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[home](#) [page](#) [about us](#) [contact](#)



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**Table of
Contents**

IN PRESS

JFS 2015

JFS 2014

JFS 2013

JFS 2012

JFS 2011

JFS 2010

JFS 2009

JFS 2008

JFS 2007

JFS 2006

JFS 2005

JFS 2003

JFS Home

**Editorial
Board**

For Authors

- **Authors
Declaration**
- **Instruction
to Authors**
- **Guide for
Authors**
- **Copyright
Statement**
- **Submission**

**For
Reviewers**

- **Guide for
Reviewers**
 - **Reviewers
Login**
-

Subscription

Journal of Forest Science

**The effects of cutting regimes on natural regeneration in
submountain beech forests: species diversity and abundance**

Barna M.:

[[fulltext](#)]

The paper summarizes the results of 15-year natural regeneration for beech of five plots with different densities situated in the Western Carpathians Mts. Three of the plots were subjected to differently intensive shelterwood cuttings (plots L, M, H), one plot was clear-cut (CC), and one was left without intervention – as a control (C). The number of one-year-old seedlings decreased proportionally with increasing cutting intensity. The ANOVA results document a significant influence of cutting intensity on the abundance of both one-year-old and older seedlings. The abundance of beech seedlings was initially increasing with increasing cutting intensity, and, having reached the peak on plot M (medium intensity), there followed a decrease in the seedling abundance. Lower numbers of beech seedlings on plots subjected to less intensive cutting (C, L) result from less favourable growth conditions in comparison with plot M. On the other hand, cutting of higher intensity (H, CC) resulted in lower numbers of fructifying

parent trees. The medium cut intervention having provided the plot M with stocking of 0.5 (50% of the stand) resulted in a lower number of seed resources (limiting factor for natural regeneration). However, for the other factor – seedling establishment (survival and recruitment) this plot (M) represents an ecological optimum in beech regeneration in the given conditions.

Keywords:

regeneration development; stand density; shelterwood cutting; clear cutting; *Fagus sylvatica* L.

[[fulltext](#)]

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