Comprehensive assessment of the territory as a part of the environmental and economic feasibility study for the formation of a state nature reserve

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Abstract. The article considers the process of creating specially protected natural territories as one of the main and traditional approaches to the conservation of biological diversity in the framework of the implementation of the state environmental policy. Based on an analysis of a number of projects for the creation of specially protected natural territories of federal significance, a recommended list of sections has been compiled for a comprehensive assessment of the territory as a part of the environmental and economic justification for the formation of a state nature reserve.

1. Introduction

In order to prevent environmental degradation both in the country and around the world, as well as to reach the normative level of the state of environmental components, it is necessary to conduct a focused environmental policy based on the principles of market relations and using the financial and economic capabilities of all environmental managers. State environmental policy is one of the most important factors in managing the socio-environmental situation.

State environmental policy is a system of views, regulations and positions of the state on the problems of using limited natural resources in the conditions of unlimited needs of the economy, environmental protection, environmental safety and prevention of natural and man-made emergencies.

The implementation of environmental policy today is one of the priority areas of activity of authorities in the most developed countries, including Russia. The state authorities of the Russian Federation and the constituent entities of the Russian Federation set tasks to implement the priority provisions of environmental policy along with activities to implement the policy of socio-economic development, demographic policy, the policy of modernization of education and health, ensuring national security, as well as other strategically important areas. At the same time, local self-government bodies, citizens and their associations are actively involved in its formation and implementation.

As the authors of the article “Implementation of the state environmental policy in the field of environmental safety: a comparative analysis in Germany and Russia” Antoshin V.A. and Shestakov V.A. correctly noted, one of the priority areas for the implementation of the environmental policy of the Russian Federation is international environmental cooperation [1]. This cooperation is developing through interaction with international organizations in the framework of conventions, agreements and bilateral treaties. The main documents in the implementation of which the Russian Federation is involved are:
• the resolutions of the UN Conference on the Environment and Development (Rio de Janeiro, 1992);
• a program of action for the further implementation of Agenda 21 (adopted by the UN General Assembly, 1997);
• resolutions and ministerial declaration of the Ministerial Conference “Environment for Europe” (Lucerne, 1993);
• ministerial declaration and proceedings of the Ministerial Conference “Environment for Europe” (Sofia, 1995);
• Environmental Action Program for Central and Eastern Europe;
• the intergovernmental agreement of the CIS countries as of August 8, 1992 "On interaction in the field of ecology and environmental protection."

These documents reflect the pressing problems of our time in the field of environmental protection and are designed to draw attention to solving problems to achieve long-term sustainable development goals.

In April 2012, the Government of the Russian Federation approved a draft Decree of the President “On the basis of state policy in the field of environmental development of the Russian Federation until 2030” [hereinafter referred to as the Basis], prepared by the Ministry of Natural Resources and Ecology of the Russian Federation.

In this connection, the main objectives of the state policy in the field of environmental development in our country are:
• environmentally oriented economic growth;
• preservation of favorable environment, biological diversity and natural resources to meet the needs of present and future generations;
• realization of the right of citizens to a favorable environment;
• strengthening the rule of law in the field of environmental protection and environmental safety.

According to the Basis, the strategic goal of state environmental policy is to preserve natural systems, maintain their integrity and life-supporting functions for the sustainable development of society, improve the quality of life, improve public health and the demographic situation, ensure environmental safety of the country [2].

At the same time, Mikhail S. Stishov, Ph.D. in Biology and the main coordinator of projects for the conservation of Arctic biodiversity, in the developed methodology for assessing the environmental effectiveness of specially protected natural areas and their regional systems, has argued that the creation of specially protected natural areas has been one of the oldest basic and traditional approaches to the conservation of biological diversity at both the global and national and regional levels [3].

2. Methods of research
The main legal act regulating mainly relations in the sphere under consideration is the Federal Law “On Environmental Protection”, adopted on January 10, 2002 and which is essentially a comprehensive, systematic legal act in the field of environmental protection that regulates the main public relations in the field of nature management and environmental protection.

The above normative act determined the main tasks and the mechanism of regulation of relations in the field of interaction between society and man. It laid the foundations for the progressive development of environmental legislation as the legislation of a new generation.

In the system of environmental protection measures, the most important direction is the removal from economic use of certain territories and water areas or the restriction of economic activity on them, which contributes to the preservation of ecosystems and biota species in the state closest to the natural state, the preservation of the gene pool of plants and animals, as well as landscapes as standards of nature, for scientific and educational purposes. The specified direction of nature conservation is implemented on the basis of the existing legally fixed network of specially protected natural territories.
Specially protected natural territories (hereinafter referred to as protected areas) are land, water surface and airspace above them, where natural complexes and objects that have special environmental, scientific, cultural, aesthetic and recreational significance, which are removed by decisions of state bodies authorities in whole or in part from economic use and for which a special protection regime has been established. The territories under consideration are objects of national heritage [4].

To date, Russia has created the largest network of protected areas at the federal, regional and local levels in the world in terms of footprint (71.5 million ha, including marine areas or 52.6 million ha without protected marine areas). Compared to 2017, this indicator increased by 8.6 million ha, or by 13.6 %. For the period 2010–2018, the total area of protected areas of federal significance increased by 15.8 million hectares, or by 28.3 % [5].

