

Král, Kamil, Tomás Vrska, Libor Hort, Dusan Adam and Pavel Samonil (2010): Developmental phases in a temperate natural spruce-fir-beech forest: determination by supervised classification method. Eur J Forest Res 129: 339-351.

Reference: Král, Kamil, Tomás Vrska, Libor Hort, Dusan Adam and Pavel Samonil (2010): Developmental phases in a temperate natural spruce-fir-beech forest: determination by supervised classification method. Eur J Forest Res 129: 339-351.

Short reference: Král et al. (2010)

First author: Král Kamil

Year: 2010

Abstract

A sequentially shifting fine-scale mosaic of forest patches in different phases of development is widely accepted as being a basic description of the natural dynamics of temperate deciduous and mixed forests. The determination of these patches and phases has often been performed using subjective field observations and simplistic or loosely defined mapping criteria, with resulting maps being observer-dependent. The goal of this study is to develop a more objective, more complex and spatially explicit method for the determination and mapping of forest developmental stages and phases. We propose a new approach, based on local diameter distributions, presuming that their shape indicates the phase and trend of stand development. As input data, we used a stem position map of more than 18,500 trees in the Zofin natural forest (Czech Republic). Using focal filtering, we created local distributions of both live and dead tree counts and tree basal areas, across diameter classes, separately for every particular site in the stand and its circular surroundings (diameter of the moving filter was 21 m; mapping step 1 m). These distributions were then recognized by an artificial neural network and classified into pre-defined categories. Preliminary results indicate a classification accuracy of about 80% in distinguishing four developmental stages and above 68% in distinguishing eight developmental phases. The merits of this new method are in the fine scale and repeatability of mapping. It can be an objective unifying concept for the

inter-comparison of stand dynamics from comparable site conditions.

habitat: coniferous mixed woodlands

habitat: oak-hornbeam forests, beech forests

forest dynamic, gap dynamic, succession

forest structure: stand

Journal: European Journal of Forest Research

Location: ER Archívum - digitális

URL: [SpringerLink](#) Type: scientific paper

Strict forest reserves: [Kékes Forest Reserve](#) Katalógusba vette

[Óserdő Forest Reserve](#) Horváth

Ferenc [Tátika Erdőrezervátum](#)

Katalógusbavétel időpontja: [Wed, 01/10/2024](#) 12:00