SELF-ORGANIZATION OF CENTRAL RUSSIAN UPLAND LANDSCAPES WITH ANTHROPOGENIC LOAD IS REDUCING

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Man lives in an environment that is modified and adapted to his needs. The Calls to go back to nature does not stand up to any scrutiny because of the changed environment and the human nature. Many mistake anthropogenic landscapes for the naturals, forgetting that they had formed in their present form under the influence of human activities. But as soon as the human influence is weakened, the system that creates them begins the processes of self-organization. Central Russian Upland landscapes are man-made. Convenient economic and geographical position attracted people. Natural landscapes experienced a profound transformation over the tens of thousands of years. Currently, only seven percent of the studied area is forested, with most of them planted by man. Feather grass steppes are plowed up and turned into agricultural landscapes. To understand the reasons which led to the current state, it is necessary to analyze the state of the ecosystem over time.

Some indirect information about the dynamics of the natural ecosystems of the territory under the influence of anthropogenic and natural factors can give us the materials of archaeological research. They show that the person has been actively integrated into the natural ecosystems of the territory already in the Paleolithic. The found artifacts provide insights into the climatic conditions of the time, as well as the interaction between man and his accommodating landscape. About two thousand years ago Sarmatians lived here. Sarmats engaged in sheep and therefore lived there, where there were the best pastures for the year-round grazing. The reason why the Sarmatians left the area was climate change, winters became snowier. Year-round grazing became impossible. The climate became cooler and wetter, and therefore favorable for the growth of forest vegetation. In all likelihood, these reasons have caused an increase in forest area in the study area. And the Sarmatians are replaced by migrating tribes, preferring to lead sedentary lifestyles, and whose activities further interacts with the natural environment and, consequently, more than transform it. In this area, the iron ore deposits are fairly close to the surface. The population is actively using the resources that are found in their ecosystem and engages in metal smelting. For smelting, iron ore was needed and it became a charcoal derived from wood harvested in the surrounding woods. Forest ecosystem condition, as determined by conjugated bonds with the river ecosystems of the Don Basin. The Don River since ancient times has been an important trade and transport route. The ships were built in the shipyards of the Don river and its tributaries. Now it is hardly possible to calculate how many hectares of forest have been reduced to their construction. But no one doubts that the natural regeneration of forests does not keep pace with deforestation and forest species composition changed [2]. At the same time with deforestation plowed feather grass steppes. In the late 18th century, a type of feather grass vegetation was already rare [1].

In the 90s, of XX century, there was an economic decline in Russia. It minimized the production landscape and consequently began to change radically in the direction or close to the dynamic state. The ecosystems of meadow-steppe vegetation returns feather grass (Stipapennata L.). Succession begins to develop in the direction depending on the nature of the habitat and the competitive ability of the systematic units, which can settle here [1].

My observations show that the reduction of anthropogenic load forest and steppe vegetation is beginning to recover, due to the kind of seed bank, accumulated in ecosystems. And recovering those species, which are typical for the area. It is known that oak prefers soils formed on the source rocks containing calcium. I observed how on unexploited, but not yet re-cultivated deposits of limestone (Sitovka quarry), the undergrowth of oaks originated. There is a self-restoration of the pine forests growing on the territory, in the alluvial deposits in the river valleys. All of these processes suggest that even a modest reduction in human activity triggers self-organization of the landscape. We see de-mutation – the process of restoring ecosystems to a state close to its original state after a material breach of the composition and structure.

References

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