“Management of the nature conservation areas of Ukraine’s Polissya region based on the international experience”

AUTHORS	Alina Yakymchuk https://orcid.org/0000-0002-5038-5215 http://www.researcherid.com/rid/A-7576-2017 Taras Mykytyn Andriy Valyukh

ARTICLE INFO	Alina Yakymchuk, Taras Mykytyn and Andriy Valyukh (2017). Management of the nature conservation areas of Ukraine’s Polissya region based on the international experience. *Problems and Perspectives in Management*, *15*(1-1), 183-190. doi:10.21511/ppm.15(1-1).2017.05
DOI	http://dx.doi.org/10.21511/ppm.15(1-1).2017.05
RELEASED ON	Wednesday, 10 May 2017
RECEIVED ON	Monday, 13 March 2017
ACCEPTED ON	Tuesday, 25 April 2017

LICENSE	This work is licensed under a Creative Commons Attribution-NonCommercial 4.0 International License

JOURNAL	"Problems and Perspectives in Management"
ISSN PRINT	1727-7051
ISSN ONLINE	1810-5467
PUBLISHER	LLC “Consulting Publishing Company “Business Perspectives”
FOUNDER	LLC “Consulting Publishing Company “Business Perspectives”

NUMBER OF REFERENCES	NUMBER OF FIGURES	NUMBER OF TABLES
33	4	0

© The author(s) 2026. This publication is an open access article.

Alina Yakymchuk (Ukraine), Taras Mykytyn (Ukraine), Andriy Valyukh (Ukraine)

Management of the nature conservation areas of Ukraine's Polissya region based on the international experience

Abstract

In ensuring sustainable development an important role belongs to natural preservation areas with different functions and modes of preservation, where an important place is occupied by natural conservation territories and natural conservation objects that form the natural reserve fund. A system of management of Natural Reserve Fund of Ukraine is associated with many problems and shortcomings. The authors have studied the experience of efficient management of similar institutions in other countries, such as the national natural and regional landscape parks. They have outlined prospects for the development of natural reserves in Ukraine in accordance with international standards and requirements. They have also outlined innovative tools for the protection of biodiversity. They have offered a range of measures to improve the efficiency of the system of management of natural reserves based on the best international practices (establishing standard expenses of the state budgetary financing, insurance, the use of geoinformation technologies, grant projects and programs, adaptive management, restructuring of management, improvement of the organizational structure, effective system of paid services, etc.).

Keywords: natural reserves, experience in management, financing, Nature Reserve Fund.
JEL Classification: F01, F36, Q39.
Received on: 13th of March, 2017.
Accepted on: 25th of April, 2017.

Introduction

Statement of the problem in general and its connection with important scientific and practical tasks. In ensuring sustainable development, ecological balance of the environment, reduction of pollution, preservation of biological and landscape diversity an important role belongs to natural reserves with different functions and types of protection, the most important of which are natural reserve areas and conservation objects, which together form the Nature Reserve Fund (NRF).

The natural reserve areas and conservation objects play a significant role in the formation of the physical and spiritual health of any nation. The international community realized it a long time ago, giving great importance to the establishment of nature reserve territories to maintain environmental quality, biodiversity, cultural heritage, aesthetic and ethical traditions of the peoples. Today, almost one tenth of the earth's surface belongs to natural conservation areas: national parks, natural reserves, landscape reserves, marine protected areas (Hockings). In such European countries as Germany, Austria and Switzerland the percentage of natural lands reaches 18-37% of their territories.

© Alina Yakymchuk, Taras Mykytyn, Andriy Valyukh, 2017.
Alina Yakymchuk, Doctor of Economic Sciences, Professor, The National University of Water Management and Nature Resources Use, Rivne, Ukraine.
Taras Mykytyn, Ph.D (Engineering), Associate Professor, Rivne State University of Humanities, Rivne, Ukraine.
Andriy Valyukh, Ph.D (Economics), Director, Educational-Research Institute of Economics and Management, The National University of Water Management and Nature Resources Use, Rivne, Ukraine.

This is an Open Access article, distributed under the terms of the Creative Commons Attribution-NonCommercial 4.0 International license, which permits re-use, distribution, and reproduction, provided the materials aren't used for commercial purposes and the original work is properly cited.

Today, there are numerous developments regarding sustainable ecological and economic development, including in Ukraine. However, the effectiveness of management and economics of natural reserves, the assessment of the management system in Ukraine were not given proper attention. It should be noted that natural reserves and conservation objects in Ukraine were organized without sufficient scientific environmental and economic substantiation.

