

Territorial environmental management in conditions of strict environmental limitation (on example of territories with special status)

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Abstract. The mechanism of territorial environmental management in the possessing unique natural and geographical characteristics is proposed. Their uniqueness is an objective criterion for giving them a special status that does not depend on the government interests. The main task of managing such territories is the competent combination of various instruments for regulating the use of natural resources and protecting the unique parameters. For this purpose, in addition to general environmental legislation, the standards of a special system of government regulation are applied. Therefore the same land plot falls within the scope of the several legal regimes, which causes difficulties in definition the priority regime. On example of Lake Baikal a mechanism of legal environmental zoning has been developed that allows making decisions in the condition of a lot environmental limitations oriented to protecting unique territorial properties. Legal zoning is informational mechanism of territorial management that regulates relations in the field of land use, reflecting contradictions in real and permitted use and allowing a long-term forecast of territorial development. With use of geographic information systems operation of laws on the territory in the form of the map of legal zoning is visualized that allows to be easy guided in legislative space.

1. Introduction

Any activity in the territory is related to the attitude of people to the land, to its various areas, types of use, possession, and lease, protection from negative consequences and restoration of potential, i.e. to everything that, one way or another, is perceived in the system of relations of ownership of land. To determine the nature and intensity of the use of land, the natural possibilities of the available resources and the limits of these possibilities must be taken into account. The use of these resources without taking into account the limits of ecological opportunities leads to the destruction of ecosystems [1] (environmental damage) and, as a result, to economic damage.

Any use of nature is impossible without the implementation of general land use. Therefore, in addition to the activities shown on the ground, the system of relations to resources is fixed in normative and legal acts of different levels, imposing various limitations on the use of the territory and showing preferable standards of action on them. Often, the same land is subject to several legal regimes: a specific category of land, a territorial zone and a zone with special conditions for the use of territories [2], causing difficulty in determining its priority legal regime and as a consequence, priority of use and protection.



In addition, the existing environmental protection mechanism in the Russian Federation is oriented to the consideration of the situation as a whole and does not allow for taking into account regional and local (municipal) features of the territory where the complex of unique spatially interacting geographical objects that are characteristic of a specific territory is most clearly manifested. Underestimation of local characteristics makes it impossible to ensure the targeting of management decisions and impacts, as well as the full protection of unique objects in a particular area [3]. To ensure the adequacy of management impacts on nature, taking into account local conditions, it is necessary to apply the principles of territorial management.

2. Territory with a special status

When it comes to the use of unique natural objects that are most attractive from the point of view of recreation, recreational use of natural resources and investments, all existing environmental protection mechanisms in the Russian Federation [4] are included in full force to ensure the safety of the facilities and are not sufficient. Environmental and economic activities for the use of unique resources are strictly regulated by special legislation at various levels, establishing a special protection regime and imposing significant restrictions on use. It is appropriate to use the notion of "territory with a special status" [5] - part of the territory of Russia, in relation to which a special system of state regulation for the formation and maintenance of certain parameters peculiar only to a given territory is normatively established, or unique to achieve state interest, the system of power and delimitation of powers.

The most striking example of a "territory with a special status" is Lake Baikal - a UNESCO World Natural Heritage site that attracts not only the close attention of tourists, but also potential investors. Baikal is the deepest lake on the planet with ultra-fresh water and unique ecosystems located along its banks.

The main document that provides legal regulation in the field of its protection and basic rules of economic activity is the Federal Law "On Lake Baikal Protection" (of May 1, 1999 No. 94-FZ, only one federal law adopted for a particular natural object) and related legislative and legal acts. It should be noted that, despite a significant number of regulatory documents of different levels and departmental affiliations, researchers in the field of environmental law note the weak points of environmental legislation as one of the main conditions for securing Lake Baikal [6].

Any water body in the Russian Federation has legally defined zones: a coastal strip (20 m from the coastline), a coastal protective strip (30-50 m, depending on the slope of the shore of the water body), water protection (50-200 m, depending on the length of the river and 500 m near the lake) (Water Code) and fish protection (RF Governmental regulation, of October 6, 2008 No. 743). Within their borders, a special regime for the implementation of economic and other activities is established to prevent pollution, clogging, siltation of these water bodies and depletion of their waters, as well as to preserve the habitat of aquatic biological resources and other objects of the fauna and flora.

