

Social Assessment of Specially Protected Natural Areas



**Galina Viktorovna
MIKHAILOVA**

Ph.D. in Pedagogy

Institute for Environmental Issues of the North, Ural Branch of RAS
23, Northern Dvina Embankment, Arkhangelsk, 163000, Russian Federation,
mihaylov@atknet.ru



**Valerii Antonovich
EFIMOV**

Institute for Environmental Issues of the North, Ural Branch of RAS
23, Northern Dvina Embankment, Arkhangelsk, 163000, Russian Federation,
valerefimov@yandex.ru

Abstract. Approaches to the consideration of functions of specially protected natural areas (SPNA) in the development of society seek to determine the size of the territory withdrawn from agricultural use for the purposes of nature conservation; these approaches also aim to evaluate money revenue gained from these territories. However, the influence of SPNA on public life is not reduced to the “monetization” of the territory. People who live near conservation areas and experience the advantages (disadvantages) of such neighbourhood should be the focus of the study of the social role of protected areas. The social role of SPNA in the life of local communities in the Arkhangelsk Oblast and the Karelia Republic was identified with the help of public opinion survey. In total 575 people participated in the survey. The research was carried out in the settlements located within the boundaries of Kenozersky and Vodlozersky national parks, and near Shilovsky Nature Reserve. When measuring the impact of conservation areas on the society of the neighbouring settlements, the authors define the axiological, emotional-and-psychological, activity-and-regulatory, economic, forecasting and integrated components. The research findings show that the residents acknowledge the conservation value of protected areas; many of the inhabitants of adjacent territories do not experience inconveniences in connection with the special environmental regime, they earn income connected to the operation of SPNA; there is a positive attitude towards the activity of SPNA.

If these areas cease functioning, then one third of the respondents expect negative changes in their life. Specially protected natural areas contribute to the socio-cultural and spiritual development of the local community to a greater extent in comparison with its socio-economic development. The presence of SPNA on the territory of the municipality opens up opportunities for new types of economic activities, provides employment in the field of recreation and tourism.

Key words: specially protected natural areas, social function of nature conservation areas, sociological surveys, environmental management, remote rural settlements.

Specially protected natural areas (SPNA) are established in order to preserve natural diversity, ensure environmental security and sustainable development of society. However, the establishment and functioning of protected areas for the benefit of nature and man can conflict with the need for economic development of the natural environment to satisfy economic and other needs of society and its individual groups.

The International Union for Conservation of Nature (IUCN), which comprises 82 countries including the Russian Federation represented by the Ministry of Natural Resources and Environment (Minprirody) indicates that the aim of specially protected natural areas is to conserve nature and the services it provides to man: food, clean drinking water, protection from natural disasters, mitigation of climate change. In contrast, biodiversity reduction and climate change can affect human well-being and the availability of means of livelihood, because natural capital is being destroyed and global and local sustainability is being undermined [9]. However, the need to demonstrate evidence of significant contribution of SPNA to the economy and society remains an urgent issue to be solved.

The ratio of the area of SPNA and the area of the region is used as one of the key indicators of sustainable development of the territory. According to the international convention, a strategic plan for preserving biodiversity for 2011–2020 assumes that 17% of land and 10% of water areas will be allocated as protected natural areas [9]. The share of the territory occupied by the SPNA of federal, regional and local importance in Russia in 2014 amounted to 12% of the total area of the country. As a result of implementing the RF state program “Environmental protection” for 2012–2020, this figure is expected to reach 13.5% [2]. Russian experts argue that the share of protected areas cannot be universal or similar for different regions of the country. Quite obviously, the less attractive areas for resources, the fewer obstacles for their inclusion in protected areas and vice versa [3]. However, such a directive instruction from the international organization concerning the expansion of protected areas in Russia’s regions in practice becomes an incentive for managerial decision-making on the creation of new protected areas.

