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ПРИРОДНО-ЗАПОВІДНИЙ ФОНД КАРПАТСЬКОГО РЕГІОНУ: ПРОБЛЕМИ ТА ПЕРСПЕКТИВИ РОЗВИТКУ

NATURE RESERVE FUND OF CARPATHIAN REGION – ITS PROBLEMS AND PROSPECTS OF DEVELOPMENT

Стаття присвячена проблемам сталого розвитку Карпатського регіону шляхом збереження та розвитку природно-заповідного фонду. Досліджено екологічні наслідки вирубки лісів, всихання ялини, нелегальної та планової вирубки на території Прикарпатського фонду Карпатського регіону та подано пропозиції щодо збереження її лісового фонду. Визначено екологічну цінність лісу як комплекс соціально важливих функцій, таких як захист ґрунтів, захист води, кліматизація, рекреація, естетика та ін. Визначено, що основними принципами збереження та відтворення лісових ресурсів природно-заповідного фонду є лісонасадження, лісовідновлення та розширення лісів.

Ключові слова: природно-заповідний фонд, охорона навколишнього середовища, Карпатський регіон, лісові ресурси, вирубка лісів, екологічна цінність лісів, сушіння ялини, збереження лісів, лісовідновлення та розширення лісів.

The presentation deals with the problems of sustainable development of Carpathian region through nature reserve fund conservation and development. The environmental impact of deforestation, spruce drying, illegal and planned felling on the territory of Nature reserve fund of Carpathian region was examined and proposals as to preservation of its forest fund were submitted. It is elucidated the ecological value of the forest as a complex of socially important functions such as ground protection, water protection, climate-forming, recreational, aesthetic, etc. It is determined that the main preservation and reproduction principles of nature reserve fund forest resources are afforestation, reforestation and forest expansion.

Keywords: nature reserve fund, environment, Carpathian region, forest resources, deforestation, ecological value of forests, spruce drying, preservation of forests, reforestation and forest expansion.

Стаття посвящена проблемам устойчивого развития Карпатского региона путем сохранения и развития природно-заповедного фонда. Исследована экологические последствия вырубки лесов, усыхание ели, нелегальной и плановой вырубки на территории Прикарпатского фонда Карпатского региона и представлены предложения по сохранению ее лесного фонда. Определено экологическую ценность леса как комплекс социально важных функций, таких как защита ґрунтов, защита воды, климатизация, рекреация, эстетика и др. Определено, что основными принципами сохранения и воспроизводства лесных ресурсов природно-заповедного фонда является лесонасаждения, лесовосстановления и расширения лесов.

Ключевые слова: природно-заповедный фонд, охрана окружающей среды, Карпатский регион, лесные ресурсы, вырубка лесов, экологическая ценность лесов, сушки ели, сохранение лесов, лесовосстановление и расширения лесов.



Problem content in general and its connection with important scientific and practical tasks. The Carpathian forests have always been the lungs and heart of Europe, the supplier of clean water and air for the European continent. However, over the past decades the problem of preserving the Carpathians ecology has become particularly acute due to frivolous, irresponsible management [3, 16].

Analysis of recent researches and publications, which initiated the solution of this problem and which the author refers to; emphasis on previously unsolved parts of the general problem to which this article is devoted. In the works of Ukrainian scientists a great attention is paid to the study of forest resources natural potential and reforestation. In particular, reforestation processes and questions of forest plantations reproduction are highlighted in S. Gensiruk's works [1]. The problems of forest policy, reforestation and logging are considered in V. Samoplavskiy's works [11]. A great attention is paid to the ecological and economic aspects of forest use in the works of I. Sinyakevich [12] and I. Kalutskiy [4]. Despite the large number of researches, the definition of the ecological value of the Carpathian nature reserve fund forests is rarely considered and is not completely formed.

Purpose of the article (setting goals). The performance aims at giving the analysis of Carpathian reserve fund state forests and outlining the ways of its development, preservation and augmentation.

Main research material presentation with full argumentation of the received scientific results. Ivano-Frankivsk region belongs to the most wooded regions of Ukraine. The average region forest area is 42%, while in Ukraine it is 15.9%. The total forest fund area of the permanent use is 626.0 thousand hectares, that is 6% of the state total forest area. Forests are unevenly located and are mostly located in the mountainous part, with forest cover varying from 5.5% (Snyatin district) to 66.2% (Dolyna district). The main forest users of the region are: 17 enterprises of the Ivano-Frankivsk Regional Department of Forestry and Hunting, take 75% of the lands - 468,300 ha of the region forest fund [6].

