Compatibility of Selected Natural Protected Areas of Kazakhstan with the Requirements of the World Heritage Convention for the Nominated Sites

by

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Abstract

The lands of Kazakhstan are rich with natural resources. And not only oil and gas were given to the people by the nature. It shared with us the most valuable of its treasures - the diversity of life forms.

Having inherited this beauty, we are to be dignified heirs and to save it. However, paying attention to the economic development, we forget about the nature. Some of the developed countries passed through the stage of active lands exploration and natural resources use and learned how to protect their natural wealth. Kazakhstan can learn from their experience and avoid the mistakes connected with the inappropriate use of natural resources.

The whole system of creation and protection of natural areas was developed, and it is quite effective. This system was not created in one day, many countries step-by-step were involved into its work. At the moment there are more than 160 natural protected areas in various states of the world united on the grounds of their exceptional value into one system of protected areas, organized according to the UNESCO's World Heritage mission and known more as the World Heritage.

Natural protected areas of Kazakhstan have a great value on the local and international levels. They deserve being included in the World Heritage. But to be nominated and included it is necessary to prove the compatibility of these areas with the requirements of the World Heritage. Partially the assessment of the natural sites was done by the IUCN experts, who made an analysis of the biodiversity state, having marked the most prominent sites. They gave some recommendations concerning necessary changes on the sizes of the natural sites, necessity of further studying and implementation of new management standards. Despite the big volume of work done by the IUCN, there are some uncovered aspects, which are very important from the point of view of the WH nomination. And first of all, this is the environmental legislation.

The effective legal protection is one of the main requirements of WH. That is why in this work it was decided to make an analysis of the active environmental legislation of Kazakhstan and to point out its pluses and minuses. It was also planned to hold the interviews with the people directly involved into the protection of the natural sites of Kazakhstan. The results have shown that the active legislation of Kazakhstan does not provide the effective protection of the natural sites. The interviews have also confirmed the existence of obstacles for the WH nomination.

The analysis of the environmental legislation of Kazakhstan and the recommendations, which follow the main research, are the main value of this research. By making the analysis of compatibility of the natural sites of Kazakhstan it was determined which changes should be done in the legislation in order to make the protected areas really protected and to save their beauty for the future generations.

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List of Abbreviations

ICOMOS	International Council on Monuments and Sites
IUCN	World Conservation Union
MAB	Man and the Biosphere (a programme of UNESCO)
OUV	Outstanding Universal Value
PA	Protected Areas
SLNK	Steppes and Lakes of Northern Kazakhstan
UNEP-WCMC	United Nations Environment Programme – World Conservation Monitoring Centre
UNESCO	United Nations Educational, Scientific and Cultural Organisation
WCPA-UNEP	World Commission on Protected Areas of UNEP
WH	World Heritage
WWF	World Wide Fund for Nature / World Wildlife Fund

I. Introduction

Degradation of the environment is one of the main challenges which the humanity meets in the twenty-first century. Conservation of ecosystems, therefore, is a foreground task in the common strategy of conservation of nature on the global, regional and national levels. Nowadays, international organizations, like International Union for Conservation of Nature (hereinafter – IUCN) or United Nations Educational, Scientific and Cultural Organization (hereinafter – UNESCO) organize global systems of protected territories. Kazakhstan, standing on the 9th place in the world for its territory, can play an important role in enlargement and development of the protected territories.

In 1994 Kazakhstan ratified the World Heritage Convention concerning the protection of World Cultural and Natural Heritage (hereinafter – the Convention). Thereby, the state confirmed its eagerness towards implementation of new international standards of environment protection as a necessary condition for inclusion into the World Heritage (hereinafter – either WH or World Heritage) List of properties forming part of cultural and natural heritage.

Today Kazakhstan has ten reserves with a total area of 1,165,552 hectares and 9 national parks with a total area of 1,456,597 hectares, and theoretically each of them can be a part of the natural heritage of the world (Babakhanova 2005). However no one site has been nominated since 1994. Preparation of the territories for nomination and further inscription into the WH List usually requires both time and changes in the traditional system of environment protection. Nowadays, there are some results from the activity of the international experts in the region and local specialists, which, however, resulted in non-nomination of the sites.

Therefore, in this work it is aimed to determine the level of compatibility of the national protected territories to the World Heritage requirements by analyzing the current state of the environmental protection of these territories, including the most important aspects of legal protection, conservation management and biodiversity value. The research has no purpose to

discuss if the WH nomination is good for Kazakhstan or not: the WH nomination is rather a certain criterion, which is to be reached by the state after the ratification of the Convention.

The research is devoted to specially protected territories only, which correspond to IUCN Categories I and II, as the most highly protected and suitable for nomination sites.

The work also includes the common overview of the national protected territories from the point of view of their potential value as the WH natural sites.

The main tasks of the research are as follows:

- to analyze the requirements of the World Heritage Convention
- to consider the nominated territories from the main aspects, such as legal, scientific, natural and managerial
- to compare the legal protection and management of the sites with those required by WH
- to make a conclusion on the base of the comparative analysis
- to give recommendations

II. Methodology

The methods of research used in this work refer to the qualitative methods. They involve the use of qualitative data, taken from the documents and interviews. The following sources of information can be distinguished:

- *the published literature sources*
- *the interviews with the people involved*
- *the information provided by the people involved*
- *the official Internet sites*

The area of the research lies within the studies of institutional systems, represented by the international organization of UNESCO with its World Heritage program and the environment protecting bodies of Kazakhstan, and touches such spheres as environmental legislation. Therefore, partially the research is based on the studying of the secondary data. The secondary data used in the research includes the WH data, the information of IUCN, the legislative base and descriptive material on biodiversity value of national protected areas of Kazakhstan. The interviews information refers to the primary sources.

The data was gathered and analyzed according to the main tasks of the research. Based on the recommendations of the WH mentioned in the separate chapter, it was decided to *highlight the main streams for studying.* Among the main requirements of the WH, there were determined:

- biodiversity value, including integrity of the sites, uniqueness of their ecosystems;
- environmental policy, which would include planning programs, maintenance of natural sites by special services, legal protection and management.

First of all, according to the WH requirements, it was necessary *to look at the state of biodiversity of the protected territories and to determine their value*.

Secondly, *the conservation management* of the sites was determined as one separate issue, very important. Partially the data on conservation management was covered by the interviews. Partially the data was received by e-mail, other – from the written sources: in case if the contacted persons did not answer and it was impossible to conduct an interview.

The interviews were performed either by telephone or during the organized meetings. The contact information was provided by the Regional Ecological Center (literature sources and contact numbers, emails).

Speaking about the environmental legislation of Kazakhstan concerning the PAs this research tried to answer the following questions:

- what legislative acts/laws are used for the PAs protection
- what WH requirements they cover
- what bodies are responsible for implementation of this legislation
- what programs/strategies are used in the sphere of PAs

The legislative acts were, conditionally, divided into two groups: 1) the ones which have direct relevance to the PAs; 2) the ones which give additional data. Among the legislative acts used in this research there are the following ones:

- Law of the Republic of Kazakhstan (hereinafter – the RoK) "On specially protected territories" # 175-III, 07.06.2006
- Land Code of the RoK # 442-II, 20.06.2003
- Forest Code of the RoK # 477-II, 08.07.2003
- Water Resources Code of the RoK # 481-II, 09.07.2003
- Law of the RoK #593-II "On protection, reproduction and use of fauna", 09.07.2004
- Decree by the President of the RoK authorized as Law # 2350 "On Oil", June 28, 1995
- Decree by the President of the RoK authorized as Law # 2828 "On Mineral Resources and Subsurface Users", January 27, 1996

- Law of the RoK # 85-I "On ecological expertise", March 18, 1997
- Law of the RoK # 160-I "On environmental protection", July 15, 1997 (Table1)

There are also other legislative acts, which refer to protection of natural sites as well:

- Law of the RoK # 567-II "About Communication Means", 05.07.2004
- Decree of the President of the RoK # 474 "About Measures on Conservation of Unique and Rare Landscapes on the territory of Kazakhstan", 11.06.2004
- Resolution of the Government of the RoK # 910 "About Approval of Land Transfer to
- the Specially Protected Territories", 08.09.2003
- Resolution of the Government of the RoK # 673 "About Approval of the Rules of Protection and Maintenance of Historical and Cultural Monuments, Objects of Natural Reserved Fund, Referred to the Objects of Global and Republic Significance", 08.07.2003
- Resolution of the Government of the RoK # 990 "About Approval of the Program of Development of the System of Specially Protected Natural territories of the RoK for 2007-2007", 13.10.2006
- Resolution of the Government of the RoK # 1692 "About the Concept of Development and Allocation of Specially Protected Natural territories of the RoK till 2030" # 1692, 10.11.2000
- Resolution of the Government of the RoK #746 "About Approval of the List of Specially Protected Natural territories of the Republic Significance" # 746, 19.07.2005
- Resolution of the Cabinet of Ministers of the RoK # 918 "About Approval of the Convention on Biodiversity by the RoK and Implementations of its Commitments", 19.08.1994, and some other resolutions related to this issue.

Besides, a draft of the Environmental Code (hereinafter – the Environmental Code) was analyzed in the present research.

The legislative acts from the second group *cover the questions on interaction of protected areas and human activities.* For example, in the Law of the RoK # 567-II "About Communication Means" it is said: "…construction of the telecommunication network and its objects on the lands of specially protected natural areas is performed according to the Land Code of the RoK" (Paragraph 5, Article 31). So, first of all, this law puts the rules for construction of telecom networks within the protected areas. Second of all, it refers to the Land Code showing the interconnectedness of various laws. Almost all the studied legislative acts have references to other legislative acts.

Besides the laws, there was done *the analysis of the resolutions and orders*, as sometimes they add or harden the measures on protection of natural sites. For example, Decree of the president of the RoK # 474 "About Measures on Conservation of Unique and Rare Landscapes on the territory of Kazakhstan" contains the following order for the government: "… within the six months period to work out the measures on rational use of the specially protected natural territories for tourism development and recreation taking into consideration the socio-economical factors and interests of the local population".

Some of the legislative acts contained the information on authorized state bodies. Such as Resolution of the Government of the RoK # 910 "About Approval of Land Transfer to the Specially Protected Territories", this resolution assigns the rights of the parliament and local executive bodies for the lands transfer.

One the base of the results received from studying these three main issues: biodiversity value, conservation management and legal protection, it was possible *to extract the main problematic points* and on this base *to give the conclusions and recommendations.*

In addition to the secondary data and the legislative acts, there was used the information received from *the interviews.* It was rather helpful for the research as it gave the practical description of the situation with the natural sites. Several interviews took place. Contact persons were as follows:

- N.P.Ogar, a participant of the WH nomination committee in Kazakhstan;
- A.A.Begembetov, Director of Ile-Alatau State National Natural Park;
- A.Chelyshev, Specialist of Katon-Karagai State Natural National Park;
- M.A.Demilova, Deputy Director of Naurzum State Natural Reserve;
- D.E.Emkibaev, Director of Almaty State Natural Reserve.

The interviews were taken in the time and place comfortable for the interviewed persons (Ogar, Begembetov) or by telephone Demilova, Emkibaev, Chelishev). The following questions have been asked:

1) What measures are taken in your PA to protect and conserve the ecosystems? (Demilova, Emkibaev, Chelishev, Begembetov)

2) Are there are any projects/plans/programs on improvement of conservation measures/preparation of PAs for the WH nomination? (Demilova, Emkibaev, Chelishev, Begembetov) - The PAs described in this work were all considered by the Nomination Committee of Kazakhstan, which was working under the guidance of UNDP, in 2000, as the most prominent sites for WH, however, they are still not in the List.

3) Do you agree with the requirements of IUCN on joining other sites for creation of one larger site which will correspond with the requirements on integrity of the WH? (Begembetov)

4) Is long-term planning included into the current work of PAs? (all)

There were also the questions of rather a complementary character, aimed to give external knowledge on the current situation with the WH nomination of the Kazakh sites:

1) What is your opinion about the nomination of the Kazakhstan's natural sites as the WH sites? (Ogar, Begembetov)

2) What would you recommend to do for the nomination of the Kazakhstan's natural sites? (Ogar, Begembetov)

3) Do you agree with the requirements of IUCN on joining other natural sites for creation one larger site which will correspond with the WH requirements on integrity? (Begembetov)

4) What is done in Ile-Alatau for improvement of the site's environmental protection? (Begembetov)

Another aim of these questions was to get the professional opinion of people involved into the work in the sphere of protection of Pas and to highlight the moments which could be probably missed while studying the literature sources. The information received during the interviews confirmed the existence of additional circumstances, which result in incompatibility of the national protected areas with the WH standards. It also put some light on the issues of conservation management of the several PAs of Kazakhstan.

III. Literature Review

There is a big scope of literature about the domestic PAs in Kazakhstan. At the same time, the major part of it is devoted to the biodiversity, while the issues of conservation management or international approach to PAs protection are lit up only in separate reports prepared by IUCN and UNDP. Additional information can be found in mass media, which usually touches upon the violations of regimes of PAs.

There is almost no literature devoted to potential nomination of PAs of Kazakhstan into WH List. From this aspect, the issue is considered a little by IUCN (IUCN 2005) and in the notes from the meetings of the Nomination Committee (Baitullin 2000). And there is a report of the Ministry of Environment on preparation of PA for WH nomination, their status, which was published in 2000 (Beknyazov). That's why the conclusions concerning the legal preparedness of Kazakh PAs and conservation management have been made according to the self research results, which in their turn give a special value to this work.

This research uses secondary data, including:

- texts of the official documents, such as the Convention, the Operational Guidelines for Implementation of the World Heritage Convention (hereinafter – the Operational Guidelines), etc
- articles from the official site of UNESCO, together with other related sites, devoted to the World Heritage mission
- the legislative acts of the Republic of Kazakhstan
- scientific surveys done by the experts on the natural protected territories of Kazakhstan
- articles and books on general and specific environmental issues related to the subject

Among the used literature sources devoted to the biodiversity there are, e.g. "Vegetation Cover of the Western Tien Shan" by Pavlov (1980) and "Aksu-Dzhabagly. Guidance for the Reserve" by Kovshar (1972); there were used the works by Baitullin, Kovshar and Ivaschenko (2000), which refer to the current period of time. The scientific data mentioned in the books, written by Baitullin alone (Baitullin 2000) or together with other famous authors (Baitullin, Kovshar, Ivaschenko 2000), are based on personal experience and deep knowledge of the subject. The information from these works was used in the research in the part devoted to the biodiversity of the nature sites. The regional overview (IUCN 2005) included the whole volume of work done by IUCN and local experts, it added new knowledge on the state of biodiversity of several nature sites. Besides, it points out the main significant features of the sites, which could be potentially used as advantages for their inscription.

Speaking about legal protection it was required to look through the environmental legislation of Kazakhstan, analyze the legal acts related to the issues of PAs and their protection. The mutual connection between some legislative acts used in this work is explained in the previous chapter. The laws and other legal acts, used in this work, devoted to either administrative regulation of the PAs protection, measures of criminal responsibility or additional data on measures of protection and restrictions of violations on the territory of PAs.

Besides the above-mentioned data, there were used literature sources on WH, including the Operational Guidelines and the Convention. There were used the data on successful projects implemented in the WH sites in other countries (UNESCO 2006b,c,d), taken from the official UNECSO site and links to it. The data from the UNESCO report on the regional workshop, which took place in Almaty, was used to understand if there are some special recommendations on the PAs of Kazakhstan, to point out what sites have the potential for nomination as WH sites (UNESCO 2002).

There were also materials represented by the employees of the parks, for example, the report of A.N.Chelyshev "Perspectives of Scientific and Research Activity in the Katon-Karagai State National Nature Park" (Chelyshev 2006) or the presentation of V.P.Vinogradova on the Ile-Alatau State National Nature Park Results (Vinogradova 2006), which are not published, but were prepared for internal use.

Not a big quantity of the literature on PAs, and the issues related to their protection, WH nomination and adopted conservation measures, is explained by the fact that this theme is quite a new one for Kazakhstan and is becoming of interest only now, when the anthropogenic pressure on protected areas is increasing, in connection with the urban expansion and tourism development. However, in this work there was an attempt to use all the existing sources, which were not analyzed before, and the scope of literature, including the environmental legislation, was rather wide and diverse.

IV. World Heritage and the Requirement to the Nominated Sites

IV.1. Short overview of the history of the World Heritage Mission

According to UNESCO the necessity of formally protecting cultural and natural sites was finally accepted in 1959 after the decision of constructing the Aswan High Dam in Egypt (UNESCO 2006e). The works threatened the ancient temples situated in the valley, which was expected to be flooded after the dam was operational. As a result of UNESCO launching an international safeguarding campaign, the Abu Simbel and Philae temples were dismantled, moved to dry ground and reassembled. The expenditure of the campaign was reimbursed by the international community, represented by some 50 states (UNESCO 2006e). But even this was not considered the main achievement. The problem with the ancient temples showed how important it is for the global society to protect unique national historical monuments and proved the need for countries to cooperate in order to protect and conserve world heritage. Consequently, UNESCO initiated, with the help of the International Council on Monuments and Sites (hereinafter - ICOMOS), the preparation of a draft convention on the protection of cultural heritage (UNESCO 2006e).