The contribution of SPNA to the revenue part of the budget of the territory (country) is another indicator of functioning of SPNA

that concerns the social and economic sphere. When more than half of federal budget revenues in Russia comes from mineral extraction industries, the development of a system of SPNA appears to contradict the economic development objectives of the country and its regions. There are examples of initiatives put forward by representatives of the Committee on Natural Resources and Environmental Protection of the Federation Council on improvement of legislation concerning the creation, change of the boundaries and mode of protection of SPNA, and cases of their abolition for the needs of subsoil users. In this case, “part of the profits from mineral extraction can be allocated to the development of SPNA, expansion of biodiversity, and replenishment of the budget” [4]. Here we are speaking mainly about the Siberian, Far Eastern and Northwestern federal districts, where the number of SPNA is the greatest (47, 25 and 13% of the territories, respectively) and strategic mineral reserves are concentrated.

The income from tourism in SPNA is often correlated with real money contribution of these areas to the revenue part of the budget. Northern regions consider the recreation potential as a socio-economic development factor. Here we should note the positive experience of the Republic of Karelia, where in 2010 the gross income from tourism amounted to 3.8 billion rubles a year, and one of the main tasks of the Government of the Republic of Karelia is to make the tourism industry one of the region’s three major industries along with the timber and mining industries [12].

At the same time, the application of the targeted commercial approach to the functioning and development of SPNA undermines the foundations of this fragile branch of natural resources management, contributes to the loss of the idea of nature protection. As the analysis of world experience in building a network of SPNA, the focus on the rendering of recreational services to the population, while important to the economy, often does not contribute to effective environment protection and biodiversity conservation [7]. In Russia Protected areas such as national and nature parks are intended for regulated tourism. The goal of nature conservation in nature reserves and parks can not always be successfully combined with tourist activity in these areas. According to A. M. Khomyakova, an expert at Russia’s Minprirody, the modern system of SPNA combines “nature conservation” and “rational nature management”, and shifts the emphasis more and more toward the latter. The dominance of the socio-economic component in the concept for development of the system of SPNA leads to erosion and further devaluation of the original idea of establishment of protected areas [14].

The recovery from the violators of the sums charged under the claims for the compensation of damage caused to natural objects is a rather controversial indicator used by Rosprirodnadzor for assessing the effectiveness of national parks. Organization of protection of nature reserves and objects is considered one of the main issues of SPNA; the website of the Ministry

of Natural Resources provides a list of national parks that recovered the maximum amounts claimed from the violators. Thus, in 2006 there were six national parks, each of which recovered from 230 thousand rubles up to 1 million 800 thousand rubles, which amounted to 82% of all the amounts claimed by the parks system. These national parks are located in the Kabardino-Balkar Republic, the Yaroslavl Oblast, Krasnodar Krai, Krasnoyarsk Krai, in Moscow and the Moscow Oblast, and in the Vladimir Oblast [10].

In the social context the assessment of activities of national parks by the amount of money claimed from violators may characterize the existence of conflicts in the relationship between the nature park and the population. Typically, a potential conflict of nature management is present in all SPNA due to the existence of contradictions between the priorities of nature conservation and economic development of territories [6]. In the conditions, when the mode of nature protection does not meet the requirements and needs of the population, there arises a misunderstanding, rejection and even opposition from the local residents, who are engaged in nature management in the protected areas. A protected area that is densely populated and actively visited has high probability of conflicts caused by the negative impact of anthropogenic transformation on the environment. However, the reasons for potential and actual conflicts are often rooted in the lack of consideration of the interests of the residents at the pre-design stage of

creating SPNA, and arise in the process of formal participation in the environmental protection.

When discussing the strategy of territorial development and demonstrating the influence of SPNA on the implementation of socio-economic objectives, a key indicator is the *standard of living in the settlements adjacent to SPNA*. However, the impact of SPNA on the life of local communities cannot be estimated without assessing the overall socio-economic situation in a given territory and without taking into account the orientation and dynamics of social process. Thus, the period of formation of national parks in the northern regions in the 1990s coincided with the widespread bankruptcy and collapse of agricultural and forestry enterprises, the reduction of incomes of residents in remote northern settlements. The state of degradation and decline was observed in the forest settlements of Karelia [11], the majority of the population living below the poverty line in the Arkhangelsk region were rural residents. In other words, a low standard of living in the settlement adjacent to SPNA may not be an adequate indicator of the influence of conservation areas on the development of a society; moreover, this figure does not take into account the opportunities for self-sustainment implemented by the population: money revenue from collecting berries and mushrooms in SPNA.

