

**CLASSIFICATION OF FOREST SITES BY THE VOROBYEV-POGREBNIYAK'S SPECIES
INDICATOR TABLES: DATABASE AND EXPERIENCE OF ANALYSIS OF FOREST
INVENTORY DATA**

L.G. Khanina

Institute of Mathematical Problems of Biology RAS - the Branch of Keldysh Institute of Applied

Mathematics of Russian Academy of Sciences

Prof. Vitkevich st., 1, Puschino, Russia, 142290

E-mail: khanina.larisa@gmail.com

Received 20 November 2019

Vorobjev's indicator tables of plant species were updated according to the modern nomenclature of plant species. The Vorobjev's tables are used to determine the types of forest conditions (forest sites) (FS) according to the Krudener-Alekseev-Pogrebnyak system in the Russian forest inventory. Prof. Ludmila Zaugolnova developed a database according to these tables in the early 1990s. An analysis of 898 indicator species by type and subtype of the edaphic grid (with accounting of ecological-coenotic groups of species) showed a very high proportion of species of relatively rich habitats among the indicator plants (subtype C, 78%). The expected high representation of piny species in subtype A, boreal species in subtype B and nemoral species in subtype C turned out to be biased in the Vorobjev's tables toward richer (and often wetter) habitats. An algorithm has been developed for the formal calculation of FS by the composition of plant species dominated the ground layer of forest stands. The algorithm was tested on the data of forest inventory of 1981 in the Prioksko-Terrasny Biosphere Reserve. In 77% of cases, the FS values calculated from the lists of dominant species coincided with the FS values marked in the forest inventory data, but in 62% of cases the calculated estimates did not have a single value. In general, formal processing allows revealing inconsistencies of FS values and lists of species dominated the ground layer, if such inconsistencies exist. The proposed algorithm and the developed database can be used to determine FS according to the Pogrebnyak's system and the list of dominants in the ground layer as well as for independent verification of expert assessments of FS contained in forest inventory data.

Key words: *forest inventory, forest taxation, edaphic grid, Krudener-Alekseev-Pogrebnyak system, forest site conditions, indicator tables, plant species, ecological-coenotic groups*

Рецензент: профессор, д.б.н. Чертов О.Г.