Organization of natural reserves and conservation objects was carried out mostly according to the criteria, which are individual for each area, without proper substantiation. Inconsistencies in their location were often observed. As a result of the prolonged economic crisis, the deficiency of financial resources and the lack of infrastructure provision, the Nature Reserve Fund has been in very poor condition, the solution of which is possible only under the conditions of restructuring in its organizational and economic mechanism, the creation of an effective system of management. Therefore, it is necessary to develop a national system of economic protection of natural reserves, stimulation of its development.

Presentation of the main material of research with complete substantiation of the obtained scientific results. The Natural Reserve Fund of Ukraine (as of 01.01.2017) consists of 8101 different territories and objects with the total area of 3200 thousand hectares, which is 6.05 per cent of the total territory of Ukraine. The share of Ukraine's nature reserves is more than 10.8 per cent of their total number in Europe (65 thousand objects) (Ofitsiinyi sait Ministerstva ekolohii ta pryrodnykh resursiv Ukrainy). The World Watch Institute provides the data that the total area of

natural reserves should be 10-12 per cent of the region's territory, that is, in the case of Ukraine it should be 6.10 million hectares.

According to the Law of Ukraine "On the Nature Reserve Fund of Ukraine", reserve funds are the areas of land and water, natural complexes and objects, which have a special environmental, scientific, aesthetic, recreational and other value and are created to preserve the natural diversity of landscapes, the gene pool of flora and fauna, to maintain the ecological balance and ensure environmental monitoring. Today there are 11 categories of the nature reserve fund – 7 natural and 4 artificial (of the park type). The natural categories include natural reserves (natural and biosphere), national parks, nature reserves, natural monuments, protected woodlands and regional landscape parks. The categories of the park type include botanical gardens, dendrological parks, zoos, parks-monuments of landscape architecture.

In the world practice of preserving the natural areas more recognition is gained by the approach based on the multiple use of natural reserves, which includes recreation, the quality of health, the use of biodiversity, aesthetic, cultural and educational benefits. Moreover, it appears that in addition to the function of preserving natural systems and public health, natural reserves, as evidenced by international experience, can be an important source of the budget's replenishment and make a significant contribution to the development of the local economy. For example, revenues from eight national parks in Australia exceed by 33.3 times the costs of the state for their maintenance (2.5 billion versus 60 million Australian dollars, respectively). Costa Rica annually spends about 12 million US dollars for the maintenance of its national parks, while the earnings from tourism exceed these costs by 27.5 times and make over 330 million US dollars. Tourism in the national parks is the second largest sector of this country's economy. According to the estimates of the famous American economist E. Swanson (University of North Carolina), income from tourism in the national parks of the United States is 5 times higher than the costs of their maintenance. To visit these natural museums Americans annually spend about 7 billion dollars.The studies conducted by the Economic Service of the International Union for Conservation of Nature (IUCN) together with the World Commission on Protected Areas (WCPA) show that in Canada an annual increase of GDP due to environmental measures reaches 6.5 billion Canadian dollars, which makes it possible to provide 159 thousand jobs and generate tax revenues of 2.5 billion Canadian dollars. In Japan, according to the estimates of the Ministry of Agriculture and Forestry, the forest and agroecosystems deliver public services in the amount of 240 and 120 billion dollars (12 per cent and 6 per cent of GDP, respectively), which has been reflected in the GDP since 1985. This played a role in the public policy of conservation and preservation of land occupied by natural ecological biozones, to search ways to generate income from them. According to various authors, Ukraine possesses from 12.8 per cent to 15.6 per cent of potentially suitable areas for recreational development. However, now the square of recreational categories in natural reserves (national parks, regional landscape parks and other categories of the park type) is 2.5 per cent of the country's territory, or 46.2 per cent of the total area of natural reserves). This indicates that the area of nature reserves in Ukraine can be significantly increased.

The assessment of efficiency in the management of nature reserves is necessary for conservation, identification and elimination of potential degradation of the natural regions. According to its content such assessment should include the analysis of both objective and subjective factors. M. Hockings, S. Stolton, N. Dudley note that the characterization of effective management of nature reserves cannot be reduced to a single indicator. It should be determined according to at least three variables: peculiarities of the legislative and executive power of the state, provision of necessary resources and support of the population. The authors of this article have complemented the scheme of factors that determine the possibilities of effective management of the nature reserve fund, which are shown in Fig. 1.