25% (152.9 thousand hectares) of the forest fund is provided for other users, namely: specialized enterprises of OP "Ivano-Frankivskoblagroliis" – 74,0 thousand hectares; Carpathian Natural National Park – 38.6 thousand hectares; National natural park "Hutsulshchyna" – 7,6 thousand hectares; Natural Reserve "Gorgany" – 5.3 thousand hectares; Precarpathian military forestry of Ivano-Frankivsk forestry complex – 8.0 thousand hectares; SINOGORA PJSC – 10.9 thousand hectares; PE "Black Forest" – 8.5 thousand hectares [17].

According to the species composition in Ukrainian forests predominate coniferous forest species: European fir (52%), white fir (5%), the most common deciduous species are forest beech (21%) and oak (11%). The average stock on 1 hectare of forest -covered land is 282 cubic metres. The average annual vegetation growth is 4.3 m³ / ha. The total wood stock in the regional forests is about 160.0 million cubic metres. According to the age structure medieval vegetation predominate – 52%, young stock – 17%, contentious – 15%, ripe – 16% [1].

Distribution of forests according to its aim. Forests are divided into categories: nature conservation, scientific, historical and cultural purposes (occupy 19% of the forest covered area), recreational forests – 13%, protective forests – 23%, exploitation forests – 45% (Fig. 1).

Most of the region forests are classified as forests with special protective functions, with limited forest management. On the territory of the region forest area there are more than 300 nature reserve fund objects located on the area of 186.5 thousand hectares [17].

Despite such forest wealth, there are still a number of problems that are currently relevant and need urgent solution. We have characterized some of them.

In the Carpathians, there is a significant increase in the spruce drying areas (Fig. 2).

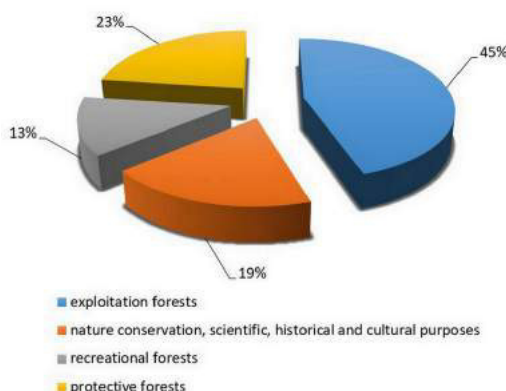


Fig. 1. Distribution of forests according to its aim

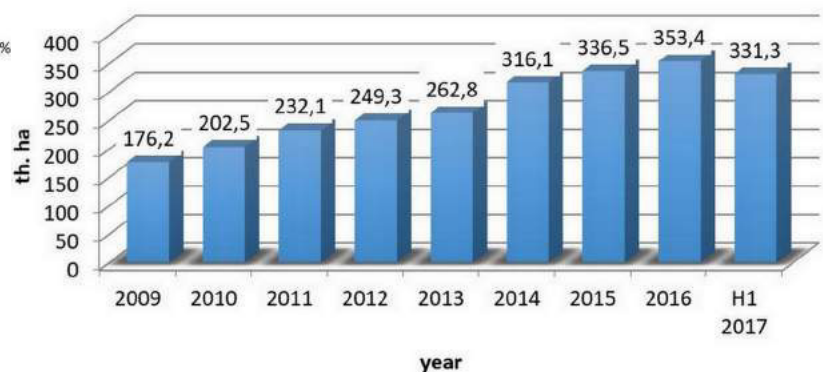


Fig. 2. Dynamics of spruce drying areas [8, 14, 17]

During the first half of 2017 the drying area of forests subordinated to the State Forestry Agency was 331,300 hectares.

The most desiccation extends to pine (almost 142 thousand hectares), spruce (fir) (almost 26 thousand hectares) and oak (almost 100 thousand hectares).



Due to the ever – increasing technogenic and man-made loading, adverse climatic conditions, the overall sanitary state of forests needs to be improved. A great influence on it has the forest – pathological situation degradation in forests of other forest users, where forest protection measures are practically not carried out and, as a result, they are accumulation places of pests and diseases and their distribution in the forests of enterprises and institutions under the State Agency of Forestry.

