

ONTOGENETIC SCALES OF RELATION OF TREES TO LIGHT (ON THE EXAMPLE OF EASTERN EUROPEAN FORESTS)

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Abstract. Scales of shade tolerance, light demand and ranges of light possibilities for 13 tree species of the Eastern European forests have been developed. The variability of these plant properties in ontogeny is shown. Shade tolerance is the lower limit of the light and production potential of plants. The light minimum of the undergrowth is based on the ontogenetic scales of shade tolerance. The light minimum was determined with the help of individuals with extremely low vitality and which grew under a dense forest canopy under the conditions of light deficiency. The light demand is the upper limit of the light and production capabilities of plants. The basis of the ontogenetic scale of light demand is the production (average annual increment of biomass) of individuals that have grown in conditions of free growth at high irradiance levels. The range of light possibilities is the irradiance limit where the production process of plants can be carried out. Ontogenetic scales of ranges of light possibilities of trees are constructed on the basis of a comparing the position of species in the scales of light demand and shade tolerance.

Key words: shade tolerance of trees, light demand of trees, ranges of light possibilities of trees, light minimum of undergrowth, ontogeny of a tree, Eastern European forests.