Lake Baikal, as a territory with a special status, having its own system of government regulation, falls into even more limitations. The boundaries of the site of the World Natural Heritage "Lake Baikal" coincide with the boundary of the Central Ecological Zone of the Baikal Natural Territory (CES BNT). The RG Government edict No. 368 (of March 5, 2015) equated the water protection zone of Lake Baikal with the CEP of the BNT in order to minimize possible negative impacts, reduce existing man-made loads on the water body, preserve the biological diversity of Lake Baikal's unique ecological system and optimize the use of potential opportunities for the development of protected areas.

As a result of the imposition of environmental laws, Baikal falls into the system of severe environmental constraints of economic activity, which makes the sustainable economic development of these territories extremely difficult [7]. At the same time, the regime of strict restriction of economic activity allows to maximally ensure the protection and conservation of Baikal, thereby implementing the government's environmental policy in respect of the World Natural Heritage site.

In the most difficult position was the 500-meter coastal zone of the lake Baikal, because in addition to the specially established restrictions on activities in the territory with a special status (CES BNT and

water conservation zones), there are general limitations on the fish protection zones, coastal protective bands and coastal stripes of general use. Part of the territory falls under the additional effect of limitations imposed on the conduct of economic activities in the territory of specially protected natural reservation.

3. Methodology

In conditions of various environmental restrictions, economic activity on a territory with a special status without damage to nature is possible only on the basis of the territorial principle of environmental management. The main task of territorial management is the simultaneous consideration of natural, economic and social factors of the development of the territory. Management is carried out by a system of territorial bodies of management of various levels that are responsible for the state of the environment in the jurisdictional territories; see to the implementation of state environmental programs and environmental measures. The territorial management takes into account the interconnection of environmental components, ensures control over the use of natural resources by nature users and encourages them to use resource-saving technologies.

For the effectiveness of territorial management, a tool is needed that accurately and visually regulates relations in the use of resources and lands, a mechanism that visually represents the operation of environmental regulations and reflects the contradictions in real and permitted use. The quality of such management largely depends on the usefulness and timeliness of the receipt of characteristics about the territory, on the visibility and availability of their presentation. In the tasks of territorial management, the information, with the help of which decisions are made and their consequences are assessed, acquires a system-forming significance.

To make decisions in the current situation of multi-level environmental restrictions, we have developed a tool for legal environmental zoning - an instrument of information (legal) support for decision-making in the mechanisms of territorial management that ensures the adequacy of managerial decisions through the consideration of objective and stable features of the region [8]. Legal zoning is an expression of the modern system of relations to the land at the state, regional and local levels, enshrined in laws and regulations. It regulates relations in the use of land and resources at the level of the constituent entity of the Federation and the municipality (district), allows to visualize the effect of environmental regulations and implement a long-term forecast of territorial development. With its help, the adequacy and targeting of management decisions and impacts on a particular territory is ensured by unambiguous and accurate interpretation of multi-level environmental restrictions on the conduct of economic activities for each specific site (local location features and targeted management, rather than regulation of the situation as a whole).

4. Results and Discussion

At the heart of legal zoning lies the division of the territory into a certain number of zones, where for each land plot within these zones, certain regulations are established. It is clear that it is possible to draw boundaries for the implementation of a normative act only when the structure of the natural basis of the territory is known. For example, water protection zones are defined on both sides of the river in width, depending on the extent of the river (figure 1). Obviously, even in this simplest case it is necessary to know the location of the river and its natural characteristics. The geoinformation systems (GIS) containing the entire volume of basic information (topographic and landscape basis, natural and economic infrastructure, space images, forest taxation database, socio-economic characteristics of populated areas, etc.) are the best tool for obtaining a complete and clear picture of the structure and potential of the territory, what is potentially necessary for solving various tasks of territorial management [9].

Each information object contained in the GIS has a replenishing set of basic and unique characteristics, which allows, taking into account legislative environmental regulations, automatically assign it to the appropriate environmental category with strictly defined regulations for conducting economic activities. Such regulations can be: types of permitted use of environmental management

facilities, the maximum loads on the territory, the restoration potential of the territory. Laws are, as it were, refracted on the terrain and act in accordance with how significant and meaningful their application is for a particular object. Thus, a map of legal environmental zoning is obtained, which visualizes the regulatory and legal framework for a particular territory. The system of laws becomes not in itself, but oriented to a particular object of use.

