

Project title: **“Problems of preserving the snow leopard in the vicinity of Almaty.”**

The snow leopard or the ounce (*Panthera uncia*) is an endemic of the highlands of Central Asia; occupying the top of the trophic pyramid, it serves as a kind of an indicator of the state of high-mountain ecosystems. In Kazakhstan, the snow leopard is one of the state symbols and has a great social and cultural significance.

It is recognized that the central part of the northern macroslope of the Zailiyskiy Alatau, in particular the basins of the Small and Large Almatinka Rivers are quite suitable habitats for the snow leopard. The above-said was evidenced by quite frequent encounters with local people and zoologists with both the predator itself and its traces in the past. However, studies in recent years have shown that the snow leopard does not inhabit constantly in the above-mentioned gorges but only its occasional visits have been observed, i.e., the snow leopard has ceased to be an ordinary animal specimen in the vicinity of Almaty.

Despite the fact that most of the Zailiyskiy Alatau is part of the Ile-Alatau National Park and the Almaty Reserve with a quite proper and well-established protection, the situation with this specimen being very important for Kazakhstan is quite disappointing in general. Obviously, the primary reason for this is the close proximity to the Almaty megapolis with a constantly growing rate of increase in its population and infrastructure development. In addition, the planned construction of the next ski resort of Kokzhailyau will further exacerbate the problem and entail consequences that will adversely affect the habitat of not only wild animals and plants but also the entire ecosystem as a whole. This, in turn, will affect the stable existence of the snow leopard in the trans-border ecological region of the Northern Tien Shan.

With a view to exclude or minimize such environmental risks, one should ensure that similar projects related to the development of mountain ecosystems will be developed and implemented in future subject to the ecological and biological needs of all the animals inhabiting there, and first of all the snow leopard. It is the solution of similar ecological problems at the regional level that will become a vivid example of the implementation of the transition of the independent Kazakhstan to the “Green Economy” according to the new political course of the country referred to as the “Strategy of Kazakhstan-2050.”

The objectives of protecting the populations of rare animals are multifaceted and include a set of measures to eliminate or reduce negative factors. Proceeding from the foregoing, the main goal of the planned project is to investigate the ecology of the snow leopard in the Almaty region on a multi-sided basis to draw up recommendations for its conservation.

The process of implementing the project will be mainly aimed at the areas, which are mostly exposed to the anthropogenic impact - the gorges of the Small and Large Almatinka. In addition to the work intended for detection of snow leopards, potential locations for the probable localization of the specimen are to be identified, a degree of threat and conditions of existence is to be assessed according to the basic criteria as follows: availability of prey items (quantitative and qualitative indicators),

crossspecies competition with other predators, influence of recreational load (tourists' visits), cattle grazing, poaching etc.

For an experimental comparison, similar studies and observations will be conducted in other adjacent mountain gorges, which have similar environmental conditions but differ in the degree of the anthropogenic load including those areas where, according to our data, there is currently a stable grouping of snow leopards; in this respect, an analysis will also be made under the above-said criteria. Based on the analysis of the factors affecting the snow leopard population, we'll be able to give an unbiased estimate of the risk of extinction of the specimen and recommendations on the risk reduction in a particular area.

Having a clear scientific idea of the specificity of the ecology, the territorial and habitat propagation and other conditions of the snow leopard habitat, we'll be able to have influence on the tendency of reduction in the snow leopard habitat against the background of changes in the natural environment under the influence of technogenic factors. Clarification of the said issues will ensure a fundamentally new and higher level of protection of the snow leopard and its habitat.

The relevance and priority of studies in this area meet the requirements specified in the long-term strategy of "Kazakhstan-2050", "Convention on Biological Diversity" (1992), "Convention on the Preservation of Migratory Animal Species" (1998) and "National Strategy and Action Plan for Conservation and Sustainable Use of Biological Diversity of the Republic of Kazakhstan" (1999), "Strategies for Preservation of Snow Leopard in Kazakhstan" (2011), "Global Snow Leopard Preservation Program and Related Ecosystems" (2013), "National Action Plan for Study and Preservation of Snow Leopard in Kazakhstan for 2015-2020" (2015) etc.

Within the area chosen for studies, the scientific project is divided into 6 consecutive stages as follows:

Stage I-II – the basin of the Large Almatinka River (2016);

Stage III-IV – the basin of the Small Almatinka River (2017);

Stage V-VI – survey of other mountain gorges adjacent to Almaty (2018).

In 2016, at the **first stage** of the studies, two reconnaissance field trips will be arranged to the Zailiysky Alatau (the basin of the Bolshaya Almatinka), with a view:

- To identify potential snow leopard habitats;
- To establish the presence or absence of the specimen in some potential habitats;
- To select places (setting up monitoring sites) for installation of automatic security cameras

(photo traps) for the **second stage** of studies.

The work will be carried out under the generally accepted methods of zoological and ecological studies. To establish the presence or absence of the specimen (in some areas), several photo traps available at the Institute of Zoology of the Ministry of Education and Science of the Republic of Kazakhstan will be used as well.

At the **second stage**, the studies designated by the work program will be continued. Depending on the project financial possibilities, the principal tasks to be performed (within the project area) will be as follows:

- To assess the current state of the snow leopard population in the area under the study, and also with photo traps (population level, territorial and habitat propagation);
- To identify factors adversely affecting the snow leopard population in the area under the study;
- To assess the extent of reduction in the snow leopard habitats, threats and conditions of the specimen existence;
- To draw up recommendations on the preservation of the snow leopard in the area so studied.

The project budget estimate for 2016.

The project financing includes payment for labor of researchers, tax levies, travel expenses (including driver's ones) and purchase of fuels and lubricants, acquisition of photo traps and their consumables.

№	Cost item	Total tenge
1	Costs for researchers team	3 250 000
2	Social tax and deductions	357 500
3	Trip costs and POL	950 000
4	Burden costs	650 000
5	Materials and equipment	1 292 500
Total		6 500 000

Costs for I stage of research (1 500 000 tenge)

№	Cost item	Total tenge
1	Costs for researchers team	750 000
2	Social tax and deductions	82 500
3	Trip costs and POL	500 000
4	Burden costs	75 000
5	Materials and equipment	92 500
Total		1 500 000