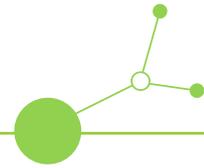


Documentation of identification of good-practices on ecological restoration & interconnectivity (D.1.1.1)



Final version

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Title: Best practices in enhancing biodiversity by restoration

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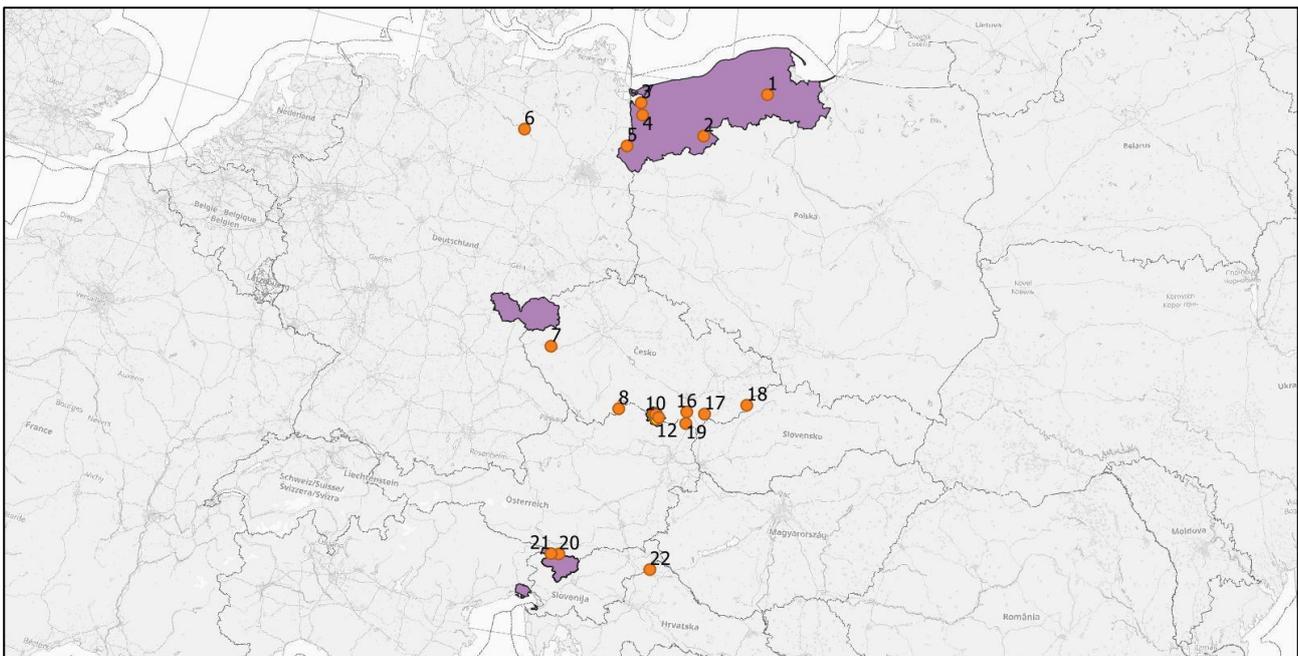
Introduction

Thanks the helpful cooperation of RECO project partners, we were able to prepare an overview of good practice examples, which are listed below. These projects represent the efforts of many people involved into the projects helping to restore natural processes or saving valuable natural phenomena occurring along or near the European Green Belt.

They focus on a number of issues related to the current project as well: connectivity, restoration and improvement of natural habitats, restoration of natural water regime, conservation of endangered species.

Individual projects, however, usually include measures whose effect intertwined and it is not easy to distinguish which problem is the priority. Restoring the natural water regime helps to restore habitats and suitable habitats contribute to the conservation of species.

An overview of individual examples of good practice follows, their distribution along the European Green Belt is shown on the map:



Restoration and improvement of natural habitat

3. Szczecin Lagoon Nature Park
4. Polish Meadow - nature-friendly farmland
5. Conservation of xerothermic meadows in the Polish-German border area
7. Janovský mokřad - Wetland management
6. Lebendige Auen für die Elbe (engl.: Living floodplains for the river Elbe)
8. Bummermoos - mire restoration
9. Elimination of neophytes in the National Park Thayatal
10. Control of invasive alien plants in the Podyjí National Park
11. Conversion of commercial forests into natural forests in the Thayatal National Park
12. Conservation of Natura2000 dry grassland at Retzer Hügel
15. Burning management in Podyjí National Park
16. Pouzdřanská step-Kolby - priority grassland habitats management
17. Bird park Kosteliska
18. Ščůrnica - non-state nature reserve
19. Green Belt Camp of the nature conservation union of lower Austria
20. Preserving daffodils in Karavanke mountain range
21. Measures to restore meadows in bloom
22. Obnova rečnega ekosistema nižinskega dela reke Drave v Sloveniji (engl.: Riparian ecosystem restoration of the lower Drava River in Slovenia)

Restoration natural water regime

6. Lebendige Auen für die Elbe (engl.: Living floodplains for the river Elbe)
7. Janovský mokřad - Wetland management
8. Bummermoos - mire restoration
17. Bird park Kosteliska
22. Obnova rečnega ekosistema nižinskega dela reke Drave v Sloveniji (engl.: Riparian ecosystem restoration of the lower Drava River in Slovenia)

Conservation of endangered species

1. Systemic protection of critically threatened indigenous species the noble crayfish *Astacus astacus*
2. West Pomeranian bison
13. Protection of the European wildcat (*Felis silvestris*)
14. Grassland management through grazing by Exmoor ponies in the Podyjí National Park
17. Bird park Kosteliska
20. Preserving daffodils in Karavanke mountain range
21. Measures to restore meadows in bloom

1. Systemic protection of critically threatened indigenous species the noble crayfish *Astacus astacus*

Localization:

Country: Poland

Region: Pommeranian Lakeland (NW Poland)

Coordinates: 54.07949194789447, 17.879292144196747

Implemented by:

Name of the main implementer: Przemysław Śmietana

Contacts: przemyslaw.smietana@usz.edu.pl

Other involved partners:

Green Federation "GAIA", University of Szczecin, Association of Pomeranian Landscape Parks, Astacus Astacus Foundation, Voivodship Fund for Environmental Protection and Water Management in Gdańsk, Institute of Nature Conservation of the Polish Academy of Sciences, The General Directorate for Environmental Protection, Regional Director for Environmental Protection in Gdańsk

Years of realization: since 2000

Type of measures:

Monitoring existed natural populations of noble crayfish in Pommerania Lakeland.

Field exploration to find "new" not known up to now population of noble crayfish populations.

Active protection of the species based on own elaborated restocking methods.

