

Baseline for Carpathian wide forest indicators

EEA overview about Naturalness indicator and HNV forest

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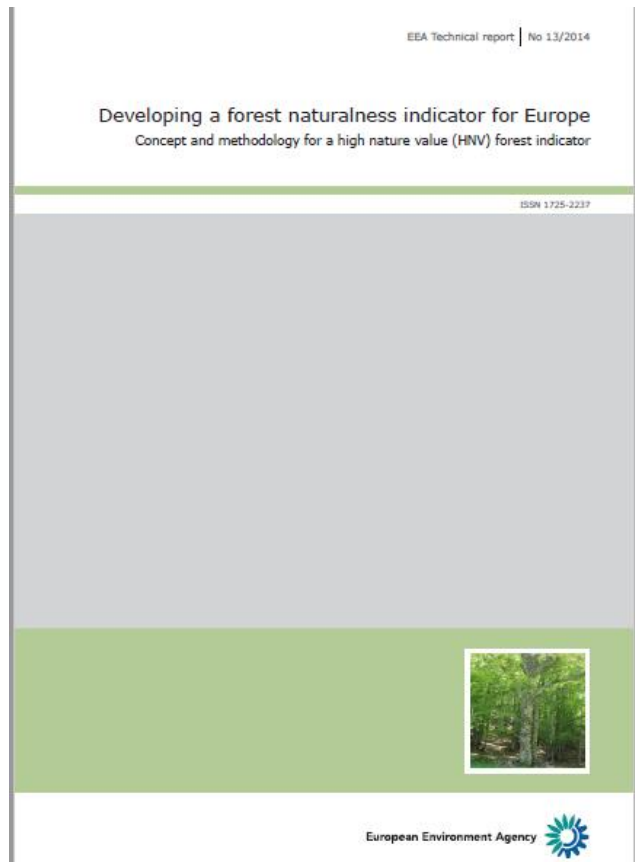
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European Environment Agency



Background



High Nature value forest area as a key forest related indicator to monitor and assess the degree of naturalness in Europe and relate to the forest management intensity in European forests. The outcome will contribute to assess the success of the target 3b of the EU Biodiversity Strategy as well as the EU forest Strategy.



Definitions


Concept (from 2007, contemporary to HNV farmland) *all natural forests and those semi-natural forests in Europe where the management (historical or present) supports a high diversity of native species and habitats, and/or those forests which support the presence of species of European, and/or national, and/or regional conservation concern.*

The HNV concept brings an approach to **nature conservation** that differs from, and complements, the more established approach based on site protection. The HNV concept and the indicators developed for defining HNV areas will contribute to the first three targets of the EU 2020 headline target, of halting biodiversity loss by 2020.

- The concepts of naturalness and biodiversity are sometimes misinterpreted. If **naturalness can be defined as 'the similarity of a current ecosystem state to its natural state'** (Winter, 2012), biodiversity can be defined as 'the diversity of life in all its forms and all its levels of organization' (Hunter, 1990). Confusion arises between the two concepts because some virgin forest ecosystems (with high naturalness) also harbour a large amount of biodiversity. But this is not always the case: a pristine forest habitat located in environments affected by strong limiting factors (extreme cold or drought, poor soils, etc.) may still have very high level of naturalness, even if it is usually characterised by a limited number of life forms, and thus has a lower level of biodiversity. So naturalness and biodiversity are not correlated in all forest ecosystems.

'Naturalness' can thus be considered as a gradient, ranking from the extreme of absolutely natural to the opposite, absolutely artificial.