An important objective of activities in SPNA is to integrate non-economic environmental values in the management of territorial development. Environmental-economic assessment of natural sites and

ecosystem services is implemented with the use of a standardized set of evaluation principles and methods developed in the framework of environmental and economic accounting (Integrated Environmental and Economic Accounting, 1993, 2003) and successfully applied in most countries of the world. There are three basic *approaches to the money evaluation of natural sites and ecosystem services*: market valuation, non-market direct (subjective) valuation, and non-market indirect valuation. The objects of economic valuation of natural resources and ecosystem services provided on the territory of SPNA are forest resources (including timber resources, non-timber resources, hay (mowing), rare plants, carbon sequestration by forests), recreational resources, hunting resources, fish resources, land resources, mineral resources, etc. Resource assessment of SPNA is based on the net economic income that local residents obtain from gathering the resources for personal consumption and for sale. The use of natural resources and ecosystem services of Bystrinsky Nature Park (Kamchatka Krai, Russian Federation), according to the results of economic valuation, was 1,046,095.4 thousand rubles a year (data for 2007) [15].

The subjective component of assessing the effectiveness of protected areas is also important. The results of sociological surveys are used in addition to money evaluation of natural sites and ecosystem services of SPNA. Thus, the analysis of the efficiency of SPNA in the Komi Republic took into consideration the opinion of

its residents about the contribution of protected areas to the region's socio-economic development (maintenance of the quality of life, development of local economy, provision of residents with jobs, creation of constraints for the region's development) and the nature of interaction between local population and SPNA (restriction of traditional activities and attendance of the areas) [13].

The World Wildlife Fund uses a methodology for assessing the effectiveness and prioritization of protected areas management; the methodology was developed in 2000 and tested in Algeria, Cameroon, France and Gabon, and after that – in China, Russia and South Africa [16]. The methodology is based on an expert survey and evaluates different aspects of SPNA, including its social significance. In particular, experts evaluate the ability of SPNA to provide economic opportunities for people residing in these areas or near them, to create conditions for improving the standard of living and/or maintain the traditional nature management of local residents, to perform religious or spiritual purpose, etc. [8].

Thus, the necessary data on the effectiveness of SPNA are obtained by using sociological methods, surveys of experts or the public in general, i.e. the consumers of ecosystem services. We think that the opinion of the residents who live near the protected areas and who directly experience the advantages and/or disadvantages of this neighborhood is an important object of the research on identifying the social significance of protected areas.

The social role of protected areas in the life of local communities in the Arkhangelsk Oblast and the Republic of Karelia was identified through the study of public opinion using the method of survey. A special questionnaire included questions relating to various spheres of life and nature management; besides, the issue of functioning of SPNA was discussed with the residents who were interested in it. The research was conducted by the staff of the Institute of Ecological Problems of the North, the Ural Branch of RAS in the settlements located within the boundaries of Kenozersky and Vodlozersky national parks, and near Shilovsky Nature Reserve. Vodlozersky National Park is located on the territory of the Republic of Karelia and the Arkhangelsk Oblast, occupies an area of 0.5 million hectares and is a UNESCO biosphere reserve. In the western part of the Park the rural settlement of Kuganavalokskoye is located, in which 470 people were registered at the time when the survey was conducted. Kenozersky National Park occupies 141.4 thousand hectares in the south-western part of the Arkhangelsk Oblast at the border of Plesetsky and Kargopolsky administrative districts. Here about 2.5 million people live in the villages of Morshchikhinskaya, Orlovo, Vershinino, rural settlements of Pocha, Ust-Pocha and others. Shilovsky State Nature Reserve of regional significance occupies the area of 23.9 hectares in Krasnoborsky district of the Arkhangelsk Oblast. The Reserve was established for preserving rare and valuable game animals.

The municipalities of Permogorskoye (3.2 thousand inhabitants) and Cherevkvskoye (0.7 thousand inhabitants) are adjacent to the territory of Shilovsky Reserve.