Later, the conservation of cultural sites was combined with those of nature. In 1965 a White House Conference in Washington, D.C. called for a 'World Heritage Trust', the main task of which was to stimulate international cooperation to protect 'the world's superb natural and scenic areas and historic sites for the present and the future of the entire world citizenry'; in 1968 the International Union for Conservation of Nature (hereinafter - IUCN) developed similar proposals for its members. These proposals were presented to the 1972 United Nations Conference on Human Environment in Stockholm (UNESCO 2006e).

Eventually, a single text was agreed upon by all parties concerned. On 16 November 1972, the World Heritage Convention was adopted by the General Conference of UNESCO. The adoption of the Convention led to the establishment of the World Heritage Program (hereinafter –World Heritage). It consists of various organizations, governmental bodies and agencies, non-

governmental organizations and local communities - all united by the idea of conservation of the world's cultural and natural heritage. The work of the World Heritage is based on the Convention, the Operational Guidelines and the Rules of Procedure. To perform the tasks of World Heritage, the Committee, Bureau and Secretariat were established. The Director-General of the UNESCO also participates in the work of the World Heritage. IUCN, ICOMOS and other international organizations act as advisory parties.

The tasks of the World Heritage are to:

- encourage countries to sign the World Heritage Convention and to ensure the protection of their natural and cultural heritage
- encourage State Parties to the Convention to nominate sites within their national territory for inclusion on the World Heritage List, which is the list of protected territories of the outstanding unique value
- encourage State Parties to establish management plans and set up reporting systems on the state of conservation of their World Heritage sites
- help State Parties safeguard World Heritage properties by providing technical assistance and professional training
- provide emergency assistance for World Heritage sites in immediate danger
- support State Parties' public awareness-building activities for World Heritage conservation
- encourage participation of local populations in the preservation of their cultural and natural heritage
- encourage international cooperation in the conservation of our world's cultural and natural heritage (UNESCO 2006, World Heritage Centre)

IV.2. Main Requirements towards the Nominated Sites

Outstanding Universal Value of Natural Sites

The Convention is the main mechanism regulating the work of the World Heritage Mission. It identifies the main standards for nominating territories together with the Operational Guidelines. For many countries, including Kazakhstan, the Convention provides guidance for implementation of international rules on conserving natural heritage.

One of the objectives of the Convention is to assist applying countries to confirm the outstanding universal value of their sites and identify them under one of the categories. The Convention identifies natural heritage as follows (Article 2):

- **natural features** consisting of physical and biological formations or groups of such formations, which are of outstanding universal value from aesthetic or scientific points of view;

- **geological and physiographical formations** and precisely delineated areas which constitute the habitat of threatened species of animals and plants of outstanding universal value from the point of view of science or conservation;

- **natural sites** or precisely delineated natural areas of outstanding universal value from the point of view of science, conservation or natural beauty.

According to the Operational Guidelines (Chapter II.D., paragraph 77), a natural heritage property nominated for the inclusion should meet one or more of the following criteria (see also Table 1):

- **N(vii)** contain superlative natural phenomena or areas of exceptional natural beauty and aesthetic importance; or
- **N(viii)** be outstanding examples representing major stages of the Earth's history, including the record of life, significant ongoing geological processes in the development of landforms, or significant geomorphic or physiographic features; or

- **N(ix)** be outstanding examples representing significant ongoing ecological and biological processes in the evolution and development of terrestrial, freshwater, coastal and marine ecosystems and communities of plants and animals; or
- **N(x)** contain the most important and significant natural habitats for *in situ* conservation of biological diversity, including those containing threatened species of outstanding universal value from the point of view of science or conservation.

Natural sites proposed as WH sites must have an "Outstanding Universal Value" and must fulfill "Conditions of Integrity" (Operational Guidelines, Chapter II.D., paragraph 87). These attributes are judged against the one or more Criteria that the natural site chosen must comply with.

Table 1. Attributes for Nomination (Operational Guidelines)

Attributes	Outstanding Universal Value	Conditions of Integrity
Criteria N(vii)	Very best phenomena / stunning beauty	Complete set of features (Chapter II.E, paragraph 92)
Criteria N(viii)	Best example of Earth's history	Integrated and linked elements (Chapter II.E, paragraph 93)
Criteria N(ix)	Best ecological features	Sufficient size / allowing long term processes to continue (Chapter II.E, paragraph 94)
Criteria N(x)	Best natural habitats / *in situ* ecosystems / species	Viable populations / migratory routes / protected areas (Chapter II.E, paragraph 95)

The disadvantage is that having already identified other areas, belonging to a certain criterion, the Convention reduces the possibility for newly proposed areas, which are not less unique or valuable, to be included, i.e. to be protected on an international level. At the same time the inclusion itself does not make any site more valuable for the local people, and does not reduce its uniqueness on a national level.

Integrity

Paragraph 88 of the Operational Guidelines states that "…*integrity is a measure of the wholeness and intactness of the natural and/or cultural heritage and its attributes*". All properties nominated for inscription should satisfy the conditions of ***integrity.*** This means they should:

- include all elements confirming their outstanding universal value

- be of an adequate size to ensure the complete representation of the features and processes which convey the significance of the properties
- suffer from adverse effects of development and/or neglect

For natural sites, according to Paragraph 90, Subchapter II.E of the Operational Guidelines, the biological processes and landform features should be relatively intact.

However, it is almost impossible nowadays to find a place untouched or not suffering from direct or indirect anthropogenic influence. Usually sites are in a dynamic state. In this case, human influence can be presented to a certain extent. For each criterion, (vii – x), there is a separate definition of integrity.

For example, the properties under criterion (vii) should include *areas* maintaining their natural beauty. Properties under criterion (viii) should contain all or most of the *key interrelated and interdependent elements*, i.e. an "ice age" site should include the glacier, the snow field and samples of cutting patterns, deposition and colonization, like pioneer stages of plant succession, etc. Criterion (ix) supposes that the properties should have *a sufficient size* and the *components providing a long term conservation* of the ecosystems and the biological diversity they provide. For criterion (x) only the properties which contain the most *diverse fauna and flora* of the bio-geographic province and ecosystems can be included. For this criterion, e.g. a site containing wide ranging species should be large enough to include the most critical habitats to ensure the survival of viable populations of these species (UNESCO 2005, Operational Guidelines, paragraphs 91-95).

Protection and Management

The maintenance of the outstanding universal value, the conditions of integrity and/or authenticity depends on the ***protection and management*** of the WH properties (Paragraph 96, UNESCO 2005).

According to the Operational Guidelines, the nominations should be prepared according to the following format, containing sections devoted to:

- identification of the property
- description of the property
- justification for inscription
- state of conservation and factors affecting the property
- ***protection and management***
- monitoring
- documentation
- contact information
- signature on behalf of the State(s) Party(ies)

While the identification of the property, its description, justification for inscription, documentation and contact information are the issues which do not require special research and have descriptive character; the state of conservation and factors affecting the property, its protection, management and monitoring need attention. Here the protection and management issues identify how the site will meet the standards of the WH as they determine both the state of conservation and the monitoring program. Correct protection measures and management can either improve the conservation or reduce the factors affecting the property, and also they can help to create an effective system of monitoring.

According to the Operational Guidelines, paragraph 132, Chapter III.B, one of the main conditions for properties inscribed on the WH List is their protection, which includes "***long-term regulatory, legislative, contractual, planning, institutional and/or traditional protection and management***". Without these measures the site cannot be included into the World Heritage List.

Such factors as "common boundaries" of the PAs are very important from the point of view of protection. Paragraph 98 of Chapter II states that "… to protect the property's heritage value, its boundaries should include sufficient area adjacent to the area of outstanding universal

value". It is necessary to mention that the PAs are to have their own boundaries providing necessary protection for their heritage, as per paragraphs 100-101 (UNESCO 2005, Operational Guidelines). Paragraph 102 states that if PAs with common boundaries have different management zones, only some of them can satisfy the criteria for inscription.

This statement is important from that point of view, that three PAs studied in this work have common boundaries with other natural sites.

Presence of buffer zones is also required for good protection. According to Paragraph 103, "*Wherever necessary for the proper conservation of the property, an adequate* ***buffer zone*** *should be provided*". "A buffer zone is an area surrounding the nominated property which has complementary legal and/or customary restrictions placed on its use and development to give an added layer of protection to the property. This should include the immediate setting of the nominated property, important views and other areas or attributes that are functionally important as a support to the property and its protection. Paragraphs 105 states that "a clear explanation of how the buffer zone protects the property should also be provided" And Paragraph 106 says that the absence of a buffer zone of the nominated territory should be presented in a statement. World Heritage Committee should approve any modifications to the buffer zone, which are subsequent to inscription.

Management, according to the Operational Guidelines, includes, first of all, a management plan. Each nominated territory should have ***a management plan*** or other documented management system, as per paragraph 108. Speaking about management, the WH does not point out the exact techniques or methods, which should be adopted on the sites, it says that *management system can vary according to different cultural perspectives, resources and other factors, it can incorporate traditional practices as well* (paragraph 110). Secondly, *assurances of implementation of a plan are necessary as well*. Thirdly, *a detailed analysis of a plan should also be provided*. Sometimes a management system is attached to the nomination. Without these documents a nomination cannot be considered complete. According to paragraph

111, Chapter II.F of the Operational Guidelines effective management systems should include the following elements:

- a thorough shared understanding of the property by all the stakeholders
- a cycle of planning, implementation, monitoring, evaluation and feedback
- the involvement of partners and stakeholders
- the allocation of the necessary resources
- capacity building
- an accountable, transparent description of how the management system functions

A cycle of long-term and day-to-day actions for the nominated property should be included, providing its protection and conservation (Chapter II.F., paragraph 112). However, in accordance with paragraph 115 of the Operational Guidelines, a management plan sometimes cannot be provided at a time of nomination. If this is the case, a State Party must indicate when a plan can be presented.

The analysis of the WH requirements has shown that the protection and management of the PAs are considered as the most important elements of compatibility of the sites. They determine the maintenance of the OUV and integrity of PAs. The state of conservation, monitoring and factors affecting the property can be influenced by proper management and protection. Besides, these two terms are very much related with each other. The purpose of management is to provide effective protection (paragraph 109, UNESCO 2005a).

However, the term "protection" is very broad and includes various aspects. Here, in this work, the attention is paid to the legal protection. The legal protection of PAs is represented by the environmental legislation. It establishes the legal base for good conservation management, it gives the legal status to PAs, it confirms the establishment of integrated natural sites, etc. In total it creates the base for development of other aspects, such as management, control over implementation of protective measures, creation of scientific centers, monitoring programs, etc. It can guarantee the fulfillment of the following points of Article 5 (UNESCO 16/11/1972):

1. adoption of a general policy, giving the cultural and natural heritage a function in the community life

2. integration of the protection of the sites into comprehensive planning programs

3. setting up special services responsible for the protection, conservation and presentation of the cultural and natural heritage with an appropriate staff

4. development of scientific and technical studies and research to counteract the dangers that threaten its cultural or natural heritage

5. establishment or development of national or regional centers for training in the protection, conservation and presentation of the cultural and natural heritage

As a result of the analysis of the WH Convention and the Operational Guidelines, it is possible to say that the main requirements towards the natural sites are devoted to their OUV and integrity, their protection and management.

V. Natural sites of Kazakhstan – biodiversity value

V.1.Kazakh sites as a part of the Central Asian region

The Republic of Kazakhstan is situated in the Central Asian region; as a result neighboring countries often share interrelated ecosystems. Therefore, in order to follow the standards of the World Heritage it is required to consider the protected areas of different countries, separated by political borders, as one integrated area (UNESCO 2005, Operational Guidelines, Paragraph 88b). Though this is politically challenging, from an environmental point of view, integrating individual sites increased chances for conservation of biodiversity. An enlarged territory automatically increases the area for inner safe migration of the species in search of food and safe places. Interaction of ecosystems is less interrupted by humans' activity, which usually appears at the sites' borders, reduced in this case. Absence of some borders creates a kind of a bigger protected centre, artificially removed from the buffer zones and increases the resistance of the ecosystems towards the human expansion.

From 16-18 December 2002, a UNESCO regional workshop on "Possibilities of Nominations on World Natural and Mixed Heritage in Central Asia" was held at the National Academy of Sciences, Almaty, Kazakhstan. Forty participants included experts from the five Central Asian countries: Kazakhstan, Uzbekistan, Kyrgyzstan, Turkmenistan and Tajikistan, and international experts. One of the recommendations from the workshop was the need for an independent review of potential natural WH sites in Central Asia. Currently, there are eight sites included in the WH List in Central Asia, all of which concern cultural heritage:

- the Mausoleum of Khoja Ahmed Yasawi in Kazakhstan
- Petroglyphs within the Archaelogical Landscape of Tamgaly in Kazakhstan
- the State Historical and Cultural Park "Ancient Merv" in Turkmenistan
- Kunya-Urgench in Turkmenistan
- Itchan Kala (= the old centre of Khiva) in Uzbekistan

- the Historic Centre of Bukhara in Uzbekistan
- the Historic Centre of Shakhrisyabz in Uzbekistan
- Samarkand, Crossroads of Cultures in Uzbekistan.

Natural sites are under consideration. During the workshop meetings the participants considered reports on the current status of ecosystems of the region, they paid attention to the sites, which have potential for being protected as the World Heritage sites. Mutual cooperation resulted in production of recommendations and comments on the current status of the sites in Central Asia (UNESCO 2002) and the IUCN report "World Heritage Thematic Study for Central Asia" (hereinafter – the IUCN Review) based on research done by the IUCN and local experts. As seen from Table 2, various authors have identified several ecosystems situated in Central Asia which are of global significance.

Table 2: Ecosystems of Central Asia (IUCN 2005)

Ecosystem	IUCN 2003	WWF Global Ecoregions*
Steppes	x	
Wetlands, lakes and deltas	x	x
Forests (incl. mountain forests with high levels of endemism)	x	x
Cold winter deserts	x	x
Coastal ecosystems	x	
Mountains	x	x
Internal water basins	x	

* - sources mentioned in the original source (IUCN 2005)

The chances for inscription grow if to consider the sites according to the requirements of IUCN: the five Central Asian countries all lie entirely within the Palearctic Biogeographic Realm and span seven Biogeographical Provinces (hereinafter – BP) (IUCN 2005; Table 3). Four out of seven BPs are already represented in WH Sites in other countries, but three provinces, namely the Turanian, Pamir-Tian-Shan Highlands and the Aral Sea are not on the WH List.

Table 3: Udvardy BPs in Central Asia and existing WH Sites (IUCN 2005)

Udvardy Biogeographical Province	No. of WH Sites	Names of WH Sites
Name		
West Eurasian Taiga	3	Laponian Area (S)* The High Coast (S)*

Udvardy Biogeographical Province Name	No. of WH Sites	Names of WH Sites
		Virgin Komi Forests (Ru)*
Turanian	0	
Pontian Steppe	1	Danube Delta (Ro)*
Caucaso-Iranian Highlands	1	Western Caucasus (Ru)*
Altai Highlands	2	Golden Mountains of Altai (Ru)* Uvs Nuur Basin (Ru / M)*
Pamir-Tian-Shan Highlands	0	
Aral Sea	0	

* - Ro = Romania, Ru=Russia, Ru / M = Russia / Mongolia, S = Sweden

Although representation of all Udvardy BPs in WH sites is not an objective of the WH Convention, the sites of the underrepresented biogeographical provinces have more potential for nomination according to the principles of outstanding universal value of the natural heritage of the sites. According to Paragraph 60a of the Operational Guidelines, "States Parties whose heritage of outstanding universal value is under-represented on the World Heritage List are requested to give priority to the preparation of their Tentative Lists and nominations", which means that the importance of nomination of underrepresented sites is quite big from the point of view of UNESCO and the World Heritage Committee.

In this work there are three sites mentioned, which refer to the under-represented area of the Pamir-Tian-Shan Highlands, namely the ***Aksu Dzhabagly State Nature Reserve***, situated in the Western Tien Shan region, and the ***Ile-Alatau State National Nature Park*** united with the ***Altyn-Emel State National Nature Park***, both situated in the Nothern Tian-Shan region.

According to the Program on Development of the System of Specially Protected Natural Territories of the RoK for 2007-2009, there are 107 natural sites in Kazakhstan (Table 4).

Table 4: Objects of Specially Protected Territories within the Geographical Zones

Zones	Nature reserves – "zapovednik"	National natural parks	National reserves – "reservat"	Natural monuments	Natural reserves – "zakaznik"	Protected zones – "zapovednaya zona"	Total
Southern forest-steppe	-	-	-	-	2	-	2
Moderate-droughty steppe with small wooded areas	-	-	-	2	1	-	3
Moderate-droughty steppe	-	3	-	19	4	-	26
Droughty steppe	-	-	-	-	1	-	1
Moderate-dry steppe	1	1	-	-	9	-	11
Dry steppe	1	-	2	1	1	-	5
Deserted steppe	-	-	-	-	5	-	5
Semi-desert (or desert with representation of some steppe areas)	2	-	-	1	4	2	9
Desert	-	-	-	-	10	-	10
Southern desert	1	-	-	-	-	3	4
Mountains with clearly represented vertically set zones	5	5	-	3	18	-	31
Total	**10**	**9**	**2**	**26**	**55**	**5**	**107**

Nowadays, the republic has several protected territories of different legal statuses, situated in various geographical zones (Table 4). As we see, they have not the similar level of protection due to their sizes and administrative protection measures distributed according to categories. There are 10 sites under the category of "nature reserves", which is Category I according to IUCN, and 9 sites under the category of "national parks", Category II of IUCN. And 5 sites under Category I and II belong to the mountainous zone, while there are no sites

under these categories among deserts or droughty steppe, or both among moderate droughty steppe with small wooded areas and forest-steppe.

