

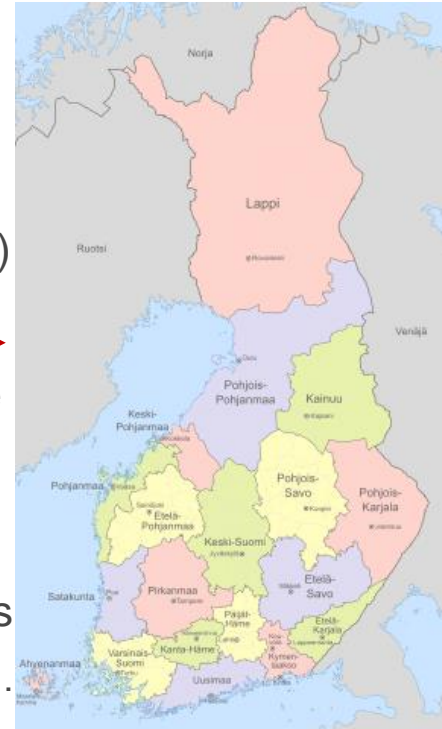
UPM – User Experience on the Feasibility of Environmental Databases

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Databases currently in use in UPM GIS (FOR-IT)

- HERTTA red listed species – the Finnish Biodiversity Info Facility
- Protected areas, Natura Areas, ground water areas – from the Finnish Environment Institute
- Regional land-use plans from the Regional Councils (18 altogether)
- Historical relics from Finnish Heritage Agency
- Specially Important Habitats of Forest Act from the Forestry Centre
- FSC CW potential HCV areas from Tapio
- FM standard's protected and special areas by UPM own effort
- Wide range of data sets with various impacts on forestry operations
 - Types of loggings, tree species selection, regeneration, soil preparation, ..



Approach and instructions by species

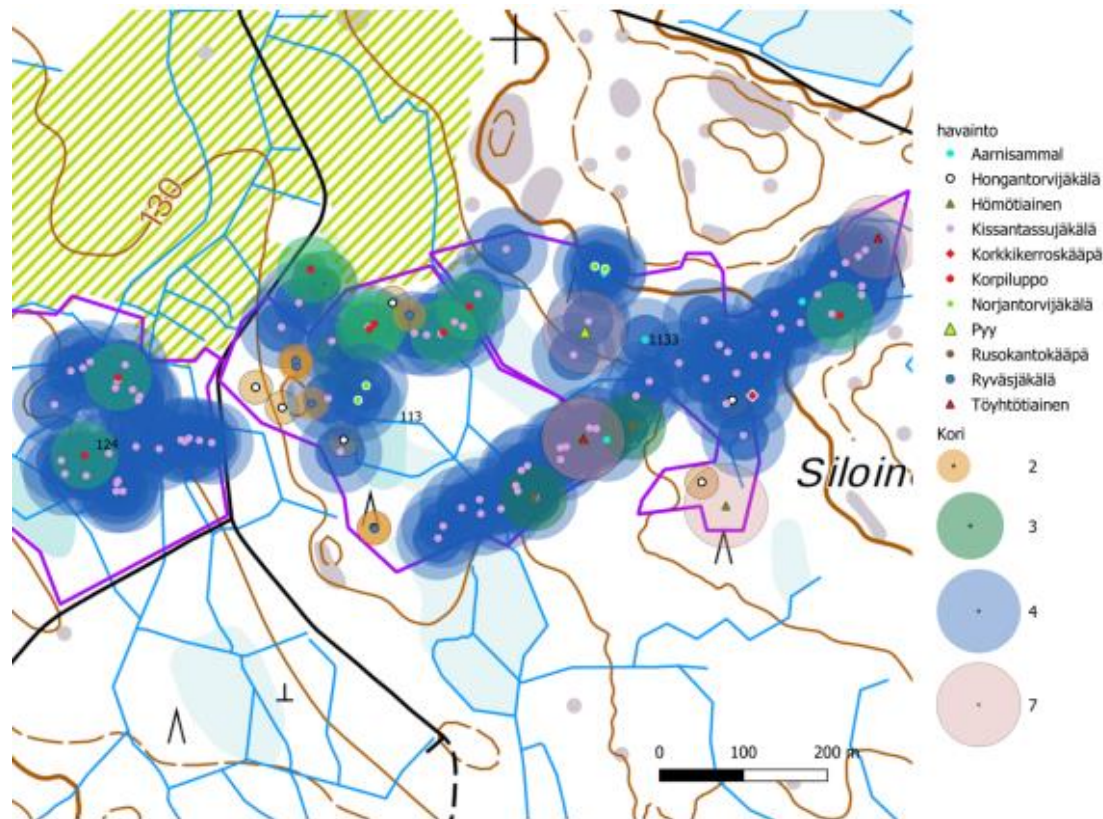
- White-Backed Woodpecker
 - Flying Squirrel
 - Capercaillie
 - Arctic Jay
 - Osprey and other birds of prey (nesting trees)
 - HERTTA red listed species – the Finnish Biodiversity Info Facility
 - Species inventory data from ENGOs and other sources – a number of national and regional VU, EN & CR species
- Operational by species but the big biodiversity picture cannot be managed this way.
- Limitations on forestry operation at the nesting time of the birds
 - A wider range of species but still only birds. Guarantees undisturbed nesting time.