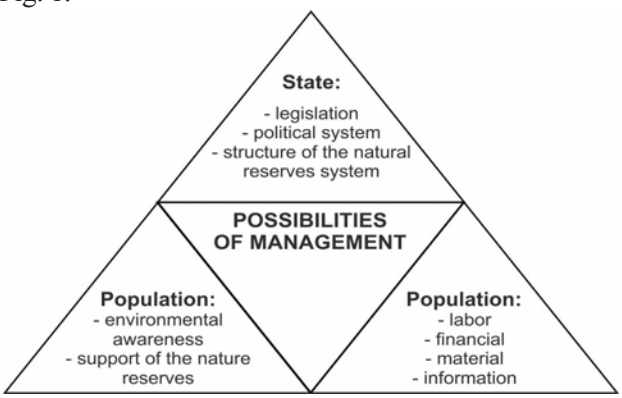

Fig. 1. Factors that form the system of management of nature reserves

Such comprehensive approach makes it possible to coordinate environmental activities not only by individual nature reserves, but by the region of Polissya of Ukraine as a whole. It is necessary to clarify that in this paper the Polissya region of Ukraine corresponds to the regions that are geographically located in the northern part of the country – namely, the regions of Volyn, Rivne, Zhytomyr, Kyiv and Chernihiv. According to article 8 of The Convention on Biological Diversity, the system of monitoring over the efficiency of management of nature reserves is to be included in the national program for environmental

protection. The current system of management of the natural reserve fund of the Polissya region is shown in Figure 2. We will give a short description and make an analysis of the current state of management of some natural and conservation objects of the Polissia territory of Ukraine.

1. Management of nature reserves and national parks

Management of nature reserves and national parks is carried out by special administrations under the leadership of a director. Such administrations have been created in the Shatsky and Desna-Starogutskiy national nature parks, in the Cheremskyi, Rivne, Polissyan nature reserves. All departments, services and their employees act according to the current legislation as well as the statutes and job descriptions approved by director. The Directorate, as an advisory body, has a scientific and technical council. Each nature reserve and national park has appointed scientific curators – scientific and educational institutions. All of the above-mentioned nature reserves and the Shatsky national nature park are subordinated to the State Forestry Committee of Ukraine with an exception of the Desna-Starogutskiy natural park, which is subordinated to the Ministry of Ecology and Natural Resources of Ukraine.

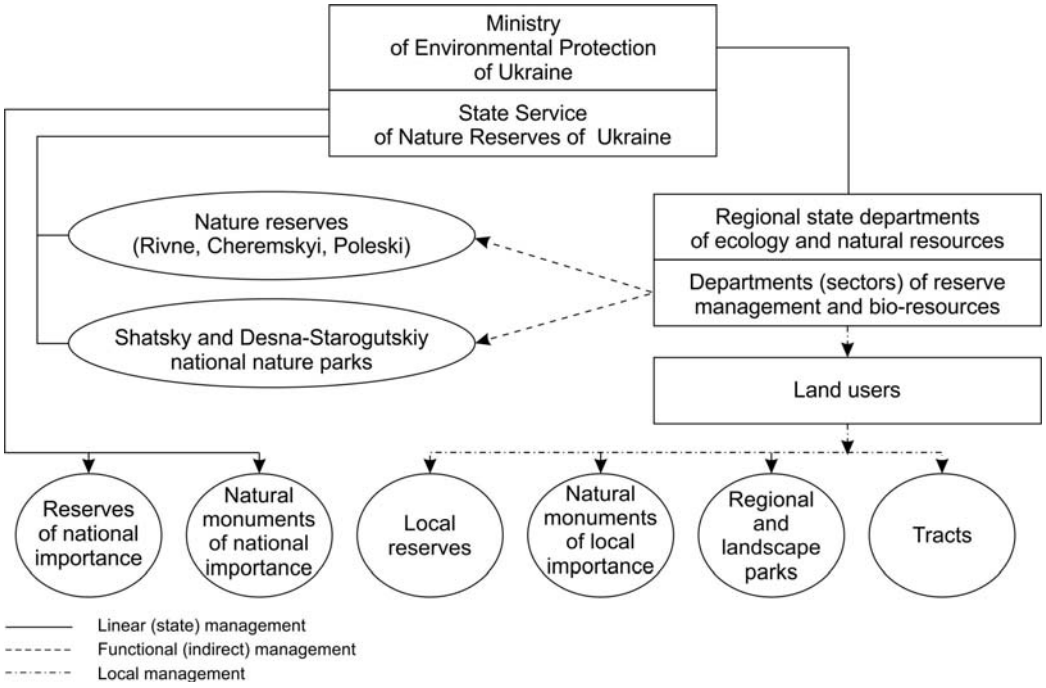

Fig 2. System of management of nature reserves

Management in the field of organization, protection and use of natural resources as well as state control over the maintenance of special regime on the territories of nature reserves and national parks is carried out directly by the sector of natural reserves management of the state administrations of ecology and natural resources of the regions. All nature reserves and national parks are recognized as legal entities, which have a status of research facilities, their own bank accounts, seals and emblems. Their protection relies on the security service.

