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Subject: Biodiversity - Sustainable development - education

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Topicaliti.
The work of the mining industry in relation to the conservation of biological diversity is under scrutiny of the public and non-governmental organizations (NGOs). This is due to the growing understanding of the importance of biodiversity conservation. But also with the fact that the work in this industry often conducted in remote and environmentally sensitive areas in the world.

Demonstrates commitment to the conservation of biological diversity has become an essential element of sustainable development of the mining industry.

In this regard, it is necessary to have more information about this field.

Should also be given an enhanced role of educational institutions in terms of bringing to the government agencies and the public on the role of companies in the conservation of biological diversity.

Biological diversity includes the variety and variability of life on Earth.

It refers to the differences within and between all living organisms at different levels of biological organization - genes, individual, species level and at the level of ecosystems. Biological diversity provides means to support human life and life itself. Modern load on biodiversity and related loss threaten to undermine the function of the ecosystem on which we all depend.

Over the past 50 years, many ecosystems was damaged on a larger scale and in a shorter time than any other historical period.

Outcome could be one. This is what the threats to biodiversity require urgent action. When dealing with them are not taken comprehensive measures that need to take into account socio-economic and scientific factors brought by ecosystem services benefits will be substantially reduced for future generations.

It basically determines the relevance of research.

**Project Objective:** The presentation of the results of conservation of biological diversity for ecological public consciousness. Creation of hiking trails, as well as the preparation of information for young people.

**Tasks:**
- Evaluation of the entire range of impacts of mining on biodiversity.
- Assessment of significant levels and to collect information on key indicators of biological diversity and the creation of conditions of tourist facilities and trails.
- The layout of the results of work on the issues of biodiversity and measures to reduce the negative impact for the greening of public consciousness.

**Methods of assessment and monitoring of biodiversity.** Scientific support for monitoring and conservation of biodiversity. Analysis of the scientific literature on the stock and the subject in question.
1 Evaluation of the entire range of impacts of mining on biodiversity.
While the construction works usually take from one to three years, industrial activity can continue for decades.
Quarrying efforts almost entirely concentrated on the prediction and mitigation of impacts.
In this production phase often provides opportunities for the protection and enhancement of biodiversity.
Special attention should be given to potential impacts on biological diversity.
It is known that the main effects of the plant infrastructures occur during their construction.
In this case, the continued presence of physical barriers can pose a threat to migratory species.
The main risk to biological diversity from the supporting infrastructure refers to the transportation of hazardous industrial chemicals and hazardous wastes.
This - sulfuric acid, formed in the purification of flue gas melting furnaces. Also, hazardous metals (eg mercury), which can be associated with other metals.
Stripping and quarrying often produce the most spectacular visual effects in the process of mining.
But even for a large size recess pits can be quite limited.
The major impacts on biological diversity. They are formed when clearing land for overburden removal.
The major impacts are formed in the regeneration of access roads to the quarry and the subsequent expansion of the area of the quarry.
Expansion of new areas is equivalent to the discovery of a new career.
This increases the area of the quarry, and the level of impact on biological diversity.
In addition, the company will need to conduct a new assessment of the environmental impact of the EIA. In an extreme case, update the original estimate.
Assessment of the importance of biological diversity is essential to the understanding of the significance of potential impacts on the environment and, therefore, priorities for mitigation.
In general, the greater the diversity of habitat or species at the site, the greater value represents the portion. The diversity of habitats within the ecosystem can also be very valuable.
Patchiness of habitats is of great value. This is because some species need different types of habitats, the existence in the transition zones between habitats.
The key is called a view that has a big impact on the ecosystem with respect to its density or total biomass.
The concept of scarcity can be applied to ecosystems and habitats, as well as in relation to species.
Rare as a measure of exposure to extinction.
This concept can be expressed in a number of terms.
Vulnerable species, rare, endangered species.
Fragility concept means the sensitivity of the ecosystem or habitat to environmental changes.
Fragility determines the stability of ecosystems to such changes. In assessing the impacts on biodiversity should be understood that the intensity of the impact varies over the life of the project.

