

# HABIT-CHANGE

## Basic Information

09/2012

<b>Title:</b>	Adaptive management of climate-induced changes of habitat diversity in protected areas				
<b>Acronym:</b>	HABIT-CHANGE	<b>Project Number:</b>	2CE168P3		
<b>Programme:</b>	CENTRAL EUROPE	<b>Application Round:</b>	2	Priority:	3
<b>Start date:</b>	3/2010	<b>End date:</b>	2/2013	Duration :	36 months
<b>No Partner:</b>	17	<b>Partner Countries:</b>	AT, DE, HU, IT, PL, RO, SI, UA		
<b>No Assoc. Inst.:</b>	24	<b>Assoc. Countries:</b>	CZ		
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<b>Objective:</b>	<p>The European network of protected sites is challenged by anthropogenic actions and climate change. Nature conservation agencies have to cope with potential modifications of habitat composition induced by Climate Change and the fact that the targeted conservation 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. 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. The project partnership is built by local site management agencies, nature conservation authorities, partners from the private sector and scientific institutions active in ecological and Climate Change research. This complementary mix of implementing and scientific organisations allows for a successful translation between scientific and user domain towards practicable implementation.</p>				
<b>Activities and Results:</b>	<p>In HABIT-CHANGE workshops, seminars and a international conference will be organized to discuss and test new management practices, possible scenarios and impacts of risk (Web-GIS priority matrix), to 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, and develop a manual for monitoring. In addition a web-based decision support tool will be developed and Climate Change adapted management plans (CAMPs) and strategies tested. The project will provide recommendations and guidelines for management of protected areas in a changing climate.</p>				
<b>Further information</b>	<a href="http://www.habit-change.eu">http://www.habit-change.eu</a>				

## 1. Project description

**[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 will become an additional important driver influencing habitats and their quality in the next decades.

**[Issues/Challenges]** Thus, the European network of protected sites is challenged by anthropogenic actions and climate change. Nature conservation agencies have to cope with potential modifications of habitat composition induced by climate change and the fact that the targeted conservation 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, esp. water-based ecosystems such as wetlands and rivers but also the composition of forested areas and grasslands. To monitor changes through time (history, present state, short term future, long term future and to adapt management strategies and consider flexible response to ongoing developments are the main challenges.

**[General 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 climate change 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 is a very valuable information and tool especially for the administrations of nature protected areas.

**[Specific objectives]** Identify potential climate change induced threats, evaluate existing conservation practices, derive a set of indicators reflecting local-scale effects, establish monitoring measures based on Earth Observation (EO) data, support protected site authorities with decision support tool, foster awareness rising on the demand for adaptive management. Furthermore, recommendations for managing climate change induced changes on regional, national and European level will be derived.

**[Transnational cooperation]** Neither habitats nor CC impacts obey national boundaries. Only a strategy reflecting transnational understanding may successfully face the challenges imposed by climate change on habitat integrity. Moreover, transnational cooperation allows for the transfer of knowledge and mutual exchange of experiences with specific types of threats to habitats.

The **[project partnership]** is built by local site management agencies, nature conservation authorities, partners from the private sector and scientific institutions active in ecological and climate change research. This complementary mix of implementing and scientific organisations allows for a successful translation between scientific and user domain towards practicable implementation.

**[Activities and results]** Web-based platform, workshops, international conference, new management practices, possible 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, climate change adapted management plans (CAMPs) and strategies, recommendations and guidelines for management.

## 2. Investigation Areas

### Austria (/Hungary)

The Neusiedler See-Seewinkel National Park was founded in 1993. The Fertő-Hanság Nemzeti Park in Hungary was established already in 1991. The protected area now covers about 300km<sup>2</sup>. This National Park is the first cross-border National Park in Austria and the first Austrian National Park that was recognised by the IUCN.

### Germany

#### Vessertal - Thuringian Forest Biosphere Reserve

The Vessertal - Thuringian Forest Biosphere Reserve is dominated by the Thuringian Forest highlands, which are part of the Thuringian-Franconian highlands. Unlike other major natural sections of the Thuringian-Franconian highlands, the Thuringian Forest, a mountain ridge area, is cut by a system of deep valleys. The biosphere reserve's most prominent peaks include Großer Beerberg (982 m), the Thuringian Forest's highest mountain, Schneekopf (978 m), Finsterberg (944 m), Fichtenkopf (944 m), Sachsenstein (915 m) and Adlersberg (850 m). The landscape, which is dominated by forests, presents itself as a largely contiguous forest system. Small upland meadows are found only in stream valleys and in certain high areas. Runoff from ridge areas has led to the formation of small raised bogs and feeds a dense network of streams.