To conduct research in nature reserves and national parks they have their own scientific departments. The major areas of research are determined on the basis of programs and coordination plans of research institutions, which are coordinated by the Department of nature reserves of the Ministry of Ecology and Natural Resources of Ukraine and the National Academy of Sciences of Ukraine. Other institutions and organizations can carry out research on the territory of nature reserves and national parks provided that there are special agreements signed with their administrations. The main form of generalization of scientific research is a description of the flora and fauna ("Chronicles of Nature"). Considerable attention is given to ecological education and educational work among the population, especially in national parks. There are many forms of such work: excursions along specially equipped ecological paths, eco-educational camps, educational expeditions and scientific seminars, publications, promotions in the press, radio and television, etc. Nature reserves and national parks have the right to issue their own informational, journalistic, scientific and popular scientific publications, make video films.

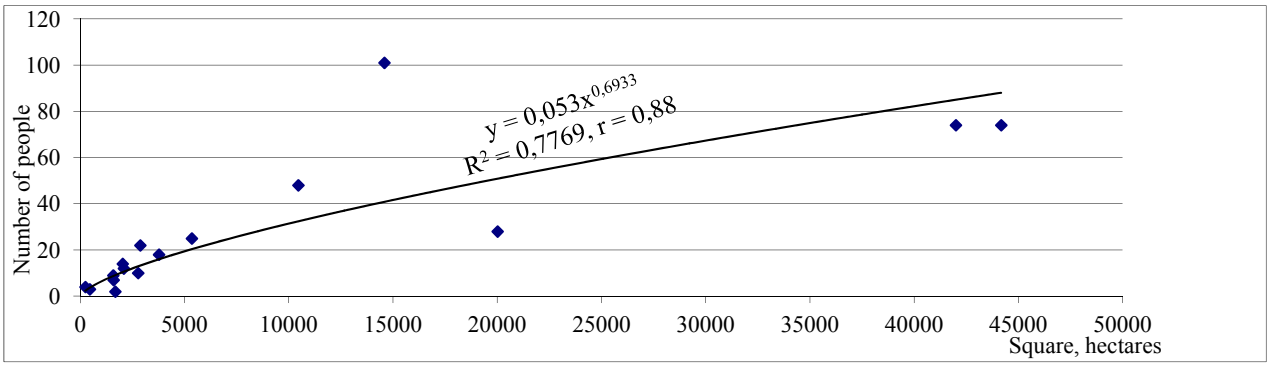

Fig. 3. Dependence of the number of employees on the square of nature reserves

There is an established dependence of the number of employees on the area of reserves (Fig. 3). The coefficient of correlation *r* is 0. 88, that is, the relationship between these indicators is rated as strong. In accordance with the "Provisional regulations of the number of forestry employees", the normative value of the territory per one forester is - 400 hectares, while, in reality, this figure is much higher.

It is known that the efficiency of functioning and protection of the Nature Reserves Fund is determined by the flexibility of its management and control. According to the nature of management the existing nature reserves can be divided into two groups: *active* (or real) and *passive* management (Fig. 4). The first group includes nature reserves, which are recognized as legal entities, have a special administration, personnel, and are financed from the state or local budgets.

On the territory of the Polissya nature conservation area this group includes: the Rivne, Poleski and Cheremskyi nature reserves; the Shatsky and Desna-Starogutskiy natural parks; 10 regional and landscape parks (which have a potential for active management, because most of the management issues are still under development), the category of the park type that are recognized as legal entities, including the Kyiv, Rivne and Mensk zoos, 6 botanical gardens, 5 dendrological parks and 25 parks with monuments of landscape architecture). This group includes only 55 nature reserves (or 2.9 per cent of the total number). Their area is 397.75 thousand hectares or 47.6 per cent of the total area of the region's Nature Reserve Fund.