![Figure 1. Dynamics of the area of specially protected natural territories and their number](image)

The legislation of the Russian Federation on protected areas is based on the relevant provisions of the Constitution of the Russian Federation.

Relations arising from the use of land, water, forest and other natural resources of protected areas are regulated by the relevant legislation of the Russian Federation and the legislation of the constituent entities of the Russian Federation.

Relations in the field of organization, protection and use of protected areas in order to preserve unique and typical natural complexes, interesting natural formations, objects of flora and fauna, their genetic fund, study of natural processes in the biosphere and control over changes in its state, environmental education of the population are regulated by The Federal Law “On Specially Protected Natural Territories”.

Taking into account the features of the protected areas regime and the status of environmental locations on them, the following categories of the indicated territories differ [4]:

1. State nature reserves (including biosphere)
2. National parks
3. Natural parks
4. State nature reserves
5. Monuments of nature
6. Dendrological parks and botanical gardens
7. Health and wellness areas and resorts
8. Territories of traditional nature management

State nature reserves and national parks are protected areas of federal importance. State nature reserves, natural monuments, dendrological parks and botanical gardens can be assigned to both protected areas of federal and regional significance. Natural parks belong only to the protected areas of regional importance.

The reserve is a certain natural territory (or water area), completely excluded from the economic turnover, intended for the protection and study of typical or unique natural complexes. Within their borders, it is necessary to preserve the natural environment in a natural state, and there is also a ban on economic and other activities, except as otherwise provided by law.

Land plots and natural resources located within the boundaries of state nature reserves are federal property and are not subject to alienation from federal property. Changing the purpose of land and land located within the boundaries of state nature reserves is extremely prohibited.

3. Results

As emphasized above, the legal basis for the application of this method of nature protection is the Federal Law “On Specially Protected Natural Territories”, as well as the relevant legislative acts of the constituent entities of the Russian Federation.

From the point of view of creating new protected areas, the legislation of the constituent entities of the Russian Federation may vary. In accordance with this, there are no strict requirements for the maintenance of the environmental and economic component of the materials for the establishment of the reserve, therefore they can be established at the entity level.

The fundamental component of the environmental and economic rationale for the creation of the reserve is a comprehensive assessment of the territory within the proposed boundaries.

Based on the analysis of a number of projects for the creation of protected areas of federal importance, a comprehensive assessment of the territory for a newly created reserve, as a rule, contains the following sections:

1. Natural characteristics of the designed reserve and assessment of the environmental significance of the territory. For each considered component of the natural environment, potentially hazardous processes and phenomena (floods, seismic activity and its consequences, forest fires, hurricanes, etc.) that can damage valuable natural complexes and objects are considered.

   Rare and especially valuable ecosystems, as well as objects of animate and inanimate nature, are evaluated.

2. Assessment of the historical and cultural potential of the territory. This section includes a description of historical and cultural sites located on the territory, an assessment of their condition, as well as necessary measures for the restoration, conservation and future use of the proposed territory of the reserve.

3. Socio-economic assessment of the situation in the proposed boundaries of the designed reserve and in the adjacent territories.

4. Assessment of the recreational potential of the territory. The section includes the main promising areas of tourist and recreational activities and the organization of educational tourism within the proposed boundaries of the reserve, as well as taking into account the existing tourist infrastructure and its development prospects.

5. Assessment of the current state of the ecosystems of the territory and factors of negative impact. In this section, the level of the impact of various factors on the environment and their characteristics are established. A comprehensive assessment of the current state of the natural environment of the territory is carried out, and existing trends in changes in the state of the environment are also taken into account.

6. Biomedical situation in the projected boundaries of the reserve and in adjacent territories.

The situation with natural focal and other specific diseases is examined in the context of tourist and recreational use of the territory.
7. **Assessment of existing difficulties in the process of organizing the reserve.** The section discusses existing problems that have not yet been resolved in the design process, as well as those problems that may arise in the near future, and ways to solve them.

8. **Environmental impact assessment as a result of the organization of the reserve.** It is worth noting here that in accordance with the Federal Law “On Ecological Expertise”, the documentation subject to state environmental impact assessment should contain the results of an assessment of the impact of the proposed activity on the environment (Clause 1, Article 14), in connection with which a component-wise assessment of possible environmental changes in the case of the organization of protected areas in comparison with existing anthropogenic loads is conducted. The results obtained are summarized and include provisions on the environmental value of the projected area, confirming the feasibility and environmental soundness of the organization of the reserve within the proposed boundaries of the considered territory.

4. **Conclusion**

At the beginning of the twentieth century, environmental problems became relevant for all countries of the world in connection with an increase in the growth of the world’s population, as well as the development of industry and other sectors of the economy.

In the Russian Federation, in regions with particularly intensive development of industry and agriculture, from the second half of the 20th century, extensive zones of environmental disadvantage have emerged, covering about 15% of the country’s territory, where the main production capacities and the most productive agricultural land, where more than 60% of the population live. In this connection, the need to preserve unique sections of the earth’s surface and water areas becomes obvious.

In the process of writing the article, an extensive analysis of the regulatory framework in the field of environmental protection and the process of creating protected areas was carried out, the dynamics of the growth of the area of protected areas of federal significance was revealed.

The results obtained allowed concluding that the creation of protected areas of federal significance is a laborious and rather costly process. This article provides a recommended list of sections for a comprehensive assessment of the territory, which is a fundamental and integral part of the environmental and economic feasibility study of the established state nature reserve.

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