We define the axiological, emotional-and-psychological, activity-and-regulatory, economic, forecasting and integrated components of the sociological assessment of the impact of specially protected natural areas on the residents of the neighboring settlements. *Table 1* presents the data obtained in the course of the research conducted in Kenozersky National Park (2007, sample of 349 persons, including 152 respondents from Kargopolsky sector, 197 respondents from Plesetsky sector), in Vodlozersky National Park (2008, 127 respondents) and Shilovsky Nature Reserve (2007, 99 respondents). The survey was conducted with the use of availability sampling; 575 people participated in it. In addition, the prospects of creating a national park were discussed with the local population of the village of Soyana during an international environmental expedition to Soyansky Nature Reserve (1998).

Table 1 presents average values for specified territories. The surveys were conducted in different time periods, in different socio-economic situations caused by a change in the legislation, which, of course, affected the relationship between the residents and SPNA as agents of change in the sphere of nature management. Therefore, in our opinion, the trends identified in the assessments given in the table represent the most valuable research findings.

Table 1. Assessment of the impact of SPNA on the residents of the settlements
(represented as a percentage of the number of all the residents interviewed)

Answer options	Kenozersky and Voslozersky national parks, Shilovsky Nature Reserve
Axiological component of the assessment	
How would you assess the role of SPNA in nature conservation in your region and Russia in general?	
Very important	19
Important	53
Of little importance	26
Other (<i>what exactly, please, specify</i>)	2
Activity-and-regulatory component of the assessment	
How often do you have problems in connection with nature conservation regime in SPNA?	
Very often	4
Often	11
Occasionally	29
Very seldom	12
I don't have any problems/ it's difficult to answer	44
Emotional-and-psychological component of the assessment*	
What is your attitude toward the activities of SPNA?	
Positive	41
I don't care about it	16
Negative	18
It's difficult to answer	25
Economic component of the assessment*	
Do you receive income related to the existence of a national park?	
Yes, I have a regular income	13
Yes, I obtain income sometimes	20
Other / I don't receive any income / it's difficult to answer	67
Forecasting component of the assessment	
How will your life change if the activities of SPNA cease?	
My life will be better	6
My life will not change	46
My life will be worse	36
Other (including those who found it difficult to answer)	12
Integrated assessment*	
Does the activity of SPNA promote <i>socio-economic</i> development of the local community?	
It does	43
It doesn't	48
Other / it's difficult to answer	9
Does the activity of SPNA promote <i>cultural and spiritual</i> development of the local community?	
It does	63
It doesn't	31
Other / it's difficult to answer	6
* The results of the surveys concerning Kenozersky and Vodlozersky national parks; the data on Shilovsky Nature Reserve is not available.	

The *axiological* component of the assessment relates to the value, subjectively defined importance, and utility of protected areas for nature conservation. The degree of importance of SPNA can show that the residents agree or disagree with the necessity of nature conservation and the importance of SPNA. In this regard it should also be noted that it is common practice to underestimate the uniqueness and value of nature by those who live near a conservation area, because for them this environment is ordinary and customary. “Why create a national park? We are doing well in preserving our nature on our own”, the residents of a remote northern village of Soyana wondered. The nature conservation status of the territory, the interest of researchers, representatives of culture and tourists in protected areas helps to understand the specifics of such places, to realize their significance “for themselves” and “for others”. In the territories under consideration the respondents recognized the value of protected areas: about 70% of the respondents chose the answer “important” or “very important”. The survey results may indicate that the recognized and legitimized value of natural areas corresponds to the value and significance that the respondents who live in the settlements near SPNA attach to these territories.

The *activity-and-regulatory component* of the assessment shows the impact of nature conservation regime of protected areas on the life of local communities. In general, from 40 to 30% of the residents surveyed do not feel any inconvenience in connection with nature conservation

regime. From 30 to 25% of the residents have occasional problems in this respect; from 20% to 10% of the respondents often have problems in connection with the established rules and constraints to environmental management. As a rule, national parks have the necessary conditions for nature management, and provide incentives for the local population. At the same time, natural resources are not only a means to sustain life, but also a certain intrinsic value, when people say: “I can’t live without the forest, without the lake”, “I love fishing, hunting” (Kenezersky National Park), “Forest is health, livelihood, it’s our life!” (Shilovsky Nature Reserve). The inhabitants of the settlements adjacent to protected areas perceive any restrictions as a violation of that value, and they are frustrated by the need to comply with the terms (to fish under the permit, etc.). According to some respondents, what they have been doing for centuries is now prohibited, controlled and must be paid for.

