

Age Structure and Composition of Pine Stands in the Altai-Novosibirsk Region of Forest-Steppe and Ribbon Forests

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The article constitutes an analysis of the structure of pine stands by age, height, diameter, and wood stock. The study was carried out on the territory of the Rakitovsky forestry of the Altai Krai for six pine stands that grow in the conditions of the forest types “dry coniferous wood on gentle slopes” and “fresh coniferous wood”. The article presents graphs of the wood stock distribution and the number of trees in the studied stands by diameter classes, as well as the distribution of age and height indicators by diameter classes.

The felling age established in the Rakitovsky forestry for stands with the predominance of common pine of the III and lower yield classes is from 121 to 140 years. Under these conditions, trees of this age can have completely different diameters – 40 cm and more or from 16 to 20 cm. At the same time, trees belonging to the diameter classes with a thickness of 40 cm or more can have a smaller age. The range of variation in the age of trees within the same diameter class can be from 10 to 164 years with an average value of 40 years which certainly makes it difficult to divide trees into age generations.

The study found that all the pine stands under study were single-tiered, conditionally mixed-age, and mixed-age. The stands in which the distribution of the stock by diameter classes has two or more vertices were evaluated as pine trees consisting of 2-3 generations. For two of the

six pine stands, there is an overestimation of the average age of forest elements based on forest management materials and an underestimation of the average age for one of the stands. Such taxation indicators of forest elements as the average height and average diameter in the forest management materials correspond to reality. The study also found that for stands that grow in the conditions of the fresh coniferous wood type, the largest number of trees was concentrated in diameter classes of 8 to 12. In the conditions of the type “dry coniferous wood on gentle slopes”, the distribution of trees along the diameter class is more uniform. Based on the obtained data on the age of the registered trees and stocks of the studied pine stands, corrected formulas for their compositions were proposed.