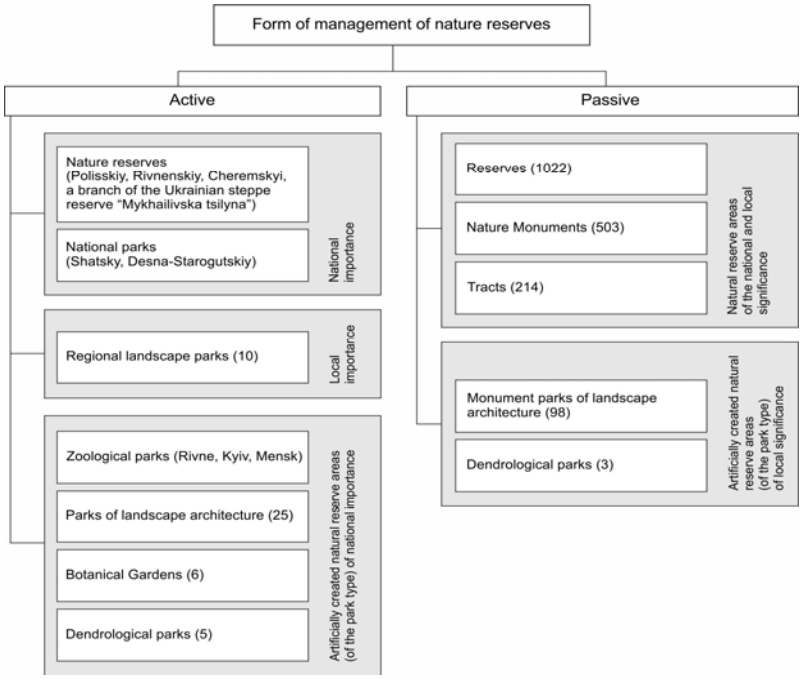

Fig. 4. Form of management of the territories and objectsof the Natural Reserve Fund of Ukraine in the Polissya region

Considering this problem it is necessary to make clarifications regarding the regional landscape parks. According to their purpose, they are polyfunctional, which means that their territories are divided into zones with specific protection regimes. In fact, the area with such regimes is small. In addition, their management structure has not been developed. According to the Law of Ukraine "On the Nature Reserve Fund of Ukraine", the lands are not removed from their owners to the regional land-

scape parks. At the same time these parks might have directorates. That is why they can be attributed to the first group of management. Thus, the first group includes 45 natural conservation objects of the region with an area of 118.35 thousand hectares.

The second group includes natural conservation objects created without removing the land from its owners (land users). These are reserves, natural monuments, protected woodlands of the park type of local importance, which do not have special administrations. They are maintained with the money of enterprises, organizations and institutions they belong to (Article 46). The number of natural conservation objects of the second group in the region is 1840 or 97. 1 per cent. Their area is 52. 4 per cent of the total area of the nature reserve fund in the region.

The analysis of distribution of natural reserves in the region according to the form of management shows that in the Polissya region of Ukraine only 2.9 per cent of natural conservation objects belong to the active management and protection regime, while 97.1 per cent belong to the passive regime, which, according to the territory, means 47.6 per cent and 52.4 per cent respectively.

According to the results of financial analysis, the costs of 1 hectare of the national parks are significantly lower than the costs of nature reserves in the Polissya region of Ukraine. The peculiar feature of the national parks' financing is the fact that about 50 per cent of the actual annual costs of 1 hectare of the national parks are received from the own funds of the national parks obtained from economic activities. Only the Desna-Starogutskiy national park reached the European average level of the costs of 1 hectare in 2003-2004 taking into account its own resources. The costs per one hectare in the Desna-Starogutskiy park are higher than in the Shatsky park. Moreover, the unit costs of 1 hectare of the Desna-Starogutskiy national park are higher than in the Shatsky park, which is likely caused by different subordination of both parks (the Shatsky park belongs to the State Forestry Committee while Desna-Starogutskiy belongs to the

Ministry of Ecology of Ukraine). In the recent years there has been a significant decrease in the funding of the national parks of the Polissky region in the structure of the total budget funding of the national parks in the country (the Shatsky park – from 33 per cent to 29 per cent, the Desna-Starogutskiy park – from 63 per cent to 34 per cent). However, according to the results of in-depth research, the available funds are not sufficient for the maintenance of both parks. The budget does not provide even a minimum of the required expenditures. Therefore, it is necessary to develop regulations regarding the use of resources for the maintenance of these categories of protected areas, taking into account their status and subordination. It is important to develop these regulations based on the area, status and strictness of protection regimes for these categories of the nature reserve fund.

The funds for the maintenance of all categories of natural reserves of the Polissya region from the state budget are insufficient. Neither the categories of the national importance nor the local importance are able to independently meet their annual funding needs. Obviously, it is necessary to reform the current system of funding for the nature reserves fund.