This resulted in various levels of protection. And the sites of mountainous and steppe zones were chosen for preliminary nomination as more protected.

The map of these territories is given in the end of the work (Figure 1, Annex). And here is the table with these sites.

Table 5: Sites suggested as potential Natural WH sites in Kazakhstan

Site Name	Natural Value				Suggested by UNESCO	Georgraphical zones
	i	ii	iii	iv		
Aksu-Zhabagly state natural reserve (= *Aksu-Djabagli*)			1	1	1	Mountains
Northern Tyan-Shan (*Ile-Alatau* State National Park) *		1		1	1	Mountains
State National Natural Park "*Altyn-Emel*" *	1	1	1		1	Mountains
Steppes and Lakes of North Kazakhstan (= *Saryarka*)	1	1	1	1	1	Steppes
Extension of Altai Golden Mts into Kazakhstan (*Katon-Karagai* National Park)					1	Mountains

*- sites suggested as one protected territory by IUCN

Each of the sites has its own high-valued importance, locally and globally, even those ones, which were not suggested for nomination. And nomination is only another stage in improvement of the protection of the sites. However, giving a short overview of all the protected territories, it was decided to pay special attention to those which are recognized as the most prominent. Four sites, considered from the point of view of biodiversity, size, conservation value, management, are examined in this work.

V.2.The Aksu-Dzhabagli State Nature Reserve

In the process of preparation of data for WH, IUCN representatives and the local experts were considering the Aksu-Dzhabagly State Nature Reserve (hereinafter – Aksu-Dzhabagly) together with a group of other reserves, as part of a larger area supporting common ecosystems (IUCN 2005). And Aksu-Dzhabagly was regarded as a key site in the cluster, by the IUCN experts, who consider it as the richest for animal and plant species (IUCN 2005).

Today the Western Tien Shan represents a complex of national protected areas and two Man and Biosphere reserves situated at the junction of the borders of Kazakhstan, Kyrgyzstan and Uzbekistan (Table 6). Many are actually contiguous; others are closely clustered and are biologically linked through the movement of mobile species. Although mountain sites are already well-represented in the WH list, a transboundary WH site of truly spectacular landscape and biodiversity value has a great potential for inclusion.

Table 6: Main features of principal protected areas in the Western Tien Shan (IUCN 2005)

Country	Site Name	IUCN Management Category	Date Designated	Area (ha)
Kazakhstan	Aksu-Dzhabagly State Nature Reserve	Ia	1926**	75,094
Kyrgyzstan	Sary-Chelek Reserve	Ia*	1959	23,868
Kyrgyzstan	Besh Aral State Nature Reserve	Ia	01/01/1979	63,200
Kyrgyzstan	Chandalash Wildlife Refuge	IV	01/01/1975	35,000
Kyrgyzstan	Manass Wildlife Refuge	IV	01/01/1975	15,000
Uzbekistan	Chatkal Reserve	Ia*	1947	35,809
Uzbekistan	Ugam Chatkal National Park	II	01/01/1990	574,600
			Total	**822,571**

Note: * - MAB reserve; ** - first protected area in Central Asia

Biogeographical Province: Pamir-Tian-Shan Highlands (Table 3)

Geographical Location: These seven protected areas lie at the junction of three countries - Kazakhstan, Kyrgyzstan and Uzbekistan - in the western Tien Shan mountains. They stretch from the south-western end of the Chatkal'skiy Range in Uzbekistan (Chatkal Reserve) to the north-western end of the Talassky Alatau range in Kazakhstan (Aksu-Dzhabagly), and extend

eastwards to the north-eastern slopes of the Chatkal'skiy Range in Kyrgyzstan (Sary Chelek Reserve).

Coordinates: Aksu-Dzhabagly 42º30'N, 70º10'E; Chatkal 41º08'N, 69º59'E; Sary-Chelek 41º47'N, 71º54'E (Map 1)

Date and History of Establishment: Aksu-Dzhabagly is the first protected area in Central Asia, established in 1926 (Ivaschenko 2006)

Area: Approximate area 822,571 ha. The Chatkal Mountains Biosphere Reserve component covers 57,360 ha (45,160 ha core area and 12,200 ha buffer zone), whilst the Sary-Chelek Biosphere Reserve covers 23,868 ha (including a core area of 18,080 ha). Aksu-Dzhabagly – 75,000 ha (primarily – 29,000 ha) (IUCN 2005)

Land Tenure: Mostly state-owned by Kazakhstan, Kyrgyzstan and Uzbekistan.

Altitude: Aksu-Dzhabagly – 1,110 meters, Sary-Chelek Reserve – 4,247 meters (IUCN 2005)

Physical Features: The reserves encompass the ridge and spurs of the Chatkal'skiy Range, high altitude lakes, e.g. Sary-Chelek at 2,000m, numerous river basins. The hanging glaciers with ice falls can be found on the territory of the site as well. There are rocky outcrops of Devonian and Carboniferous age, with thin deluvial and eluvial deposits, which lie on shallow bed rocks, and deeply entrenched valleys. Aksu-Dzhabagly contains a magnificent landscape of the Aksu River canyon, with the depth of 500 meters (Baitulin 2000). The soils of the site are various brown earths.

Climate: Varying with altitude and location, temperature changes at 1200 meters from -16°C during the coldest months of January and February, and up to 20-25°C during the warmest month, July. At low altitude, mean annual temperature is 11.5°C. Maximum and minimum temperatures are 37.9°C and -21°C, respectively. Annual precipitation varies from 680-900mm, with a mean of 656mm at 1,200m. The frost-free period is 190-200 days. At medium altitudes the snow cover can remain from the end of December to the middle of March.

Vegetation: Uninhabited, except the Ugam Chatkal National Park, these protected areas remain in a natural or semi-natural state. Natural vegetation in the reserves consists of three main vegetation belts:

- mountain Turanian-type semi-savanna (Table 2),
- forest/shrub (mostly juniper and hardwood with the notable presence of wild fruit tree species)
- alpine steppe

River valleys are characterized by tugai-type landscapes. Juniper forests contain *Juniperus turkestanica*, *J. semiglobosa*, and *J. seravschanca*, and deciduous trees such as *Prunus sogdiana*, *Acer turkestanicum*, *Crataegus turkestanica, Malus kirghisorum* and walnut *Juglans regia*. And there are also the woodlands of magnificent ancient spruce *Picea schrenkiana* and fir *Abies semsnovii*. South- and west-facing slopes support sclerophytic, including groves of *Pistacia vera*, and mountain steppes. Highland areas have meadows. There are 1,100 recorded species of plants, including 40 species of trees and shrubs. Some 72 are rare and endemic (Pavlov 1980)

Aksu-Dzhabagli is widely famous for six kinds of tulips growing in its territory and the territory of the buffer zone. Two of them, *Tulipa greigii* and *Tulipa kaufmanniana*, are included in the Red Data Book of Kazakhstan. These beautiful flowers are under threat of degradation. People from the local communities throw the flowers during their blossom time in spring. Inspectors of the park cannot cope with all the people who visit the park in great quantities.

Nowadays, the conservation measures are taken with the help of IUCN, which organized a special project. The aim of the project is to hold an informational course for the local community, to provide technical support to the inspectors, to maintain educational programs in schools about tulips, etc.

According to Baitulin (2000), the site contains 19 endemic high plant species out of 64 growing in the Central Asian mountainous region. As per the classification given by Pavlov

(1980), which divides the site into four vegetation belts, situated vertically: semi-desert – 800-1300 m.a.s.l. (meters above sea level), Turanian steppe – 1300-2000 (2500), sub-alpine – 2000-2800 (3200), alpine – above 2800, the reserve represents a unique combination of plant species according to different climatic zones. Local experts indicate that the most threatened plant species are *Prenanthea mira, Tulipa dubia, Thesium minkwitzianum, Malus niedzwetzkiana, Seseli setiferum, Scutellaria flabellaria, Ugamia angrenica,* and *Dryopteris mindshelkensis* (Baitulin 2000).

Fauna: Many years of zoological research show that the fauna of the Western Tien Shan is a mixture of different for their geographic background species, which inhabit the landscapes of Europe, Northern America, Central Asia (Kovshar 1972). At least 42, according to other sources 54 (Baitulin 2000), mammal species inhabit the area, including characteristic species such as the brown bear *Ursus arctos*, snow leopard *Uncia uncial*, Eurasian lynx *Lynx lynx*, roe deer *Capreolus capreolus*, Tien Shan argali *Ovis ammon karelini*, Asiatic ibex *Capra sibirica*, and Menzbier's marmot *Marmota menzbieri* (endemic to the Western Tien Shan). Over 240 bird species (255 subspecies) have been recorded, including Himalayan snowcock *Tetraogallus himalayensis* and chukar partridge *Alectoris chukar*, as well as golden eagle *Aquila chrysaetos*, booted eagle *Hieraeetus pennatus*, saker falcon *Falco cherrug*, lammergeier *Gypaetus barbatus* and black stork *Ciconia nigra*. There are also at least nine species of reptile, two amphibians and five fish; insect species account around 5000 species (Kovshar 1972)

Cultural heritage: Besides the natural heritage the site carries very important historical data. Ancient drawings dating 1000-2000 BC were found on the cliffs along the Tereksay River in Karasau, 2,000 m.a.s.l., in the Chatkal Reserve. Moreover, the Aksu-Dzhabagly State Nature Reserve contains more than 2,000 petroglyphs (IUCN 2005)

Local Human Population: Among the reserves only Ugam Chatkal National Park has some small settlements.

Conservation Value: Relatively not well utilized, the Western Tien Shan is a harbour of a rich variety of rare and threatened species of plants and animals. Beautiful landscapes, like the Aksu river canyon, compose the unique value of the site too. As for its social significance, it is known that Aksu-Dzhabagly streams provide water for one village, with a population of 2000, situated at the border of the reserve. The life style of people and their health depend directly on water coming from the streams of the park. The conservation of the site, which will provide a careful management of water resources, is very important for these people (IUCN 2005)

The Commission on National Protected Areas proposed that Chatkal Reserve would qualify under criteria N(vii) and N(x), and Thorsell and Hamilton, delegated by IUCN in 2002 for scientific research, considered that Aksu-Dzhabagly merited inclusion as a montane site (IUCN 2005). Some local experts suggest inclusion of Aksu-Dzhabagly under N(vii) as an "area of exceptional natural beauty and aesthetic importance" - for the Aksu river canyon (Proceedings 2000). For a more accurate evaluation of potential of the site further research is required. Currently, experts consider the Western Tien Shan, including Aksu-Dzhabagly, as natural heritage under criterion N (x) (IUCN 2005; Bekniyazov 2002).

Criterion N(x): Biodiversity and threatened species The Western Tien Shan has large, viable populations of most of the larger fauna (many such as the snow leopard and Tien Shan argali are globally threatened) characteristic of the currently un-represented Pamir-Tian-Shan Highlands Biogeographic Province. It has high numbers of endemic plants, and is located in the Mountains of Middle Asia centre for plant diversity (CPD).

The uniqueness of the site is confirmed with the fact that it is included into the Global 200 Ecoregion "Middle Asian montane woodlands and steppe". Besides, Aksu-Dzhabagly has on its territory an ancient "stone gallery", created by many generations of ancient "artists", starting from the Saks's period till the Middle Age (Ivaschenko 2006, P.24). And thus there is a potential for inclusion of the site under mixed category for cultural and natural heritage. But this statement requires good arguments which can be achieved only with further studies.

V.3. Northern Tien Shan

The Northern Tien Shan has a potential for nomination as one relatively contiguous site. Having all the features of integrity, it represents one geographic region of the Zailiyskiy Alatau Range. Its northern site consists of Altyn-Emel State National Nature Park (hereinafter – Altyn-Emel); while the southern site would be a cluster consisting of the contiguous reserves of Ile-Alatau State National Nature Park (hereinafter – Ile-Alatau) and Almatinskiy Nature Reserve (hereinafter – Almatinskiy) (IUCN 2005; Table 7).

Table 7: Main features of the principal protected areas in the Northern Tien Shan

Country	Site Name	IUCN Management Category	Date of establishment	Area (ha)
Kazakhstan	Altyn-Emel National Nature Park	II	1996	169,627
Kazakhstan	Almatinskiy Nature Reserve	Ia	1961	73,342
Kazakhstan	Ile-Alatau National Nature Park	II	1996	164,450
			Total	**407,419**

Ile-Alatau borders Kyrgyzstan, and in the future it might be possible to extend this potential site to make a transboundary WH site with protected areas in Kyrgyzstan. Similar to the Western Tien Shan, the cluster of sites only raises the value of biological diversity of the areas on an international level and strengthens the chances for inclusion. And opposite to the Western Tien Shan, the Northern Tien Shan can be nominated without joining sites of neighbor states, as the value and size of Ile-Alatau, Almatinskiy and Altyn-Emel united together already allows conservation of a larger group of species, representing the unique flora and fauna of the region.

Biogeographical Province: Pamir-Tian-Shan Highlands (Table 3)

Geographical Location: Altyn-Emel is situated on the northern slopes of the Dzunghar Alatau mountain range. Almatinskiy lies 25km east of Almaty, the former capital of Kazakhstan, in the central part of the Zailiisky Alatau Range, which is the southern border of the Northern Tien Shan. Its boundary follows the Leviy Talgar River in the west, the Pravy Talgar River in the

north, and in the east, the ridge separating the valleys of the Issyk and Jurgen Rivers. The distance from the west to the east is 32km. Ile-Alatau, surrounding Almatinskiy, shares its northern borders with the largest conglomeration, consisting of the city of Almaty and small towns of Kaskelen, Talgar and Esik (Babaev 1990).

Coordinates: Almatinskiy - 43°N, 78°E**;** Altyn-Emel - 43º57'N 78º38'E; Ile-Alatau - co-ordinates ca. 43º09'N 77º49'E

Area: Almatinskiy - 73,342ha; Altyn-Emel - 169,627; Ile-Alatau - 164,450. The entire site, if united, would cover around 407,419 ha (IUCN 2005).

Date and History of Establishment: Almatinskiy was first established in May 1931 and designated a state nature reserve in 1935, but ceased to exist in 1951. It was re-established as a State Nature Reserve in 1961. Between 1966 and 1983 Kalkany mountain semi-desert zone, with the area of 17,800 ha, was included in the reserve, together with the 'Singing Sands'. In 1983 this site was transferred to Kapchagayskiy Hunting Reserve. Altyn-Emel was established in 1996; and Ile-Alatau, situated on the place of Zailiyskiy National Nature Park was established in 1996. Ile-Alatau contains Almatinskiy in the very heart of the territory (Dzhanyspaev 2006)

Land Tenure: State-owned

Altitude: Ranges from approximately 1,000m in Atyn-Emel and 1,100m in Ile-Alatau to 4,973m at the peak of Talgar Mountain in Almatinskiy (IUCN 2005)

Physical Features: Altyn-Emel consists of sandy plains, steppe-covered foothills and mountains reaching 2,500m high (Picture 1, Annex). Ile-Alatau contains mountains, numerous glaciers and gorges up to 700m deep. Almatinskiy Reserve forms part of a northern ridge of the Tien-Shan Mountains and consists of the northern Zailiisky Alatau and the Illissky Depression, characterized by a network of peaks culminating in Mt. Talagar, and has strongly dissected relief resulting from intense erosion. It includes stretches of the fast-flowing Talgar and Issyk rivers which ultimately drain into Lake Balkash. Soils range from degraded chernozems to black earths (IUCN 2005).

Climate: Conditions in the Northern Tien Shan are continental. Mean annual temperature is 6.8°C in the valleys and 0.8°C on the mountains. Temperatures in the valleys vary from 4.3°C in January to 18.1°C in July, and on the mountains from -9.7°C to 10.6°C. The annual number of frost-free days varies from 145 in the valleys to 90 on the mountains. Mean annual precipitation is 830-870mm. Snow cover lasts for 160-190 days and is usually 60-80cm deep.

