Habitat ecology versus habitat definition - how can the two approaches be combined?

Tommy Lennartsson
Standard vegetation mapping

- Explained c. 10% of the demanding target species
- Explained c. 35% of the total species list
**Target species**

- Depending of certain combs. of disturbance & soil moisture
- Which is in turn created by:
  - Wind-driven sand allocation
  - Rain erosion on slopes
  - Natural vegetation turnover
  - (Tourism)
Standard vegetation mapping

Mapping based on disturbance patterns combined with succession stage
Target species

- Depending of certain combs. of disturbance & soil moisture
- Which is in turn created by:
  - Wind-driven sand allocation
  - Rain erosion on slopes
  - Natural vegetation turnover
  - (Tourism)
- Rabbit digging
Ecosystems/biotopes

Landscape elements

Ecosystem structures

Landslapes

Habitats for species

Populations and their content of adaptations and genes

Organism societies, interaction webs etc
- Ecosystems/biotopes
- Ecosystem structures
- Landscape elements
- Landscapes
- Habitats for species
- Populations and their content of adaptations and genes
- Organism societies, interaction webs etc

Ecological processes (natural and anthropogenic)

Basic ecological conditions
Ecosystems/biotopes

Ecosystem structures

Landscape elements

Ecosystems/biotopes

Ecosystem structures

Landscape elements

Landschapes

Habitats for species

Populations and their content of adaptations and genes

Organism societies, interaction webs etc

Ecological processes (natural and anthropogenic)

Basic ecological conditions
Wet meadow

Annual

Salt marsh
Succulent

Alpine hay-meadow
Biennial without apical dominance

Pasture
Biennial
4060 Alpine and Boreal heaths (Alp. dwarf shrub heaths)

6150 Siliceous alpine and boreal grasslands (Alp. silic. grasslands)

6170 Alpine and subalpine calcareous grasslands

4080 Sub-Arctic (Alpine) Salix spp. scrub

6430 Hydrophilous tall herb fringe communities of plains and of the montane to alpine levels
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6430 Hydrophilous tall herb fringe communities of plains and of the montane to alpine levels
Disturbance or stress
Disturbance or stress

Tall & perennial plants mechanically damaged

Too little resources for tall & perennial plants
Snow cover
Grazing by reindeer & rodents
Moth herbivory

Ecosystem structures
Landscape elements

Ecosystems/biotopes

Habitats for species

Populations and their content of adaptations and genes

Organism societies, interaction webs etc

Soil & bedrock
Aspect (N-S, E-W)
Altitude
Temp, precipitation, wind

Basic ecological conditions

Ecological processes (natural and anthropogenic)
- Ice rubbing, frost in winter
- Drought stress summer
- Poor in nutr. & fine particl.
- Very long growth season, long days
- Reindeer graz. all year, rodent graz. summer
- Frost solifluxion

- Protected in winter
- Moderate moist
- Rich in nutr. & fine particles
- Long growth season, medium days
- Reindeer graz. summer, rodent graz. all year
- Some frost- and gravity soliflux.

- Protected in winter
- Moist-wet but cold
- Very rich in nutr. & fine particles
- Short growth season & days
- Reindeer graz. late summer-autumn, rodent graz. all year
- Mechanical pressure
- Gravity solifluxion

20-200 m
High alpine
- Exposed areas, snow covered, and snow beds
- Grasses or dwarf shrubs in exposed & covered, depend. on graz., altitude, soil
- Grass, dwarf shrub or herbs in snow beds depend. on melting time & soil

Alpine heath
- Only snow covered & snow beds
- Succession towards shrubland in absence of disturbance

Low alpine grassland

Sub-alpine birch forest

20 km
Alpine habitats further south
Alpine habitats further south
Identify as many as possible of:

- Ecosystem structures
- Landscape elements
- Ecosystems/biotopes
- Landscapes
- Habitats for species
- Populations and their content of adaptations and genes
- Organism societies, interaction webs etc.

Ecological processes (natural and anthropogenic)

Basic ecological conditions
Identify as many as possible of:

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Features that can be identified using the available method.
Identify as many as possible of:

- Ecosystem structures
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Ecological processes (natural and anthropogenic)
Basic ecological conditions

Features that can be identified using the available method
Identify as many as possible of:

- Ecosystem structures
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Identify:

Features that can be identified using the available method:

Match?

- Yes
  - Go for it!
- No
  - Limited ecological value; reconsider indicators