### Hungary

#### Balaton Uplands National Park

The Balaton Uplands National Park is situated in the immediate vicinity of Lake Balaton, a place renowned all over Europe for its hospitable settlements and cosy holiday resorts. Thus it faces many tough challenges which are posed mainly by civilisation and development. Current tasks focus on the need to protect and preserve the natural and cultural treasures of an area of some 56,997 ha. Within this total area 11,282 ha constitute a strictly protected core, and 14,397 ha have been designated a Ramsar Site. The fabulous instances of its extraordinary diverse character include the several thousand hectares of marshlands at Kis-Balaton, the uniquely fluctuating dolomite-limestone surface of the Keszthelyi Hills and Pécselyi Basin, the dense basalt hills with their exceptionally interesting shapes in the Tapolca Basin and the surface of the Káli Basin dotted by volcanic craters, plateaux, stone seas and small lakes.

#### Körös-Maros National Park

The operational area of the National Park is 800 000 hectares. Its area includes all the territory of Békés County, the area of Csongrád County located to the East of river Tisza, the Dévaványa-Ecsegi steppes as well as the parts of Körös flood-plains in Jász-Nagykun-Szolnok County. Besides the maintenance and development of the National Park, its task is the supervision and control on its

operational area. The magnificent landscape is characterized by diversified and unique natural scenery of the uncontrolled countryside. The Csanádi and Békési plateaus that stretch between the rivers Körös and Maros. Owing to the considerable agricultural development, the protection of the still existing natural plant communities, first of all, that of the loess fields is an outstanding challenge of nature protection. On the vast areas of the erstwhile Kis-Sárrét, in the region covered by the meandering branches of river Körös and on the Dévaványai -, Békési and Csanádi plains there are spacious sodic steppes, remnants of wooded grasslands and marshlands as well as meadows and groves of extraordinary value.

## Italy

The Rieserferner-Ahrn Nature Park is situated in the north-eastern part of the Autonomous Province Bozen-Südtirol (Italy). It extends over an area of around 313 square kilometers belonging to the municipalities of Sand in Taufers, Gais, Percha, Rasen-Antholz, Ahrntal and Prettau. The Park is situated between the bottom of the Tauferer Ahrn Valley in the northwest, the Austrian border at Staller Sattel in the east, Antholzertal in the south-east and Pustertal in the south.

The Rieserferner-Ahrn Nature Park (313 square kilometers) was founded in 1988. It borders on the Hohe Tauern National Park (1,786 square kilometers). Together with the Zillertaler Hauptkamm Nature Park (372 square kilometers), they build up the biggest association of protected areas in Europe, with a total area of 2,471 square kilometers.

## Poland

The Biebrza National Park is located in Northeast Poland, in the Podlaskie Voivodship. The northeastern boundary of the park is near the Belarus border. The Narew River and its confluence with the Biebrza River form the southern boundary. The park was established in 1993, and with a total area of 59 233 ha, it is the largest of the Polish national parks. The Park includes 15 547 ha of forests, 18 182 ha of agricultural land, and 25 494 ha of wetlands - the most valuable habitats of the park - the famous Biebrza marshes. The area of 3 936 ha is under strict protection ha including the Czerwone Bagno or Red Bog at the Grzędy Forest District. Unique in Europe for its marshes and peatlands, as well as its highly diversified fauna, especially birds- the Park was designated as a wetland site of global significance and is under the protection of the RAMSAR Convention.

## Romania

### Bucegi Nature Park

The Natural Park Bucegi is located in the Alpine biogeographical zone on the most eastern part of the Carpathian mountains (the curve of the Carpathian) and benefits of the temperate continental climate. The protected area cover 32.663 ha and include 14 strict protected sites.

The site host a diversity of habitats as alpine and subalpine grasslands, tall forbs habitats, scrubs, rocks and screes habitats, chasmophyte vegetation on calcareous rocks, peat bogs, deciduous forests, coniferous forests and mixed deciduous and coniferous forests, rivers and lakes, communities of hydrophytes along the waterway s.o.

According the available information 17 of the existing habitat types are nominated for protection and conservation in the Habitat Directive: peat bog, grasslands, scrubs, deciduous forests, coniferous forests, screes, communities of hydrophytes along the waterway and chasmophyte vegetation.