Evaluation methods of elimination non-indigenous crayfish species esp. the spiny-cheek crayfish *Faxonius limosus*.

Information campaigns on the importance of biodiversity using the noble crayfish as a flag species.

Short description:

According to the criteria of the IUCN organization, the noble crayfish is classified as critically endangered in Pomerania. For over 20 years, Prof. Przemysław Śmietana from the University of Szczecin has been working on the issue of saving the species from extinction. In cooperation with many organizations and authorities at both local and central levels, a number of activities in this direction have been implemented. The preservation of the species is based on restocking to water reservoirs of suitable environmental conditions. In order to carry it out effectively, the preserved populations of the species are monitored and those that have not been discovered so far are searched. The establishment of new noble crayfish populations is based on the breeding of YOY (young of one year old). The restocking material is bred in special Breeding Centre set out at Sominko Lake in The Wdzydzki Landscape Park. Overall breeding process at the centre is unique and was elaborated by Prof. Przemysław Śmietana. An annual production at the farm (over 3000 -5000 individuals of YOY) is destined for restocking purposes. The restocking success strongly is depended on ecological awareness in local community. Threats for survival of the noble crayfish populations are the same as to global biodiversity. So far, the informative campaigns directed to

local communities are good practice to propagation a knowledge about importance of saving biodiversity. There the special accent is put on the invasive non-indigenous species as present the most relevant local problem. The methods of limitation alien crayfish invasive are developed and propagated.

Pictures:

1. Breeding cages with egg bearing females ready for start the incubation stage (photo: Przemysław Śmietana)



2. Young crayfish from released cages in the end of the breed stage (photo: Przemysław Śmietana)



2. West Pomeranian bison

Localization:

Country: Poland

Region: Western Pomerania

Coordinates: 53.32623550023198, 16.305605230153237

Implemented by:

Name of the main implementer: West Pomeranian Nature Society

Contacts: dzika.zagroda@zubry.org, www.dzika-zagroda.pl

Other involved partners:

Green Federation "GAIA", Regional Directorate for Environmental Protection in Szczecin, University of Szczecin

Years of realization: since 2008 - ongoing

Type of measures:

Acquisition and exchange of breeding animals (reintroductions and translocations)

Management of wild herds of bison (feeding, veterinary care, telemetric monitoring, interventions in the event of human-bison conflict)

Promotion of the idea of protecting the European bison

Running a demonstration bison enclosure in Jabłonowo (West Pomeranian Voivodeship)

Supervision over the genetic condition of herds

Short description:

In Western Pomerania, since 2008, the West Pomeranian Nature Society has been conducting projects of active protection of European bison, the effects of which are an increase in the number and initiation of natural diversification of herds. The West Pomeranian population, currently numbering over 300 European bison, is developing dynamically. The models of European bison protection used so far by the West Pomeranian Nature Society consisted mainly in controlling the movement of animals. Currently, the emphasis is placed primarily on activities related to minimizing the negative effects of the presence of European bison on local communities. Feeding in the autumn and winter season, based on GPS telemetric monitoring, scaring away animals from the fields and protecting the most valuable agricultural crops from bison, will be aimed at minimizing losses in agriculture. Running the Bison Emergency Service and developing a model of its wider use in relation to other animal species (Wildlife Service model) increase the safety of animals, combat poaching and eliminate conflict situations involving migrating, sick and injured bison. The Emergency Service also take care of maintaining low local densities of bison through translocations and initiating the division of existing herds, which is of great importance in maintaining a low level of damage that animals can cause. Thanks to such activities, it is possible to increase the size of the population, in an atmosphere of high acceptance of bison among local communities.

Pictures:

1. Free-living bison herd in the West Pomeranian Voivodeship (photo: Aneta Kozłowska)



3. Szczecin Lagoon Nature Park

Localization:

Country: Poland

Region: West Pomeranian voivodeship

Coordinates: 53° 43'52.27"N, 14° 33'27.14"E

Implemented by:

Name of the main implementer: Society for The Coast

Contacts: stowarzyszenienarzeczwyrzeza@gmail.com, <https://snrw.myportfolio.com/>

Other involved partners:

Green Federation "GAIA"

Years of realization: since 2005

Type of measures:

In 2005, on the initiative of the Society for The Coast and with the support of the Maritime Office, the Goleniów Forestry Inspectorate and the Wolin and Stepnica communes, the Szczecin Lagoon Nature Park was established, a private protected area.

Area management: Year-round grazing of Konik Polski horses and Scottish Highland cows and mowing of leftovers.

Nature tourism - conducted by professional guides.

Due to the breeding habitats of birds, guided tours are recommended.

Short description:

The Nature Park of the Zalew Szczeciński covers approx. 700 ha of meadows, pastures and reed beds located on the Zalew Szczeciński, in the Natura 2000 area Łąki Skoszewskie. This is an area whose use was abandoned in the 1990s. Re-use was introduced in the years 2002 - 2004, initially only by mowing meadows, and then gradually introducing Polish horses and Scottish highland cattle. The Szczecin Lagoon Nature Park is an area extremely valuable primarily for birds, including many protected and/or listed in Annex I to the Birds Directive: "Bird species subject to special protection measures, including their habitats, and which are aimed at ensuring survival and reproduction of these species in their range" (species in the Annex are marked in bold). During the spring and autumn migrations, numerous flocks of geese (mainly greylag geese, but also grain and white-fronted geese), white-faced geese, ducks (flashes, widgeons, rosehips, teal, teal, gadflies, mallards), lapwings, ruffs, sandpipers, and curlews sandpipers, in winter, but more and more often throughout the year, white herons are seen in rare numbers (up to 300 individuals) and whooper swans, white-tailed eagles, black and red kites, and marsh harriers feed over the meadows all year round. It is also a feeding place for seagulls, mainly black-headed gulls and common gulls. In the spring and early summer, breeding takes place, among others. cranes, lapwings, chicks, red-billed, spotted, corncrakes, shelduck, black-headed gulls, white-winged, white-winged and black terns, a number of ducks, including widgeons, hornworts, teal, gadflies, and blackheads. Due to the need to protect breeding habitats, nature tourism is conducted only

in the presence of professional guides, after making an appointment. Other tourists can visit the Park to a limited extent - only from the indicated places.

Pictures:

1. Grazing horses regulate the height of the meadow sward (photo: Aneta Kozłowska)



2. Aerial view of a fragment of the Nature Park (photo: Aneta Kozłowska)



4. Polish Meadow - nature-friendly farmland

Localization:

Country: Poland

Region: West Pomeranian voivodeship

Coordinates: 53° 32'30.27"N, 14° 38'23.43"E

Implemented by:

Name of the main implementer: Green Federation "GAIA"

Contacts: fzbiuro@gajanet.pl, www.gajanet.pl

Other involved partners:

West Pomeranian Nature Society, University of Szczecin

Years of realization: since 2004 - ongoing

Type of measures:

Lease of land owned by the state treasury

Determination of natural values Tailoring use to specific habitats.