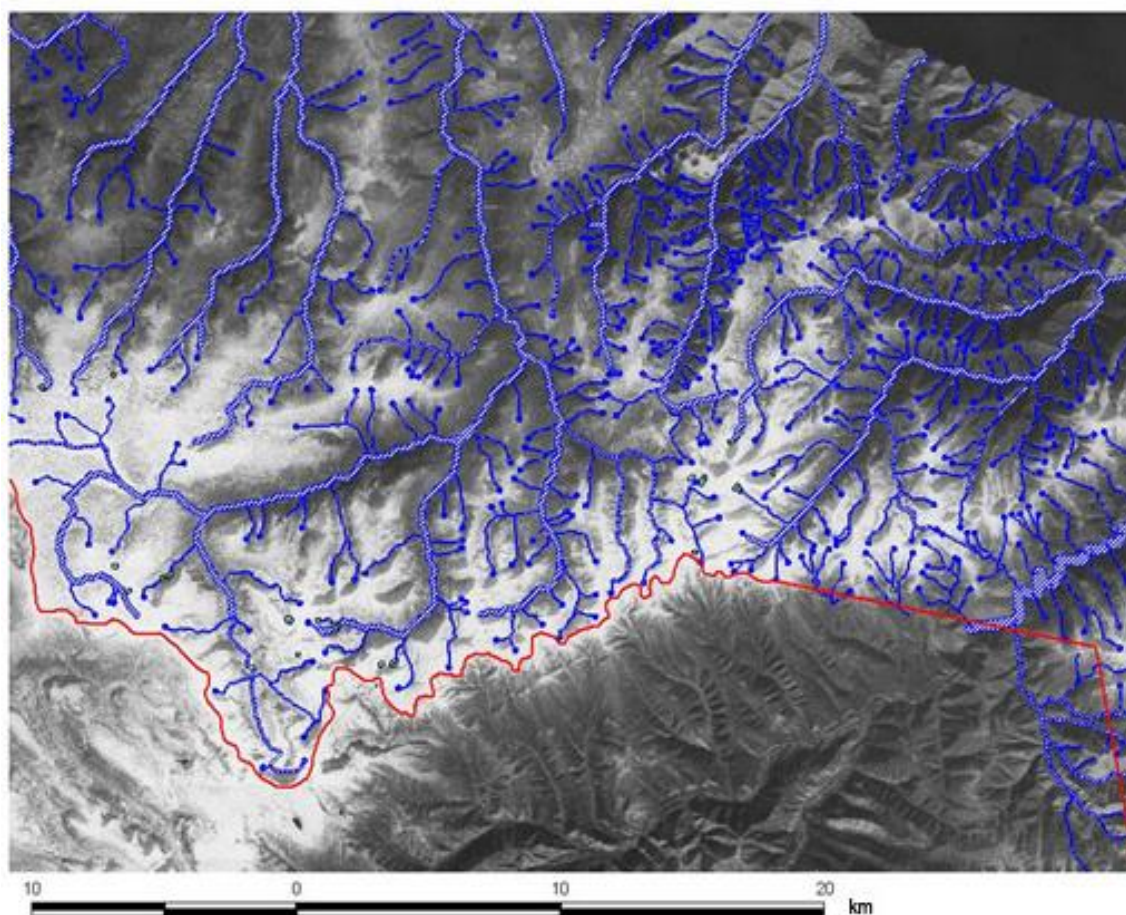


Figure 1. Water protection zones of rivers and their sources.

For visualization of normative and legal information, methods of through geographical mapping of the territory are used, the logic of which is based on the unity of the three coordinate principles "nature - economy - population". In this case, GIS technologies not only allow to speed up the processing of information, but also harmoniously supplement the standard operations with databases with the advantages of visualization and the ability to solve spatial analysis problems using electronic maps and involving mathematical modeling and through mapping methods [10].

A multi-layered map of the legal zoning of the Slyudyanka district of the Irkutsk region, which is part of the CEZ BNT, reflecting the features of the legal regulation of nature protection activities was created.

It can be seen (figure 2), as a result of the imposition of environmental laws, the entire territory of the region falls into the system of severe environmental constraints of economic activity, among which it is difficult to find a suitable place for conducting economic activities. However, such territories are found. Simultaneous visualization of all current regulatory and legal acts of all levels in the form of a map of legal environmental zoning makes it possible to identify areas on which it is possible to conduct legally permitted economic activities.

