ou au sud-ouest. Les vestiges bâtis en pierre attestent de groupes de une ou deux maisons et d'enclos pour les animaux. Certains des peuplements étaient visiblement des camps d'hiver uniquement, accueillant les éleveurs, tandis que d'autres étaient des camps permanents. La zone abrite aussi des édifices plus modernes : des habitations provisoires d'été pour les bergers, qui passent l'hiver plus bas dans les plaines.

Les premiers sites présentent plusieurs strates et témoignent d'une occupation sur un long laps de temps. Dans un site mis au jour, la plus ancienne maison date de l'âge du bronze. Elle est circulaire, avec un âtre central ; un mouton a rituellement été enterré sous le sol. Au-dessus se trouvent des habitations du début de l'âge du fer et de la fin du Moyen Âge.

On connaît un grand nombre d'anciens sites funéraires sur le site, essentiellement de deux types. Le premier est une enceinte de pierre avec des urnes et des cistes, datant du milieu et de la fin de l'âge du bronze, tandis que le deuxième se compose de tertres (*kurgans*) de pierre et de terre construits au-dessus des tombes. Ces derniers

semblent dater du début de l'âge du fer et s'étendre jusqu'à l'époque actuelle.

Sept des enceintes les plus anciennes au pied des collines alluviales ont été étudiées. On a réalisé une analyse détaillée des vestiges, comprenant des pétroglyphes du type le plus ancien, qui a défini une séquence chronologique.

On trouve les *kurgans* partout sur le site, les plus grands se dressant au pied des collines, où ils forment des rangées parallèles. Plus haut dans les montagnes, ils s'organisent en petits groupes.

On trouve, associées aux cimetières de l'âge du bronze, d'anciennes carrières qui fournissaient les grandes dalles de pierre utilisées pour construire les cistes.

➤ Des sites sacrés :

La gorge centrale est dénuée d'habitations, et abrite également la plus grande concentration de gravures et ce que l'on suppose être des autels, situés à proximité de roches ornées de pétroglyphes. On pense qu'il s'agissait de lieux où se déroulaient les offrandes sacrificielles. Il semble que tout le centre de la zone avait un caractère sacré ou rituel.

Ailleurs, des clôtures en pierre, certaines gravées, s'organisent autour du sommet des rochers ou des collines, à proximité des villages kazakh permanents. Dans les enceintes grossièrement circulaires, de 3,5 à 10 m de diamètre, on trouve habituellement une riche couche culturelle d'ossements animaux, suggérant des associations rituelles. Aucune fouille n'a encore eu lieu dans ces sites sacrés.

Histoire

Les pétroglyphes et les peuplements, les sites funéraires et les autels associés reflètent la vie sociale et culturelle des habitants de la zone, de l'âge du bronze au début du XX siècle – déjà vue plus haut.

Pendant toute la période, aucune habitation n'a été construite dans la gorge où se trouvent les cinq principaux groupes d'images. Les tombes et les structures de culte se trouvent dans la vallée voisine, tandis qu'on dénombre maints peuplements, sites funéraires et petits sites de pétroglyphes à la périphérie de la montagne. D'après la disposition, on a supposé que la zone centrale était une zone de culte, séparée de la périphérie résidentielle par une zone neutre, sans aucun vestige. Au début de l'âge du fer, la zone résidentielle fut largement agrandie, sans toutefois toucher la zone de culte. Au Moyen Âge, elle fut cette fois réduite, mais occupa toujours les mêmes sites. Le XIXe siècle voit un changement complet : bien des habitations kazakh d'hiver apparaissent à de nouveaux endroits et dans les gorges voisines, tout en occupant d'anciens sites. Beaucoup de grands groupes patronymiques d'habitations entouraient la zone de culte – qui semblait avoir conservé son importance.

Avec la collectivisation des années 1930 et 1940, la population déserta Tamgaly. Ce n'est qu'en 1956 qu'elle

fut à nouveau occupée, dans le cadre d'une ferme soviétique, par des habitants venus de Russie et d'Ukraine. Plus tard, des Kazakhs migrèrent depuis la Chine et, ensemble, ces nouveaux venus absorbèrent les quelques habitants autochtones qui étaient les dépositaires des anciennes traditions locales ; une piste a été construite au travers du site et, jusqu'en 2001, les poids lourds roulaient au beau milieu des rochers.