Area management - nature friendly agricultural measures of 75 ha of meadows.

Environmental monitoring, mowing, periodic grazing introduced if necessary.

Implementation of the agri-environmental programme.

Short description:

The liquidation of state farms resulted in the abandonment or neglect of farming in many agricultural areas. Unused meadows and pastures were subject to rapid processes of secondary succession (overgrowing). These changes result in the withdrawal of many important and often rare species of plants and animals from meadow ecosystems, which in turn leads to a decrease in their biodiversity. In the long-term Polish Meadow project, special emphasis is placed on the protection of wet meadow ecosystems, because they are the ones that are most susceptible to unwanted secondary succession processes. In order to effectively counteract unfavourable transformations, the Green Federation "GAIA" has started actions that will allow the withdrawal of reed, willow and sedge, which dominated meadow area of 75 ha due to several years of neglect in cultivation.

Land use consists mainly of mowing and, if necessary, grazing of cows belonging to local farmers. Every 5 years, a natural inventory is made, on the basis of which, if necessary, the method of use (times of mowing and/or grazing of cows) is modified. The area covered by the project is located in the Odra river estuary.

Pictures:

1. Less frequent spring flooding (photo: Aneta Kozłowska)



2. Landscape of a mowed fragment of a meadow (photo: Aneta Kozłowska)



5. Conservation of xerothermic meadows in the Polish-German border area

(within the framework of the project INT162 - subsidized by the Cooperation Programme INTERREG V A Mecklenburg-Vorpommern / Brandenburg / Poland within the framework of the European Regional Development Fund (ERDF), with the financial support of the Baltic Sea Conservation Foundation)

Localization:

Country: Poland

Region: West Pomeranian Voivodeship

Coordinates: 53.01388647273425, 14.286593603458272 (Zatoń Dolna); 53.213099691767525, 14.9387576306871 (Brodogóry Nature Reserve); 53.19013186855542, 14.99217505343549 (Stary Przylep Nature Reserve); 53.3642893181787, 14.396729445558236 (Barnisław); (Pargowo); 52.91704516235181, 14.346127024818987 (Mętno)

Implemented by:

Name of the main implementer: Federacja Zielonych "GAJA"

Contacts: www.gajanet.pl, fzbiuro@gajanet.pl;

Other involved partners:

Western Pomerania Directorate for Environmental Protection, Landkreis Vorpommern-Greifswald, Landschaftspflegeverband Uckermark-Schorfheide e.V.

Years of realization: 2019-2022

Type of measures:

- transboundary sheep grazing,
- mowing of grasslands with removal of biomass,
- shrub removal (cutting and grubbing) with biomass removal,
- inventory/mapping of grassland habitats (before and after implementation of conservation measures) according to Polish-German methodology developed for the project,
- study visits,
- promotion of grassland protection (www, press articles, lectures in schools, planting of information boards in the field, preparation and printing of brochures and leaflets about the project).

Short description:

Xerothermic meadows are thermophilic grassland communities with a steppe character, belonging to very valuable and at the same time strongly endangered elements of the natural environment of Europe. The areas where they occur are characterized by high biodiversity and are of great importance for the protection of species and habitats. In recent years, a drastic decline of xerothermic vegetation has been observed in Europe. The main reason for this process is the abandonment of agricultural land use or the intensification of agriculture. In most cases, xerothermic grasslands are able to preserve their values only due to human activity. The cessation

of any use leads to natural succession, as a result of which their areas begin to overgrow with shrubs and trees and other undesirable vegetation, thus displacing the valuable plants characteristic of the grasslands.

Within the framework of the INT162 project, in selected locations with a total area of more than 70 hectares (West Pomeranian Voivodeship: the landscape-naturalistic park "Valley of Love", the nature reserves "Old Przylep" and "Brodogóry", the Natura 2000 area Wzgórza Moryńskie PLH320055, the border areas Pargowo- Barnislaw; the area of Brandenburg and Mecklenburg-Vorpommern: Natura 2000 areas "Schwarzer Tanger," "Müllerberge," "Stettiner Berge," Old Wollin Gravel Pit, Radewitzer Heide Protected Landscape Area, area nature monuments Dry Slopes Nadrensee and "Helle" near Neuohof, area Randowhänge bei Schmölln, border areas Ladenthin-Pomellen-Staffelde and Neurochlitz-Staffelde-Rossow) the following treatments were carried out: removal of shrubs and tree undergrowth, mowing of grassland areas with biomass harvesting, and quarter grazing of sheep. None of the above-mentioned activities were easy - the treatment area was mostly slopes of up to 60°, and there was no direct access to half of the land, as its vicinity was arable land. In addition, the implementation of the work was hampered by restrictions related to the development of the SARS-CoV-2 virus pandemic and the spread of the African swine fever (ASF) virus in the border area. The organization of sheep grazing was also associated with numerous formal and legal difficulties. The legislation did not provide for "cross-border grazing," so grazing quarters had to be erected and registered separately on the Polish and German sides, and the registration procedure itself was very different on both sides of the border. Despite these difficulties, it was possible to achieve most of the intended effects of the protection measures carried out, i.e. for a period of more than three years, the phenomenon of succession was stopped and part of the overgrazing veld was reduced. The best evidence of this was the flowering grasslands, which from year to year were richer in terms of the quantitative composition of typical thermophilous plant species.

Detailed results of the project are described in a summary botanical report (in Polish and German) - a document available on the website:

<https://gajonet.pl/wp-content/uploads/2019/12/Raport-botaniczny-projektu-INT162-1.pdf>

<https://gajonet.pl/wp-content/uploads/2019/12/Botanischer-Bericht-uber-das-Projekt-INT162-1.pdf>

Pictures:

1. Mowing and collection of mowed biomass in the area of xerothermic meadow in the nature reserve "Brodogóry" (Warnice municipality, West Pomeranian Voivodeship) (photo: Agnieszka Raćławska)



2. Quarterly sheep grazing in the village of Pargowo (Kolbaskowo municipality, West Pomeranian Voivodeship) (photo: Agnieszka Raćławska)



3. Blooming xerothermic meadow in the "Valley of Love" park (Chojna municipality, West Pomeranian Voivodeship)



6. Lebendige Auen für die Elbe (engl.: Living floodplains for the river Elbe)

Localization:

Country: Germany

Region: Sachsen-Anhalt

Coordinates: 53.035692848248495, 11.626835893362971

Implemented by:

Name of the main implementer: BUND - Friends of the Earth Germany, Auenzentrum Burg Lenzen

Contacts: <https://www.bund.net/fluesse-gewaesser/lebendige-elbauen/das-projekt/partner-und-foerderer/>

Other involved partners:

Technische Universität Berlin (Institut für Landschaftsarchitektur und Umweltplanung); Karlsruher Institut für Technologie (WWF-Aueninstitut); BUNDstiftung

Years of realization: Since 2015

Type of measures:

Purchase of land (130 ha)

Plantation of habitat-typical trees

Reconnection of cut-off oxbows

Creation of an artificial lake

Deactivation of old dikes

Joint elaboration and implementation of activities with locals and stakeholders (Auenwerkstatt)

Education Material (Auenrucksack, Puppet-Theater)

Short description:

The Hohe Garbe in the north of Saxony Anhalt. In the 420 hectare area, one of the largest floodplain forests in the riparian forests in the Elbe River Landscape UNESCO biosphere reserve in the shadow the former inner-German border. The dense stands of trees with a lot of deadwood are an ideal habitat for endangered species such as the black stork, white-tailed eagle and otter. But in the Hohe Garbe, the vital dynamics, the constant change between high and low water, was interrupted for a long time. An old non-functional dike shielded the area from the Elbe. Only during high flood events did water get over the barrier, but then it could hardly flow off. Untypical conditions for a floodplain and a threat to biodiversity. The old trees were in danger of dying and the typical floodplain animals and plants to disappear. With the project "Living Floodplains for the Elbe", the BUNDAuenzentrum has reconnected the Hohe Garbe with the natural dynamics of the Elbe. Now the water is bringing diverse life to the old forest and the surrounding meadows.

7. Janovský mokřad - Wetland management

Localization:

Country: Czechia, Czech Republic

Region: Plzen district

Coordinates: 49° 42'1.449"N, 13° 11'25.932"E

Implemented by:

Name of the main project partner: Regional Authority of the Pilsen Region

Contacts: Jiri.Vlcek@plzensky-kraj.cz

Other involved partners:

Municipality Plzeň

Municipality Nýřany

Years of realization: 2020 - ongoing

Type of measures:

Purchase of land, Transfer of territory under public administration

Designation of a protected area

Management of the area:

Grazing of large herbivores - horses, wild cattle, fencing

Forest management regulation

Publicity of Nature Conservation

Short description

A wetland developed on the site of the historic pond after the construction of the highway and as a result of beaver activity. Subsequently, quite diverse wetland communities developed here, which were subsequently inhabited by a number of endangered and rare animal species. The area has become very valuable from a nature conservation point of view.

The Pilsen Region decided to buy the land and declare it as a nature reserve. However, due to the overgrowth of trees, the area needs appropriate management. Therefore, part of the area was fenced off and grazing of large ungulates - wild horses and ancestors of cattle - was introduced. Part of the area was opened to the public; a nature trail and an observation tower were built. The site has become a popular destination for visitors.

Pictures:

1. Landscape of Janovský mokřad marshes



8. Bummermoos - mire restoration

Localization:

Country: Austria

Region: Lower Austria

Coordinates: 48,866904 N 15,016652 E

Implemented by:

Name of the main implementer: Mag. Margit Gross, Association for Nature Conservation Lower Austria

Contacts: www.noe-naturschutzbund.at, noe@naturschutzbund.at,

☎ +43 1 402 93 94,

Other involved partners:

professional supervision on site by Mag. Joachim Brocks and Mag. Axel Schmidt

Years of realization: 2020-2021

Type of measures:

- stabilizing the water level by closing drainages with wood sheets piling and clay dams
- removal of spruces to reduce transpiration and foster the regeneration of the mire

Short description:

In the course of the Interreg AT-CZ project “Connecting Nature”, one goal was the revitalization of forest mires, peats and bogs. The Bummermoos is located in the region of the Litschauer Highland, where it represents many of the highly valuable, but also endangered habitats of the area. Reasons for its critical condition are drainages as well as the use as pasture and for forestry in the past.

For restoration 9 dams were installed to closed drainages and retain water as well as 5 probe tubes to monitor the water level. Furthermore, clay dams were built successfully.

Pictures:

https://www.noe-naturschutzbund.at/files/noe_homepage/Anlagen/Projekte/Moore/Bummermoos_BerichtUmsetzung_oA.pdf

9. Elimination of neophytes in the National Park Thayatal

Localization:

Country: Austria

Region: Lower Austria on the border between Woodquarter, Winequarter and South-Moravia

Coordinates: 48.851508, 15.859755

Implemented by:

Name of the main implementer: Nationalpark Thayatal GmbH (Thayatal National Park Administration)

Contacts: www.np-thayatal.at, office@np-thayatal.at,

☎ +432949-7005

Other involved partners:

Administration of Národní park Podyjí

Years of realization: 2000 - future

Type of measures:

Impatiens glandulifera: Pulling out and mowing

Robinia pseudoacacia: Ringing the bark, Cutting of the root shoots

Short description:

Analysis of the occurring neophytes - which ones are problematic in terms of nature conservation

Mapping of the invasive neophytes

Preparation of a management plan for renaturation - What are the best methods of control?

Management *Impatiens glandulifera*: Pulling out and mowing, cooperation with Národní park Podyjí which do the management by boat

Robinia pseudoacacia: Ringing the bark, Cutting of the root shoots, no use of herbicide

Monitoring of the stock development

Pictures:

1. Pulling out *Impatiens glandulifera*



2. *Robinia* stock that was curled



10. Control of invasive alien plants in the Podyjí National Park

Localization:

Country: Czech Republic
Region: South-Moravia, Znojmo district
Coordinates: 48° 50'50"N, 15° 54'35"E

Implemented by:

Name of the main implementer: Podyjí Nationalpark Administration
Contacts: <https://www.nppodyji.cz/>, info@nppodyji.cz
☎ +420 515 282 241

Other involved partners:

Administration of Nationalpark Thayatal

Years of realization: Since 1997 - ongoing

Type of measures:

Management of invasive herbs: Impatiens glandulifera, Solidago gigantea, and S. canadensis.

Reynoutria bohemica: Mowing, herbicide spraying

Management of invasive woody species: Robinia pseudoacacia, Ailanthus altissima, Acer negundo.

Short description:

Mapping of widely distributed invasive alien species (IAS), field experiments of available control methods, and gathering experience from other areas. What are the best control methods?

Management of Impatiens glandulifera: Pulling out and mowing is efficient. More years of effort are necessary to deplete the seed bank. Cooperation with Nationalpark Thayatal which does the management of the Austrian part of the basin.