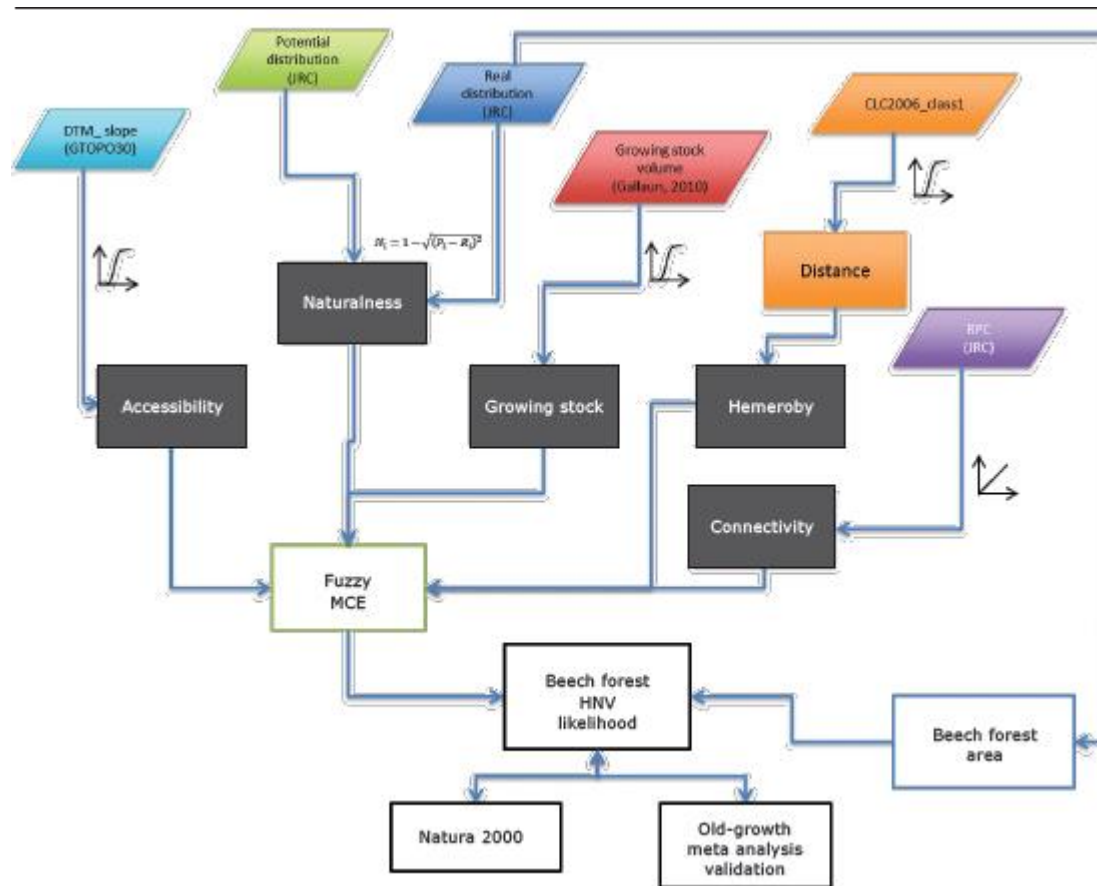
Table 1.2 The 3 categories of forest naturalness as reported from different sources, and their relationship to forest naturalness and HNV forests

European Commission		Forest Europe, UNECE and FAO	FAO FRA	Naturalness	HNV forest
Plantations	Forest stands are established by planting and/or seeding in the process of afforestation or reforestation. They are intensively managed stands of introduced or indigenous species and meet the criteria of regular spacing, even age class and 1 to 2 species. Excluded are established plantations which have not been managed for a significant period of time which are considered to be semi-natural forests	Plantations	Planted forests		NO
Semi-natural	These are forests whose natural structure, composition and function have been modified through forest operations. Most forests with a long management history	Semi-natural	Other naturally regenerated forests		SOME OF THEM
Naturally dynamic	Forests whose structure, composition and function have been shaped by natural dynamics without substantial anthropogenic influence over a long time period.	Undisturbed by man	Primary forest		YES

Source: Modified from European Commission, 2009.