FSC Basket Model

- The objective is to allocate selected red listed species into baskets and specify forestry approaches by baskets, see <https://fi.fsc.org/fi-fi/monimuotoisuus-ja-uhanalaiset-lajit-talousmetsissa/korimalli-uhanalaisille-metsalajeille>.
- C. 800 selected species. Majority of the concerned species data is weak in quality.
 - 314 NT species
 - 245 VU species
 - 148 EN species
 - 94 CR species
- The work was done in a working group consisting of species specialists, ENGO and forest industry representatives. The end result was a dead end with no consensus.
- → The knowledge of habitat requirements, the minimum features of the habitats, species resilience and dispersal patterns is very limited.

A practical example of the emerged problems



Basket 1. Species occurring in warm and light habitats and dwelling on soil or rock surfaces.

Basket 2. Species occurring in warm and light habitats and depending on old trees or woody debris.

Basket 3. Species associated with broad-leaved trees, indifferent to micro climate.

Basket 4. Species requiring continuous tree cover and dependant on old trees and woody debris.

Basket 5. Species dwelling in moist, shady and cool habitats.

Basket 6. Species requiring wood cover and connectivity at landscape level.

Compartment 124 c. 8 ha, basket area c. 5 ha
Compartment 113 c. 9 ha, basket area c. 6 ha
Compartment 1133 c. 8.5 ha, basket area c. 7.5 ha

Limitations in the Usability of the Hertta Species Data

- There is no statistical data collection procedure.
- The data quality varies a lot by species groups and by species.
- Species data serves well the need for which it is collected for – monitoring of National Biodiversity Change
- At spot level there is too much noise in the data.



The best current practice

- Safeguarding the specified habitats and critical structural features in forests with help of forestry data – soil type and fertility, tree species composition, age, coarse woody debris, etc.
- End result is a limited number of habitats enabling instructing the operations
- The range of structural features is limited, too. Possible to be instructed as well.
- The problem is that the data and knowledge of species response accumulates on a very long time span.
 - Except for species in sun scorched eskers, burnt areas and small water bodies.
- No systematic monitoring system for species response
- A broad consensus that this approach is beneficial for species

Problems and shortcomings

- [Kärpäsiä](#). Data is short and of poor quality. The habitat requirements or ecology of the great majority of species is not well known.
- Lajisuojelun lähestymistapa nojaa yleisiin teorioihin
 - The Theory of Island Biogeography
 - Source – sink model
 - Extinction debt
 - → there is no common widely accepted approach to species protection except strict nature protection.
- Processes in the boreal forests are slow. Forestry operators have left retention trees for over 20 years time. Their ecological surplus starts to realise on a wider scale only after 50 – 60 years or later.
- We have various assessment processes – NFI, threatened species, threatened habitats. The way the habitats are defined is process specific and generalisation is difficult or impossible.

In optimum

- The impact of the data is clear in geography and on the land-use.
- There is only one location for the data
- Insignificant or confusing data should be removed, no over-lapping data
 - Nature protection programme (from 1980's) → Protected area in degree → Protected area in the field → Natura 2000 area (based on nature protection act, land-use and construction act, forest act, water act) → Natura 2000 nature types → Species inventory data, etc.

UPM **BIOFORE**
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