Increases markedly during production, and decreases as the implementation of measures to complete the project.

The value of the projected impacts on biodiversity depends on the magnitude of impacts on biological biodiversity.

Pollution can affect the air, water and soil on site or around it.

Air pollutants such as dust, sulfur dioxide, may have a direct impact on biological diversity.

This effect as choking or respiratory diseases. And also produce secondary effects, such as soil and water pollution.

1.2 Ecol of public consciousness

Greening the public consciousness is the development of environmental education. And also in education and education for the restructuring of public environmental awareness, lifestyle changes a person, his morality.

At the moment in the public consciousness firmly established idea of human exceptionalism and the liberation of man from the domination of environmental laws. People's behavior in relation to the environment, based on the paradigm of human exceptionalism, can lead to an ecological crisis on the planet.

Environmental education - specifically organized, planned and systematically carried out by the process of mastering environmental knowledge, skills and abilities. Currently in force in our country, the system of environmental education is an ongoing, comprehensive, multi-disciplinary and integrated nature, varying depending on the professional orientation.

Established centers for environmental education of the population being tested environmental component of the maintenance of professional education.

Environmental education forms an active environmental stance. This is achieved through a set of environmental and ecological education. The training includes education in the narrow sense of the word. Also, school and university environmental education, promotion of environmental outlook.

The central idea of the ecological culture is to share the harmonious development of man and nature. Relationship to nature, not only as to the material, but also as a spiritual value.

Rules «do not harm» and «think globally, act locally» are binding on all people. In the name of life on Earth humanity will revive, preserve and develop all of the core values of ecological culture.

2 Assessment of significant levels and to collect information on key indicators of biological diversity and the creation of conditions of tourist facilities and trails.

Mangistau region is a popular destination for local tourists.

They are attracted by the unique opportunities of the Caspian Sea. In addition, the region has a lot of potential tourism resources.

These resources constitute more than 30% of all potential tourism resources in Kazakhstan. Tourism resources include natural, historical and cultural resources.
Basic and important cultural heritage and natural attractions with the flora and fauna are concentrated in the inland areas.

Tourism is a potentially important sector for our area, where is a major factor to development is the lack of water.

The tourism industry requires delivery of water. Drinking water for the tourists can bring in bottles from all regions. Tourism development is constrained, to a greater extent, inaccessibility to the tourist spots attractions. Also, the lack of appropriate places to stay and other amenities.

The main thing is that there is no variety of options that can be offered to tourists. Thus, a strategic approach to the successful development of tourism.

Thus, the district Shetpe can be developed into a tourist base land for natural «green» tourism around the Karatau Mountains.

It is known that tourism in the region is at an early stage of development. Neither the domestic nor foreign tourism markets, our region is not perceived as a holiday destination.

At the same time, the experts, the Mangistau region, has the best natural and cultural conditions for the development of the competitiveness of the tourism.

On the basis of studies by experts identified four areas suitable for the development of national parks and tourism.

**Airakty.** Located to the north of the city of Aktau, 100 km. from the center, on the border with Tamshaly canyon on the north-western coast of the sea.

The territory of 480 000 ha., Land includes a huge variety of scientific, geological, paleontological, historical and cultural values.

The grounds include a vast territory of Mangistau district.

**Usturt.** Located to the east of the resort area Kenderli. Located on the east of the region. Is a public reserve. Here is a typical dry steppe landscape.

There are a huge variety of flora.

Usturt also has rare endangered species of birds, animals and reptiles. Territory - 632 000 ha.

**Karaki Caracol.** Located in the south-eastern part of the region, 85 km., From the regional center. Karaki - one of the deepest valleys in the world (132 m. Below sea level). Caracol - long freshwater lake south of the city of Aktau.

There are many settlements flamingos. Territory - 180 000 hectares.

**Kulaly.** The zone has a crescent shape. Located north of Fort-Shevchenko. It is the largest island of the archipelago of islands seals. Here you can see a huge number of sea birds. Sometimes even a pelican.

The island is located on the migration route of herring, mullet and sturgeon. On the beaches there are seals. Area - 4,500 hectares.

