

Structure of White Poplar Plantations in the River Floodplains of the Middle Don Basin

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The article considers a complex of characteristics that determines the specific structure of the floodplain white poplar plantings in native groups of forest types and reflects or directly influence the degree of their biological stability.

Referring to the existing connection of research on the structure with problems of maintenance of the stability, increasing forest productivity and effective forest management according to the data of contemporary scientists [1-4], the author of the article bases the actuality of his work for plantings of white poplar – as one of the edificator species in the floodplains of the rivers at the middle Don.

The principal part of the article decrypts the structure elements of white poplar plantations of different typological affiliation. The study establishes that there are structural differences in the white poplars which growing in the middle and in the nearterrace parts of the floodplain, what manifest as a measure of distribution, the course of growth and productivity, the species composition, the success of natural regeneration. Analysis of the age structure, reveals a negative tendency to aging of white poplar stands, which smoothes out by its high regeneration and afforestation ability. Species of trees and shrubs that can constitute the second layer of the forest stand and underwood in white poplar plantations points out. The study analyzes distribution of white poplars by stand density and characterizes natural thinning at different thickness level in pure and mixed plantings.

The horizontal structure of stands of different age and species composition evaluates by character of the spatial distribution. The research reveals that young white poplars is characterized by regular type of placement of suckers, when it grows up is replaced by random distribution or, in the author's opinion, regular-group. In the mature stands, there are tendency to group placement of white poplar trees and its associated species.

The age, typological affiliation, the species composition of white poplar plantations determines their biological stability, and the stand density, thickness and course of natural thinning, the presence and composition of the undergrowth and underwood reflect its degree.

The study is proved that the heterogeneity of the stand diameter construction indicates a high degree of biological stability of floodplain white poplars. And both indicators changes with age and differs depending on the group of forest types, and this confirms the results of earlier studies [5].

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