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CHANGE IN THE VECTOR OF DYNAMICS OF SECONDARY FORESTS OF THE SLOVECHANSKO-OVRUTSKYI RIDGE UNDER THE INFLUENCE OF PLANT INVASIONS

Khomiak I.V.

Ivan Franko Zhytomyr State University

The current stage of biosphere development is characterized by a profound transformation of forest ecosystems under the influence of anthropogenic pressure and plant invasions, which change the course of natural succession and reduce their stability. To understand the current destructive processes in this region, a retrospective analysis of forestry practices is necessary, in particular the tradition of growing introduced species. To objectively understand the causes and prerequisites of current destructive processes in the secondary forests, it is necessary to turn to a retrospective analysis of forestry practices. The tradition of involving introduced plant species in European forestry has long been considered a sign of progressive, intensive forestry. Starting from the 18th–19th centuries, in connection with the rapid development of industry, urbanization, and the development of the railway network, there was an acute need for significant volumes of wood. During this period, classical forestry science formed the concept of artificial enrichment of local flora by acclimatization of fast-growing and technically valuable exotics. Introduction was considered not just as an experiment, but as a panacea for the "wood famine" and an effective tool for optimizing forest landscapes. The main criteria for selecting introduced species were: high growth energy at a young age, unpretentiousness to soil and climatic conditions, high quality of wood, and most importantly – apparent resistance to local pests and pathogens due to the lack of coevolutionary relationships with local biota. Thanks to this paradigm, European forests were extensively replenished with species such as black locust (*Robinia pseudoacacia* L.), northern red oak (*Quercus rubra* L.), European larch (*Larix decidua* Mill.), and several others [1]. In the Polesie region, the mass introduction of introduced species into silvicultural practice intensified in the second half of the twentieth century. Post-war reconstruction of the national economy required large-scale afforestation of unused lands, steep slopes, and eroded ravines, as well as the creation of protective strips.

For decades, the cultivation of introduced species has been accompanied by exclusively positive reports from forestry enterprises. An increase in the total stock of plantations per unit area, improved phyto-ameliorative indicators, and high survival rates of crops have been recorded. Traditional classical forestry viewed artificial phytocenoses with the participation of exotics as a technological success of man over the natural limitations of local flora. However, the long-term ecological consequences of such a strategy were almost not calculated. The fact that artificially created introduced foci, finding themselves in favorable ecological niches without the restraining influence of natural enemies from their autochthonous range, are capable of triggering mechanisms of uncontrolled self-renewal and aggressive expansion was ignored. Over time, cultural plantations of introduced species have turned into powerful primary sources of diaspores, which began to actively colonize adjacent

natural forest areas, especially those that have been disturbed. This problem is extremely acute for the primary forests of the Slovechansko-Ovrutskyi ridge, where, due to active deforestation in the middle of the 19th century, erosion processes on loess slopes intensified. To stop these processes, mass plantings of invasive species were used. This led to a sharp reduction in biodiversity in such areas. [2].

Secondary forests on the territory of the Slovene-Ovruch Range are most often ecosystems whose autotrophic block is the Robinieta Jurco ex Hadac et Sofron 1980 group. In the absence of invasive species, the vegetation of the order Sambucetalia racemosae Oberd. ex Doing 1962 prevails here. In a few decades, it turns into native coniferous or broad-leaved forests. In a few centuries, they will become a climax forest ecosystem with an above-ground phytomass of more than 300 tons per hectare. The volume of ecosystem services that such an ecosystem can provide is maximum for this natural zone.

If invasive species penetrate the ecosystem, the vectors of dynamics shift. Here, the order of plant groups Chelidonio-Robinieta pseudoacaciae Jurko ex Hadač et Sofron 1980 begins to form. The successional development of such ecosystems stops, reaching a certain limit. Here, a catastrophic climax is formed with many times lower potential for maximum ecosystem services [3]. Also, biotic diversity is often lower here. In addition, such ecosystems are hotbeds of the spread of seeds of invasive species to other ecosystems of the region.

A strategic mistake that is repeated during the practice of using invasive species is a primitive view of the forest. The forest is considered only as a potential source of wood. However, the forest is not even a plantation for growing valuable tree species. The forest is a full-fledged ecosystem, therefore it provides much more services to humans than timber and fuel.

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