The experience of such countries as Poland, Germany and the UK shows that for each institution of the nature reserve its management plan should be developed. An important issue today is the introduction of a model of integrated management. For this goal it is necessary to subordinate all natural conservation areas of national importance to the Ministry of Environmental Protection of Ukraine and provide them with adequate funding. In Ukraine, of 33 nature reserves and national parks only 15 are subordinated to the Ministry of Environment. In the Polissya region, out of six natural protection facilities (4 nature reserves and two national parks) one is subordinated to the Ministry of Ecological Resources (the Desna-Starogutskiy national park), one – to the National Academy of Sciences of Ukraine (a branch of the Ukrainian steppe reserve "Mykhailivska tsilyna"), others – to the State Forestry Committee of Ukraine (the Shatsky national park, the Rivensliy, Poleskiy, Cheremskyi nature reserves) that actually are the structures of the regional associations of forestry, and therefore unable to provide adequate environmental protection regimes. Other categories of the nature reserve fund have a dual subordination. The objects of national importance should be financed from the state budget of Ukraine and the local ones – from the regional budget.

It is also important to solve the issue of attracting geographic information systems (GIS) to the management of the nature reserve objects. Creating a GIS database will make it possible to conduct an integrated assessment of the nature reserve fund and receive a comprehensive characteristic of the human impact. In the GIS database spatial data are presented by using the vector and raster models. GIS is the future of environmental management systems, a modern computer technology for the mapping and analysis of real events occurring within the nature reserves. GIS makes it possible to combine a model-based imaging of the territory (electronic maps, charts, etc.) with information of the tabular type

(statistics, economic indicators). GIS should receive a widespread use in the management of inventories of the nature reserves and their management on different levels (national, regional, local and object). GIS can reduce the time for the processing of information in making managerial decisions and help establish links between different parameters (for example, the volumes of industrial production and the degree of water and soil pollution; available financial resources and the planned ones, etc.

Conclusions

The system of management has a number of drawbacks that arise due to the imperfect legal framework, partial execution of the plan because of insufficient funding, limited cooperation with landowners and local residents. It should be noted that conservation of natural reserves and restrictions of certain types of economic activity should not be a mechanical "removal from economic circulation" of natural resources, but a transition to a more sustainable socially significant forms of environmental management accompanied by ecologically prudent commercial activities regarding the use of products of the nature reserve fund. The activities of nature reserves make a significant economic contribution to the development of the region, but across the country the current contribution is small. It leads to the conclusion that the main characteristics of conservation objects do not affect their financial state today.

It has been established that according to the nature of management all existing conservation objects can be conditionally divided into two groups: of active and passive management. Conservation objects are actively managed if they have a special administration, staff and budgetary funding. On the territory of the Polissya region of Ukraine these are natural reserves, national parks, regional landscape parks (the latter are potentially active, because the law does not allow a seizure of land, but they have their own management bodies), certain categories of the park type recognized as legal entities. Conservation objects of passive management are those that do not have special administrations and are created without taking the land from its owners: sanctuaries, wildlife reserves, protected woodlands as well as objects of the park type of local importance. The number of conservation objects of the second group in the studied region is 1840, or 97,1 per cent of the total and 52,4 per cent of the total area of the studied region's nature reserve fund. Nature reserves of the second group are the most vulnerable and need a restructuring of the management system.

At present the state budget's resources for the maintenance of all types of protected areas and their normal functioning are insufficient. The funds from the state budget are allocated in extremely uneven way. It is necessary to adopt clearly differentiated regulations for the maintenance of nature reserves from the state budget of Ukraine. Such regulations should be developed based on the territory, the status and the strictness of regimes of the nature's protection.

Today, organization of environment protection in Ukraine as a whole and in the Polissya region in particular needs fundamental restructuring, namely: the shifting of objectives from the traditional expansion of protected areas – while preserving this trend – to the qualitative aspects. It is necessary to change the paradigm of functioning of nature reserves, which have to become not only research laboratories that monitor and preserve natural systems, but also environmental recovery centers of biological diversity of both the conservation objects and the surrounding areas. Their activity should be directed at maintaining ecological balance not only on nature reserves, but on much larger areas. It is clear that the solution of this problem is impossible without improving the existing management mechanism and without the participation of scientists and specialists from various fields of the national economy, including the organizers of production and involvement of the general public.