Vegetation: In Altyn-Emel vegetation types include the peculiar Dzungharian deserts, where stony landscapes are decorated with saksaul forests (saksaul is a typical for Centrl Asia tree), but the lack of vegetation is only a visible feature. In some places the desert is replaced with the mountain steppe, shrub stands, spruce forest and alpine and sub-alpine meadows. The total number of recorded plant species is 634, including 27 endemics. Almatinskiy contains forest-meadow steppe, situated at 1,300-2,600 m.a.s.l., where conifers, mixed forest, grasslands and forest grasslands converge. One can see here feather grasses *Stipa capillata*, *Phleum phleoides* and *Festuca ganeschinii*. At 2,600-3,000 m.a.s.l. there is the sub-alpine belt, supported with the evergreen scrub *Juniperus turkestanica,* steppe and mixed grasslands. In the alpine zone at 3,000-3,600 m.a.s.l., meadows are interspersed with rock outcrops. Other species present include apple *Malus sieversii*, honeysuckle *Lonicera altmanii* and representatives of the genera *Armeniaca*, *Crataegus*, *Rosa*, *Artemisia*, *Geranium*, *Myosotis*, *Gentiana* and *Cobresia*. Some 950 species have been recorded, including 13 trees, and 63 shrubs. Ile-Alatau contains similar vegetation types to Almatinskiy, and up to 1,200 species of plants, including 46 rare and endemic species (IUCN 2005).

One of the remarkable sights of Ile-Alatau is mountains covered by spruce forests (Picture 3, Annex). Schrenk's spruce, *Picea schrenkiana*¸ can reach a height of 45 meters and a diameter of up to two meters. This tree, remarkable for the ability to grow on nearly vertical slopes, lives for up to 250-300 years, and at the upper tree-line, for up to 600. Below the coniferous forest zone lie mixed forests, distinguished by their rich diversity of species. Here one encounters Mushketov's atraphaxis, Turkestan shrub maple, Yanchevsky's currant, Caucasian

carcas, and Siver's apple tree *Malus sieversii*, which is considered by some experts the forefather of all the world's known apple varieties (Vinogradova 2006).

Fauna: According to data provided by IUCN, based on the Red Book of Kazakhstan and researches of local experts, Altyn-Emel supports 70 species of mammal, including populations of montane species such as snow leopard *Uncia uncia*, Tien Shan brown bear *Ursus arctos*, and Tien Shan argali *Ovis ammon karelini*; and lowland species such as kulan *Equus hemionus kulan*, sand or goitred gazelle *Gazella subgutturosa*. Eurasian otter *Lutra lutra*, stone marten *Martes foina* and marbled polecat *Vormela perugnusa* are also found. The 155 species of birds recorded include golden eagle *Aquila chrysaetos*, Barbary falcon *Falco pelegrinoides*, bearded vulture *Gypaetus barbatus* and ibisbill *Ibidorhyncha struthersii*. There are also 25 reptiles, four amphibians and 28 fishes. Mammals in Almatinskiy include marmot *Marmota baibacina*, vole *Clethrionomys frater*, birch mouse *Sicista concolor*, wolf *Canis lupus*, maral *Cervus elaphus* (Picture 2, Annex), stoat *Mustela erminea*, stone marten *Martes foina*, Eurasian lynx *Lynx lynx*, red deer *Cervus elaphus*, roe deer *Capreolus capreolus* and Asiatic ibex *Capra sibirica*. The snow leopard is a rare visitor to the high mountains. Birds include lammergeier *Gypateus barbatus*, golden eagle *Aquila chrysaetus*, Himalayan snowcock *Tetraogallus himalayensis* and chukar *Alectoris chukar*. Of the passerines, there are whistling thrush *Myiophonus caerulens*, grosbeak *Mycerobus carnipes* and Guldenstadt's and blue-headed and Eversmann's redstarts *Phoenicurus erythrogaster*. Ile-Alatau also supports a diverse fauna: 47 mammals, including Tien Shan argali and Asiatic wild dog *Cuon alpinus*, 148 species of nesting birds, 10 reptiles, 2 amphibians, 8 fish and at least 1,500 insects (IUCN 2005).

Cultural Heritage: Altyn-Emel includes 191 historic / cultural monuments, from the Stone, Bronze and Iron Age, including a number of barrows and burial grounds. As for Ile-Alatau, it also has barrows and burial grounds from the Early Iron Age, stone monuments dated from the 6^{th} -8^{th} centuries A.D. and petroglyphs founds 6 kilometers to the south of Turgen village.

Archeologists have discovered the remains of old settlements at the Big Almaty Range (Proceedings, 2000).

Conservation Value: Together these three protected areas span almost the complete range of Central Asian habitats, including as they do the ecosystems from the high mountains to desert. They became the harbor of an extraordinary diversity of higher plants and vertebrates, many of them endemic (Baitulin 2000). Thus the justification for a serial nomination would be that together the sites encompass the full range of northern Tien Shan species and habitats, descending from alpine regions to semi-desert (IUCN 2005)

Criterion N(x): Biodiversity and threatened species: The Northern Tien Shan WH site has high floral and faunal diversity and includes a relatively high number of threatened species. It has high numbers of endemic plants as well. Some of the species are mentioned above. About the half of the proposed site is located in the Mountains of Middle Asia Centre of Plant Diversity (CPD). It is situated within the currently un-represented Pamir-Tian-Shan Highlands Biogeographic Province. The whole site lies within the Global 200 Ecoregion "Middle Asian montane woodlands and steppe". It is adjacent to the "Central Asian Deserts" Global 200 Ecoregion as well, and contains many faunal and floral elements associated with it, such as desert reptiles and kulan.

It is supposed by Thorsell and Hamilton, IUCN experts, mentioned in the regional overview (IUCN 2005), that it may be necessary to establish a connecting corridor in order to prevent the parts of the site from becoming ecological islands.

V.4. Saryarka: Steppes and Lakes of Northern Kazakhstan (SLNK)

Saryarka or SLNK, is a suggested natural site. It does not exist as an entire site. Nowadays, two main reserves of Northern Kazakhstan, namely Naurzumskiy (hereinafter – Naurzum) and Kurgaldzhinskiy (hereinafter - Kurgaldzhino) State Nature Reserves, can become parts of Saryarka.

Table 8: Main features of the principal protected areas of Saryarka

Country	Site Name	IUCN Management Category	Date of establishment	Area (ha)
Kazakhstan	Kurgaldzhinskiy State Nature Reserve	I	1968	258,963
Kazakhstan	Naurzumskiy State Nature Reserve	I	1931	191,381
			Total	**450,344**

Biogeographical Province: Pontian Steppe (Table 3)

Geographical location: Kurgaldzhino and Naurzum are situated in the northern part of Kazakhstan. Kurgaldzhino lies within the steppe zone. Naurzum is situated in the forest-steppe zone.

Coordinates: Kurgaldzhino - 51°N, 68°E, Naurzum - 52°N, 64°E

Area: Kurgaldzhino has 258,963 hectares of the area, which includes two lakes, Tengiz and Kurgaldzhino (Kovshar 2006), and two kilometers zone around them. Naurzum has the area of 191, 381 hectares, including three big parts like Naurzum (139,714 hectares), Tersek (12,947 ha) and Sypsyn (38,720 ha), all united and surrounded with the area of 116,726.5 hectares (Bragin 2006).

Dates and history of establishment: Created in 1931, Naurzum was closed in 1951 and re-established in 1959, but actually it started to work as a reserve again in 1966. The decisions on closing was connected with the idea of organization of forest producing farm on its territory, which contains pine forested areas. Later in 1976, it was decided to add a part of steppe to the rest of the territory. Kurgaldzhino appeared as a result of active development of virgin lands,

which started in 1950's. To protect the original ecosystems from degradation, Kurgaldzhino was created. The size of the site has been changed several times since then. Today, it includes two lakes and a surrounding zone, when the unique virgin lands are still out of its territory.

Land Tenure: All the lands of these reserves are state-owned.

Altitude: 304-420 meters above the sea level in Kurgaldzhino.

Physical features: Kurgaldzhino is in the relief area of the lowest part of the Tengiz-Korgaldzhin Hollow, where all the rivers between the Kazakh Low Hills Area and the Kokshetau Height flow to and concentrate, which results in big river floods in the spring time. Especially the level of the flooding depends on Nura, the main river of the area. In the same period, the lakes also enlarge in size. But their area and depth can be reduced significantly in other seasons because of the dry climate of this geographical zone (Kovshar 2006)

Naurzum lies within the Turgai Hollow mainly. It contains wooded lands and steppe. The biggest rivers of the area are Dana-Bike and Naurzum-Karasu, 58 and 85 kilometers consequently (Bragin 2006).

Climate: the climate for both sites in sharp continental, with big temperature fluctuations in winter and summer periods. The average temperature in Naurzum comes to +2.4 degrees above 0, with the absolute maximum of +41.6°C and minimum of -45.7°C (Bragin 2006). The number of frost free days is 131 per year approximately. In Kurgaldzhino the temperature can vary from +44°C in summer to -49°C, although these are the extreme indexes (Kovshar 2006). The level of deposits for Kurgaldzhino is 200-350 millimeters, and for Naurzum – 233 on the average.

Fauna: The Korgalzhin-Tengiz lakes are capable of supporting 15-16 million (IUCN 2003) or 5-10 million (UNEP-WCMC 2003) waterbirds, among them flocks of geese estimated at 2-2.5 million (IUCN 2003) or 0.5 million (UNEP-WCMC 2003). After rains these lakes support 350,000 nesting waterfowl and the Naurzum and Sarykopa lakes 250,000 (IUCN 2003). The sites comprise a key stopover point and cross-roads on the following migratory flyways: Siberia

- Central / South Asia; Siberia - Eastern and Central Europe; Scandinavia - Siberia -Eastern Europe (IUCN 2005).

SLNK is also inhabited by many endemic species, some of which are endangered as well. For example, *Saiga tatarica*, or saiga antelope, which is now a Critically Endangered species, lives in the steppes of the protected area.

Conservation Value: Being a part of unique steppe and forest-steppe ecosystems, Kurgalgin and Naurzum belong to the heritage of global significance. There are not so many regions of virgin lands preserved from degradation. Another point stating for conservation value of Saryarka is that it belongs to the Pontian Steppe Biogeographical Province (Table 3), which is presented with one site in the Danube Delta only. If nominated, this site will be the largest steppe reserve on the WH List. The integrity and functionality of steppe ecosystems in Saryarka are linked to the absolute size of the steppe. The few reserves that do include substantial areas of natural steppe lie further east. They form the Mongolian-Manchurian Steppe. But they lie in a different biogeographic province. To improve the conservation of the site Kazakhstan has agreed to extend the Naurzum reserve section of SLNK to include an extra 1,000 km^2 (IUCN 2005).

Criterion N(vii): Earth's history and geological features

The nomination stated that the site is the best remaining example of 'humus-building graminaceous steppe' between the Black Sea and the Altai Mountains. IUCN evaluation (IUCN 2003) accepted the high level of naturalness within the site. The evidence of wild nature preserved in the region is also given in the report of Baitullin et al (2000). There are also some articles on the Internet sites, containing the letters of different people, who occasionally or on purpose visited this part of Kazakhstan, which cannot be considered as fully reliable sources, but attract attention with the similarity of opinions of visitors. Unfortunately, there is no convincing evidence presented by an officially recognized body, like a nomination committee, e.g., which is necessary to establish the global significance of the site because of its geological setting or present-day landforms, it could not be accepted under this criterion.

Criterion N(viii): Ecological processes / ecosystems:

According to studies made by IUCN commissioned (IUCN 2003), it was considered that the lakes of the site with their seasonal dynamics of hydrology, chemistry and biology can be of significant scientific interest. The diverse flora and fauna of the wetlands have evolved through complex wet/dry cycles. However, the evaluators considered that the site needs further studying for objective assessment.

Criterion N(ix): Superlative natural phenomena of natural beauty and aesthetic importance.

Though the IUCN evaluation showed that this site cannot be evaluated under Criterion (ix), the description given in the IUCN Review states that the wetlands of Saryarka provide an impressive and colorful sight from the air, which is difficult to appreciate from the ground. Only the low clay hills of the Tersek Unit were considered to be of OUV. However, this is not enough for inclusion of the whole site on the WH List.

Criterion N(x): Biodiversity and threatened species

IUCN's evaluation (IUCN 2003) stated that the wetlands of northern and western Kazakhstan are of international importance and may be of outstanding universal value for the conservation of migratory waterfowl as they stopover on their way from Africa, India and southern Europe to their breeding places in Western and Eastern Siberia. However, the evaluators considered there was a need to develop a more comprehensive thematic study for the region in order to compare the site to other important areas within this territory in relation to this criterion.

Despite the fact that Saryarka was chosen under many categories as a potential WH site, it has not been nominated yet. It was proposed in 2002 and was considered by the WH Committee in 2003, which initiated IUCN separate independent evaluation. IUCN representatives visited the site in August 2002 and identified a number of concerns. The experts paid attention particularly to the lack of information (IUCN 2003). As a result of this evaluation, Decision 27 COM 8C.6 of the 27th meeting of the WH Committee in June / July 2003 was

made. It postponed the consideration of the nomination "until a detailed action plan and implementation program demonstrating the commitment of the State Party to:

- upgrade the Sarykopa Wildlife Reserve to Nature Reserve protected status
- link the Tersek and Sypsyn outliers to an extended main Naurzum Nature Reserve by protecting the intervening corridors of unmodified steppe" (WHC 2003, 171 pp).

The nomination was not re-submitted by Kazakhstan for consideration at the 28th meeting of the WH Committee in 2004.

However, as we see from the current data, Tersek and Sypsyn, which were separate areas, are now parts of Naurzum (Bragin 2006), which means there is some action in this field in comparison with 2003.

SLNK appears to have potential to meet the outstanding universal value for its wetland biological diversity and for its steppe biological diversity. Potentially it can be considered under criteria N(x) for selection as a WH site. To assure the preparedness of the site to the requirement of the World Heritage, it is also recommended for the State Party to add to the existing protected territory the substantial areas of steppe, part of the Temperate Grassland biome that is currently under-represented in WH sites (the second-least represented biome after Cold Winter Deserts) (IUCN 2003).

V.5. Katon-Karagai State National Nature Park

"Altai" in Mongolian means "golden mountains". The first explorers, visited this area, were amazed with its untouched bright beauty. And today, they continue to impress visitors with its almost unspoiled nature. Four states have parts of the Altai Mountains within their territories (Figure 2, Annex), each of which have established their own parts as protected national reserves. In Russia, these include the Katun State Biosphere Reserve, situated at the Russian border, and a special zone "Plateau Ukok". On the Chinese side there is the National Park of Khanasi (at the lake of Kanas), and in Mongolia – the Altai Tavn Bogd National Park.

Recently the Kazakh government created 832,000 ha of new protected areas, all of which come under IUCN management categories I and II, meaning that they will be strictly protected with biodiversity conservation as their aim. The World Wildlife Fund has recognized the creation of these areas by the Kazakh government as a "Gift to the Earth". One of these areas, the Katon-Karagai State National Nature Park (hereinafter – Katon-Karagai), is located in the Altai Mountains of Kazakhstan, and could form a transboundary biosphere territory together with the Russian Katun State Biosphere Reserve. It can also become the basis for the extension of the Russian World Heritage site, "Golden Mountains of Altai" (Chuprova 2006)

Biogeographical Province: Altai Highlands (Table 3)

Geographical Location: North-eastern part of Kazakhstan

Coordinates: Approximately 49º00'N, 87º00'E.

Date and History of Establishment: In 1998 the government of Kazakhstan adopted the Resolution on organization of Katon-Karagai. In July 2001 the park was created and became operational (Starikov 2006)

Area: 637,000 ha (Starikov 2006), which makes it the biggest protected natural protected area in Kazakhstan.

IUCN Management Category: According to park data, it is classified as IUCN Category II.

Land Tenure: State-owned

Altitude: Here is situated one of the most beautiful and the highest mountains of Siberia and Altai the mountain of Belukha (the mountain is called so because of its white color explained with a snow cover, which remains in summer too: "beliy" in Russian means "white"), which is 4506 meters high. This mountain is "shared" with Russia. Standing on the border, it belongs, of course, not to two states, but first of all, to people who come here specially to look at this wonder and it belongs to nature (Ecosystem 2006).

Physical Features: Includes the Kazakh side of Mt Belukha, the Bukhtarminskoe Lake, the Kokkol waterfall, the thermal Rakhmanov's Springs, a spur running west from the Ukok Plateau. On the territory of the national park there are two big glaciers, among 60 of different sizes. The thickness of these glaciers comes to 84 meters approximately. And the length can reach 3-4 kilometers. Together with the glaciers on the other side of the border, they have a great influence on formation of climate in the region, on precipitation level and phonological processes in the South Altai (Starikov 2006).

Climate: The geographical position of Katon-Karagai in the center of giant continent of Eurasia determines the prevailing of sharp continental climate. In the whole, the region is the place where Mongolian steppe, semi-desert and West Siberia continental climates meet. Influence of glaciers, big temperature fluctuations with the complicated system of air circulation resulted in formation of various microclimate zones, which under general conditions could be found standing one from each other for hundreds or even thousand of kilometers (Starikov 2006). The annual level of precipitation varies from 600 to 1800 millimeters. The high precipitation level led to formation of a complex river system. Bukhtarma river flows within the territory of Katon-Karagai for 200 kilometers, the total length of the river is 405 meters. Among the biggest rivers there are also Kara-Kaba, which is the right-bank inflow of Irtysh river, Tikhaya river, one of the inflows of Katun river. They flow through the territory of the park forming magnificent in their beauty waterfalls. One of the biggest is Kokkol waterfall, which is 80 meters high (Starikov 2006).