Reynoutria bohemica: Herbicide spraying or mowing followed by spraying new shoots with herbicide (on the Czech side only),

Solidago gigantea and canadensis: Intensive mowing (3-5 times per season), herbicide spraying (for big areas), sowing of hemiparasitic plants (*Rhinanthus alectorolophus*).

Robinia pseudoacacia, Ailanthus altissima, Acer negundo: Mechanical methods such as cutting or girdling lead to massive resprouting, and thus these methods are not recommended., Stem injection of herbicide (drill and fill method) is very effective to control large or medium-sized trees. Small trees are treated with herbicide after partial bark stripping. Trees are removed 1-3 seasons after treatment when they are completely dead. The benefit of stem injection techniques is that many trees can be left as dead wood attractive to many valuable invertebrates.

Pictures:

1. Stem injection (drill and fill) method: small amount of herbicide is applied into holes drilled around the tree stem



2. Dead black locust trees (*Robinia pseudoacacia*) two years after treatment. The best benefit of stem-injection techniques is that no or hardly any sprouts appear. The photo shows a dead Robinia standing near Havraníky grazed by sheep. The dead trees are removed slowly to avoid large disturbances to soil.



11. Conversion of commercial forests into natural forests in the Thayatal National Park

Localization:

Country: Austria

Region: Lower Austria on the border between Woodquarter, Winequarter and South-Moravia

Coordinates: 48.851508, 15.859755

Implemented by:

Name of the main implementer: Nationalpark Thayatal GmbH (Thayatal Nationalpark Administration)

Contacts: www.np-thayatal.at, office@np-thayatal.at,

☎ +432949-7005

Other involved partners:

external companies contracted to implement the work

Years of realization: 2000-2021 (smaller forest areas will be transformed till 2030)

Type of measures:

Just cutting the trees

Short description:

Mapping of the forest areas - Comparison with the potential natural forest vegetation

Preparation of a management plan for renaturation - Priority setting and timetable

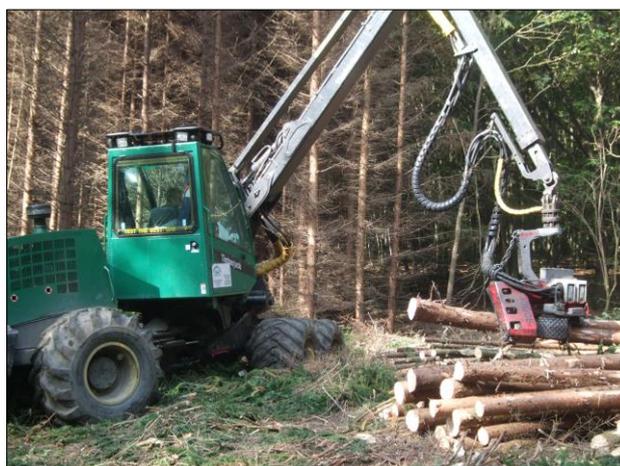
Felling of the trees - sale of the wood

No afforestation

Monitoring of the natural development

Pictures:

1. Forest transformation by means of harvester



2. Natural forest regeneration under non-native spruce trees



12. Conservation of Natura2000 dry grassland at “Retzer Hügeln”

Localization:

Country: Austria

Region: Western surroundings of the municipality Retz: hillrocks “Gollitsch”, “Kalvarienberg”, “Parapluieberg”, “Talberg”, “Windmühle”, Lower Austria

Coordinates: 48° 46' 40.00" N 15° 56' 35.00" E

Implemented by:

Name of the main implementer: Municipality Retz with professional guidance of Dipl.-Ing. Dr. Gabriele Bassler-Binder

Contacts: Municipality: www.retz.gv.at, office@stadtgemeinde-retz.at,

☎ +43 2942 2223

Other involved partners:

Dipl.-Ing. Dr. Gabriele Bassler-Binder, gabriele.bassler@boku.ac.at

Years of realization: 2016

Type of measures:

Removing of shrubs

Short description:

In the last decade the removal of shrubs at dry grassland in the surroundings of Retz (FFH area “Westliches Weinviertel”) were conducted at a regular basis. Via the network “conservation area lower Austria” it was possible to implement another removal of shrubs in autumn 2016. The municipality Retz organized this action in which the municipality itself participated but also volunteers and refugees. The main profiteers of this actions were thermophilic and light-demanding species like *Iris humilis* ssp. *arenaria* (sand iris), *Pulsatilla grandis* (greater pasque flower) and *Lacerta viridis* (green lizard).

Pictures:

1. Eastern part Gollitsch (© G.Bassler)



13. Protection of the European wildcat (*Felis silvestris*)

Localization:

Country: Austria

Region: National park Thayatal, Lower Austria

Coordinates: 48° 49' 17.92" N 15° 51' 15.91" E

Implemented by:

Name of the main implementer: Nationalpark Thayatal

Contacts: www.np-thayatal.at, office@np-thayatal.at,

☎ +43 (0) 2949 / 7005 - 0

Years of realization: 2018

Type of measures:

Measures for stocktaking and monitoring:

- Questionnaire
- Wild camera
- Searching with dogs
- Lure sticks
- Implementing a reporting platform for wildcat sightings

Measures for communication:

- Preparation of a communication concept
- Communication of the topic wildcat in the circle of land users
- Educational work within the topic wildcat and domestic cat
- Compilation of the topic in collaboration with current projects
- Development of an expert network
- Communication of the topic within the broad public
- Preparation of a literature database

Short description:

The wildcat research was innovated and intensified within the cross-boarder Interreg project "Connecting Nature AT-CZ". The aim was to investigate the occurrence of the European wildcat within the national park Thayatal more intensively, to strengthen the knowledge about this rare species, verifying possibilities of wildcat population support as well as improving research methods. Therefore, the already implemented method of lure sticks was used.

Pictures:

1. *Felis silvestris* (© NPTT)



14. Grassland management through grazing by Exmoor ponies in the Podyjí National Park

Localization:

Country: Czech Republic

Region: South Moravian border area with Austria, South Moravia, Znojmo district

Coordinates: 48° 48'23"N, 15° 59'30"E; 48° 50'41"N, 15° 58'15"E

Implemented by:

Name of the main implementer: Podyjí National Park

Contacts: www.nppodyji.cz, info@nppodyji.cz,

☎ +420 515 282 241

Years of realization: Since 2018 - ongoing

Type of measures:

Grazing of steppe grasslands, heaths and forest pastures

Short description:

Horses from Exmoor (or Exmoor ponies) have been grazing in the Podyjí National Park since May 2018 on two pastures, near Havraníky and on the former shooting range near Mašovice. The pasture near Havraníky is formed by dry grasslands, heaths, and shrubs. About one-third of the pasture in Havraníky is covered by a mixed forest, which gradually merges into the pasture. Rangers carefully observe the capacity of the pastures to know how many animals the pasture can support without the risk of overgrazing the sensitive plant communities.

