

Adaptive management, precision forestry and geoinformatics.

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Abstract

Space-scale matters are traditionally important for solution of problems in many application fields including forestry. Commonly, without deeper reasoning or consequences evaluation the stand or its part (patch) are accepted as a target of research and management activities, too. Also the scales used in modeling and generalization are rather higher, regarding the long lasting forest growing up and high variability of natural conditions as well as uncertainty or wider statistical dependency of the relationships and management rules effect. It is also typical to apply the static, less or more constant management targets, rules and principles in the forest management. These trends are changing currently. Time depending approach to evaluation of ecosystem goods and services as well as management targets correction, regarding their development, risk and negative factors influence and relationships between the whole ecosystem dimensions and the smallest location change, which are important for its behavior, utilization or operation, are introduced.

Adaptive forest ecosystems management and precision forestry are effects of these tendencies. Although they were understood as independent more or less, it seems that is possible to append or integrate them one another. The tendency of precise forestry, oriented more technologically by now, would found rationalization and content - object by accurate arrangement to the adaptive forest management. And the adaptive forest management would acquire part of very important, vital and effective tools and specific research and management objects employing the precision forestry, vice-versa.

There are plenty of scientific and research initiatives existing in this field. Very good example is the MOTIVE project (MOdels for AdapTIVE forest Management). It is a large-scale integrated project in the 7th Framework Programme of the EU that evaluates the consequences of the intensified competition for forest resources specific climate and land use change. Another examples offer two COST actions under the Forest Products domain – COST FP0603 Forest Models for Research and Decision Support in Sustainable Forest Management and COST FP0804 Forest Management Decision Support Systems FORSYS. Two institutions play key role in symposia and conference organizing - Precision Forestry Cooperative at the University of Washington, Seattle, USA and the Department of Forestry and Wood Science at University of Stellenbosch, South Africa. The second one was prepared serial of fourth symposia – last of them in March 2010.

There are presented also results and plans of the Technical University in Zvolen in this field. It is especially a project supported by the Scientific Grant Agency of the Ministry of Education of Slovak Republic and the Academy of Sciences with title “Precision Forestry Principles and Methods Research” and project titled “Center of Excellence for Decision Support in Forest and Landscape” which is supported by the Agency for EU Structural Funds of the Ministry of Education of the Slovak Republic.

Key words: adaptive forest management, precision forestry, decision support system, information, research project