Vegetation: Larch, fir, cedar, juniper and Siberian fur-tree share the territory of forests under the extreme conditions of continental climate and influence of hot air masses coming from Central Asia. Here one can have a convenient research on influence of climate and anthropogenic factors on forests as these areas, representing the Siberian taiga vegetation, are very sensitive to all the changes under not typical conditions of a different geographical zone.

Fauna: The above-mentioned forests are home to 360 species of vertebrates, of which around 40 are listed in the Red Data Book of Kazakhstan. Globally threatened species include the Altai argali *Ovis ammon ammon* (VU), Menzbier's marmot *Marmota menzbieri* (VU) and Asiatic wild dog *Cuon alpinus* (VU), the last information about this animal referred to the 1960's. Probably, it still exists in the most unexplored places. Birds include the Altai snowcock *Tetraogallus altaicus.* The park is inhabited by mountain goats (*Capra sibirica* Pallas). Red deer (*Cervus elaphus L.*), Siberian deer (*Capreolus pygargus Pallas*) live here too. Very careful Kabarga (*Mosehus mosehiferus L.*) can be found by the traces left at the mountain foots. Brown bears (*Ursus arctos L.*), lynx (*Lynx lynx L.*) and many other endangered species, like Menzbier's marmot (*Marmota menzbieri),* e.g., live within the protected area (IUCN 2005).

In 2003 in the area of the Yazovoi Lake there were held research works: by analyzing the soil layers the scientists were studying changes of climatic periods. Despite the logical incompleteness of the works they pointed out that the Yazovoi Lake refers to the most ancient water-wet land areas in the Altai montane system.

Cultural Heritage: The Northern (Golden) Branch of the Great Silk Road was partially going through the territory of the present park. This fact can be of great interest for the further development of the territory. At the same time, the tourism activity should not become the reason of degradation of the park.

Conservation Value: It is considered that "the Golden Mountains" WH site could unite not only the areas in Russia and Kazakhstan, but also in China and Mongolia (IUCN 2005). The Kazakh extension would qualify under the same criterion that the Russian World Heritage site, namely:

Criterion N (x): Biodiversity and threatened species: According to IUCN (2005), Katon-Karagai represents an important and original area of biodiversity of montane plant and animal species in northern Asia, a number of which are rare and endemic. The proposed extension of the Golden Mountains is located in the Altai-Sayan centre of plant diversity (CPD). It is also within the Global 200 Ecoregion "Altai-Sayan montane forests".

Besides, the site has cultural value: the necropolis of Berel, situated at the border of the national park, is also a part of national cultural heritage (Chelyshev 2006)

V.6. Overall Conclusion for Chapter V

Based on the analysis of the above stated information it is possible to make the following conclusions and to consolidate them into one table (Table 9).

Table 9. OUV of natural protected areas of Kazakhstan

Natural Protected Area	OUV
Aksu-Dzhabagly	N_{vii}: Very best phenomena / stunning beauty N_x: Best natural habitats / in situ ecosystems / species
Ile-Alatau, Altyn-Emel and Alma-Atynskiy	N_x: Best natural habitats / in situ ecosystems / species
SLNK	N_{vii}: Very best phenomena / stunning beauty N_{viii}: Best example of Earth's history N_{ix}: Best ecological features N_x: Best natural habitats / in situ ecosystems / species
Katon-Karagai	N_x: Best natural habitats / in situ ecosystems / species

As one can see from Table 9, all the four PAs obtain unique features of the sites, which are compatible with international standards. Aksu-Dzhabagly and SLNK received more than one criterion. It is connected with the discussions between international and local scientists, who found more than one outstanding feature for these sites. Being not very well explored these sites remain the habitats for rare and endemic species. They also represent an interesting area for scientific research, as some of the species, like Siver's apple tree, *Malus sieversii*, consider to be original for the next sub-species, and thus can help to explain how the process of evolution was going, e.g. Or can be used for selection and reproduction of species.

And SLNK,e.g., is the area of temporary residence for migrating birds, which gives places and food for hundreds of species. Besides, wetlands of SLNK play a big role as a stabilizing factor in the process of climate change.

However, there are some obstacles for each site which do not allow them to be nominated now. In connection with this there are some recommendations of IUCN, which should be taken into consideration. It does not mean that the sites do not deserve to be accepted on the international level. They already received the potential criteria, but to confirm their criteria and be included into the WH, the sites need some changes to be done (Table 9).

For Aksu-Dzhabagly, Ile-Alatau and Katon-Karagai it was recommended to join neighboring sites and to create transboundary sites, it is necessary to provide the integrity of

ecosystems, Paragraph 88 of the Operational Guidelines (UNESCO 2005a). For Aksu-Dzhabagly it is also unclear if the site can be nominated under the mixed category or as a natural site: the site contains an ancient "stone gallery" which has cultural value. And SLNK, as a site which has been already applied for the nomination, needs to develop an action plan on upgrade of the status of the Sarykopa Wildlife Reserve. As it was already mentioned another recommendation of WH for SLNK was performed: the Tersek and Sypsyn outliers were connected with the main body of the reserve. All the sites require further scientific research.

VI. Natural sites of Kazakhstan – Conservation Management

VI.1 Conservation Management In-situ

"… Management of specially protected areas is activity devoted to the main strategic goal, i.e. to the conservation and support of biological diversity and natural resources taking into consideration the constantly changing inner and outer conditions of this activity," – was said in the text of WWF, devoted to the conservation of protected areas in Russia (WWF 2002)

The terms "management" and "conservation" are tightly connected with each other if to speak about PAs as far as their aim is to provide conservation of ecosystems of OUV and in order to implement conservation measures they need to be managed. The conservation management is an important item for WH sites, a necessary element. As it is stated in Paragraph 109 of the Operational Guidelines, "…the purpose of management is to provide effective protection" (UNESCO 2005a), i.e. conservation if to speak about ecosystems. There are other forms of protection, like legal, but in this chapter, it is planned to look at the conservation management in the four PAs and to point out what kind of conservation measures are taken, what environmental planning is done, what programs or plans are developed within the sites, etc.

Besides, the preliminary research done by IUCN revealed the absence of management in the most of the sites of Kazakhstan. And it was decided to confirm or disprove this statement. Under the conservation management in this section the following issues are considered: 1) programs on increase of the territories, creation of "green corridors"; 2) research works, performed separately and together with foreign organizations, which aim to improve conservation measures; 3) inspectors' services, which control illegal activities, such as logging or hunting, on the territories of the reserves; 4) programs/projects on implementation of new methods of remediation of ecosystems or reproduction of species, etc.

VI.2 Aksu-Dzhabagly

As the site appears to be popular among the *tourists*, to preserve the wildlife habitats it was suggested to allow visits only by special arrangement. And visitors must be guided along specific predetermined routes, according to the international standards connected with protection of sites under Category Ia (IUCN 2005)

Scientific activities are taking place in Aksu-Dzhabagly and other natural sites of the Western Tien-Shan as well. Current research is focused on studying of complex structure and dynamics of the area, including an inventory of flora and fauna, and on developing techniques to re-afforest the mountains, especially the nut-tree forest areas. There is other research works being conducted, including the study of biology of wood-producing plants and of rare animal species, such as the marmot and snow leopard. The site has equipped laboratories, experimental plots and meteorological stations at its disposal. Accommodation is also available for the scientists (Baitulin 2000).

Belonging to different states, the reserves have different *protection* regimes. For example, the Chatkal Reserve in Uzbekistan is already twinned as a 'cluster reserve' with Sary-Chelek State Nature Reserve in Kyrgyzstan, and was designated as part of the Chatkal Mountains Biosphere Reserve in April 1978. Aksu-Dzhabagly is under supervision of the Committee of Forestry and Hunting Facilities (hereinafter - Committee of Forestry) of Kazakhstan. Parts of the reserves have been used for hunting and grazing, and for mineral prospecting, while part of Ugam Chatkal National Park is settled and cultivated. Over-grazing and hunting are the main conservation threats, together with over-collection of firewood in some areas.

According to the materials presented by the nomination committee (Proceedings, 2000) Aksu-Dzhabagly has a *budget* of 4,664,000 tenge per year (1 USD = 125 tenge) including 3,124,000 tenge for salary of 42 employees. Tourist activities bring to this park around 302,000 tenge annually (about 2400 USD). Among the 42 employees 5 perform administrative tasks, 10 scientific work, 18 security, and 9 logistics and transportation.

Conclusion. Despite the natural value of the sites of the Western Tien Shan, and Aksu-Dzhabagly in particular, the further promotion of the territory as a WH site is required. For this, as it is seen from the above-mentioned characteristics, it needs some initiative in order to improve management, restrict hunting and put tourism into a more organized way. Local communities should be controlled for over-grazing by cattle. International transboundary co-operation should be activated. This initiative should come from the local side, supported by authorities. It needs additional efforts and time, but the results can guarantee improvement of conservation measures. Here, Kazakhstan can look at the experience of other countries.

VI.3 Northern Tien Shan, namely Ile-Alatau and Almatinsky

According to data received from the administration of the park, particularly from A.A.Begembetov, Director of Ile-Alatau, there are some conservation measures taken in the park. The team of the park is working on cultivation of the wild plant species and their protection. This includes pest management, including a mass treatment of wild trees with biological medicines in 2002, in accordance with the recommendations of the specialists from the National Academy of Science of RoK. Special measures on increasing the population of birds in the park were taken as well. The park experts take care of the animal by adding salt, iodide and calcium in their everyday meal, and providing grass and grain for herbivores (Vinogradova 2006).

At the same time, for example, in Ile-Alatau the *anthropogenic pressure* on the park has increased too. If the capacity of the park according to the old plan is 0.5 person per ha, today on the same area in the recreational zone one can register the presence of tens of persons. As articulated by Andrei Gubenko (2006), in the previous times, the nature parks were closed for ordinary people, only some elite members could visit them. This may be perceived as socially unjust, yet it shaped conservation efforts towards a relatively minimal use of natural resources. Nowadays, with the number of increasing visitors, these methods are inappropriate. Another side of this issue is that, providing equal access to nature, the park team should organize the protection of wildlife, and create special zones for tourists.

Another aspect which should be more aptly considered in the management plan is *illegal hunting and logging*. The management plan should also include instructions for catastrophes, e.g. mudslides, which are typical for mountain regions, and foresee possible ways of protection of the park zone and its surroundings. According to the director of the park, Ile-Alatau will have a management plan after the mutual work with the Ecoproject Ltd, an environmental company, which is working on the Scientific and Technical Justification for this plan.

According to data given by the director of Ile-Altau Park, there are around 116 inspectors responsible for *security* of the park. There are special facilities for the inspectors on the territory of the park (Picture 4, Annex). Twenty persons are responsible for sanitary measures, including cleaning of streams from wastes, sanitary logging, planting, etc. Ten people are responsible for conservation, and animal reproduction.

There is no exact budget, it is known only that Ile-Alatau contains on its territory one summer camp for children and several housings rented for the summer period as well. Both can be a source of income. Besides, all the natural sites, mentioned in this work and not, have a budget determined by the Government.

At the moment there is no active *research* being done in the area, although some facilities are organized for students, who make their experiments necessary for diploma works.

D.E.Emkibaev, Director of Almatinskiy, told that at the moment there is no special long-term plan on conservation of ecosystems or protection measures. However, the PA works out annually the action plans for measures taken in case of illegal hunting, logging. To protect the forest area there were created two security points at the Talgar Ravine and at the Issyk Lake. The department of ecological education was created, with 1 person of the staff.

Conclusion. To increase the chances of nomination it is also required to have a management plan, which is being prepared now according to AA.Begembetov, director. Joining of three natural sites into one suggests some administrative changes, which are not welcomed by the current management as it brings joining of supervising positions. Perhaps, to avoid reduction of employees it is possible to create a joint team with preservation of the salaries, and to choose the management among the old employees, without bringing someone from outside, by results of voting.

VI.4 SLNK

Having the status of state nature reserves, Kurgaldzhino and Naurzum obtain a special regime of protection. They cannot be used for any other purposes than scientific studies of biodiversity, according to the legislation of the RoK. A group of experts from the United Nations Development Program (hereinafter – UNDP) is working on a project connected with the wetlands protection in Kurgaldzhino nowadays. Probably, this will result in improvement of conservation of biodiversity.

According to the recommendation of the WH Committee the environmental services should "maintain the existing natural flows in the Nura River and deposits of mercury pollution" (UNESCO 2006f).

As it was stated by M.A.Demilova, Deputy Director of Kurgaldzhino, nowadays the negative effects of mercury pollution in the Nura River are eliminated. The local plant, Karaganda Synthetic Caoutchouc Plant, which was the mercury discharge source, was inspected and after installation of waste water treatment facilities no discharges are taking place now.

The team of the reserve followed the WH requirements stated in Decision 27 COM 8C.6 of the 27th meeting of the WH Committee (UNESCO 2006f) and worked out the Plan on Development of the Territory, which foresees the conservation measures for the period of 2007-2011. This plan was approved by the Committee of Forestry and Ministry of Education and Science on 08.11.2006. It consists of 3 parts, written on 160 pages: 1) descriptive part; 2) assessment part; 3) planning part.

Besides, to improve the conservation of the PAs ecosystems, an ecological "green" corridor was created between Kurgaldzhino and Naurzum, which occupies 159 000 ha.

VI.5 Katon-Karagai

Within the territory of Katon-Karagai there are two zones. One has the reserves' protection regime, when any economic activity is prohibited. It borders with the nature reserves of neighbor countries, which fortify protection of the site performing the function of "buffer zones" from the other side of the border.

Another zone has a less strict regime, where some types of economic and recreational activity are permitted. For these purposes, the zone was divided into two sub-zones. The sub-zone of recreational use has the territory of 107,173 ha. It borders with the zone of reserve regime and includes the territory of Rakhmanov's Springs with the sanatorium, which can accommodate around 120 persons, and other facilities for tourists. And another zone is used for economic activity of the local population controlled by the park team. It has the territory of 385,068 ha (Starikov 2006).

Local people are mostly occupied with cattle farming, maral farming and bee-keeping. The Altai honey is well-known in Kazakhstan for its taste and used as a medicine for different diseases. The medicines produced from the maral horns are famous in different countries. Farmers do not kill the animals, as they take the horns only (Ecosystem 2006)

According to A.Chelyshev, Specialist of Katon-Karagai, they develop annual plans of measures on protection of the park from illegal logging and hunting. In Katon-Karagai there was created Department of Science and Tourism, which is responsible for ecosystems monitoring in various regimes and inventory works in the flora and fauna fields. With the help of the leading institutes there were done works on studying of the territorial distribution and quantity of big mammals in Katon-Karagai. As a result there were developed the most perspective measures on their conservation and reproduction (Chelyshev 2006)

In 2003 the research works on vegetation cover were started. By the end of these works, the experts could give recommendations on protection of the vegetation cover. Special value of

the final report was in the section devoted to mycological researches, which resulted in discovery of new species, not only for the park but for the Eastern Kazakhstan region (Chelyshev 2006)

The park works together with the Russian Katun State Biosphere Reserve on development of joint measures in the sphere of environmental protection and biodiversity studying. This cooperation is important as potentially Katon-Karagai can be nominated as a WH Site being considered together with the Russian Katun State Biosphere Reserve. An important step in development of the common strategy of these two reserves became the international meeting, which was held on July 7, 2005, in the village of Ust'-Semain of the Republic of Altai. It was devoted to the development of *transboundary cooperation* of the protected territories of the Republic of Altai and Kazakhstan. The aim of the meeting was the discussion of joint implementation of conservation measures on the territories, development of scientific research, ecologic and educational activity and ecotourism. The meeting was supported by the World Wild Life Fund. With the organization of the transboundary site, it would be possible to strengthen the conservation measures taken on place. At the moment, the team of the park has several main tasks:

- fight forest fires
- contend with illegal hunting and logging, caused with the increased level of unemployment in the region
- development of the tourism activities with involvement of the local population
- support to research works done on the territory of Katon-Karagai (Ecosystem 2006)

The logical continuation of this event became participation of the park's specialists in the international Russian-Kazakh-Austrian expedition performed with the GLORIA Program (Global Observation Research in Alpine Environments).

Form July 2005 Katon-Karagai is cooperating with the Czech public organization "Ounce" in the sphere of joined scientific research works. The park is planning together with

"Ounce" to prepare young experts who could further work on conservation of ecosystems in Kazakhstan and Czech Republic.

Conclusion. It is believed that the management of such a protected area might encounter difficulties caused by the interesting geopolitical position of the site, where four countries with different environmental policies, different levels of conservation management have parts in it. And therefore, the management of the site does not conform to the World Heritage standards.

Also, Katon-Karagai requires deeper research on place. It could be nominated by the World Heritage if considered as an extension of the Golden Mountains of Altai site (IUCN 2005), but there are some political and management constraints, which may create difficulties for uniting of Katon-Karagai with the Russian Golden Mountains. For example the creation of one management plan for two states can be complicated as it will require the establishment of equal legislative bases, which could provide an adequate attitude to conservation of the territory from both sides of the border. The Russian part of the territory is already under the UNESCO guidance and, it has adopted new standards concerning the conservation of the site, including the legal protection. And the Kazakhstan part, in case of nomination, will need to catch up with the Russian site. A joined site will require as well one management body. How the management will be performed, who will take the leading position and how the responsibilities will be distributed between the states - these are the questions which naturally appear as soon as the idea of a united territory is considered.