Le respect des zones de culte demeure parmi la population musulmane, qui tient des festivals traditionnels, rappelant les anciennes traditions, par exemple en accrochant des chiffons à des buissons près des sources. Leur relation directe avec les pétroglyphes a toutefois été brisée.

Le site d'art rupestre est connu depuis 1957. Les recherches archéologiques ont été exécutées sous la direction du Dr Alexey E. Rogozhinsky. Les méthodologies utilisées par l'équipe de recherche utilisent les normes les plus élevées. L'art rupestre de Tamgaly peut être considéré comme l'un des mieux étudiés en Asie centrale. La république du Kazakhstan a créé une base de données des pétroglyphes d'Asie Centrale et un atelier s'est tenu dans la zone en 2003 pour la développer.

Politique de gestion

Dispositions légales :

La majorité du site appartient à l'État. Il y a quelques propriétés privées, pour la plupart des sites funéraires. Le site est protégé par la loi de 1992 sur la protection et l'utilisation du patrimoine historique et culturel. Le paysage archéologique est un bien d'importance nationale inscrit sur la liste kazakh des monuments historiques et culturels nationaux en 2001.

On propose que la limite de la zone tampon et la limite de la zone proposée pour inscription soient toutes deux légalement établies dans un avenir proche.

Le site et sa zone tampon devraient devenir un « territoire » de la future réserve archéologique d'État de Tamgaly, un musée réserve devant être établi en 2003. Il s'agira d'une agence de gestion permanente, sous la direction du ministère de la Culture. Une fois celle-ci établie, l'usage privé de la zone sera interdit.

Structure de la gestion :

L'Institut public de recherche scientifique et de gestion des monuments culturels (NIPI PMK), responsable de la gestion du site, a institué une agence de gestion provisoire du site, qui restera en fonction jusqu'à l'établissement de la réserve.

Le NIPI PMK et la réserve de Tamgaly ont développé ensemble un protocole pour assurer la coopération entre les deux institutions, quoiqu'il n'y ait encore pas de directives claires.

À ce jour, il n'existe pas de plan défini pour le bien, à l'exception du plan de développement touristique du district de Zhambyl, qui mentionne Tamgaly comme objet touristique.

Le NIPI PMK a reconnu la nécessité d'élaborer un plan de gestion propre pour Tamgaly. Des conseillers norvégiens ont pris part aux réunions préliminaires. Le plan devait être terminé en 2003 et soumis à l'UNESCO d'ici à la fin mars 2004.

Un accord bilatéral entre les gouvernements de Norvège et du Kazakhstan devait être signé au printemps 2003, après quoi un projet pour la gestion, la conservation et la présentation de Tamgaly devait commencer. Toutefois, le dossier suggère que le financement a été interrompu après la mission préliminaire norvégienne en 2002. Le rapport suivant la mission expose un plan d'action triennal couvrant la restauration, l'accès des visiteurs, la littérature, la conservation du site, etc.

Ressources :

Actuellement, six gardes de sécurité patrouillent sur le site – quatre de jour et deux de nuit. Ces postes ont été instaurés en 2001 et ont grandement contribué à la stabilité du site – voir les menaces ci-dessous.

Sur ordre de l'établissement de la Réserve, le personnel compte 29 membres permanents, dont : 6 responsables / administrateurs, 8 chercheurs, et 15 employés administratifs. Un comité consultatif sera également mis sur pied ; y siègeront des représentants de l'État, de la Région, de l'Académie des Sciences, ainsi que d'autres spécialistes.

Le budget annuel proposé pour la nouvelle réserve s'élève à 6 millions de Tenge (aux alentours de 40 000 USD).

L'administration sera installée dans la zone tampon, où l'on prévoit la création d'un centre d'accueil des visiteurs ou d'un musée.