The Natural Park is also one of the reaches areas on endemic plants from the South-Eastern Carpathian and accommodate 4 globally threatened plants from the IUCN Global Red List (*Draba haynaldii*, *Hesperis oblongifolia*, *Larix decidua* ssp. *carpatica*, *Plantago atrata* ssp. *carpatica*) and 5 european threatened plants from the Habitat Directive & Bern Convention (*Achillea oxyloba* ssp. *schurii*, *Campanula patula* ssp. *abietina*, *Campanula serrata*, *Ligularia sibirica*, *Tozzia alpina* ssp. *carpatica*).

## Danube Delta Biosphere Reserve

The Danube Delta maintains its enormous biodiversity in a better state than most other deltas in Europe, even in the world. It contains a greater range of habitat types, lower and higher plants, invertebrates and vertebrates than all other deltas in Europe. Many of the species that live within the delta are unique to it, these include plants and animals. The static freshwater ecosystems provide the base for the food chain in much of the delta. The contribution they make spills over in canals, rivers and other moving waters. Protozoa, micro-algae, algae and macrophytes are the primary producers, on which zooplankton, oligochaetes, molluscs, insects, fish, amphibia, reptiles, birds and mammals feed in ascending order within the food chain. Imbalances in some seasons have allowed some components like blue/green algae to thrive, to the detriment of macrophytes and many of the animals that depend on plant life. Inevitably, the more adaptable fish species (roach, crucian carp and perch) have survived then thrived, at the expense of species like pike, zander and common carp (*Cyprinus carpio*). Terrestrial ecosystems have suffered less than aquatic ones, because they are less easy to pollute and over fish. Exploitation by grazing, arable cropping, forestry, reed cutting is limited to areas where this is possible and in much of the delta these potentially damaging activities are impossible.

## Slovenia

### Triglav National Park

The Triglav National Park (TNP) is the only Slovenian national park. The park was named after Triglav, the highest mountain in the heart of the park, which is also the highest summit in Slovenia (2864 m).

The Triglav National Park extends along the Italian border and close to the Austrian border in the north-west of Slovenia, that is, in the south-eastern section of the Alps. Its territory is nearly identical

with that occupied by the Eastern Julian Alps. The park covers 880 square kilometres, or 3% of the territory of Slovenia.

The Triglav National Park prides itself on pure waters, deep-cut gorges, remains of virgin forests, richness of biodiversity, and an eldorado of mountain flowers including a number of endemic plants such as Triglav Hawksbeard (*Crepis terglouensis*), Julian Poppy (*Papaver alpinum* subsp. *ernestimayeri*) and Silver-leaved Cranesbill (*Geranium argenteum*). Typical park animals are the chamois, ibex, red deer, brown bear, lynx, eagle, numerous bird and reptile species, and the endemic Marble trout.

### Sečovelje Salina Nature Park

The Sečovelje Salina Nature Park covers around 650 hectares of terrain in the extreme south-west of Slovenia, next to the border with Croatia in the southern part of the Piran Municipal District. The Sečovelje Saltworks, together with the nearby Strunjan Saltworks, are the most northerly saltworks still in operation in the Mediterranean. It is among the few saltworks where salt is still produced using centuries-old methods. The mild sub-Mediterranean climate favours salt-harvesting and attracts distinctive flora and fauna, including birdlife. Some 290 bird species have been observed in the area, 70% of all species ever recorded in Slovenia. Other distinctive fauna of the Sečovelje Saltworks include species that are adapted to the salty environment just behind the sea defence walls in the network of basins where different levels of water tables can be observed and on the lines of internal dykes, partly or fully overgrown with salt-loving plants, or halophytes, which can tolerate or exploit the high salinity. Several coastal and wetland habitat types of EU importance are found in the area, including salt meadows, estuary and *Spartina* stands.

## Ukraine

### Shatsk National Natural Park

This biosphere reserve is situated in north-west Ukraine, some 160 km north-west of the city of Lutsk and adjacent to Poland's West Polesie Biosphere Reserve. Both biosphere reserves feature a unique landscape of rivers, lakes, moors and forests. Shatskiy comprises a Ramsar site (Shatsk Lakes) which is an important moulting, migrating and wintering area for waterfowls.

12,160 people live in the transition area of the biosphere reserve and are mainly engaged in agriculture, tourism and services. The whole area is a melting pot of inhabitants of different cultures, nationalities and religions. About 100,000 tourists annually come to visit the area. It is hoped that the biosphere reserve concept will help to create opportunities to develop this sparsely populated area which is currently under big social and economic change. However, at the same time, local communities are interested in an economic development that is balanced with the conservation objectives of the biosphere reserve. The longer-term aim is to merge Poland's West Polesie and Shatskiy Biosphere Reserve to a transboundary biosphere reserve.



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