VI.6. Overall Conclusion for Chapter 6

This section is aimed to integrate the received conclusions on each site, which follow the descriptions in Chapter VI, and to pick up those which refer to the WH/IUCN recommendations. As a result of the research devoted to the conservation management studying four special protected territories of Kazakhstan the following table appeared. It shows:

- recommendations of WH/IUCN for upgrade of the current status of the PAs,
- conservation measures taken to fulfill the WH/IUCN recommendations

Table 10. OUV and recommendations of WH/IUCN

Natural Protected Area	Recommendations of WH (UNESCO)/IUCN	Conservation Measures Fulfilled according to WH(UNESCO)/IUCN recommendations
Aksu-Dzhabagly	*Further research for determination the right criterion and category* *Probably, creation of a transboundary site*	*No information*
Ile-Alatau, Altyn-Emel and Alma-Atynskiy	*Creation of one site or, at least, establishment of a corridor between the sites*	*No information on any attempts to create a corridor* *According to the Ile-Alatau Director: no initiative on creation of a joint site*
SLNK	*Further studies* *Upgrade of the Sarykopa Wildlife Reserve status* *outliers* *maintain the existing natural flows in the Nura River and deposits of mercury pollution*	*The studies are performed.* *Mercury pollution in Nura is eliminated, the source of pollution has been identified and destroyed* *Creation of a "green" corridor between Kurgaldzhino and Naurzum (159 000 ha)*
Katon-Karagai	*Creation of a transboundary site*	*Cooperation with the Russian Katun State Biosphere Reserve on development of common conservation measures*

The natural areas considered above (Table 10) have different approaches to what is called conservation management. In Paragraph 109 it is said that the purpose of management is to provide effective protection (UNESCO 2005a). However, as one can see from the above written the sites interpret protection measures in their own way, as for example, arrangement of special zone for tourism activities in Aksu-Dzhabagly, control over illegal hunting in Ile-Alatau, creation of two zones with different regimes of protection in Katon-Karagai.

As we see for Aksu-Dzhabagly and Ile-Alatau (plus Altyn-Emel and Almatinsky) there is no information on improvement of the sites' conservation management. However, for SLNK there are some changes, as well as for Katon-Karagai. The reasons of such a passive attitude to using of new conservation measures can be explained by historical development of this question. Conservation management is not new for the natural reserves and parks, there were always some protection measures taken. But the approach was different. The creation of a protected zone was considered already as a protection measure. The tourists activities were not developed in the past, accommodations near the natural sites, infrastructure – these are quite new things for Kazakhstan. Eco-tourism is not popular yet. So the main protection measures were connected, as in Ile-Alatau, with control over illegal logging and hunting. Ordinary people were not often visitors in the sites, which were open mostly for scientific work and some representatives of the authorities (Gubenko 2006). As a result the were no requirements for detailed management plans, which, as for WH sites, include multiple tasks connected with activities in the buffer zones, mostly devoted to tourism, work on conservation of wild species in the zone of strict regime, etc (UNESCO 2006d).

Nowadays, people working in natural reserves understand that the time has changed and it is necessary to find another approach. In Katon-Karagai, e.g., they try to develop the transboundary cooperation with the Russian site in order to work out joint conservation measures for two neighboring sites, to update scientific data, to develop tourism together. In Ile-Alatau, they work on their management plan. Aksu-Dzhabagly tries to attract tourists in order to have additional source of financing. Perhaps, this site will also cooperate with tranboundary reserves as Katon-Karagai. In SLNK the experts from UNDP are working on development of conservation measures. At this is only the beginning, taking into consideration the growing interest of people to local natural sites one can suggest that the protected territories will soon need management plans, which would include protective measures in the recreational zones and special regime for the inner untouched territories.

VII. Legal Environmental Protection in Kazakhstan

In Paragraph 98 of the Operational Guidelines it is said that "Legislative and regulatory measures at national and local levels should assure the survival of the property and its protection against development and change that might negatively impact the outstanding universal value, or the integrity and/or authenticity of the property. States Parties should also assure the full and effective implementation of such measures" (UNESCO 2005a).

The legal environmental protection is considered in this work as one of the major requirements for the WH sites. This can be explained by the fact that only legislation can provide stable conservation of ecosystems. Without the legal justification the PAs cannot confirm their status, cannot have any rights, cannot be protected from the violations, etc.

This chapter is devoted to the studying of strong and weak aspects of the environmental legislation of Kazakhstan.

The first period in development of the national legislation was in 1991-1996, when Kazakhstan adopted new legislative system of the independent state, including the first law on specially protected territories. Nowadays, the legislation goes through the second period, which is connected with the active transfer to the market economy with the use of international standards for environmental protection.

The work on development of new forms of legislation in the sphere of specially protected natural territories was started within the International project of TACIS on conservation of biodiversity of the Western Tien Shan and the Central Asian trans-boundary project of Global Ecological Fund and the World Bank, which was also devoted to conservation of biodiversity of the Western Tien Shan. Later on, the four out of five countries of the Central Asian region (Kazakhstan, Kyrgyzstan, Uzbekistan and Tajikistan) participated in implementation of the project TCP/INT/2903 of the United Nations Food and Agriculture Organization (FAO), called "Enhancement and Harmonization of the Legislation on Specially Protected Natural territories" (FAO 2006). Since then there have been done a great job in the sphere of environmental

protection, which resulted in signing or joining different international conventions and protocols by Kazakhstan. Among them the Kyoto Protocol, which was signed on 12.03.1999 (Resolution #84), but not ratified yet, the Montreal protocol to which Kazakhstan has joined on 30.10.1997 (Law #176-1), the Convention on biodiversity, approved by Kazakhstan on 19.08.1994 (Resolution # 918), the World Heritage Convention, ratified on 29.04.1994, etc. They have or will have the legal force in Kazakhstan. However the priority in the sphere of PAs is given to the local legislation.

The environmental legislation on protected natural territories is represented, first of all, by the Law "About Specially Protected Natural Territories" (hereinafter – the Law on protected territories), last version of which was adopted on July 7, 2006. It is the main legislative act legalizing the rights of protected areas and the rules of their use. It has respondents, the legal acts, which strengthen the statements of the Law on protected territories and add new information to it, they are: the Constitution, Administrative and Criminal Codes, Environmental Code, resolutions, like, e.g., Resolution "About Approval of the List of Specially Protected Natural territories of the Republic Significance" # 746.

Several other legislative acts have connections with the Law on protected territories via references to this law. For example, *Law of the RoK #593-II "On protection, reproduction and use of fauna"*, 09.07.2004. It states in Article 18, "The protection of animals on the specially protected natural territories is done according to the Law of the RoK on Specially Protected Natural Territories".

Water Resources Code of the RoK # 481-II, 09.07.20.03, Article 109: "The use of the water objects of the specially protected natural territories is done according to the Law of the RoK on Specially Protected Natural Territories". There is the reference in *Law # 2828 "On Mineral Resources and Subsurface Users", 27.01.1996*, as well. It states that "the use of the subsurface within the specially protected territories is done according to the Law of the RoK on Specially Protected Natural Territories" (Article 11-1).

Law # 2350 "On Oil", June 28, 1995, Article 49, states that "1. The general permission on oil production operation offshore, in the zones of environmental crisis and within the specially protected natural and cultural territories is given by the President of the RoK on the base of the state environmental expertise. 2. The order of the operations offshore, in the zones of environmental crisis and within the specially protected natural and cultural territories is approved by the Government of the RoK".

Forest Code of the RoK # 477-II, 08.07.2003, Article 11, says that "The system of the state bodies, performing the state governing in the sphere of protection, remediation and cultivation of forests consists of the Government of the RoK, the responsible body (the Committee of Forestry) and its territorial branches, and also the local executive bodies". In Article 13 it says that "The competence of the responsible body and its branches includes the consideration of administrative violations in the sphere…of the Law of the RoK on Specially Protected Natural Territories".

Law of the RoK # 160-I "On environmental protection", July 15, 1997, Article 67, states "1.The specially protected natural territories are the lands, waters, forests and subsurface areas which have a special legal regime of protection, which provides conservation and remediation of the state reserved fund. 2. The types of the specially protected natural territories are set up by the Law of the RoK on Specially Protected Natural Territories. 3. The order of formation, regimes of conservation and use…are set up by the legislation of Kazakhstan".

Law of the RoK # 85-I "On ecological expertise", March 18, 1997, Article 6: "Among the objects of the ecological expertise there can be the materials of the complex research of the territories for giving them a special legal status". Article 14: "The obligatory state ecological expertise is done for: 8-1) the schemes of development and location of the net of the specially protected natural territories, and also the justifications for the creation of these territories".

The state bodies involved into the development and implementation of the environmental legislation are determined by the laws. Forest Code mentions the functions of the Government,

the Committee of Forestry and the local branches connected with the control over the administrative violations on the specially protected natural territories.

The detailed commitments of the Government are determined in the Law on protected territories. The competence of the Government of Republic Kazakhstan in the field of especially protected natural territories concerns:

1) development of the basic directions of a state policy in the field of specially protected natural territories;

2) the right of possession, using and management of specially protected natural territories and objects of the state natural reserved fund of republican value;

3) definition of the authorized body in the field of specially protected natural territories;

4) the statement of:

- the list of specially protected natural territories of republican value;

- the list of objects of state natural reserved fund of republican value;

- the program of developments of system of specially protected natural territories and ecological networks on representation of the authorized body;

- the rules of granting in rent of the ground areas in territory of the state national natural parks for realization of adjustable tourism and a recreation;

- conducting the state cadastre of especially protected natural territories;

- the order of carrying out of competitions on construction of objects of tourist and recreational purpose in especially protected natural territories;

- the borders and a kind of a mode of protection of territories of the state nature sanctuaries of republican value;

- the list of the international and state organizations, the nongovernmental organizations and the funds giving grants on preservation of a biodiversity and development of especially protected natural territories;

- special ecological requirements for geological studying, investigation and extraction of minerals on the territory of state natural protected areas;

5) granting and withdrawal of the ground areas, including by the repayment, from the grounds of all categories in the cases connected with creation and expansion of specially protected natural territories of republican value;

6) creation and expansion of especially protected natural territories of republican value;

7) the international cooperation in the field of especially protected natural territories.

As we see the functions of the Government are quite broad and include many important questions. The *Government can create specially protected territories and control over their management, it is responsible for scientific work and the level of protection on a natural site*. It also performs ruling over regional and central bodies, according to the Law on protected territories, which are occupied with the questions of specially protected territories on places. Regional bodies, situated in relatively big towns, and central bodies, situated in smaller towns, control the protection services, including the management teams working in the natural sites, who, in their turn, report to the above set bodies and participate in the decision making (Articles 7-10).

The control on places is performed by inspectors, who are the employees of the local branches of the Committee of Forestry and Hunting, which is authorized by not only the already mentioned Forest Code, but by Resolution #310 of the Government of the RoK of 06.04.05.

According to Resolution #310, the Committee of Forestry is the department and the authorized body within the limits of the competence of the Ministry of Agriculture of the RoK, carrying out special executive and supervising functions in the field of a forestry, protection of reproduction and use of fauna (except for a fish and other water animals) and specially protected natural territories, assigned on it by the Constitution of the RoK, laws, legal certificates of Kazakhstan and the present Resolution.

The committee has territorial bodies - regional territorial managements of forestry and hunting facilities. The primary goals of Committee are:

1) maintenance of realization of a state policy concerning forestry, protection of reproduction and use of fauna (except for a fish and other water animals) in specially protected natural territories;

2) preservation and rational use of resources vegetative and fauna, and also preservation of a biological diversity and objects of state natural reserved fund;

3) maintenance of the state control over protection, reproduction and use of wood resources and resources of fauna, a condition and activity of specially protected natural territories.

Speaking about the main legislative acts devoted to the specially protected territories and the responsible bodies, it is necessary to point out if they consider some of the WH requirements, which need legal justification.

First of all, the Law on protected territories gives the status to the protected territories as state-owned property and identifies which areas can be considered as specially protected. The nature parks, considered in this work, also determined as specially protected. Article 3 of this Law states the main principles in the sphere of specially protected territories:

1) development of the system of specially protected natural territories as a base component of the ecological net, ensuring conservation and recovery of the biodiversity, unique and typical landscapes;

2) regulation and control in the sphere of specially protected natural territories;

3) conservation of the state nature-protected fund and natural ecosystems;

4) usage of specially protected territories for scientific, cultural, educational, tourism purposes;

5) paid usage of specially protected territories;

6) responsibility for violations of the legislation of the RoK in the sphere of specially protected natural territories;

7) participation of persons and legal entities in decision making in the sphere of specially protected territories;

8) access to the information in the sphere of specially protected territories;

9) international cooperation in the sphere of specially protected territories

The principles of the Law on protected territories are quite broad and include many aspects, which in total seem to provide good base for the nature protection. They correspond with Article 5 of the WH Convention, which says about " …taking the appropriate legal … measures necessary for the identification, protection, conservation, presentation and rehabilitation of the heritage".

Now it is necessary to find out if there are legal justifications for some separate points, like management plans, e.g., which were determined as the weak side for Kazakh natural sites (IUCN 2005). And which are required according to paragraphs 108,109 of the Operational Guidelines.

According to Article 8 of the Law on protected territories, *the Committee of Forestry is responsible for working out of management plans for the specially protected natural territories*. In case of violation of this Article of the Law on protected territories, as well as for any other, the Law refers to Administrative Code and Criminal Code of the RoK (Paragraphs 2 and 3 of Article 2). And looking through these legislative acts, one can find that Articles 240-306 of the Administrative Code and Articles 277-294 of Chapter 11, called "Ecological Crimes", of the Criminal Code of the Republic of Kazakhstan, devoted to different types of violations, *do not contain any measures of administrative or any other types of punishment in case of absence of management planning for specially protected territories*.

So, it is found out that the management of PAs is described in the legislation, but not guaranteed as it is seen from the reporting of IUCN (2005).

Besides, the management of the land and implementation of punitive measures there is an important issue of the allocation of *buffer zones*. According to new article of the Land Code,

Article 123, *the creation of buffer zones is legally recognized as necessary condition for any specially protected territory*. This amendment was done according to Law of the RoK # 176-III "About Changes and Amendments to Some Legislative Acts of the RoK on the Specially Protected Natural Territories and Forestry", 07.06.2006. The size of the buffer zones is regulated by the executive bodies of regional level, and should be not less than two kilometers in width. Private houses and land plots can be purchased for state needs or can be left if their activity is recognized as not causing harm to the ecosystems of the specially protected territories, Article 123 of the Land Code, paragraph 3. The creation of buffer zones, as well as other restrictions of the current Land Code and the Law on protected territories, corresponds with the requirements of the World Heritage towards the nominated territories stated in the Operational Guidelines, in Paragraph 103. So the legislation on specially protected territories corresponds with the requirements on buffer zone.

Among the protective measures there can be mentioned Article 122 of the Land Code, which says in Paragraph 2 that "*the lands of specially protected territories cannot be occupied and privatized by anyone, as they are the property of the state"*. They cannot be used for any other purposes but for conservation of their wild nature and for scientific, cultural, tourism activities, which is confirmed by this Code and by Resolution of the Government of RoK #240 "About the Rights of Attachment (Ransom) of Lands for Creation of Specially Protected Nature Territories" of 27.02.2004.

The Land Code refers to the Law on protected territories for detailed explanation of the use of protected lands. According to Article 39 of the Law on protected territories, "… *The scientific, cultural and tourism activities can be organized by the management team of these territories*"; Article 42, paragraph 3, points out that "*the tourism activity can be performed in the places on the territory of natural sites, which do not cause harm to the ecosystems of special significance"*. Which exactly significance it is not stated in the text, probably, there should be some considerations from the management side.

As it was mentioned already, there are responding legislative acts, such as Administrative and Criminal Code. Their analysis is very important as they can show the mechanisms of control over the performance of the environmental legislation.

The usual administrative punishment for violations of the environmental legislation comes to 5-10 monthly calculation indexes (hereinafter – MCI) (one index = 1030 tenge, according to Law № 88-III "On the State Budget" of 22.11.05), which is 5150 – 10300 tenge/ 42.5-85 US dollars, and therefore it is easier in all senses for a violator to pay than to follow the rules.

Apropos, the biggest punitive measure in the Administrative Code is 200 monthly calculation indexes, which are taken from large legal entities. The Criminal Code contains some stricter punitive measures connected with the environment protection, the strictest is imprisonment for the period of 8 years for crimes involving mass infection of people and human death (Article 286) and 5 year in case of human death (Articles 277-279, 283-285). *The cases of mass death of wild species are subject for administrative fee at 200-500 MCI*, if they do not involve a serious harm to human health and if they do not involve human death.

It can be considered as quite soft towards violations or vice versa: measures including 5 years imprisonment can be described as very strict. From the point of view of environmental protection, they do no play a big role as can be used only if a human death is involved, as it was mentioned before, the law does not foresee measures stricter than 200-500 MCI penalty in case of animal death or any other violations against nature only.