The residents who live near Shilovsky Nature Reserve are interested in strengthening the conservation regime for non-resident visitors of the protected areas; about half of the respondents agreed to the necessity of limiting the number of outsiders who can gather mushrooms and berries in the nature reserve. This is due to the fact that the increased demand for these non-timber products causes excitement and barbarian attitude to nature. Opportunistic people hire anyone, including random people and cardboard dwellers to collect mushrooms and berries. Mushrooms

and berries of any quality are collected. Mushroom waste and other traces of human presence remain in the forest.

The emotional-and-psychological component of the assessment focuses on the nature of the relationship of respondents toward the functioning of SPNA. The obtained results show that the general attitude of the local residents toward the activities of national parks is sooner positive (41%) than negative (18%). A quarter of the respondents found it difficult to answer or was unable to define their attitude towards the park, this may indicate the ambiguity in the attitude of the population toward the park. The respondents have difficulties because they do not have enough information and knowledge about the ongoing objectives of the park; they assess the activities of the park through the prism of personal attitude toward the park staff, etc.

The economic component of the assessment reflects the impact of the park on the living standards of the population. In our studies, from 30 to 40% of the respondents obtain income in connection with the activities of the park. These respondents include permanent and temporary employees of the park, and those who earn income through self-employment. The population of the settlements adjacent to SPNA also earns income from the resources of these areas: they sell fish, gather wild plants, etc. For example, Shilovsky State Nature Biological Reserve of regional significance formed for the purpose of preservation and restoration of game animals, is the so-called

“homeland of boletus edulis”. According to local residents, mushroom pickers earn up to five thousand rubles per day during the mushroom growth season (data for 2007). Not only many mushroom pickers, but also many buyers arrive in the area at this time of year. The price of mushrooms can reach 200 rubles per kilogram. Some people who gather mushrooms and berries (blueberries, cranberries) earn up to 100 thousand rubles per season. For comparison we note that a survey about the average monthly income of the respondents when calculating per person was 4.2 thousand rubles.

The forecasting component of the assessment refers to the forecast that shows the change in people’s life in the case of termination of activities of the park. According to this scenario, one third of the respondents (36%) can expect deterioration of their life. Nearly half (46%) of the respondents think that their life will not change. There are those who hope for a favorable change if the activities of SPNA are terminated (6%). The basis of these opinions can be understood if we analyze the responses to the open question: “How would your life change if the SPNA ceased to function?”. Some believe if it were not for SPNA, everything would be as it had been before; state farms would flourish, and enterprises would be functioning. Indeed, the creation of national parks coincided with the period of bankruptcy of agricultural enterprises and the ordinary consciousness perceives these two processes as interdependent. There is also an opinion according to which the park is seen as a competitor in rendering the tourist services,

which means that if the activities of the park were terminated, life would improve, some respondents believe. At that the residents have groundless expectations that with the disappearance of the SPNA the functional use of this territory will not change, it will also be withdrawn from economic development. They do not realize that thanks to the creation of a national park the area is preserved, it is not transformed and remains attractive to tourists. At the same time, the current desolation of remote rural settlements did not remain unnoticed. Therefore, it is no coincidence that the majority of respondents predict that their settlement would be abandoned without SPNA, just as many other settlements in the neighborhood are desolated today.

The integrated assessment of the impact of specially protected natural areas on the residents of the settlement shows that SPNA (national parks) promote socio-cultural and spiritual development of the local community to a greater extent than socio-economic development. Indeed, the preservation, study and revival of historical and cultural heritage is one of the main objectives of national parks; they systematically implement the measures to restore shrines, to return the lost historical memory. A starting point of the revival of spiritual life in the neighborhood of Vodlozersky Park was the restoration of Ilyinsky Pogost (a monument of architecture of the 18th century), memorial crosses and chapels, where regular church services are held. The 18th – 19th century chapels, old peasant houses (monuments of civil architecture), and hydraulic engineering

structures (dams and mills) are currently being restored in Kenozersky National Park. In 2014 Kenozersky Park completed emergency prevention and conservation work on the objects of cultural heritage, architectural monuments of the late 19th century – the Church of the Presentation of the Lord in the village of Ryapusovsky Pogost, and the Church of Saint George the Victorious in the village of Kazarnovskaya. The national parks host bell-ringing festivals and traditional holidays, which are attended by local residents and pilgrims from different cities of Russia [1, 5].