The reality requires intelligent organization of a system of paid recreational services, introduction of economic mechanisms of their implementation, development of alternative sources of funding – international grants, charitable help, etc. Nature reserves have to adjust to the market conditions by selling their "product" –- a special type of goods, environmental and social services that have a certain use value. It is important to adapt the national mechanisms of the nature reserves' management to the international standards and principles. A system of evaluation of various categories of the nature reserve fund should be coherent, be able to generalize the obtained results and bring the data to a common denominator.

The introduction of innovative methods in financing environmental protection – subsidies, which include direct grants, subsidized loans, soft loans, loan guarantees, financing in the form of shares. In recent years, the money from the State Fund of Ukraine was spent exclusively in the form of grants. The absence of the possibility to use various financial instruments of the State Fund (loans, credits, mutual offsets) is related to its budgetary status and the corresponding legislative restrictions on the use of the budgetary resources. This situation reduces the revenue base of the State Fund of Ukraine and

cannot improve the efficiency of the funds' use. To solve this problem, it is necessary to give the State Fund for Environmental Protection of Ukraine the status of an independent legal person without making it subordinate to any ministry or agency. Poland has such experience.

In addition, the nature reserve fund is subject to mandatory environmental insurance or commercial ecological insurance the purpose of which should not be to obtain revenues, but to create social and economic conditions that will help reduce the anthropogenic impact on the nature reserves. Such insurance is required in case of damage to the objects of nature as a result of violations of environmental legislation, natural disasters, etc. Nature reserves should be paid insurance amounts necessary to eliminate the damage, which is based on the economic assessment of natural resources before and after the damage. The difference between these indicators in terms of value is the basis of the payment for the damage caused to nature reserves. In calculating the amount of damages it is necessary to consider the revenues lost from the use of nature reserves and the costs required to improve the quality of natural objects.

The realization of the proposed measures will significantly increase the effectiveness of the existing system of management of Ukraine's nature reserves, which will have a systemic character and will be adapted to the international standards.

References

1. Hockings, M., Stolton, S., Dudley, N. (2000). *Evaluating Effectiveness*: *A Framework for Assessing the Management of Protected Areas*. JUCN. 121 p.
2. Ofitsiinyi sait Ministerstva ekolohii ta pryrodnykh resursiv Ukrainy. Elektronnyi resurs. Rezhym dostupu http://www.menr.gov.ua
3. World Watch Institute. Vision for Sustainable World. Retrieved from http://www.worldwatch.org
4. Pro pryrodno-zapovidnyi fond Ukrainy: Zakon Ukrainy. (16 chervnia 1992). *Vidomosti Verkhovnoi Rady, 34*, 502.
5. Smal, V. V., Smal, I. V. (2003). Svitovyi dosvid rozvytku ekolohichnoho turyzmu. *Ukrainskyi geohrafichnyi zhurnal, 4*, 58-64.
6. Fabijanski, P. (2003). Parki narodowe. Cuda Polski. Edukacja Powszechna. Wydawnictwo Podsiedlic-Raniowski i Spolka, 112 p.
7. Veklych, O., Yakheieva, T. (2004). Urakhuvannia pryrodnoho kapitalu yak bazovoho komponenta ekonomichnoho rozvytku Ukrainy. *Ekonomika Ukrainy, 12*, 73-80.
8. Ekonomika sokhraneniia bioraznoobraziia. Pod red. Tishkova, A. A. (2002). Proekt GEF. *Sokhraneniie bioraznoobraziia Rosiiskoi Federatsii*. M.: Institut ekonomiki prirodopolzovaniia, 604 s.
9. Bobylev, S. N., Medvedeva, O. Ye., Sidorenko, V. N., Soloviova, S. V., Stetsenko, A. V., Zhushev, A. V. (1999). *Ekonomicheskaia otsenka bioraznoobaziia*. Pod red. Bobyleva S. N., Tishkova, A. A. M., 110 s.
10. Ekonomicheskaia otsenka proektov i napravlenii politiki v oblasti okruzhaiuschei sredy. (1997). Prakticheskoe rukovodstvo. Paris: OECD Publications, 174 s.
11. Tkachenko, T.I. (2004). Ekoloho-ekonomichni ta sotsialni aspekty staloho rozvytku turyzmu. *Visnyk UDUVGP. Ekonomika. Vypusk 2 (26), chastyna* II. Zb. Nauk. pr., 588-594.
12. Yakymchuk, A. Yu. (2014). *Derzhavna polityka staloho zberezhennia bioriznomanittia Ukrainy:* monogr. Yakymchuk, A. Yu. Rivne: NUVGP, 477 s.
13. Konventsiia o biolohicheskom raznoobrazii *(1997). Sb. Normat. Dokum. Po vopr. Okhrany okruzhaiuschei sredy. Vyp. 16.* Minsk: Minprirody RB, 85-119.
14. Pro polozhennia pro naukovu diialnist zapovidnyliv i natsionalnykh pryrodnykh parkiv Ukrainy: Nakaz Ministerstva okhorony navkolyshnioho pryrodnoho seredovyscha ta yadernoi bezpaky Ukrainy vid 1 lypnia 1997 r. № 105, *Ofitsiinyi visnyk Ukrainy, 36*, 109-121.
15. Sokolov, V. I., Feigin, Yu. M. (1987). Okhrana zapovednykh territorii v Kanade. *SSHA: ekonomika, politika, ideolohiia, 4,* 44-52.
16. Soknich, A. Ya. (2002). *Problemy vykorystannia i okhorony zemel v umovakh rynkovoi ekonomiky*. Monohrafiia. Lviv: NVF "Ukrainski tekhnolohii", 252 s.
17. Tunytsia, Yu. Yu. (2002). *Ekolohichna Konstytutsiia Zemli: Ideia. Kontseptsiia. Problemy.* Lviv: LNU, 298 s.
18. Khvesyk, M. A., Yarotska, O. V., Stepchyn, M. V. (2003). Problemy rehionalnoho upravlinnia vodokorystuvanniam ta shliakhy yoho vdoskonalennia. *Visnyk UDUVGP. Ekonomika, Vyp. 1 (20). Zb. Nauk. pr. Rivne,* 619-624.
19. Chervona knyha Ukrainy. Roslynnyi svit. (1994). Pid red. Sheliah-Sosonka K.: "Ukrainska entsyklopediia", 184 s.
20. Chervona knyha Ukrainy. Tvarynnyi svit. (1994). Pid red. Scherbaka, M. M. K.: "Ukrainska entsyklopediia".
21. Shatskyi natsionalnyi pryrodnyi park: naukovi doslidzhennia 1994-2004 rr. (2004). Materialy nauk.-prakt. Konf. Do 20-richchia parku (Svitiaz, 17-19 travnia 2004 roku). Lutsk: Volynska oblasna drukarnia, 224 s.
22. Sheliah-Sosonko, Yu. R., Andriienko, T. L., Udra, I. Kh. (1979). Roslynnist "Nadsluchanskoi Shveitsarii" – tsinnoi pamjatky pryrody Polissia. *Ukr. Botan. Zhurn., 6*, 35-38.
23. Pro ekolohichnu merezhu: Zakon Ukrainy vid 24 chervnia 2004 r. № 1864-IV (2004). Vidomosti Verkhovnoi Rady Ukrainy, 45, 502.