Justification émanant de l'État partie (résumé)

La proposition d'inscription met en avant le site comme possédant une valeur universelle exceptionnelle pour les raisons suivantes :

- La particularité du paysage, liée à ses caractéristiques géologiques, à son climat et à l'abondance de sources et d'abris, les conditions principales requises à l'utilisation du site de Tamgaly par des générations de bergers, depuis des temps immémoriaux ;
- Tamgaly se trouve au carrefour des anciennes routes de communication d'Asie centrale, le long de la bordure septentrionale des monts Tien-Shan ;
- Les formations rocheuses, et particulièrement les roches couvertes de lichens noirs et luisants, ont éveillé le sens artistique des hommes ;
- Les pétroglyphes et les peuplements associés sont une illustration fondamentale du mode de vie pastorale des peuples de l'âge du bronze au XXe siècle ;

- Le corpus de pétroglyphes comprend une collection exceptionnelle d'images de l'âge du bronze, démontrant les plus hauts niveaux de développement pour ce type d'art rupestre en Asie centrale.

3. ÉVALUATION DE L'ICOMOS

Actions de l'ICOMOS

Une mission de l'ICOMOS s'est rendue sur le site en décembre 2003.

L'ICOMOS a également consulté son Comité Scientifique International sur l'art rupestre.

Conservation

Historique de la conservation :

Le site, dressé sur des roches de grès, est vulnérable aux altérations climatiques, les parois rocheuses présentant des images étant susceptibles d'être laminées par les roches sous-jacentes. Les premiers grands travaux de conservation, réalisés en 1990, visaient à réduire la pénétration de l'eau dans les fissures. Malheureusement, ils ont dû être interrompus faute de financement.

Depuis lors, la principale intervention a consisté en une conservation préventive, avec des gardes de sécurité présents sur le site depuis 2001 pour empêcher l'accès des visiteurs sans autorisation et les graffitis ; des barrières ont en outre été installées pour empêcher les véhicules d'entrer dans la gorge. En outre, on a construit des chemins pour les visiteurs, pour les orienter en les écartant des roches.

La mission conjointe entre la Norvège et le Kazakhstan qui a eu lieu en 2000 a élaboré un rapport de projet pour traiter de la conservation, ainsi que de la gestion et de la présentation. Faute de fonds, il n'y a pas eu de progrès faits depuis. Le NIPi PMK a entrepris en 2001/2002 des travaux d'urgence.

État de conservation :

La principale menace pesant sur la conservation vient de l'altération par les éléments climatiques, associée à la formation géologique des roches. L'eau pénètre dans les fissures et les crevasses. La stratification du lit rocheux étant parallèle à la surface, les parois rocheuses sont extrêmement vulnérables à l'exfoliation.

À certains endroits, on note des détériorations assez graves. Ainsi, toute une section rocheuse ornée de têtes solaires a été endommagée par des fissures structurelles et séparée de la formation rocheuse sous-jacente.

Gestion :

La structure de gestion devant être mise en place a déjà été discutée. Le plan de gestion devait être soumis au printemps 2004. Le NIPi PMK a reconnu la difficulté de la préparation d'un tel plan, qui constitue une évolution assez nouvelle.

Entre 1991 et 2001, il n'y a eu aucun contrôle des visiteurs sur le site, d'où certains dégâts dus à des graffitis, et même des vols de roches. Depuis 2001, des gardes de sécurité patrouillent sur le site ; des gardes montés et des systèmes radio aident à la surveillance du site.

La seule route d'accès vient d'Almaty. Selon le projet de la réserve, les visiteurs devront s'acquitter, à un péage central, d'un droit d'entrée.

Analyse des risques :

Les menaces suivantes sont identifiées dans le dossier de proposition d'inscription :

- Pressions liées au développement :

Les terres appartenant actuellement aux fermiers deviendront la propriété de l'État après l'établissement de la réserve de Tamgaly.

- Pressions sur l'environnement :

Comme on l'a déjà dit, la pénétration de l'eau dans les roches est la menace principale. Il convient d'y ajouter les variations extrêmes de température, dans la journée et d'une saison à l'autre.

- Catastrophes naturelles :

La zone est également sujette à des risques sismiques, la région d'Almaty étant reconnue comme zone de tremblements de terre.

- Pressions liées aux visiteurs / au tourisme :

Entre 1991 et 2001, l'insuffisance des fonds a empêché le contrôle des visiteurs, piétons ou motorisés. Cet accès incontrôlé a eu de graves conséquences, les visiteurs escaladant les roches et inscrivant des graffitis. Depuis 2001, un contrôle a été mis en place, et l'accès interdit aux véhicules.

