Assessing wild forest products using a real-time forest resource and planning system

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Scope and main objectives

There has been little benefit to forest owners in terms of Wild forest products WFPs, apart from birch sap, spruce shoots and spruce resin, which are excluded from collection under everyman's rights. This is due to a lack of supporting forest management systems that could consider the multiple use of forests, including WFPs.

Here, we present the world's first nationwide forest resource management system for WFPs, incorporated into an up-to-date resource management planning system, aimed at supporting forest-owner decision-making relating to WFP production, and allowing the diversification of income options from their forests.

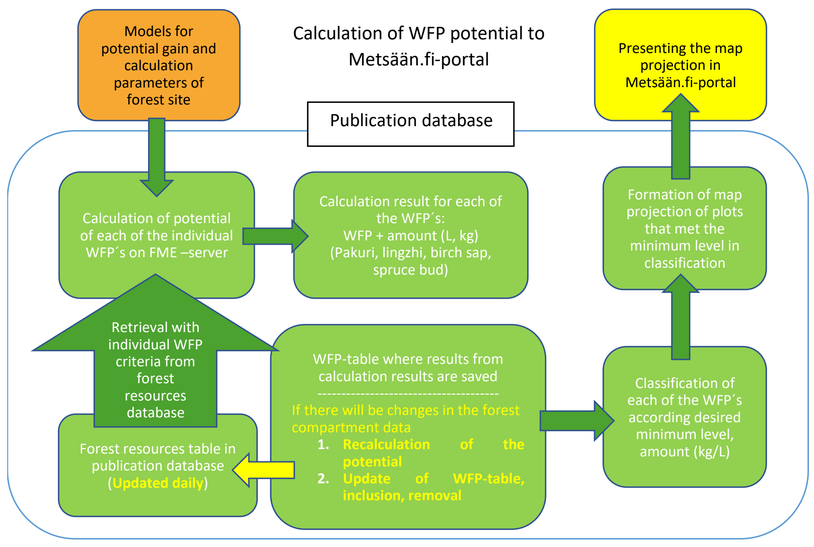
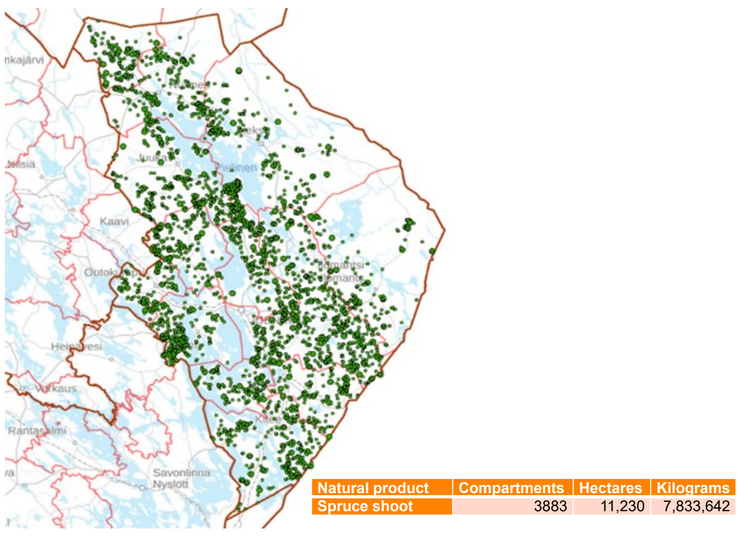


Figure 1. Process for generating a forest resource management system for WFPs that can be incorporated into a nationwide resource management planning system via the Metsaan.fi portal



Natural product	Compartments	Hectares	Kilograms
Spruce shoot	3883	11,230	7,833,642

Figure 2. Map projection of North Karelia, Finland for forest compartments suitable for harvesting spruce shoots and Projection of potential harvesting compartments and yields for spruce shoots. Projection has been derived from FME calculation and classification at the desired minimum level (kg/L).

Material and methods

Models for potential gain in two different WFPs (birch sap, spruce shoots) and two different cultivable WFPs (Pakuri, lingzhi) were generated, using forest inventory data on WFPs, cultivation data and expert estimates from researchers on the suitability of forest compartments (soil, forest type, main tree species, development class, basal area, number of stems, annual growth, average tree age and diameter, soil wetness, area) (Fig. 1.).

The potential forest compartments were derived using models from forestry data. The production potential (kg, l) or potential to cultivate was calculated (FME) for each compartment, according to the models (Fig. 2.). This information was then uploaded to the database at the Metsaan.fi portal. This portal is available free to each forest owner and forestry operator (Fig. 3.). The database at this portal is updated daily to compartments, after forest management activities have been performed.

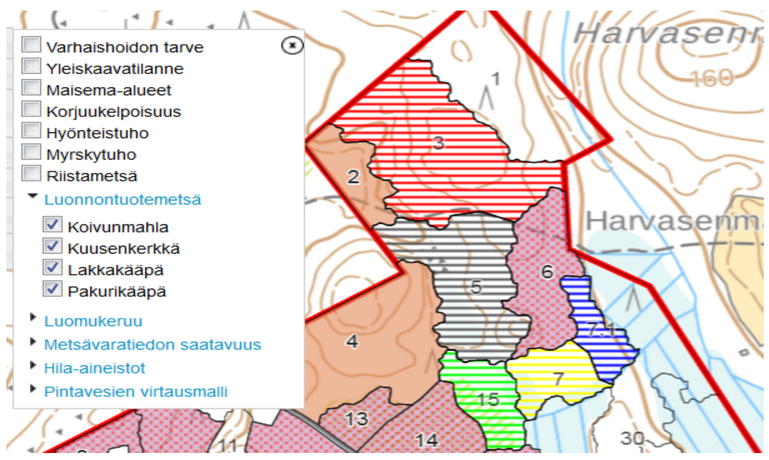


Figure 3. Map projection visible to the forest owner of their forest holdings on the Metsaan.fi-portal. The map projection includes forest management tools based on the developmental stage of the forest, and also WFP potential projections (Koivunmahla—birch sap, Kuusenkerkkä—spruce shoots, Lakkakääpä—*G. lucidum*, Pakurikääpä—*I. obliquus*).

Conclusions

The forest management and planning system presented here offers a basis from which to increase the knowledge of forest owners about WFP resources and their potential to produce them, by directing them towards multifunctional forest management.

As well as supporting decision-making processes for forest owners, this system can also support the decision-making of WFP companies and investors, allowing them to obtain safe and clean raw materials, and also to assess the availability and amounts of biomass available at the area and region level.

On its own, this system offers simple support for, and a way of working towards increasing the know-how of, forest owners, generating incentives for production and a platform for trading between forest owners and WFP companies.

Acknowledgements

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