The first five years of grazing showed that Exmoor horses are very effective grazers that can significantly reduce the cover of tall grasses in favor of flowering plants. Many species profit from open-soil habitats such as horse paths, dust baths, etc. Management of pastures is however to supplement with other measures. Both pastures suffer from intensive woody plant encroachment. Woody plant and invasive tree control are challenging tasks for the next future. Forest stands dominated by black locusts (*Robinia pseudoacacia*) are converted to open woodland pastures.

Horse grazing with this primitive and modest horse breed seems to be a promising and cost-effective tool for the management of large areas where conventional measures (mowing, sheep grazing) are impossible and/or too expensive. That is why we plan to enlarge horse pastures to other areas within Podyjí NP.

Pictures:

1. Exmoor ponies in the Podyjí National Park (photo: Nationalpark-Thayatal)



2. High-diverse grassland as a result of grazing with Exmoor horses at a pasture near Havraníky (June 2022)



3. High-diverse grassland at a pasture near Mašovice (June 2023)



4. Control enclosure with no grazing shows the original state of most grasslands at the pasture near Mašovice with the domination of tall grasses such as *Calamagrostis epigejos* (July 2023).



15. Burning management in Podyjí National Park

Localization:

Country: Czech Republic

Region: South Moravian region, Znojmo district

Coordinates: 48° 49'6.205"N, 16° 0'7.596"E

Implemented by:

Name of the main implementer: Podyjí National Park

Contacts: www.nppodyji.cz, info@nppodyji.cz,

☎ +420 515 282 241

Years of realization: 2021-ongoing

Type of measures:

Restoration of degraded grasslands, control of expansive grass species, increasing of habitat diversity.

Short description:

Oligotrophic grasslands and heathlands in the South Moravian region of Czechia suffer from overgrowth due to abandonment of agricultural use (especially grazing). Old growth is accumulating in the stands and aggressive tall grasses are spreading. Fire is a traditional tool of historical management. Burning promotes heather and other competitively weak species. A special methodology for increasing fire risk is used.

Pictures:

Fig. 1: Initial phase of control burning (backfire) at a locality near Havraníky (photo: Robert Stejskal, National Park Podyjí)



Fig. 2: Early spring at a plot treated with control burning, about one month after treatment (photo: Robert Stejskal, National Park Podyjí)



Fig. 3: Fresh grassland at the same plot about 3 months after treatment. Some local plants profit from control burning, such as *Verbascum phoeniceum* (photo: Robert Stejskal, National Park Podyjí)



16. Pouzdřanská step Kolby - priority grassland habitats management

Localization:

Country: Czech Republic

Region: South Moravian region, Břeclav district

Coordinates: 48° 56' 37.685"N, 16° 38' 32.887"E

Implemented by:

Name of the main implementer: Základní organizace Českého svazu ochránců přírody ONYX (Local Organisation of Czech Union for Nature Conservation ONYX)

Contacts:

<https://www.csoponyx.cz/projekt-stranka/48/life-southmoravia/49/zakladni-informace/>

Ing. Ivana Mariánková - ivana.mariankova@gmail.com

☎ +420 737 505 288

Other involved partners:

Botanický ústav Akademie věd ČR, v. v. i. (Institute of Botany of the Czech Academy of Sciences, p.r.i.)

Junák - český skaut, Kaprálův mlýn, z.s. (Junák - Czech Scouting, Kaprálův mlýn, z.s.)

Základní organizace Českého svazu ochránců přírody Vlašim (Local Organisation of Czech Union for Nature Conservation Vlašim)

Years of realization: 2019-2025

Type of measures:

Mowing, Grazing, Restoration of degraded grassland habitats (removing shrubs, preparing sites for long-term management)

Short description:

Grassland and forest-steppe habitats in the South Moravian region of Czechia suffer from overgrowth, often by invasive alien plant species, due to land abandonment or inappropriate management. Project LIFE SouthMoravia improves the conservation status of five priority and one nonpriority habitats of the Habitats Directive (Sub-Pannonic steppic grasslands, Pannonic loess steppic grasslands, Semi-natural dry grasslands and scrubland facies on calcareous substrates, Rupicolous calcareous or basophilic grasslands, Pannonian woods with *Quercus pubescens*, Euro-Siberian steppic woods with *Quercus* spp.). The project builds on previous LIFE project work, but on a much larger scale and with improved approaches involving grazing and eco-tourism to make the outcomes more sustainable. A fundamental objective is to develop a comprehensive system of habitat management by reintroducing traditional farming practices, particularly grazing, at the lowest possible cost. Pouzdřanská step-Kolby protected area serves as one of the seven pilot localities where the set goals should be achieved.

Pictures:

1. Pouzdřanská step-Kolby protected area with view to Pavlov hills (photo: Jaroslav Vojta)



2. Ongoing sheep grazing in Pouzdřanská step-Kolby protected area (photo: Hana Skokanová)



17. Bird park Kosteliska

Localization:

Country: Czech Republic

Region: South Moravian region, Hodonín district

Coordinates: 48° 56'22.584"N, 17° 4'14.327"E

Implemented by:

Name of the main implementer: Česká společnost ornitologická (Czech Society for Ornithology)

Contacts:

<https://www.birdlife.cz/rezervace/kosteliska/>

Mgr. Gašpar Čamlík - camlík@birdlife.cz,

☎ +420 731 782 066

Other involved partners:

Město Dubňany (Dubňany town)

Biologické centrum Akademie věd České republiky (Biology Centre CAS)

Years of realization: 2020 - ongoing

Type of measures:

Mowing, Cut-outs of invasive trees, Sheep and goat grazing, Terrain modelling, Sod Tearing, Cattle grazing, etc.

Short description:

The project aims to enhance the biodiversity in the min. 8-hectare area of the newly-founded Bird park Kosteliska. Its main objectives are to set up sustainable management leading to significant suppression of invasive species, restore and expand valuable habitats and improve the conditions for rare and protected plants and animals.