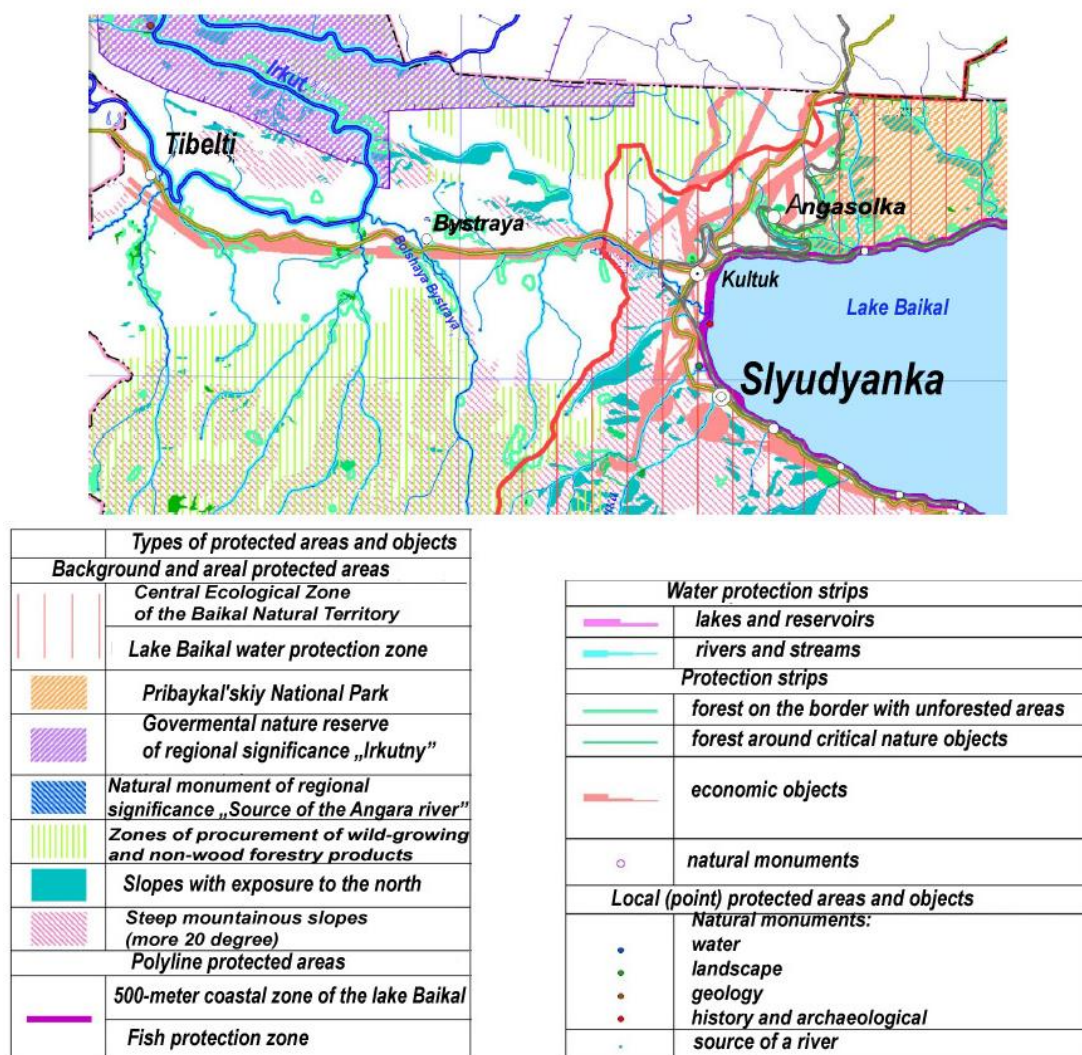


Figure 2. Fragment of the legal zoning map of Slyudyanka district of the Irkutsk region.

At the next stage, the management of nature use in the territory should be carried out taking into account the category (purpose) of land (established and regulated by the Land Code of the Russian Federation and other legislative acts and federal laws, including laws established in Russian Federation and established in certain subjects of the Russian Federation) and also the permitted use of land. The legal regime of lands established by the Land Code of the Russian Federation should be adjusted taking into account environmental restrictions identified as a result of the legal environmental zoning procedure. The final determination of the type of permitted use of the land parcel assumes the definition of a specific purpose for the use of this land plot, taking into account all possible restrictions, including the assignment of those types of activities that can be carried out on the land plot by its proprietor, types of objects that can be located on land and types of rights property.

5. Conclusion

Since in the territories with special status the same land area falls under the influence of several legal regimes: a specific category of land, a territorial zone and a zone with special conditions for the use of territories, it is the proposed territorial management mechanism that will overcome the difficulties in determining its priority legal regime and organize its targeted and sustainable use.

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