Actuellement, le nombre de visiteurs est faible, mais le site est l'une des principales attractions du pays, et leur nombre a enregistré une lente progression. Des mesures préventives sont mises en place pour assurer que la capacité de charge des zones sensibles ne soit pas dépassée.

La menace suivante n'a pas été mise en avant :

- Manque de ressources :

L'expérience vécue entre 1991 et 2001, à une époque de manque de fonds, soulignée par la proposition d'inscription, illustre de façon vivante les menaces possibles.

Authenticité et intégrité

Authenticité :

La principale intrusion sur le site est une route traversant la partie nord du site, construite à l'époque soviétique. Il y a aussi des pylônes en béton, vestiges d'une ancienne ligne électrique, et quelques étables modernes. Les pylônes doivent être enlevés sous deux ans.

Autre menace à l'intégrité du site, les graffitis, mais des mesures de gestion sont désormais en place pour prévenir tout nouvel exemple de ce type de dégradation.

Intégrité :

Le paysage naturel crée un cadre discret et fini à l'art rupestre, et toute la zone centrale et la zone périphérique immédiatement alentour sont incluses dans la proposition d'inscription.

Évaluation comparative

On recense une infinité de sites d'art rupestre en Asie centrale, illustrant différentes traditions sociales, économiques et culturelles des trois à cinq derniers millénaires. Pris dans son ensemble, cet art rupestre essentiellement composé de pétroglyphes, forme le monument culturel le plus important des civilisations traditionnelles des steppes d'Asie centrale, et n'est pour l'instant pas représenté sur la Liste du Patrimoine mondial.

Une grande partie de ce corpus reste mal connu, et les comparaisons sont donc difficiles. Il est impossible de dire avec certitude, sauf de façon assez superficielle, pourquoi Tamgaly a plus d'importance que certains autres sites moins bien compris. Toutefois, Tamgaly se distingue en ce qu'il est particulièrement bien documenté et qu'il a fait l'objet d'études plus complètes.

D'autres sites du Kazakhstan, comme Eshkiolmes et Saimaly-Tash, comptent bien plus d'images que Tamgaly – des dizaines de milliers – et illustrent pareillement une séquence de développement de l'âge du bronze à l'ère moderne. Situés dans une zone géologiquement et physiquement différente, ils reflètent un développement socio-économique autre. Toutefois, la rivière proche a fait subir à Eshkiolmes une érosion assez grave, de même que les récentes activités agricoles, et le site dans son ensemble ne semble pas être cohérent ; il est plutôt divisé en vallées distinctes, possédant chacune ses caractéristiques propres. De plus, la thématique des premières gravures est bien plus « triviale », dit-on, que celle de Tamgaly, les images fantastiques étant rares.

Saimaly est le plus grand site d'art rupestre en Asie centrale, avec environ 100 000 pétroglyphes. Il est situé dans les hautes terres, une zone alpine, et présente un type particulier d'art rupestre, lié à sa position, au point de jonction entre les sociétés agraires des plaines et les bergers des montagnes. Les images sont uniques en ce qu'elles dépeignent le travail du sol, et le site est remarquable pour son absence de gravures par-dessus d'autres. Il y a également peu d'autres monuments associés, comme des sites d'habitation et des tertres

funéraires. Ces deux caractéristiques rendent difficile toute définition exacte des séquences et des dates. Il est cependant indiqué que les gravures de Saimaly-Tash pourraient dater du néolithique.

À Baikonour, une troisième zone, les images sont en mauvais état et n'ont été que peu étudiées. Toutefois, elles comportent aussi des têtes solaires et, puisqu'elles se trouvent dans la région centrale du Kazakhstan, d'où l'on croit que les habitants de Tamgaly auraient pu venir, elles pourraient être les précurseurs des pétroglyphes de Tamgaly.

Les images de Tamgaly semblent différer des autres sites du Kazakhstan par leur cohérence, leur taille, leurs sujets, leur état de conservation et, par-dessus tout, pour leurs qualités artistiques et leur association au centre cultuel du site.

La proposition d'inscription n'avance pas d'éléments de comparaison à l'échelle de l'Asie centrale, entre les monts du Pamir et de l'Altaï. Toutefois, on pourrait dire que l'inscription de Tamgaly, et l'élargissement de la base de données et des recherches, pourraient jouer le rôle de modèle pour les autres sites de la région et ainsi inciter à des recherches et des études plus poussées, ce qui pourrait, au final, permettre de mieux comprendre l'art rupestre d'Asie centrale dans un contexte plus global.

