

STUDY OF DEAD WOOD CHARACTERISTICS ON THE I LEVEL FOREST MONITORING

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The aim of our study was to conduct a large-scaled analysis of dead wood presence in forest ecosystems of Ukraine on the results of forest monitoring I level survey.

Materials and methods. Forest monitoring I level database of Ukraine was used for the study. Testing of monitoring network representation was carried out. Presence of fresh and old standing dead trees and laying dead wood, their quantitative characteristics by categories “sporadic” or “abundantly” are recorded at each monitoring plot. Presence of dead wood for each of these categories in 2012, in the whole Ukraine, by climatic zones, main trees species, forest site conditions and age groups was evaluated during the study.

Results. Generally in Ukraine dead wood in any form is registered at about 60% of forest monitoring plots. Dead wood is mostly represented by standing dead trees, at 55,8% plots there are only standing dead trees, at 8% there are all categories of dead wood. Thus in the majority of plots amount of dead wood is sporadic.

Compared to the results of the dead wood evaluation within the European project BIOSOIL amount of dead wood in forests of Ukraine is lower than in Europe. So generally in Europe dead wood was registered in 90% of monitoring plots – while in Ukraine only at 60%. In Europe standing dead trees are estimated as about 20% of the stock of dead wood, while in Ukraine they make more than 50%. This indicates that in Ukraine there is an active removal of dead wood from forest ecosystems during forest management.

The largest share of plots with dead wood in any form is stated in the Forest-steppe (61.2% of plots), and the lowest in the Crimean Mountains (51.2%). In the Carpathians the largest variety of dead wood is stated, at 14% of plots all categories of dead wood are presented. In the mountain regions of Carpathians and Crimea there is the largest share of plots with laying dead wood (27.9 and 24.4% respectively),

probably due to the difficult terrain and inaccessibility, for comparison – generally for Ukraine the share of such plots is only 15.8%.

The share of plots where dead wood were presented abundantly is very low and ranges from 0 to 3.2%.

In A (poor sites) forest conditions the smallest amount of plots contained dead wood (49,6%) in any form. More often dead wood was stated in B (relatively poor) conditions (62,1% plots). In C (relatively fertile) conditions on 9,3% of plots all categories of dead wood were presented.

More often dead wood was registered in stands with dominance of *Fraxinus excelsior* (71,1%), *Picea Abies* (62.5%) and *Betula pendula* (63.9%). At 25 % of *Picea* stands laying dead wood was registered. More rarely dead wood was stated in *Abies alba* (35.7%) and *Robinia pseudoacacia* (44%) stands.

The share of plots with dead wood increases with age, with maximum in 80 year stands. In young stands sporadic fresh standing dead trees are often represented. In stands older then 35 years old standing dead trees in small amount is stated.

Conclusions. For the first time a qualitative assessment of the presence of dead wood in forest ecosystems of Ukraine on the base to forest monitoring I level data was carried out. It was found out that in Ukraine dead wood is represented at 60% of forest monitoring plots I level, which is much less than in Europe (90% of plots). Dead wood is mainly represented by sporadic standing dead trees (50% of sites), while in Europe they represent only 20% of dead wood stock. Obtained data indicate that in Ukraine there is an active removal of dead wood especially laying dead wood from forest ecosystems during forest management.

The analysis made it possible to obtain only general understanding of representation of dead wood in forests of Ukraine. At the same time to assess quantitative (stock, number of units) and qualitative (tree species, decomposition degree) characteristics it is necessary to conduct detailed measurement of dead wood units on plots with fixed area.

Dead wood, standing dead trees, laying deadwood, forest monitoring, types of site condition