

## SUMMARY

for the 1<sup>st</sup> stage of works of the Project of organization of the territory of Chernobyl Radiation and Ecological Biosphere Reserve and protection of its natural complexes, according to the Contract for Works Execution “Assessing the condition and development of landscapes, identifying challenges and setting priorities for the biosphere reserve”, which is executed within the limits of implementation of the joint with GEF/UNEP Project “Conservation, Optimization and Management of Carbon Stocks and Biodiversity in the Chernobyl Exclusion Zone”

**Task 1.** To analyze the natural base of forming modern natural landscapes within the Reserve limits.

In the framework of the task realization, natural components were analyzed, on the basis of which the modern landscapes of the Reserve were formed. For this purpose, using the existing maps and scientific sources, the analysis of the geological base of landscapes and lithologic features was made. Description of geomorphological conditions for the formation of modern landscape structure was carried out using remote sensing data with their refinement on topographic maps and in field conditions. Orographic description of the territory was made. Hydrological features of the territory of the Reserve were analyzed in the basins of the rivers Pripyat, Uzh and partially - Teteriv. Climatic features of the territory and changeability of climatic conditions for the period of 2005-2017 were analyzed on the Chernobyl meteorological station using the archival weather data of the Internet resource [pp-5](#). The trend for change of the climatic conditions in the direction of warming, decrease of the average annual rainfall during this period, significant decrease of the average annual air humidity and decrease of the average wind speed was found out. The soil cover of landscapes was analyzed on the basis of existing soil maps and their descriptions with refinement in field conditions.

**Task 2.** Biogeographic context of landscape diversity.

In the framework of the task realization, the place of the Reserve landscapes was determined in the system of physical geographic and biogeographic zoning. The biogeographic value and edaphic conditionality of the Reserve landscapes was revealed, connected with the expansion in this place of natural pine, pine-oak and oak-hornbeam forests, flood plains and bogs.

**Task 3.** Detection of landscape diversity of the territory.

The realization of this task consisted in the analysis of modern maps of expansion and boundaries of natural landscapes of the Reserve, as well as the clarification of their boundaries in field conditions. The main natural landscapes of the Reserve were identified - Ivankivskiy, Dymersko-Makarivskiy, Korogodsko-Vilchanskyy, Uzhs'kyi, Shepelyts'kyi, Gdens'kyi and Nyzhnioprypiats'kyi. Their boundaries on the landscape map were clarified, their characteristics were given to the level of tracts. Anthropogenic landscapes were analyzed from the standpoint of distribution of types of nature management before the Chernobyl accident and their changes within the period after the accident with the cessation of anthropogenic impact. The fact of the restoration of natural landscapes in places of their anthropogenic changes (settlements, tillage, writhes, pastures, drainage zones, anthropogenic forests-burners) was proven. Under the degree of anthropogenization growth, the forest-based phytovariant complexes are divided into radical, imaginary-radical, serial, outgoing and digressive-demutational. Anthropogenic changes within each of the natural landscapes were analyzed.

**Task 4.** To analyze historical-cultural and archaeological components of the Reserve landscapes.

In the framework of the task realization, the existing registered archaeological monuments and their status in the territory of the Reserve were analyzed: Neolithic sites, settlements of the Bronze Age, settlements of the Mylograd and Zarubintsy cultures, early Slavic settlements.

**Task 5.** Detection of the value of diversity and priorities concerning its preservation.

The value of the biodiversity of the Reserve is related to its location within the limits of the Polissian Ecocorridor as one of the main migration routes of birds

and mammals in the north of Ukraine, as well as the expansion of specific post-glacial vegetation and flora. Valuable within the Reserve are oak, oak-pine, oak-lime, oak-hornbeam and pine great-forests, meadows and all variety of bogs: oligo-, meso- and eutrophic.

**Task 6.** Detection of the value of landscape diversity and priorities concerning its preservation.

The peculiarity of the Reserve landscapes is their formation within the boundary of the shield slope in the transition lane to the Dnipro-Donets cavity. It distinguishes the Reserve landscapes among other Polissya landscapes. It was revealed that among the landscape diversity of the Reserve territory the most valuable are the areas with preserved natural, ordinary oak with bear onions, oak-hornbeam, hornbeam-oak, oak-pine, oak-hornbeam-pine forests, ordinary pine-tree with juniper. Small areas of oak forests remained in small massifs in each of the characterized natural landscapes. They are represented mainly by age trees (of 100-150, sometimes up to 200 years old).

Valuable in the Reserve territory are dune formations with formed plant groups within their limits and air-water and aquatic plant groups, bogs, coastal formations of pussy willows.

**Task 7.** Definition of values for scientific-research activity and priorities concerning their preservation.

The value for the scientific-research activity and the main priority of its realization is the study of changes of landscapes in the conditions of cessation of anthropogenic impact on them. Radiation pollution of the Reserve territory made impossible active economic activity and created conditions for the restoration of both separate components of landscape complexes (vegetation, zoobiota) and natural landscapes as a whole. Thus, in the consequence of draining of drainage systems channels, meadow-bog complexes (wetlands) are gradually restored. Valuable from the landscape positions is the study of the features of restoration of natural Polissya landscapes in the absence of significant anthropogenic impacts on them.

## **Conclusions.**

The Environmental Management Center has prepared a sufficiently comprehensive report under the first stage of the Project of organization of the territory of Chernobyl Radiation and Ecological Biosphere Reserve and protection of its natural complexes.

In the report are reflected all the characteristics of the Reserve territory, including general information about the Reserve, as well as its geological characteristics, lithology, geomorphology, hydrology, climate, soils, forestry, as well as the issues of history and archaeology. Also, problems and priorities for the further activities of the Reserve were defined.

Along with this, special attention is paid to the landscape diversity - natural and anthropogenic landscapes. This is conditioned by many factors, from which we would like to mention the uniqueness of the reserve concerning its large area, which was exposed to radiation impact due to the accident at the Chernobyl Nuclear Power Plant. In addition, it should be taken into attention that in the modern territory of the reserve since 1986 economic activity was prohibited, and the population has been relocated outside the Chernobyl Exclusion Zone, except for the 10-kilometer zone where production facilities are located within the competence of the State Agency of Ukraine on Exclusion Zone Management. That is, the flora and fauna of the territory, on which the Reserve is located, has suffered anthropogenic loading for more than 30 years in the consequence of human economic activity.

Taking into account the above it should be noted that the report fully meets the current requirements of the Regulations on the organization of the territories of institutions of the nature reserve fund of Ukraine, approved by the Order of the Ministry of Environmental Protection of 06.07.2005 No. 245. The results of the first stage of the Project of organization of the territory of Chernobyl Radiation and Ecological Biosphere Reserve and protection of its natural complexes will be officially promulgated for the general public, scientists and naturalists, as well as used during the development of the next stages of the said project.