Making analysis of the current legislation it is necessary to speak about its strong and weak sides. Among the strong sides, as it was already mentioned there are the main principles of the Law on protected territories, the rule about management plans, the justification of buffer zones. It is possible to add the Environmental Code, which includes some new points, referring to the standardization in the field of specially protected natural territories. Namely, in Article 24 of the suggested code, it is said that there should be *"target parameters' determining the state of*

environment in the specially protected natural territories. According to it, the natural sites will have to achieve the parameters, which will be set up according to the international standards on sustainable development. As it follows from the Law on protected territories, the most suitable state body for these purposes is the Government, however, it is nowhere mentioned which international standards and which methods will be used. Whether there will be WH parameters or others, as it would be helpful for environmentalists to determine the tendencies in the environmental policy of the state.

Another strong side is connected with the establishment of *the united system of monitoring over the natural sites*, required by Operational Guidelines, Paragraph 132 (UNESCO 2005a). As it is stated in Article 141 of the Environmental Code, there should be a special responsible state body.

But there are some weak sides in the environmental legislation. For example, the Law "On Oil", Article 49, while making references to the specially protected natural territories, considers the oil production on their territory as possible after the permission of the state ecological expertise, the President and the Government. The same statement is done in the Environmental Code, which will come into force in the middle of 2007. Article 221 says about exploration and production of oil on the territory of specially protected natural territories with identification of rules. Exactly it says, "When construction of oil wells is conducted in specially protected natural territories, it is necessary to apply only the storage free technology" (Paragraph 6, Article 221); "dump of waste in water objects and subsurface is forbidden" (Paragraph 7, Article 221). And some other requirements are given as well.

The article does not consider if this is a national reserve or national park, as if it is permitted to perform economic activities on the territory of national parks or reserves. Therefore, *it contradicts with the current legislation* (Articles 43-47 of the Law on protected territories), where the economic activity on the territory of natural sites is restricted fully for national

reserves and partially allowed on the territory of national parks, which means activities connected with needs of the local population, not with the activity of industrial enterprises.

This article could appear automatically as a way to give legal status to oil exploration and production already performed on the Caspian Sea, which is recognized as an object of the state natural reserved fund of republic significance. But mentioning specially protected natural territories in the article automatically put other sites, which also refer to this wide group, under threat of industrial exploitation as it gives a possibility to oil companies to refer to the Code in case of problems with other legislative acts, which prohibit exploitation of this kind.

Another weak side of the legislation is the *establishment of the complicated system of executive bodies*, where the Government and the Committee of Forestry work together, at the same time the Committee of Forestry is controlled by the Ministry of Agriculture and by the Government. Besides, there are two parallel systems of the regional executive bodies: representing the local forestry facilities and the local authorities, performing the functions of the Government. The decision making can take a long time, as it requires subordination of the hierarchy among the regional and central bodies and among the Government, Ministry and Committee of Forestry.

The lack of effectiveness is confirmed with the real life cases, sometimes seen on the TV screen, sometimes read in the newspapers, like in the article devoted to the degradation of the nature of the Almaty region (Shelepova 2006). It is about the degradation of the environment in the natural reserves, including the specially protected natural territories, where the logging and hunting is performed sometimes illegally. The situation can be explained in different ways. But the most probable seems to be connected with the personal interests of the employees of natural reserves.

The salary of people working in the forestry is one of the smallest in the country. For 2006 it comes to around 20,000 tenge, which is equal to 156 US dollar (Agency of Statistics 2006). At the same time, the average salary in the oil and gas sector comes to 100,000 tenge (781

USD) (Agency of Statistics 2006), and the market prices are orientated on the workers of the oil production sector. So people, working in the inspection services, can potentially look at some illegal activities as at the additional source of income. Especially, if there is no strict control and the punitive measures do not exceed the mentioned level (payment of 5-10 monthly calculated indexes) (Administrative Code, Article 252).

In addition to the above-mentioned discussion about weak and strong sides of the present active environmental legislation of the RoK, there is some information on the progressive steps which were done in the legal protection.

Programs and Strategies

According to the Convention, Article 5, "… A State Party should: 1)adopt a general policy, giving the cultural and natural heritage a function in the community life; 2) integrate the protection of the sites into comprehensive planning programs".

Speaking about the first point, there is a new environmental program called "Zhasyl El" (in Kazakh means "Green Land"), adopted with Decree 632, which aims to attract the youth to the problems of forests. There is a lack of young specialists in this area, and at the same time, the level of unemployment among the youth is rather high: according to the statistical research done during realization of the program, 8.8 % of people of age from 20 to 24 are permanently unemployed, and 8.0 % - from 25 to 29. So the program should reduce the number of unemployed people and solve the problem with degradation of wooded lands by hiring young people for the trees planting. Special attention in this program is paid to conservation of protected natural territories. Organizing the work with the young people, the program experts also involve other representatives of the society, who more or less informed about this program. In this way, young people work in the PAs and help to recultivate damaged lands and perform inspection services, and public learns about problems of specially protected natural territories.

As for Point 2, saying about integration of sites into a comprehensive planning program, according to the Law on protected territories the Government of the RoK adopted a new

program, called "The Program of Development of the System of Specially Protected Natural territories of the RoK for 2007-2009" (hereinafter – the Program).

The aim of the Program is *to conserve the biodiversity of the objects of natural reserved fund and natural/cultural heritage by development of a system of specially protected territories in all the climatic zones of the RoK*. Another aim is *to enlarge the total area of specially protected natural territories*, which correspond with IUCN categories I and II, for 1,258.66 thousand hectares and thus to create the total area of 1.8 per cent of the whole territory of the country, which will provide better conservation of ecosystems according to the commitments of Kazakhstan on the Convention on Conservation of Biodiversity, adopted with Resolution # 918 of 19.08.94 by the Cabinet of ministers of the RoK. In the same resolution it is also stated that the aim of enlargement of the area of specially protected natural territories will let the state to create a net of there territories in future.

One of the objectives of this program is to determine the most important natural sites and give them the status of specially protected natural territories. This will be done on the base of the analysis of the current state of the territorial protection of biodiversity in the RoK. Another objective is to set up *a multistage establishment of enlarged and newly created specially protected natural territories of different categories and types during 2007-2009*.

Realization of the Program will be supported with 147.81 million tenge from the state budget and with 9.3 million tenge due to international grants. The budget of the program for 2008 – 2009 can be amended in accordance with the Law "About the State Budget" for each financial year. In the long term the Program considers enlargement of the area of specially protected natural territories till **10** per cent or more to achieve the level of some other countries. There is an example of Canada, where according to the text of the Program, the total area of specially protected natural territories comes to 8.4 per cent (Parks Canada Agency 2004). Special attention will be paid to natural sites situated in the desert regions and semi-desert regions, which still conserve some virgin areas.

VIII. Interviews

The interviews mentioned in this chapter were performed during the personal meetings. They are aimed to view the situation of the WH nomination from another aspect: there can be other reasons for delay in the preparation of the Kazakh PAs according to the international standards. This information is rather additional and can not characterize the situation for all the studied protected areas. N.P.Ogar was the first interviewed person. Here are her answers.

1. What is your opinion about the nomination of the Kazakhstan's natural sites as the WH sites? Nataliya Petrovna told that her opinion on the nomination of the Kazakhstan's natural sites is positive. As a biologist and a member of the nomination committee she had experience in studying the natural areas by herself and agrees on necessity of their protection. International requirements can be used to strengthen the existing system of protection.

2. What would you recommend to do for the nomination of the Kazakhstan's natural sites? N.P.Ogar said that the issue of nomination needs, first of all, initiative from the local side. International organizations took an active part in the nomination process, i.e., IUCN held a seminar on the standards of evaluation of the sites for the nomination process. After that, some materials, prepared by the nomination committee, were used for the IUCN report "World Heritage Thematic Study for Central Asia" mentioned above. But for further development of the process, it is necessary to restart the work of nomination committee or to organize a new working group which could arrange the territories. So the main problem is seen in *the lack of initiative on the local level*.

Perhaps, the work on promotion of the sites should be sponsored by the state budget. As an argument in favour of additional financing can be a guaranteed support of the World Heritage Fund in case of nomination of the territories. And the member of the nomination committee, N.P.Ogar, also states that the work of the committee was stopped in 2000. There are no incentives to continue scientific research and to prepare the sites for nomination. Revising the

issue of environment protection from different aspect, one can come to the conclusion that there are positive changes in legislation and management, but *the scientific work*, which could provide continuant conservation of biodiversity of the natural sites, *is not organized*. There is, of course, some monitoring in-situ, organized by the local management teams, but it is connected mostly with the practical daily questions, then with the deeper research.

The training centers could be established on the base of active scientific work done in the natural sites. To organize the work of training centers, there should be a great job done on studying of the whole system of nomination of the World Heritage sites, with identification of main requirements, which should be performed. Something like what is done in this work, and probably, there should be some practical experience based on personal research in other WH sites. For these purposes, the experts in training centers should visit other sites, and look at the practical side of implementation of the WH requirements. They should study the positive and negative results of joining the WH List.

1. What is your opinion about the nomination of the Kazakhstan's natural sites as the WH sites? Abai Abdrakhmanovich said he finds the joining of WH sites very perspective, but *not the most important issue for the park at the moment*. Additional financing, which can come from the WH will, of course, be helpful for development of infrastructure in the zones of tourism, it can also help to increase the salaries of the staff and attract new employees: the forestry belongs to the sector with the lowest incomes of the personnel and there is lack of professional staff.

2. What would you recommend to do for the nomination of the Kazakhstan's natural sites? Nowadays there are no special actions taken for the nomination of Ile-Alatau. But the Kazakhstan sites could cooperate with international organizations in this direction. A.A.Begembetov looks at the development of natural sites from the local point of view and says it is more important to create more protected areas as nowadays their quantity is rather small.

3. Do you agree with the requirements of IUCN on joining other sites for creation of one larger site which will correspond with the WH requirements on integrity?

A.A.Begembetov could not agree with the necessity of joining of Ile-Alatau with two other parks, i.e.with Almatinskiy Nature Reserve and Altyn-Emel National Nature Park, which could make the site more compatible with the WH requirements. Probably, this can be explained with the unwillingness of the present director to share his position with the direction of other sites. There could also be a concern about the current employees of the park, who can loose their working places in case of joining of sites, though this is just a suggestion and a joint site may require more personnel. And as it was mentioned before, included in the WH List, the site can receive additional financing from the WH Fund, which will allow improvement of the existing infrastructure and attraction of new tourists.

4. What is done in Ile-Alatau for improvement of the site's environmental protection? A.A.Begembetov told that nowadays there is a strong system of security in the park. Inspectors control the area to prevent illegal activities like hunting and harvesting. There is a special piece of land in the park, where some rare species of trees are planted. After several years they are replanted into the forest. The employees of the park organize special feeding troughs for the herbivores. Every week the director himself visits all the inspectors' units, situated in different parts of the park to get reports on the current state of the protected area.

The interview with the director of Ile-Alatau showed that there can be arguments against the nomination of the sites in the form required by WH. Although A.A.Begembetov agreed that WH nomination is necessary and can be beneficial for the natural sites of Kazakhstan, he is rather skeptical on the decision about the joint site. And, perhaps, other parks' directors can agree with him. Probably, the traditional methods of work seem to be more stable and people are not ready for cardinal restructuring of the sites.

IX. Results Interpretation

The research, including the current environmental legislation of Kazakhstan, interviews results, data provided by the PAs specialists and taken from the written sources, has shown that there are weak and strong sides in the environmental protection of Kazakhstan and this resulted in incompliance for some issues of the natural sites with the international standards. More detailed discussions for each issue of compliance or non-compliance in the sphere of biodiversity, legislation or conservation management are given in relevant chapters; hereby the main issues are collaborated and the overall discussion is given (Table 11).

Table 11: Compatibility of the Specially Protected Natural Territories of Kazakhstan with the WH requirements

Advantages	Disadvantages
natural compatibility	
Belong to underrepresented Biogeographical Provinces (Table 4)	Some territories need to be extended (e.g., Saryarka should be extended to unite Naurzum and Kurgaldzhino) for nomination
One site can include ecosystems of quite different climatic zones (e.g., Katon-Karagai)	Uncommon ecosystems, like taiga forests in Katon-Karagai, are the most vulnerable ones to climate change and can disappear due to global warming
Still unexplored by scientists places (e.g., steppe of Saryarka)	Active exploitation of surrounding areas by the private sector (Tarnetskaya 2000)
Can create unique transboundary sites (e.g., Aksu-Dzhabagly, Katon-Karagai)	Potential barrier in joining transboundary sites (Katon-Karagai and Russian Katun State Biosphere Reserve)
Many endemic species (e.g., Siver's apple tree (*Malus sieversii),* saiga antelope (*Saiga Tatarica*))	Probably, some of species are not discovered yet
Many endangered species (e.g., argali, Greig's tulip (*Tulipa greigi*), Kaufman's tulip (*Tulipa kaufmanniana*))	
In Katon-Karagai: 1) the measures on conservation and reproduction of big mammals are taken; 2) as a result of scientific research new species of Fungi were discovered (not new in the world, but new for the East Kazakhstan region)	
conservation management compatibility	
Mercury pollution in Nura is eliminated, the source	No information on initiative to create new joint

of pollution has been identified and destroyed Creation of a "green" corridor between Kurgaldzhino and Naurzum (159 000 ha Cooperation with the Russian Katun State Biosphere Reserve on development of common conservation measures Cooperation with international organizations (like Czech "Ounce") in order to perform trainings for young specialists on conservation management and other environmental issues.	sites for Ile-Alatau, Almatinskiy and Altyn-Emel No long-term planning for some of the sites, though there are annual action plans.
legal compatibility	
Ratification of the WH Convention, the Convention on Biodiversity and others Creation of buffer zones	Environmental Code puts under stress all the specially protected territories by considering the possibility of oil production on their territory
Program on establishment of new protected territories united into one network and enlargement of the are of PAs Program on attraction of the youth to the problems of forests	Program is planned for two years; there is no plan for a longer period, there is no published plan of actions
Setting up in the legislation the roles of executive and legislative bodies between the Committee of Forestry and the Government, with all their regional branches	Complicated vertical system of executive bodies, where the final decision maker is the Government, but in-situ the inspector is responsible for implementation of legal requirements
Setting up the punitive measures on violation of environmental legislation	Easier to pay a penalty than to follow the law

If to speak about natural compatibility, which means compliance with the WH requirements on OUV, there are several "pluses" and "minuses" stated below.

Among the strongest points there is *the suggested richness of the wild life forms* determined by the geographical position of the sites and *quite a weak exploitation* till the present times, which leave an opportunity to consider that there are undiscovered species, but can be used as a weak point characterizing the lack of scientific initiative in the region.

Besides there is such a factor as *insufficient representativeness*: two out of four potential sites, namely Aksu-Dzhabagly and a joint site of Ile-Alatau, Altyn-Emel and Almatinskiy, belong to the non-presented Turanian Biogeographical Province.

Katon-Karagai, represents *an unusual location of the ecosystem* on the example of the relict taiga forests situated within the area of semi-deserts, containing rare and endemic species. The uniqueness of the ecosystems of the four studied sites has been confirmed by various authors, mentioned in this work, like, e.g., Kovshar or Starikov. Besides, it is proven by their status of specially protected natural territories. From the point of view of biodiversity, each of the sites, has a great value for the local and international communities and deserves to be nominated.

According to the received information there are many *endangered and endemic species*, which should be protected (Table 11).

As it was stated in the article by Tarnetskaya, the lands of Ile-Alatau are *periodically under the influence from the private sector*, some areas are already occupied by private owners. The visit to Ile-Alatau confirmed the existence of several constructions on the territory of the park. However, it was impossible to make sure if these facilities belong to the park or not. As for the anthropogenic factor, it is obvious that in future the park will be explored even more in connection with the plans of the municipal authorities to organize the Asian Winter Olympic Games in Chymbulak, the skiing area in Ile-Alatau (Lifintsev 2006).

There are also *potential constraints in joining of two transboundary sites together*, namely Katon-Karagai and Russian Katun State Biosphere Reserve, due to political borders and the question of land property as the joined site will need a common management and common regulatory legal base. It is not the aim of this research, but it should be mentioned that the Russian Federation and Kazakhstan have differences in their environmental legislation bases.

And one more weak aspect, already mentioned, is the *lack of scientific information on the PAs.* It was confirmed that in Katon-Karagai or SLNK the scientific researches are performed, as

for the other sites, there was no confirmation from the side of management teams. In this case, it is possible to rely on the statement made by IUCN about lack of scientific knowledge concerning the biodiversity of ecosystems of the PAs in Kazakhstan. Besides, the personal visit to Ile-Alatau also did not give results on the researches performed.

Discussing the conservation management in the four studied PAs it is very important to mention that some of the WH requirements, stated in IUCN reports (IUCN 2005), were fulfilled. For example, elimination of mercury discharge source at SLNK performed according to the WH recommendations (UNESCO 2006f); they have also created a "green" ecological corridor between Naurzum and Kurgaldzhino. *New common measures* are developed by both Katon-Karagai and Russian Katun State Biosphere Reserve. *This will help to make the sites' protection more effective.* According A.Chelyshev, at the moment there are several joined projects implemented between the PAs in Russia and Kazakhstan, on the level of specialists. In the same Katon-Karagai, there is organized a common project with "Ounce" organization from the Czech Republic *on training of young specialists*: this will help to improve the existing conservation measures.