For example, there is a significant increase in the spruce drying areas in the Ukrainian Carpathians (Lviv region – 16.2 thousand hectares, Ivano-Frankivsk – almost 5 thousand hectares, Transcarpathian – 1.5 thousand hectares, Chernivtsi – 1.4 thousand hectares) [8].

Changes in climatic conditions and abnormally high temperatures of the growing season in recent years, anthropogenic stress, sharp fluctuations in groundwater and other biotic and abiotic factors have led to significant plantations weakening in a large part of Ukraine.

Great importance has the felling of forests. According to the data of the Main Department of Statistics in Ivano-Frankivsk region and in the Precarpathian mountainous territory, from 2000 to 2009 there was a clear tendency of liquid wood (timber) harvesting reducing (in 2006 – 34.7 thousand m³, in 2005 – 30.0 th. m³, in 2007 – 26.5 th. m³, in 2009 – 18.7 th. m³ . However, since 2010, its volume in the forest areas of the district has been slightly increased compared to 2009 : in 2010 – 20.2 th. m³; in 2011 – 24,5 th. m³; in 2012 – 22,8 th. m³; in 2013 – 24,9 th. m³; in 2014 – 25,7 th. m³; in 2015 – 27,8 th. m³; in 2016 – 29,7 th. m³ (Fig. 3), which also indicates the forest felling area increasing: in 2009 – 1284 ha, and in 2014 – 2002 ha [13].

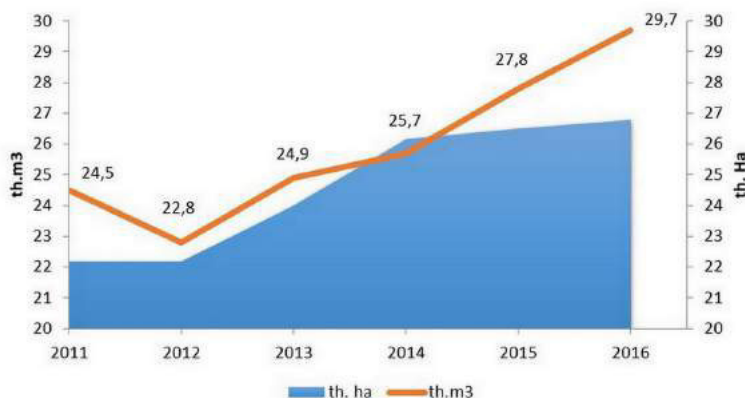


Fig. 3. Dynamics of planned felling of Ivano-Frankivsk region during 2010–2016 [13]

The issue of forest ecosystems and illegal felling delinquencies in the Precarpathian region, as well as in other wooded areas of the Carpathians, is particularly important.

The ENPI (European Neighborhood and Partnership Instrument) – FLEG (Forest Law Enforcement and Governance) sociological researches "Improving Forest Law Enforcement and Governance in the European Neighborhood Policy east Countries and Russia" have highlighted the significant threats to the forest area and the main causes of illegal felling [16].

"During last six months of 2017, there was detected an illegal felling in the amount of 759 m³. This caused to 4 million 378 thousand hryvnia losses. But we should say that comparing to last year's data, volumes of illegal felling decreased by 240 m³ [17].

According to the forestry experts and local community leaders, the most serious threats to the forests of the region are: the illegal felling by local residents, the forests transfer to temporary forest users, the misuse of forest resources exploitation by business entities and the imperfect legislative base.

As a result of illegal felling there are forming huge bare spots. We've taken some photos of such bare spots during just last month and we should observe that the 80% of the hill is cut.

The reason is that during the time of Ukraine Independence in the Carpathians there was formed a great corrupt network of shadow (black market) business.

We can demonstrate an objective picture taken by activists over the territory of the Carpathian National Reserve.

It is evident that all this leads to ecological cataclysms such as landslides, freshets and mudflows [4].

In order to provide the main forest species with high quality seedlings aimed at reforestation and forest expansion, as well as at planting, there are working 160 state forestry nurseries with a total area of 65 hectares. As of March 28, 2017, there were planted 36 hectares of planned 64 hectares of forest crops, also there were carried out sowing in forest nurseries on the area of 0,03 hectares and added 10 hectares of forest crops [17].

In spite of this, the process of reforestation is insufficient and not always rational. Measures of the first stage of the State Program "Forests of Ukraine" for 2002–2015 have not been fulfilled, including in the Carpathian region. In general, experts say that due to the forestry recovery rates in Ukraine optimal forest cover (20%) will be achieved in 177 years, that is in 2184! [2].

