

## Abstract template for the conference “A century of national forest inventories – informing past, present and future decisions”

Dear author. This is a two-page template that in the first page will ask for information on presenter name, topic, and preferred presentation form.

On page two, you are asked to fill in your abstract in the format and font size indicated. Please remember to include authors affiliation information in the footer section of page two. The length of the abstract may not be more than one page including references.

<b>Abstract title:</b>		Effect of forest management practices on forest biodiversity – analyses with NFI data
<b>Take-home message:</b>		<i>NFI data show remarkable changes in structure of forests. These changes have both negative and positive impacts on forest biodiversity. We can improve our forest management practices by analysing the future development of forests at different management scenarios</i>
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<b>General topic, see website:</b> <small>(please double click on the check box and activate the relevant one)</small>	<input checked="" type="checkbox"/>	Improving future NFIs by learning from the past
	<input type="checkbox"/>	NFIs today and in the future
	<input type="checkbox"/>	Cutting edge and futuristic inventory techniques and technologies
<b>Preferred presentation form:</b>	<input checked="" type="checkbox"/>	Oral presentation
	<input type="checkbox"/>	Poster
<i>Abstracts will be reviewed by members of our scientific committee and you will be given information on decisions in due time after the submission deadline has passed.</i>		

**Effect of forest management practices on forest biodiversity – analyses  
with NFI data**  
*Kari Tapani Korhonen et al.*

## **Introduction**

Forests and forestry has for decades been important for the Finnish society and economy. 86 % of the land area of Finland is forestry land, consisting of productive forest land, poorly productive forest land, and naturally treeless land. There are more than 600 000 forest owners, the average (productive) forest area per capita 3.7 hectares. The value of forest industry products was 20.3 billion Euro in 2016, accounting to almost 20 % of the total gross value of manufacturing in all industry sectors.

The forest legislation and forest management guidelines have traditionally targeted to efficient production of timber. In 1990's the management of forest biodiversity became increasingly important, in accordance with the United Nations Conference on Environment and Development (UNCED) Rio de Janeiro 1992 and Ministerial Conference for Protection of Forests in Europe (MCPFE) Helsinki 1993. These international processes and agreements were reflected in the new forest act of Finland (enforced in 1996), raise and rapid growth of forest certification systems as well as in the new forest management guidelines (Tapio, 2001).

Forests in Finland are mainly (63 % of forest area) owned by private people. Therefore, management of forests vary largely. The forest legislation allows large variety of management practices, including leaving the forest without any management. For several decades the forest legislation has not included obligations to do thinning or regeneration cuttings. But in the case that thinning is accomplished the legislation defines the minimum density of growing stock after thinning. In the case of regeneration cutting the forest legislation obliges to ensure regeneration with tree species that is suitable for the site. Since 1997, the Forest Act and related decrees have included a list of specific habitats where cutting is allowed only in the case that it does not harm the natural characteristics of the habitat. Regarding retention trees or removal of dead trees, the forest legislation does not contain any rules, but forest management guidelines (Tapio 2001, 2007, 2014) and the forest certification systems (PEFC, FSC) recommend leaving of retention trees on a regeneration site and avoiding removal of dead trees in the cuttings. On the other hand, the Forest Damages Act (2014) requires removal of coniferous damaged trees to ensure good forest health.

The aim of this paper is to study how the changing forest management practices have influence the structure of forests in Finland since the late 1970's.

## **Data and methods**

At the first step of the study we used national forest inventory (NFI) data from the beginning of 1980's to current to analyse the changes in forests. A few parameters indicating forests structure and measured in each NFI were selected for the analyses.

At the second step we used the MELA software to analyse the development of forests under different forest management scenarios.

The next steps of the study is to merge the data on forests development with information on threatened forest species and their requirements for the habitat. As a result we make conclusions on the effect of different forest management practices on forest biodiversity and give recommendations on management practices to mitigate the negative impacts.