

# HABIT-CHANGE

## Adaptive Management of Climate-induced Changes of Habitat Diversity in Protected Areas

### Background

Biodiversity is threatened by habitat degradation and destruction. Human activity comprising intensification of agriculture, urbanisation and expanding infrastructure is the main driver for ongoing habitat loss. Core zones and controlled natural zones in National Parks or Sites of Community Importance (SCI) within the Natura 2000 network are established to halt the loss of biodiversity by providing and conserving habitat space for the critical mix of species. Climate change (CC) will become an additional important driver influencing habitats and their quality in the next decades.

Since neither habitats nor CC impacts obey national boundaries this study is carried out within a transnational cooperation project stretching over Central and Eastern Europe. Only a strategy reflecting transnational understanding may successfully face the challenges imposed by CC on habitat integrity. Moreover, trans-national cooperation allows for the transfer of knowledge and mutual exchange of experiences with specific types of threats to habitats.



Photo: M. Neubert, IOER

### Challenges

The European network of protected sites is challenged by anthropogenic actions and CC. Nature conservation agencies have to cope with modifications of habitat composition induced by CC and the fact that the targeted conservation aim may no longer be valid. Scenarios and indicators applied for the local scale are missing and likewise there is a lack of knowledge. The direction of future changes and how this matches with a long-term impact of management measures are unclear. At site-level, precipitation might de- or increase and shift its seasonality, leading to different preconditions for the remaining natural habitats, especially water-based ecosystems such as wetlands and rivers but also the composition of forested areas and grasslands. The main challenges are to monitor changes through time (history, present state, short term future, long term future), to adapt management strategies and to consider flexible responses to ongoing developments.

### Objectives

The project's overall objective is to evaluate, enhance and adapt existing management and conservation strategies in protected sites to pro-actively respond on likely influences of CC as a threat to habitat integrity and diversity. Furthermore, a monitoring concept is being developed to detect changes caused either by human activity or climate change effects. This will be a very valuable information and tool especially for the administrations of nature protected areas.

Specific objectives are to

- Identify potential CC induced threats,
- Evaluate existing management practices,
- Derive a set of indicators reflecting local-scale effects,
- Establish monitoring measures based on earth observation data and ground truthing,
- Model regional climate change effects and risks for protected areas,
- Support protected site authorities with decision support tool,
- Adapt management plans, strategies and measures of protected areas to climate change effects,
- Foster awareness rising on the demand for adaptive management,
- Recommendations for CC adapted guidelines regarding protected areas on national and EU-level.

### Project structure

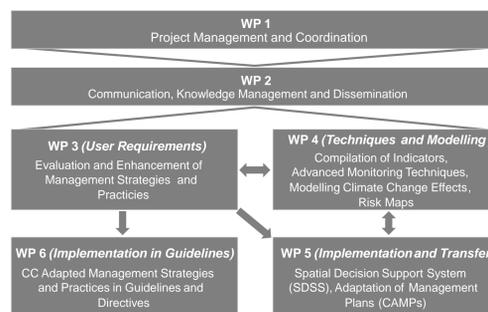


Photo: Danube Delta National Institute

### Activities and expected results

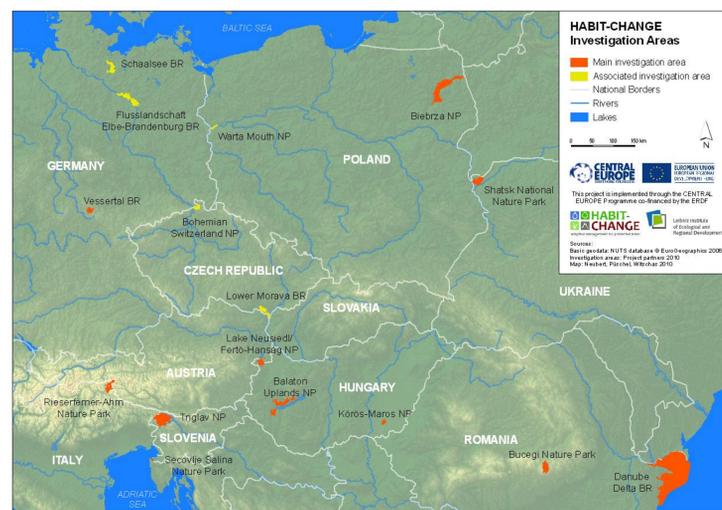
- Web-based platform and project book
- Workshops and International conference
- Current user known problems and management practices
- Scenarios and impacts of risk (Web-GIS priority matrix)
- Select indicators for characterisation of driver/pressure/ impact/response relationships (indicator interaction scheme)
- Climate impact models (potential change maps)
- Implement monitoring with earth observation system
- Guidelines/manual for monitoring
- Web-based decision support tool
- CC adapted management plans (CAMPs) and strategies
- Recommendations and guidelines for management



Photo: Triglav National Park

### List of project partners

- Univ. of Vienna, Dept. for Freshwater Ecology, AT
- National Academy of Sciences, CASRE, UA
- Thuringian State Inst. for Forestry, Game and Fishery, DE
- Potsdam Institute for Climate Impact Research, DE
- TU Berlin, Inst. of Landsc. and Environmental Planning, DE
- Balaton Uplands National Park Directorate, HU
- Szent Istvan Univ., Dept. Nat. Conserv. a. Landsc. Ecol., HU
- Biebrza National Park, PL
- Environmental Protection Institute, PL
- Triglav National Park, SI
- University of Bucharest, Botany Department, RO
- Central Institute for Meteorology and Geodynamics, AT
- Danube Delta Nat. Inst. for Research and Development, RO
- Sečovlje Salina Nature Park, SI
- University of Maribor, Department of Biology, SI
- European Academy Bolzano, IT
- ... and 24 Associated Institutions, mainly Protected Areas



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