Pictures:

1. View into the Bird park Kosteliska (photo: Jaroslav Zaňát)



2. Bird park Kosteliska - an overview (photo: Ludmila Korešová)



18. Ščůrnica - non-state nature reserve

Localization:

Country: Czech Republic

Region: Zlín region, Zlín district

Coordinates: 49° 8'27.369"N, 18° 3'52.058"E

Implemented by:

Name of the main implementer: ZO ČSOP Kosenka (Czech Union for Nature Conservation - local organization Kosenka)

Contacts:

<http://www.mistoproprrodu.cz/zachranene-lokality/scurnica/>

<http://www.kosenka.cz>

Mgr. Miroslav Janík - kosenka@kosenka.cz

☎ +420 736 777 144

Other involved partners:

Many local partners (through public fundraising)

Years of realization: 2003 - ongoing

Type of measures:

Mostly non-interventional management, support of natural processes

Short description:

Czech Union for Nature Conservation (ČSOP) saves threatened natural sites and returns nature back the way it used to be. The aim of the Place for Nature campaign (Místo pro přírodu, in Czech) is to purchase such sites and to provide them with lasting care. Ščůrnica non-state nature reserve, where 42 hectares have been purchased to date from private ownership and transferred to a prevailing non-intervention regime, can serve as a very nice example of such activity.

Pictures:

1. Mushrooms in the Ščúrnic a reserve (photo: Kateřina Landová)



2. Dead beech as a valuable habitat in the Ščúrnic a reserve (photo: Kateřina Landová)



19. Green Belt Camp of the nature conservation union of lower Austria

Localization:

Country: Austria

Region: Lower Austria

Coordinates: 48° 45' 30.47" N 16° 39' 02.86" E

Implemented by:

Name of the main implementer: Nature conservation union of lower Austria

Contacts: www.noe-naturschutzbund.at, noe@naturschutzbund.at

☎ +43 1 402 93 94

Other involved partners:

respective municipalities and “Service Civil International-Austria” (<https://www.sciaustria.org/>)

Years of realization: 2023

Type of measures:

Based on a management plan, conservation measures are conducted as well as awareness-raising measures

Short description:

In the course of the Green Belt-project conservation measures are conducted within selected areas of dry grassland in the lower Austrian municipalities Drasenhofen, Falkenstein, Wildendürnbach, Staatz, Rabensburg, Bernhardsthal and Spannberg. These conservation measures take place in the form of all-day events with volunteers. A participation for the local population with collaboration of a yearly international workshop of youths is possible too. The project aims are the assurance and improvement of the conservation status of seven dry grassland isles along the Green Belt as well as awareness-raising for the nature conservation value of dry grasslands.

Pictures:

<https://www.noe-naturschutzbund.at/green-belt-camp.html>; pics can also be found in the archive of the indicated web address

20. Preserving daffodils in Karavanke mountain range

Localization:

Country: Slovenia

Region: Gorenjska - Karavanke Mountain Range

Coordinates: 46.47627773332851, 14.065895294772819; 46.46871141943372, 14.028129793679705 and 46.45380309692854, 14.088870650001574

Implemented by:

Name of the main implementer: The Development Agency for Upper Gorenjska

Contacts: <https://www.ragor.si/en/all-projects/active-projects-en/save-the-daffodils/>,
klemen.klinar@ragor.si

Other involved partners:

Municipality of Jesenice, farmhouses around Jesenice area, Institute of the Republic of Slovenia for Nature Conservation - Unit Kranj, Primary school Jesenice

Years of realization: 2016 - 2022

Type of measures:

- Monitoring of daffodil habitats
- Guidelines for the implementation of a programme of the conservation and enhancement of daffodil habitats in the Municipality of Jesenice
- Financial support for agricultural holdings that cultivate land according to the developed guidelines
- Integration of daffodil areas into tourism and education programmes - a film about importance of daffodils as a natural value

Short description:

There are rich daffodil habitats on the mountain range of Karavanke above Jesenice area. Unfortunately, due to changes in farming methods and to the overgrowth of farmland, daffodil meadows are becoming smaller and smaller. In addition to the natural conditions that daffodils need to thrive, proper agricultural management of the meadows where they grow is also crucial. In order to preserve and enhance daffodil habitats, in 2016 the Development Agency of Upper Gorenjska and the Municipality of Jesenice established the multiannual programme "Preserving Daffodils", which sets out measures for the proper agricultural management of daffodil meadows and provides for compensation for landowners who manage daffodil habitats properly: adapted mowing or grazing, which must be carried out annually, after flowering and seed set of most plant species (daffodils, grasses), at the end of June or beginning of July, depending on the altitude or location of the area. They should be subject to clearance mowing or grazing, which should be carried out at least once a year, to prevent overgrowth of the vegetation. Hay must be harvested in the traditional way (drying of forage on the ground or in a shed - no baling or silage) and the soil must be fertilised with manure in quantities comparable to traditional farming. The project aims to encourage landowners to recognise the natural value of daffodils, to develop sustainable forms of tourism and to educate the population about the importance of daffodils. As of 2022, 35

landowners/farmhouses with a total of 40.68 ha of meadows have already joined the programme. The daffodils that bloom every year in May in the meadows in Karavanke villages attract a large number of daffodil lovers. At this time of year, these places are visited by a large number of visitors, for whom there is insufficient parking. For this reason, the Municipality of Jesenice has been working for several years to alleviate the traffic pressure on the villages of the Karavanke during the daffodil bloom by organising sustainable mobile solutions for better satisfaction of the local population and visitors. In addition, part of the project also aims to raise awareness and educate pupils about the daffodil habitat as a natural asset with participation in a prize quiz. The answers to the questions are hidden in a special educational film produced by Institute of the Republic of Slovenia for Nature Conservation: <https://www.youtube.com/watch?v=JIVH0TfBDv8&t=989s>

Pictures:

1. Daffodil (photo: archive Municipality of Jesenice)



2. Hiking tour in the daffodil meadows (photo: Jošt Gantar)



3. One part of a meadow without daffodils due to intensive cultivation and another part of a meadow with flowering daffodils (photo: archive of Upper Gorenjska Development Agency)



21. Measures to restore meadows in bloom in Triglav National Park (TNP)

Localization:

Country: Slovenia

Region: Gorenjska - Triglav National Park

Coordinates: 46.44014233283338, 13.903690520242519 (Dolina Radovne/SC Pokljuka)

Implemented by:

Name of the main implementer: Triglav National Park

Contacts: <https://www.tnp.si/en/home-2/>

<https://www.bohinj.si/en/international-wild-flower-festival/>

Other involved partners:

Agricultural Institute of Slovenia, Tourism Bohinj, Municipality of Bohinj, Sports Centre Triglav Pokljuka, various farmhouses

Years of realization: 2021/2022

Type of measures:

- Seed collection for meadow restoration, production of conservation seed mixtures for restoring degraded meadows (Life Seeds project)
- Meadow cultivation
- Seeding for meadow restoration
- Wild Flower Festival in Bohinj - raising awareness and promoting biodiversity

Short description:

The area of species-rich alpine meadows in Natura 2000 sites is decreasing. The main threat factors are the intensification of agriculture and its abandonment, leading to overgrowth of shrubs and forest. The Pokljuka Sports Centre is located in Rudno polje within the area of Triglav National Park and is affected by long winters with heavy snowfalls and low temperatures. Extensive snowfalls and the emergence of bark beetles over the past five years require intensive forestry work with timber harvesting and future rehabilitation of damaged forest areas. All these factors are now having a negative impact on the forest, the wildlife in the area and also on the grassland areas that have been converted for the construction of sports facilities with associated infrastructure, forest paths and cross-country skiing trails. Various measures have been taken to restore these alpine meadows, one of which is the production of conservation seed mixtures. The latter often contain plant species whose deep and branched root systems enable them to grow on poor, skeletal soils and prevent erosion processes from occurring on banks with a steeper slope. To this end, various methods of seed extraction have been used (manual, harvesting with a combine, seed multiplication in a sample plot), and the possibility of restoring degraded grassland areas (seeding harvested seed mixtures, transferring cut grassland biomass, transferring dried grassland biomass, etc.) has been tested in the Rudno polje. Such greening or restoration procedures, adapted to the local environment, ensure a more stable sward and greater durability.

In connection with the preservation of flowering meadows and rich biodiversity, the idea of the Alpine Flower Festival was born, which has grown into an international event. It is organised by Tourism Bohinj in the second half of May, this year already for the 17th consecutive year. There are a series of cultural, educational and creative workshops and guided botanical hikes organized for two weeks of programme with the main focus on showcasing biodiversity and promoting a respectful attitude towards nature. The festival is dedicated to wild plants, the floral wealth of Bohinj and the local offer, and is primarily aimed at raising awareness and educating young people about the presence of diverse Alpine species and the importance of their conservation. In addition, the key message to visitors is a responsible and respectful attitude towards this priceless Alpine cultural landscape.

Pictures:

1. Seed collection with vacuum cleaner in Radovna (photo: archive of TNP)



2. Meadow in bloom (photo: archive of TNP)



3. International Wild Flower Festival in Bohinj (<https://www.bohinj.si/en/international-wild-flower-festival/>)



22. Obnova rečnega ekosistema nižinskega dela reke Drave v Sloveniji (engl.: Riparian ecosystem restoration of the lower Drava River in Slovenia)

(LIFE-Nature project LIFE11NAT7SI/882)

Localization:

Country: Republika Slovenija - Republic of Slovenia

Region: Podravska regija - Podravska region

Coordinates: 46° 39'18.19 N, 16° 17'22.57 E

Implemented by:

Name of the main implementer: Društvo za opazovanje in proučevanje ptic Slovenije - DOPPS-BirdLife Slovenia

Contacts: <https://www.livedrava.ptice.si>,

<https://livedrava.ptice.si/home/documents/project-documents/?lang=en>

dr. Damijan Denac, damijan.denac@dopps.si

☎ +386 51 606 835

Other involved partners:

VGB Maribor d.o.o. - Water Management Bureau Maribor d.o.o.

DRAVA Vodnogospodarsko podjetje Ptuj, d.d. - Drava, Water Management Company Ptuj d.d.

Mestna občina Ptuj - Ptuj City Municipality

Ministrstvo za okolje in prostor - Ministry of the Environment and Spatial Planning

Dravske elektrarne Maribor d.o.o. - Drava Hydro Power Plants Maribor d.o.o.

Občina Ormož - Municipality of Ormož

Agencija Republike Slovenije za okolje - Slovenian Environment Agency

Občina Središče ob Dravi - Municipality of Središče ob Dravi

Years of realization: 1.9.2012 - 31.12.2017

Type of measures:

1. Preparatory actions, elaboration of management plans and action plans:
 - preparation of detailed documentation with models and plans for restoration of previous wastewater basins and Drava River ecosystem (flood and sediment transport modelling, ecological engineering measures, geodetic survey and marking out the land);
 - detailed grazing plan and management plan for Ormož Basins Nature Reserve;
 - guidelines for sustainable water management of the Drava River.
2. Purchase of land (purchase of flooded forest fragment and a one parcel to reach the integrity of the restored area)

3. Concrete conservation actions:

- restoration of previous wastewaters basins (created in 1977 by the Sugar factory Ormož and closed in 2006) into a semi-natural wetland and establishment of state nature reserve (construction of water supply and water regulation system, restoration of habitats for waterbirds, proper habitat management in the softwood forest stands and establishment of a grazing system for long-term and sustainable wetland management);
- construction of breeding island for Common Terns (*Sterna hirundo*) at lake Ptuj;
- restoration of the river banks for breeding of the Kingfisher (*Alcedo atthis*) and Sand Martin (*Riparia riparia*) and removal of woody vegetation at gravel bars to restore Little Ringed Plover (*Charadrius dubius*) and Common Sandpiper (*Actitis hypoleucos*) habitat;
- declaration of the area of restored basins as a state nature reserve and declaration of nature park of the area between Ormož and Središče ob Dravi.

4. Monitoring of the concrete impact of the project actions

5. Public awareness and dissemination of results (educational and promotional activities)

Short description:

Project LIVEDRAVA was implemented along Drava River between Maribor and Središče ob Dravi, encompassing Natura 2000 site Drava. Almost the entire project area is located on an alluvial plain called “Dravska ravan” in NE Slovenia. Riparian ecosystem of the Drava River has been degraded in the past (especially after building of three hydro-power plants between Maribor and Središče ob Dravi), with populations of riparian ecosystem and qualifying Natura 2000 species either decreasing or disappearing. Several threats or larger problems contributing to the degradation have been recognized and placed at the centre of nature conservation actions within the project with the main goal: to preserve and enlarge populations of Natura 2000 species as well as to improve and restore habitat types with unfavourable conservation status.

Within the project three river side arms were restored to a total length of 3.34 km, they were deepened and connected to the main channel to establish permanent surface and hyporheic water flow through them. Sandbanks, overgrown with riparian vegetation, were manually managed at 6 locations to bare vertical surfaces, available for cavity breeding riparian birds. Moreover, ten existing gravel bars, which were vegetated and/or affected by improper human use, such as gravel extraction and recreational driving with motor vehicles, were managed to be restored to unvegetated gravel surfaces. The second part of the project was dedicated to the restoration of previous wastewaters basins into a freshwater wetland, characterized by a mosaic of flooded and saturated aquatic and marsh vegetation and wet grasslands/pastures. The development of vegetation (secondary succession) is suppressed with water-level management and low intensity grazing by water buffaloes.

Pictures:

1. The Ormož Basins Nature Reserve (photo: Tilen Basle)



2. Water buffaloes and cattle egrets (photo: Ana Vaupotič)