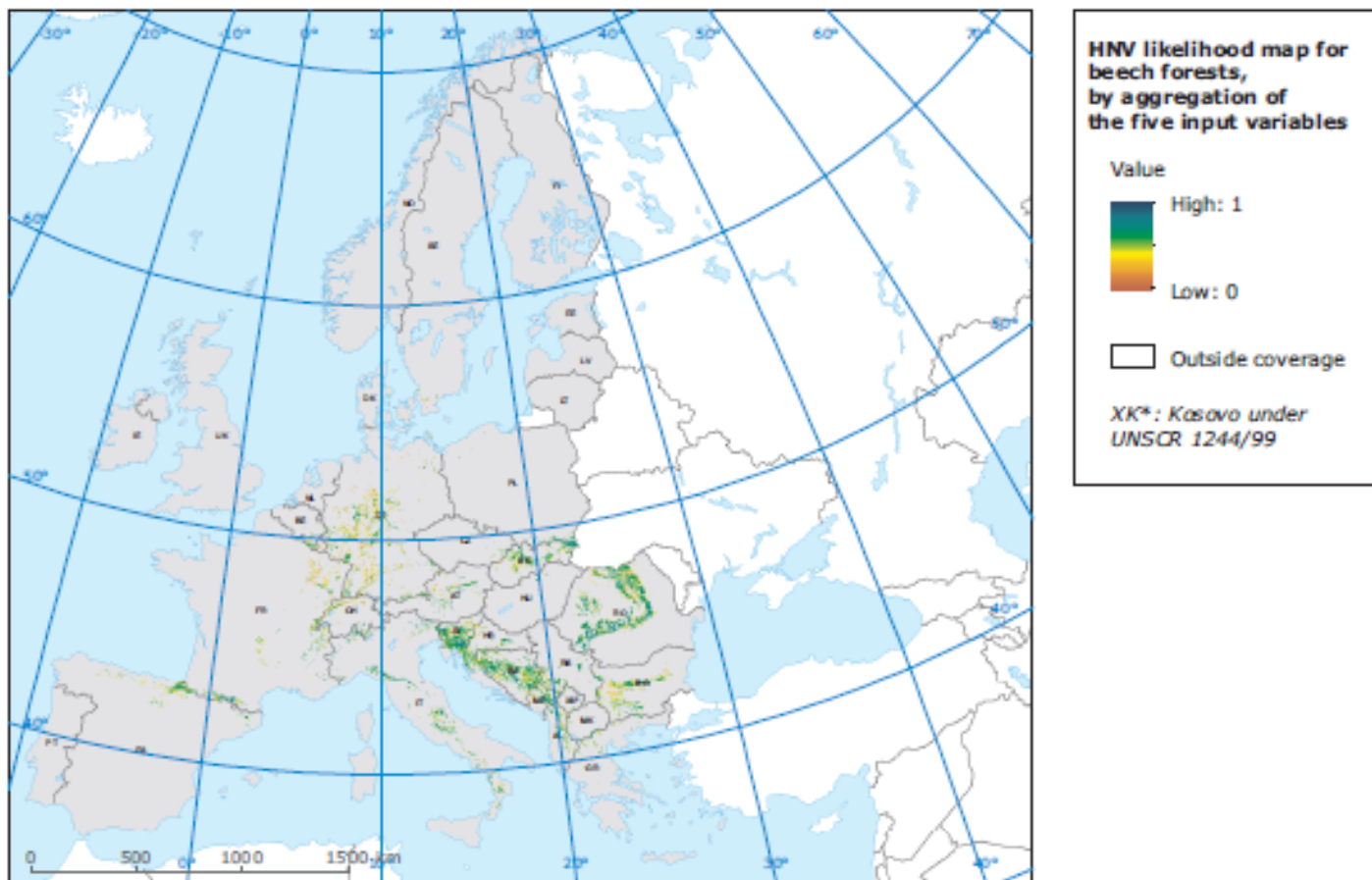
HNV forest area: a possible pan-European assessment?

Top-down approach - First approach for Beech forest type



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Map 3.1 HNV likelihood map for beech forests, by aggregation of the five input variables



