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Experience in Conducting the GIL of the Russian Federation and Improving the National Forest Inventory in the Second Cycle

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The article examines the methodical aspects of the first cycle of the National Forest Inventory (NFI) of forests and other wooded land of the Russian Federation. It also includes the critical analysis of the current method, which utilize the permanent sample plots on the stratified sample base. Further, the paper discusses the use of the forest management planning documentation as the basis for stratification and its impact on the national forest inventory results, including characteristics of the total standing volume.

The article proposes an alternative to the present method, with the application of a regular grid of permanent inventory plot method.The proposed regular grid of permanent inventory plot methodis based on a hexagon which when projected on to the Earth's surface negates the distortion of the projection.

Further, the article proposes to divide all forests of Russian Federation into three zones with different threshold values of error of total determination of standing volume on the following principles:

- *completeness of implementation of activities of conservation and protection of forests;*
- *share of usage of the allowable final cut;*
- *share of leased forest areas in the total area of forest districts;*
- *length of roads per1 000 ha of the area of forests.*

The authors proposed the change of the scheme of permanent sample plots. They propose the usage of the 68 percent confidence probability for the calculation of the total standing volume. For hard-to-reach forests, the authors suggested to conduct RussianNFI using remote sensing data as well as making test plots based on the training classification. The authors provide calculations of the constant trial plot number for repeated examinations in the NFI second cycle and the number of permanent sample plots.

In conclusion, itis noted that the alternative method, proposed in this article,assures continuation and optimal use of the results of the first cycle of the Russian NFI and provides solid basis for the next and the following onesreduces the economic cost of the working process and enhances the quality of the results.