24. Pro zahalnoderzhavnu prohramu formuvannia natsionalnoi ekolohichnoi merezhi Ukrainy na 2000-2015 roky: Zakon Ukrainy vid 21 veresnia 2000 r. (2000). Vidomosti Verkhovnoi Rady Ukrainy, 47, 405.
25. Dixon, J., Pagiola, S. (2000). *Local Costs, Global Benefits: Valuing Biodiversity in Developing Countries. Environmental Department*. The World Bank, 12-34.
26. Economic Values of Protected Areas: Guidelines for Protected Areas Managers. (1998). Adrian Phillips, series editor. JUCN, 72 p.
27. JUCN Guidelines for Protected Area Management Categories. (1994). JUCN, Gland, Switzerland and Cambridge, UK., 34-50.
28. Kluster, J. (1991). *Ecotourism and Recourse Conservation: a Collect of Papers from 2nd International Symposium: Ecotourism and Resuurce Conservation.* November 1990. compiled by Jon A. Kluster, 22.
29. Macko, S. (1937). Roslinnosc proektowanych reserwatow na Wolyniu. *Ochr. Przyr., rocz. 17*, 111-185.
30. Middleton, V. and Hawkins, R. (1998). *Sustainable Tourism: A Marketing Perspective. Butterworth.* Heinemann, 32.
31. Mieczkowski, Z. (1995). *Environmental Issues of Tourism and Recreation*. Lanham, MD: University Press of America, Inc., 496 p.
32. Panek, J. (1939). *Roslinnosc stepowa i naskalna lessowego Wolynia*. Rocz. Wolynski, Rowne, 26-66.
33. McNeely, J.A., Harrison, J. and Dingwall, P. (1994). *Protecting Nature*: *Regional Reviews of Protected Areas*. IUCN. Gland, Switzerland and Cambridge, UK, 402 p.