According to the contact persons and information represented by IUCN (IUCN 2003), *long-term management plans are quite a new event for the protect areas*. Because of the worsened ecological situation and fast degradation of ecosystems, the conservation measures should be planned for several years in advance, in view of future changes connected with the growing consumption of natural resources. For Kazakhstan this is very important as for the country with intensively developed exploration and production of oil and gas. The management plans could foresee the degradation of areas surrounding the natural protected sites and, e.g., to strengthen the security of the sites.

Unfortunately, the information on conservation management is not full as the personnel of Aksu-Dzhabagly and Altyn-Emel (part of the potential Northern Tien Shan site) did not express the willingness to cooperate.

As for the legal compatibility, the research tried to review the whole environmental legislation of Kazakhstan. Initially, the definition of "legal protection" given in the Convention was understood as environmental legislation and policy. Having no exact requirements, it was decided to look at the whole current legislation connected with protection of PAs and environmental programs, strategies adopted by Kazakhstan. As a result the following weak and strong points were determined.

Among the strong points there is legally approved creation of buffer zones (Land Code, Article 123), required by Paragraph 103 of the Operational Guidelines (UNESCO 2005a). Also there are the program called "Zhasyl El" and 'The Program of Development of the System of Specially Protected Natural Territories of the RoK for 2007-2009".

The ratification of the Convention itself was a great step towards implementation of international standards. By ratifying the WH Convention Kazakhstan showed its readiness to take some liabilities in front of the global community. And now the stated is obliged to act in accordance with the Convention provisions.

The existence of a complicated system of responsible environmental bodies is considered here as a weak and as a strong side. The strength can be in case of effective work of each responsible body: Government in the sphere of law making/adoption and Committee of Forestry in the sphere of final realization of new plans and projects. At the same time these two big institutions with all their regional branches and offices create a complicated bureaucratic machine, where it is difficult to determine the final responsible body; and decisions require much time on realization.

Speaking about punitive measures it must be stated that *the current environmental legislation sets up the punitive measures (Administrative and Criminal Codes) but it with regard to small penalties amounts it is easier to pay than to follow the law. The modern enterprises prefer to act according to the Polluter Pays Principle.*

The environmental legislation also gives the freedom of action to the local inspectors, in the situation of *low control over their activity*, who are, by the way, among the lowest paid employees of the state.

It is also known that the Environmental Code, coming into force in July 2007, states that the production activities can be performed in the specially protected natural territories. The Caspian Sea is also referred to the specially protected natural territories, and its status does not protect it from the operating companies. Moreover, it is suggested that the Environmental Code is taking into consideration the Caspian Sea, while speaking about the production on the territory of PAs. And other natural sites automatically become subjects to production activities. *This doubtful status of the natural sites of Kazakhstan does not correspond with the WH requirement on the integrity of natural sites* (UNESCO 2005a).

The current situation shows that the modern preparedness of Kazakh PAs is in the middle of the way from the old forms of protection of nature and management of its resources to the new for Kazakhstan international norms, when the full protection of PAs does not contradict with economic interests and provides safety to ecosystems.

The acting environmental legislation of Kazakhstan cannot provide this required protection to PAs. Although there are no distinct requirements from the side of WH, that for example, in the legislation there should be these and those words. But it is mentioned in the Convention and Operational Guidelines the legal protection should "…assure the survival of the property and its protection against development and change that might negatively impact the outstanding universal value, or the integrity and/or authenticity of the property be provided." The economic situation in Kazakhstan is not quite stabilized and economic interests prevail in some aspects of life. Concerning, e.g., the Environmental Code, which is coming into force in June this year: in some points, including those devoted to operations performance on the territory of PAs, this document let the interests of entrepreneurs to dominate over the interests of nature and future

generations. As a result the current legislation, does not guarantee the integrity/authenticity of PAs, and does not fully protect them from negative impacts.

At the same time there are, also already mentioned, positive changes concerning buffer zones creation, creation of a "green corridor" in SLNK, enlargement of the territory of PAs till 10 per cent of the total area of the state, etc. And in general the situation with protection improves. Joining international conventions puts some liabilities on Kazakhstan, and slowly but the legal system is changing: at least new positive changes happed in recent years, after the independent legislation of Kazakhstan appeared.

Speaking about improvements, with the help of international organizations, protection of some separate PAs within the limits of cooperative projects is done. Despite some lacks in the environmental legislation, perhaps, some specially protected areas will be upgraded in their status and receive additional protection in the form of WH nomination.

The research showed which lacks and advantages in the sphere of PAs exist now, which allow judging on the level of compatibility of the Kazakh PAs with the WH requirements. So it is possible to say that there are several points which should be changed in order to reach the desirable level of compliance with international norms. And what should be done is described in the next chapter.

XI. Conclusion and recommendations

In the past years the protected areas of Kazakhstan were performing the role of reserves with the strict protection regime. They were used for conservation of wild species and remediation of valuable for trade species (like the Caspian Sea). The strict protection regime supposed the total closeness of the areas for people, except for scientists and inspectors, and some cultural and political figures. Tourism and recreational activities were implemented on rare places, and they did not mean active exploitation of protected areas. The new events of the recent years require the creation of the so-called recreational zones, which is connected with the activation of the tourism. So the protected areas have to reset up their path now. In connection with this, e.g., in the legislation the article on buffer zones has appeared. The buffer zones were not necessary with the absence of activities around the natural sites, but now they are a need to protect them.

In other words the protected areas pass through very difficult times now, with lots of changes, connected with their involvedness into the economic relationships. If we compare the approaches to the ecosystems conservation now and in the past we'll see that despite the absence of the long-term planning, e.g., the special protected areas of the past performed their functions more effectively, as they were less used by the people.

Nowadays the approach to the functions of the specially protected areas is changing. And it is necessary to pay attention to the international experience. In this case to the WH sites experience. It is possible to remain the existing system of environmental protection as it is, but then we need to stop using protected areas for tourism and other not quite usual activities. But as far as the state has chosen another way of development, based on the market economy, i.e. the way of the western countries, it is obligatory to take into account their mistakes as well; and try to implement their standards of environmental protection.

The WH nomination gives an opportunity to cooperate with other WH sites, to exchange ideas and experience. As well as it gives other advantages. They are mentioned in the descriptive

material from the UNESCO official site, and they include five main items, which are obtained by WH sites around the world:

1) Raising awareness
2) Increasing protection
3) Enhancing funding
4) Improving management
5) Harnessing tourism

For example, the Tubbataha Reef Marine Park achieved good results to its 13th anniversary of being a World Heritage site. This park, covering 33,200 ha, was historically used by the local population for fishing. After inscription of the site, the managers of the World Heritage started the program on increase of public awareness on a great value of this park. People are proud of their park and local leaders even suggested to nominate another site. As a result, the illegal fishing has been reduced and people are occupied in other sector, connected with the protection of the reefs and tourism. Therefore, the level of protection of the site has been increased (UNESCO 2006d). The work done by the specialists of the World Heritage helped to save natural sites of Philippines and make local people take care of their natural heritage.

The changes, implemented according to the requirements of the World Heritage, provided the ecological integrity of the Nahanny National Park Reserve, situated in Northwest Territories, Canada. It was achieved with the signing of an agreement between the Government of Canada and the Deh Cho First Nations organization, responsible for the site together with Parks Canada, on withdrawal of most of the lands in the watershed of the South Nahanni River from mineral exploration from 2003 to 2008 (Parks Canada Agency 2004). Preserving the unity of lands, they achieved improvements in the protection of biodiversity.

And the experience of the Tongariro National Park, situated in New Zealand, can be useful for Ile-Alatau. WH status of the park has helped to stop the further development of the ski

field boundaries and accommodations on the surrounding area (UNESCO 2006c). So the protection of the ecosystems was strengthened.

There are many examples of successful cooperation of sites with the World Heritage, described on the site of UNESCO, and it is not only the results achieved by the World Heritage experts, but, first of all, this is a constant work done by the local people, authorities, in order to protect the nature of their motherland.

Besides, inclusion into the WH List gives Kazakhstan ability to get financial support as well (UNESCO 2006, World Heritage Fund). But of course, this support as well as technical and scientific assistance can be provided if the local side will show the eagerness to make a big work in improvement of legal protection, management of the sites and other aspects, which cannot be solved by the international organizations.

Harnessing of the tourism is also an important part of job for any present natural site, as it is the epoch of consumerist approach to the nature, and the exchange of ideas on how to protect nature from people and vice versa can be helpful. So the status of a WH site could help the Kazakh sites intensify the cooperation with other protected areas, to ask for the assistance from the experts working there. The specialist could come to the country on the base of the WH network international control, e.g.

It could also improve the management of the sites as in most of the cases it is directly connected with the tourism development, which is still a new sector of activity in Kazakhstan.

As it was already mentioned the anthropogenic pressure, connected with the tourism, is increasing and for Kazakhstan it is very important to show the reliable protection of its natural sites, which can be included into the WH List, from the degradation caused by this activity. And, of course, it is necessary to start the work on conservation management before the nomination.

However, after the nomination there are all the chances of improvement of the management with the help of other WH sites.

As one can see the perspectives of the WH nomination are very bright and give many opportunities to increase the level of environmental protection. As the conclusion it is very important to say that for the Kazakh specially protected natural territories it is preferable to be in the system of the World Heritage sites for better preservation of the ecosystems.

As for the recommendations, basing on the results of this research the following recommendations can be given. To correspond with the WH it is important:

- **to input the changes, which would increase the administrative responsibility for environmental violations**;

- **to include into the Criminal Code the measures of punishment in case of making harm to animals and plants, not only to humans**;

- **to limit the rights on natural resources use on the territory of the specially protected areas**, it would be better to prohibit production on the territory at all, or it is necessary to determine the use of the resources of the Caspian Sea, which is also a specially protected natural site, in a separate article;

- **to include into the Administrative and Criminal Codes the punitive measures, connected with the environmental violations, for the workers of the protected natural areas**;

- **to increase the financial support of the protected natural areas**, by enlargement of the salaries of the employees, e.g.;

- **to increase the control over specially protected natural territories by creating a special organization or a committee**, which will be legally independent and will have the separate management. And this committee could take the functions of the Parliament and the Committee of Forestry connected with the specially protected natural sites, reducing by this the influence of the industrial lobby on the environmental legislation.

It is possible to use the experience of other countries. For example, in the USA or Canada, there are the so-called "Parks Agencies", which are included into the countries' Ministries of Environment but, at the same time, are independent in their actions and decisions.

- to increase the support of the scientific organizations and their activity. To attract young specialists to the work it is necessary to raise the level of salaries and to give grants for scientific researches. It would be very important for the WH nomination, e.g. Despite the fact, that there is a big collection of information on biodiversity of ecosystems, there are almost no attempts to use this information for further research on improvement of conservation of biodiversity. One project on agrobiodiversity conservation of Zailiyskiy Alatau is currently sponsored by UNDP (UNDP 2006), but this is rather an exception on the national scale.

- to create an effective system of interaction of the PAs of Kazakhstan, as per 'The Program of Development of the System of Specially Protected Natural Territories of the RoK for 2007-2009", e.g. This system would help the future WH sites and non-WH sites within Kazakhstan to exchange the ideas, experience, to help with information, etc.

Basing on the results of the research, it is possible to say that the aim of the research was achieved – the compatibility of the natural sites of Kazakhstan with the WH requirements was determined. The research has shown that there are several disadvantages and advantages of the existing system of protection of natural sites in Kazakhstan.

It is difficult to change the traditional approach to the nature and its resources. But the growing demand for clean air and water, for simple observation of natural beauty requires more attention towards the existing natural sites. There are still some places on the Earth where we can breeze freely, without being worried of the air content. But how long they can survive under increasing pressure? Creation of specially protected natural territories and improvement of their conservation is an attempt to save these wonderful places, inherited by us from the Earth.

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Resolution of the Government of the RoK # 990 “About Approval of the Program of Development of the System of Specially Protected Natural territories of the RoK for 2007-2007”, 13.10.2006

Resolution of the Government of the RoK #746 “About Approval of the List of Specially Protected Natural territories of the Republic Significance” # 746, 19.07.2005

Annex

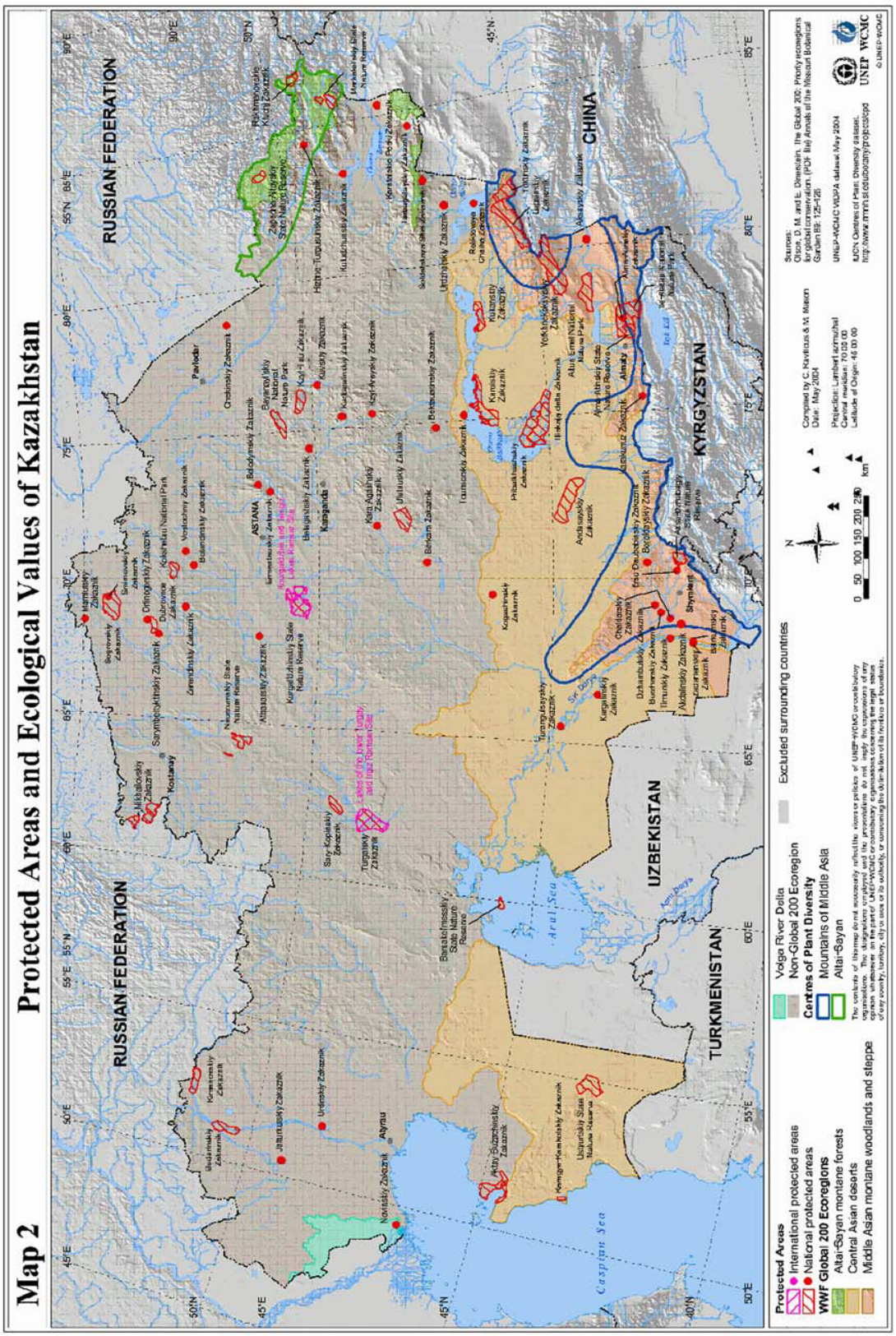

Figure 1: UNEP Map on the protected areas and ecological values of Kazakhstan

Figure 2. Golden Mountains divided among four states: Russia, China, Mongolia and Kazakhstan (Ecosystem 2006)

Figure 3: the prehistoric landscape of Altyn-Emel (Gubenko, A 2006)

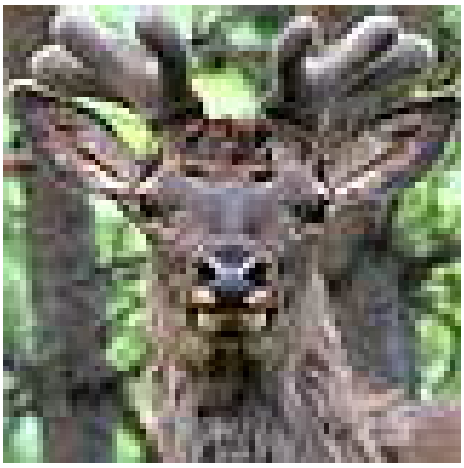

Figure 4: Maral, *Cervus elaphus*

(Gubenko, A 2006)

Figure 5: Kotyrbulak, the highest mountain of Ile-Alatau (Sdykova, A)

Figure 6: Near the inspector's post in Ile-Alatau (Sdykova, A)