The above four areas should not only be protected. These should be available for tourism in a sustainable and controlled manner. The study area, chalk deposit Shetpe South is in Zone 1 - Airakty.

The above four areas should not only be protected. These should be available for tourism in a sustainable and controlled form.

The study area, chalk deposit Shetpe South is in Zone 1 - Airakty (Figure 1, Appendix 1).
Consider the significance of the relief, the study area to create a hiking trail to the system of Southern gorges.

In our opinion, one of the main types of tourism is eco-geo-morphological tourism. Geo-eco-tourism competes with other forms of tourism.

According to some properties may even surpass all others. Morphometric parameters relief determine the possibility of using the territory for tourism. The relief has a huge potential for tourism.

Individual landforms and their complexes are of great aesthetic, cognitive, recreational value and provide a feeling of relief.

From this perspective, we consider the most interest to the tourism areas in the field of chalk Shetpe South.

From an environmental point of view, of great interest are two of the gorges, at different ends of the chalk deposits:

- The system of the northern canyons: Wide, strongly structured system of gorges with steep cliff. Vertical, talus slopes and very narrow gorges. There are few, trees and shrubs;

- The system of the southern valleys: it is not as extensive as the North, the most narrow gorge here, but with a steep rock outcrops.

Geoenvironmental important difference of this system consisting of several related canyon gorges are:

- Steep cliffs, formed as a result of severe erosion, with numerous small caves and cracks;
- Scree slopes and boulders at the foot of steep cliffs, forming a system of large and small caves;
- Small alluvial slopes of sand, clay and gravel;
- Deep ravines, formed after the rains;
- Shrubs and trees, mostly in the northern side canyons.

The above morphological characteristics of South ravines prove the possibility of using them for all kinds of tourism.

One of the central concepts in tourism is the concept of "route". Category "route" and has a geographical and tourist significance. In the conventional meaning of the route - a path with a predetermined trajectory.

Note that this category has a spatial rather than temporal connotation. In this regard, the concept of a route is often the geographical content. Hiking trails vary in configuration, ie form of a "thread" of the track.

For today's tourists most acceptable linear route - a route that starts at one point and ends at another. Tourists at the same time throughout the route will not repeat the path that passed.

To compile the route was used the program «Google Maps Pro». On this program, we have found we are interested in the area.

Riunkah on 4 and 5 of Annex 1, satellite images clearly reflect turistichechky potential of Mangistau oblast.

It is noteworthy that among the satellite images "scenic spots" found their way South and East slope of the gorge. These interesting tourism places are sites of the study area.
The aim of our study was to seal the tourist route through the chalk deposit Shetpe South.

Presented in Figures 4 and 5, the data of satellite images allow to make the tourist route. The beginning of the route along the route Astrakhan-Atyrau-Aktau, begins with the tourist trail (1 Southern Gorge - 2 - eastern slope).

Then the tourists returned to the track and follow the following routes 3 - "The Garden of stone balls", 4, 5 and 6 - Scenic canyons "in the village Zharmysh.

Each route must be set pointers. Can be used ready-made satellite images (Figure 6). Modern tourism is influenced by global trends in tourism.

It is important to understand, appreciate and preserve the strengths of tourism in the Republic of Kazakhstan that has allowed tourism to develop successfully. This plays an important role symbiosis of geography and tourism practices.
Annex 1

Figure 1 - Areas of tourism Mangistau region

Figure 2 - The central part of the southern valleys (photograph shows the logic organization in these places of ecological, geomorphological and sport routes and trails)
Figure 3 - Steep cliffs for rock climbers

Figure 4 - Satellite imagery of the program «Google Maps Pro» clearly reflect the tourism potential of the area including the Eastern slope (2)
Figure 5 - In the number of scenic spots include the Mangistau region and the South Valley (4) deposits of chalk Shetpe South (Google Maps Pro)

Figure 6 - The tourist route along the scenic Mangistau region on the route Astrakhan-Atyrau-Aktau (the beginning of the route the South Valley and eastern slope deposits of chalk Shetpe South Caspiy cement) (Kenzhetaev G. Sarbalaev K)