

Northern Research Institute of Forestry – History, Current Status and Direction of Development

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The article is devoted to the history of the forest science development in the European North of Russia and synthesis of the scientific results of the Northern Research Institute of Forestry.

Since the foundation of the Northern Research Institute of Forestry, its scientists conducted fundamental research on the nature of taiga and pre-tundra forests, typology of forests and cutting areas, natural and artificial reforestation, mechanisms of mutual influence and growth of basic tree species in the extreme conditions of the North. The theoretical regulations of taiga forestry were systematized and forest management systems developed in forests for various special purposes. The processes of stands development of derivative formations were studied, and the economic and biological assessment of the change of tree species were given [1]. The development, analysis and systematization of regional forest taxation standards, which have found wide application in forestry practice is considered the most important result of the Institute's research [2].

Ecological and silvicultural basics for improving the quality and productivity of artificial forests in the European North, the system of targeted forest growing, the system of felling for the main use, based on silvicultural, ecological and technological requirements for technical means were developed. The results of long-term scientific work on the state, ways of conservation and restoration of larch forests of the North were summed up. The southern boundary of pre-tundra forests of Russia on the basis of a comprehensive study of the protective role of extremely northern forests were established. The ways to increase the productivity of forests using methods of selection, drainage reclamation and application of mineral fertilizers were developed, technologies for the production of resinous substances were improved, an extensive network of coniferous geographical cultures which allows the zoning of forest seeds in the European North was created.

A «Dynamic model for multivariate multifactor calculations of forest use» was developed in order to conform with the principle of sustainable forest management; it makes possible the determination of size of the estimated cutting area for coniferous economy that does not decrease during the whole logging turnover, takes into account the impact on the cutting area, the period of natural regeneration, increase of forest productivity. Methods of economic evaluation of forest resources and economic evaluation of the effectiveness of forest management measures were also developed.

In conclusion, the article states that, despite the listed successes in the awareness of the northern forests, further more in-depth study of the nature of the northern forests is needed.

References

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