Monitoring conservation status of habitats: environmental aspects

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- In Flanders (northern part of Belgium) habitats face important environmental pressures and threats. These make it difficult to obtain a favourable conservation status.
- Policy for the abiotic environment of habitats needs planning, motivation, evaluation, and tuning in each six-year Natura 2000 cycle. Therefore, the Research Institute for Nature and Forest (INBO) will:
  - design a monitoring network of the in-situ abiotic environment, in collaboration with the Agency for Nature and Forest (ANB);
  - generate quantitative knowledge of abiotic requirements of habitats in Flanders.
- State and trend information of the abiotic environment of habitats serves two purposes:
  - quantify and prioritize environmental problems of habitats
  - assess the environmental aspects of the ‘specific structures and functions’ criterion in a solid and transparent way

MONITORING THE ABIOTIC ENVIRONMENT OF HABITATS
- In order to draw conclusions on the regional level (Flanders).
- Focus on the most important environmental pressures and threats of habitats, e.g.: altering the groundwater table, eutrophication through atmospheric deposition.
- Several environmental compartments will be important:
  - groundwater, surface water, soil, atmosphere.
- For each pressure, at least one relevant environmental variable must be selected for monitoring, e.g. mean highest groundwater level. For each variable, the monitoring scheme will be stratified according to habitats with similar characteristics.

KNOWING A HABITAT’S ABIOTIC REQUIREMENTS
- Based on extensive surveys of vegetation, groundwater, surface water and soil, designed for each habitat type.
- Focus on the most important landscape and environmental characteristics, e.g.: landscape profile, soil texture, mean highest groundwater level.
- Developing a concept to quantify ranges for environmental variables needed to obtain a favourable conservation status.
- Important in order to assess environmental problems of habitats and to assess possibilities for restoration.

Figure: In order to make a monitoring scheme, we investigate its possible results through the use of existing data. Here, the overall ‘mean highest’ groundwater level has been modelled with the covariate ‘effective precipitation’ (precipitation minus evapotranspiration) and a smoother for ‘year’.

Figure: A range (10-90 percentiles) for phosphorus (P_Olsen) considering all plots with a favourable conservation status.

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