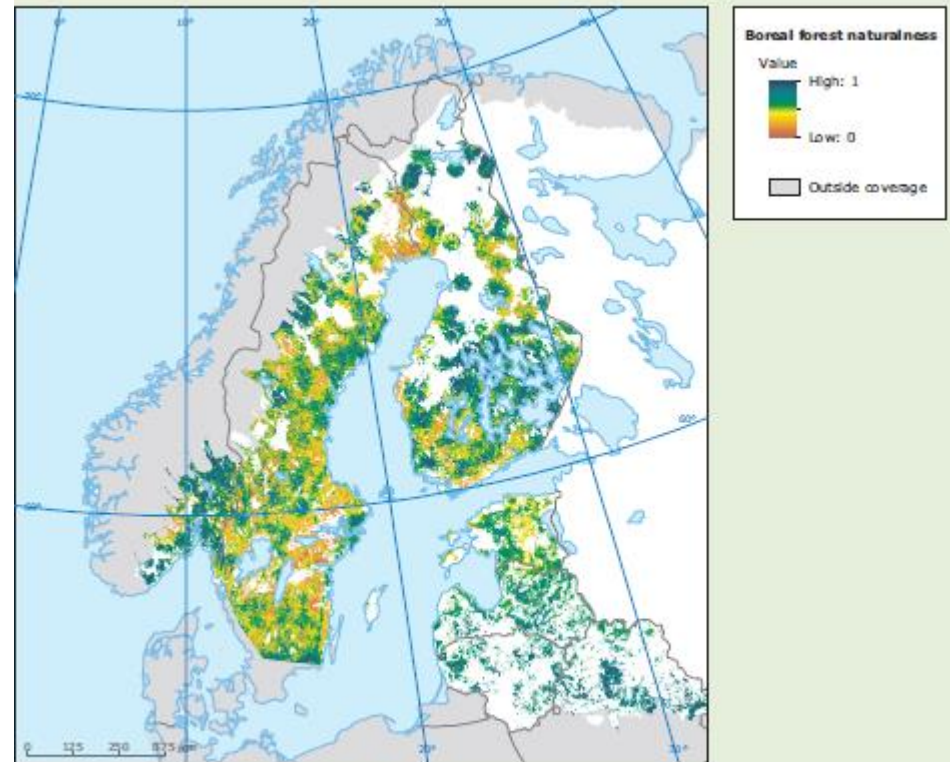
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- Limitations for extending the methodology to other European Forest type
- Non consensus with the stakeholders about what indicators have to be included. The method for beech forest overlaps and mixes concepts.

Simplified method: based on
*naturalness by Biographical
regions*

....2017 work in progress...

Map 3.6 Naturalness of tree species in boreal-dominated forests



Note: This is a first, tentative example of possible simplification of the methodology, and as such, is not intended to be a conclusive analysis of naturalness of boreal forests.

→ 2017 actions →



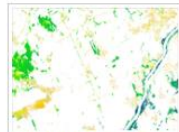
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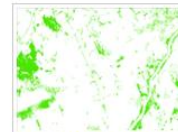
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[Tree Cover Density 2012](#)



[Forest Type 2012](#)

The HRL forest consists of 2 products: **tree cover density** and **forest type**. (As part of GIO land an additional 2 forest products are being produced for the JRC, the so called "service element 2". These products are: a) tree cover presence/absence; and b) dominant leaf type. These products are being produced in 25m spatial resolution and will be available directly from the JRC).

, habitat, usage and threats

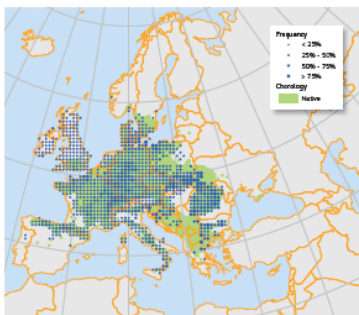
important and widespread broadleaved trees in Europe. It is a tree that matures late. Its natural range extends from southern France in the west to Turkey in the east. Though not demanding of soil type, it is distributed throughout the year and a well-drained soil. It is a tree that matures late. Owing to the capacity of its root system for assisting in the uptake of potassium in its leaves, Beech trees conserve the productive soil. It is strong and wears well making it ideal for a wide range of uses, including pulp and firewood.



Large beech in a mountain pasture in Piani di Praglie (Genova, North Italy). (Copyright Ettore Balocchi, www.flickr.com - CC BY)

Habitat and Ecology

Beech is a hardy species. It tolerates very shady situations (it is the most shade-tolerant broadleaved tree in its range¹⁰), so that natural regeneration is possible in silvicultural systems with continuous crown coverage as the seedlings are able to survive and grow below the canopy of established trees. The predominance of beech means a reduction of light level in the understorey vegetation level and in that case beech seeds survive better than those of other tree species. It is not particularly soil-sensitive¹¹ and grows on a wide variety of soils with a pH range from 3.5 to 8.5, although it cannot tolerate the most acidic



Map 1: Plot distribution and simplified choropleth map for Fagus sylvatica. (Copyright Ettore Balocchi, www.flickr.com - CC BY)

resilience + Protected areas + management degree
???....what??

challenges for validating with NFI information

Working in progress.....