Country-wide habitats mapping: a foundation for setting FRV and conservation objectives at national level

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Why a country-wide mapping?

- filling knowledge gaps: baseline data on extent and quality, i.e. actual conservation status of the HCIs;
- implementation of fundamental concept of the HD: what is actually meant by “favourable conservation status” of the HCIs in the country;
- designing the monitoring scheme;
- setting national level conservation objectives based on solid knowledge.
How was it done?

• Phase I (2009-2011): development of methodology, pilot mapping, shaping of and agreeing on scenarios
• Phase II (2011-2015): country-wide mapping, data analysis and definition of FRV, development of proposals for surveillance scheme
Main results. Methodology for field survey

Unique scheme for pre-selection of potential habitats
Main results: actual range, area and distribution patterns of HCIs

- Number of mapped polygons of HCIs: 87,530
- Country's area holding HCIs: 6.67%
- 7 million data entries in the DB
Area coverage examples: some types of grassland habitats
Area coverage examples:
most common forest habitat 9080

Natural areas of Lithuania

Legend
- Forest 9080 areas
- Forest 9080 disturbances

Area plot size: 64767.18 km²

ES assessment national forest, potential areas above 10% suitability in monitoring system
EC Directive, "Regulations of the Republic of Lithuania", 2010
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Prepared by: E. Subaite, M. Bandelis, 2013, QLM-FSL, 1:1,000,000 national map and ZDM
Cartography: CIT Lithuanian Institute of Geology and Geographical Information
Biogeographical context

Being on the edge of BOR region.

Habitats with restricted range:

- HCIs with main northern distribution cover whole country (except those related to specific geology, e.g. coastal habitats or gypsum karst lakes)

- HCIs with main southern distribution have their range lines through the country
9160 Sub-Atlantic and medio-European oak or oak-hornbeam forests of the *Carpinion betuli*

9190 Old acidophilous oak woods with *Quercus robur* on sandy plains

9170 Central European lichen Scots pine forests
Main results: actual structure and functions, incl. typical species

- Indicators for structure and functions identified and data series analyzed;
- Some uncertainties on typical species remained;
- Data on 670 typical species for 53 habitat types were collected with main variables - species abundance and frequency.
Setting favourable reference values: range


“Favourable reference values must be at least the range (in size and configuration) when the Directive came into force”.

“Following factors should be considered when setting favourable reference range <…>:

• Current range;
• Potential extent of range taking into account physical and ecological conditions (such as climate, geology, soil, altitude);
• Historic range and causes of change;
• Area required for viability of habitat type/species, including consideration of connectivity and migration issues.
• Variability including genetics.”

Underlined factors were used for LT on different extent.
Main results: favourable reference range (FRR)

- FRR for 50 types correspond to their current range;
- 7120 *Degraded raised bogs* - FRR proposed to set lower than current (at 0);
- 3190 *Gypsum karst lakes* and 9190 *Old acidophilous oak woods on sandy plains* - FRR proposed to set higher than current.
FRR for 3190
FRR for 9190
Setting favourable reference values: area

Guidance document:
“This is probably the most difficult of the three reference values to establish.”
“The following background information and parameters may be useful to set FRA:
- Historic distribution and causes of change
- Potential natural vegetation
- Natural variation
- Actual distribution and actual variation (including quality of habitat)
- Dynamics of the habitat type
- Requirements of typical species (including gene flow).
If there is no information showing that enlarged area of the habitat type is necessary for either
- typical species to reach FRC, or for
- the necessary structures or functions of the habitat type to exist,
then the FRA can be taken as the surface area of the habitat type when the directive came into force.”
Underlined factors were used for LT on different extent.
Main results: favourable reference area (FRA)

- Mainly because of lack of historical data, FRA for 51 types of HCI was proposed to set at current level.
- Exemption for 2 types:
  - 2180 *Wooded dunes of <...> Boreal region* (FRA set higher than current with increase potential when replaces mountain-pine stands on Curonian Spit)
  - 7120 *Degraded raised bogs* (FRA set lower, at 0. Habitat is expected to be replaced by other priority habitat types: 7110 or 91D0)
CS surveillance scheme (Art. 17 HD implementation)

- Solid baseline data and set FRV framed the new monitoring scheme of two distinct monitoring processes:
  - 1) surveillance of ranges and areas of HCIs, and
  - 2) surveillance of structure and functions of HCIs.
Surveillance of ranges and areas

- will be conducted in selected mapping squares covering ~10% of the country;
- is designed to capture changes of border lines of ranges and area covered by habitats.

1/3 of the monitoring efforts will be situated in protected areas.
Surveillance of structure and functions

- number of polygons for monitoring of structure and functions is proportionate to the actual abundance of the HCI in the country with capped number for common habitats;

- each group of habitats has its own methodology based on appraisal of phytosociological characteristics, pressures and threats, description of structure and functions
Example: monitoring places of structure and functions for habitat 91E0
FRV = national level COs?

Remaining questions:

• is it realistic to maintain FRA long term unless all occurrences are included in Natura 2000 network?
• is it realistic to maintain FCS of habitats dependent on regular management?
• what if natural succession is inevitable taking into account developments in rural communities? etc.
Thank you!