The presence of SPNA in the territory of a municipality opens up opportunities for new economic activities, provides employment in the field of recreation and tourism. The respondents' attitude toward the development of tourism in protected areas is presented in *table 2*.

From 38 to 74% of the respondents express their positive attitude toward the possibility of tourism development. It should be noted that the residents who have the experience of working in the tourism sector, have a more positive attitude toward this type of activity. On the contrary, 72% of the respondents do not wish to participate in the sphere of recreation and tourism under any circumstances in the nature reserve, in which the organized tourism is not developed.

In conclusion, we note the following. In modern conditions the improvement of the system of SPNA is a necessary measure for the preservation of biological diversity of natural systems, maintenance of a favorable environment, preservation of

Table 2. Distribution of answers to the questions about the development of tourism in specially protected natural areas, in %

Answer options	Kargopolsky sector of Kenozersky National Park	Plesetsky sector of Kenozersky National Park	Vodlozersky National Park	Shilovsky Nature Reserve
What is your attitude toward the possibility of development of tourism in SPNA?				
Positive	74	57	49	38
I don't care	22	32	25	5
Negative	3	10	19	49
Other	1	1	7	8
In what way would you like to participate in the activities of SPNA, and in the development of tourism in SPNA? (respondents could choose more than one answer, so the total does not equal 100%)				
To be a full-time employee: a game-keeper, guard, guide, etc.	30	17	32	15
To provide accommodation for tourists	11	10	18	4
Provide with foodstuffs	9	15	8	1
To make handicrafts, souvenirs	5	10	4	5
To organize trade in handicrafts, souvenirs	2	3	4	5
To show tourists the elements of the traditional way of life, rituals, crafts	3	3	8	3
Other participation	7	14	4	3
I don't want to participate in the organization of tourism under any circumstances	23	30	35	72

cultural values. One of the main tasks of the environmental management of territories and objects is to integrate them in the socio-economic development of regions.

The results of the present study show that protected areas (national parks) contribute to the social and socio-cultural development of the territories. The presence of SPNA in the territory of the municipality opens up opportunities for new types of economic activities, and provides employment in the field of recreation and tourism. This is especially important for remote territories of the European North, where the industrial activity is not developed.

The proposed approach to assessing the social function of specially protected natural areas on the basis of the study of public opinion reveals the attitude of the population toward SPNA, its socio-economic importance, and can be used to study the role of protected areas in the territory's development. The results of the research on the social importance of protected areas with the allocation of the axiological, emotional-and-psychological, activity-and-regulatory, economic, and forecasting components of the assessment reflect the diverse nature of the impact of protected areas on the people living near them, show the relationship between environmental activities and various

aspects of social life. The latter is important for understanding the mechanism of realization of the idea of harmonious coexistence of man and nature based on the ways of rational nature management typical for the territory.

Along with the development of socio-economic trends in the activity of protected areas it is important to maintain a balance between nature conservation and the possibilities of economic use of the territory, including the use of biological resources. When the resources of a SPNA are constantly renewed (fish,

mushrooms, berries, animals, etc.) it is possible to allow their industrial use by methods that do not destroy ecosystems and natural complexes. When planning the establishment of protected areas, especially when developing the regulations, it is necessary to implement real powers of the public and local communities in the adoption of environmentally and socially significant decisions that will take into account residents' interests, minimize contradictions and conflicts in the stages of operation and development of protected areas.

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Information about the authors

Galina Viktorovna Mikhailova – Ph.D. in Pedagogy, Senior Research Associate, Institute for Environmental Issues of the North, Ural Branch of RAS (23, Northern Dvina Embankment, Arkhangelsk, 163000, Russian Federation, mihaylov@atknet.ru)

Valerii Antonovich Efimov – Senior Research Associate, Institute for Environmental Issues of the North, Ural Branch of RAS (23, Northern Dvina Embankment, Arkhangelsk, 163000, Russian Federation, valerefimov@yandex.ru)