The dynamics of reforestation and forest expansion area in Carpathian region during last years is showed on fig. 4.

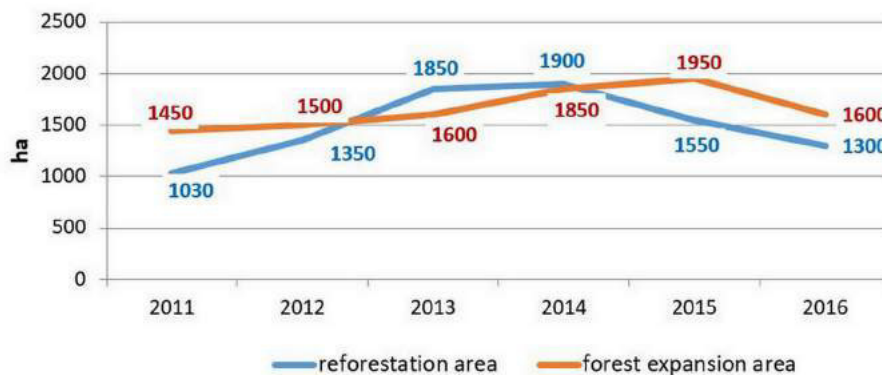


Fig. 4. Dynamics of reforestation and forest expansion area in Carpathian region

In our opinion, the rates of reforestation remain low due to the lack of financial investment. As most of the forests in Ukraine are state-owned, they are supposed to be financed from the Ukrainian state budget. Having insufficient state funding, state-owned enterprises should use their own funds.

According to the Carpathian NNP deputy director Oleksandr Kislyuk, the project "Preserving the Carpathian old-growth forests", which aims at expanding more than 100 thousand hectares of nine national natural parks territories, has been already working. In particular, it is planned to increase the area of the Carpathian NNP by 25.3 thousand hectares, the NNP "Verkhovyna" – by 11.7 th. ha, the NNP "Hutsulshchyna" – by 2.7 th. ha, the Cheremosky NNP – by 20.1 th. ha, Nizhni Novgorod Region, Vyzhnytsky NNP – by 8.4 th. ha, NNP "Enchanted Region" – by 13.4 th. ha, NNP "Synevyr" – by 0.6 th. ha, Uzhansky NNP – by 11,4 th. ha, NNP "Skolevski Beskydy" – for 10,9 th. ha [5].

Recreation. At present, the recreational capacity of landscapes is: in winter – 3.9 million people, in the summer – 1.7 million people. During the year, the Carpathian resort and recreation area can accommodate 8 million tourists and vacationers and 12 million tourists and day off tourists. But we should notice that the recreational forest potential is significantly lower than its demand.

In connection with this, an important task of state and society is to carry out comprehensive research on the basis of which is the solution of the problems of development of new recreational territories, restoration of old ones and stimulation of existing recreational facilities, raising the prestige of domestic and international inbound tourism. We can demonstrate some of the recreational zones that have been recently formed or restored.

Care for a recreational forest is a complex of forestry activities that includes forest reclamation, clearing from litter, landing, harvesting, forestry, and a number of other works. Improvement includes the creation of a track-and-track network, equipment for rest and overnight places, preparation of sites and firewood for fireplaces, shelters in the event of bad weather, the accumulation of various equipment (pegs for tents, inventory for cleaning the place of overnight), landscaping of sources and fountains, ecological paths, placement of observation decks, game lawns, children's forest sites, parking lots, garbage collectors. All this, of course, must be made in such a way that there is no disturbed landscape, no disharmony in nature [7]. In the current situation, the purpose of forestry must be to meet the growing needs of the population in the forest recreation with the unconditional provision of non-exhaustion of forest use in general and recreational forest use in particular.)

Research conclusions and prospects for further exploration in this direction.

Based on mentioned above, one can conclude that the deterioration of the Carpathian region nature reserve fund forests state, their area reducing is a great problem. The reason for this was the excessive forests felling (both legal and illegal), forest resources inefficient use and management, high level of anthropogenic pressure and ineffective control of compliance with legislative and legal framework at the state level.

The main ways to solve tasks are reducing the total felling and introduction of close to nature forestry, which provides the formation of close to natural mixed-aged forests, as well as preservation and protection of virgin forests and old-growth forests of the Carpathian region [9, 10, 15].

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