Valeur universelle exceptionnelle

Déclaration générale :

Le site proposé pour inscription est d'une valeur universelle exceptionnelle en ce qu'il combine les caractéristiques culturelles suivantes :

- Le groupe dense et cohérent de 5 000 pétroglyphes, dont les images les plus anciennes remontent à l'âge du bronze, datant des environs de 1400 à 1300 avant J.-C., présente des figures taillées avec netteté et d'une grande qualité artistique ;
- Les pétroglyphes, les peuplements et les sites funéraires associés représentent un inventaire complet de la vie des peuples pastoraux des steppes d'Asie centrale, de l'âge du bronze à l'époque actuelle ;
- La délimitation du site en un centre sacré et une périphérie extérieure résidentielle, combiné à des images sacrées de têtes solaires, à des autels et à des zones de culte clôturées de culte, en fait un ensemble unique, présentant des associations sacrées qui ont perduré de l'âge du bronze à nos jours.

Évaluation des critères :

Le site est proposé pour inscription sur la base des *critères i, ii, iii, iv and v*.

Critère i : Les plus anciennes images gravées, telles que celles associées aux têtes solaires et aux sujets

anthropomorphiques, témoignent d'un grand talent artistique. On remarque tout particulièrement l'image d'une divinité solaire montée sur un taureau et d'une vache avec son veau.

Critère ii : Ce critère se justifie au motif que l'occupation continue du site sur plusieurs millénaires montre comment les images, devenues redondantes, étaient supplantées par de nouvelles images plus pertinentes dans le contexte de l'évolution sociale. Les sites reflètent ainsi le développement de la société et de ses symboles sociaux. Ceci s'apparente plutôt au critère iii serait plus approprié. Pour satisfaire le critère ii, il faut prouver l'influence du site sur les valeurs, la technologie, etc. ailleurs dans le monde.

Critère iii : Les images d'art rupestre, ainsi que les traces des peuplements et des sites funéraires alentours, et la division spatiale du site en zones sacrées et résidentielles, offrent un témoignage tangible de la vie et des croyances des peuples pastoraux de la région, de l'âge du bronze à nos jours.

Critère iv : La proposition d'inscription reconnaît que, en l'état actuel des connaissances, ce critère est difficile à justifier, mais poursuit en disant que la « création » du site de Tamgaly pourrait être liée à la consolidation des tribus dans la moitié sud de ce qui constitue aujourd'hui le Kazakhstan. Il faudrait plus de preuves pour justifier ce critère.

Critère v : Les arguments avancés pour le critère ii sont tout aussi applicables à ce critère.

4. RECOMMANDATIONS DE L'ICOMOS

Recommandations pour le futur

La route qui traverse le site et la zone tampon, construite à l'époque soviétique, représente clairement une intrusion majeure dans le site, et affecte son authenticité. Un engagement de la déplacer à l'extérieur du site à moyen terme serait justifié.

L'état de conservation du site est fragile à cause de la pénétration de l'eau dans les roches. La définition du projet convenu dans le cadre de la mission conjointe de la Norvège et du Kazakhstan devrait si possible progresser sur le moyen terme.

Pour permettre aux visiteurs d'apprécier pleinement le site et de comprendre les limitations de l'accès imposées, il serait souhaitable d'élaborer des stratégies d'information et d'accès, qui pourraient figurer dans le plan de gestion à venir.

Le dossier de proposition d'inscription déclare que le plan de gestion doit être finalisé pour le printemps 2004. Étant donné les questions complexes de gestion associées au site et la nécessité de développer les pratiques les meilleures pour la gestion des sites d'art rupestre, ce plan devrait être examiné avant qu'une décision finale concernant l'inscription ne soit prise et il devrait être adopté par le ministère de la Culture.

À la fin du mois de mars 2004, ce plan n'avait toujours pas été soumis.

Recommandation concernant l'inscription

Que la proposition d'inscription soit *renvoyée* à l'État partie afin de lui permettre de la soumettre à nouveau une fois le plan de gestion finalisé et approuvé.

ICOMOS, mars 2004