

CONSERVATION OF NATURA 2000 SITES KOČEVSKO

Layman's report
LIFE13 NAT/SI/000314



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ABOUT THE PROJECT

The “Conservation of Natura 2000 sites Kočevsko” project or LIFE Kočevsko, in short, comprehensively addressed active protection of Natura 2000 sites Kočevsko.

The project applicant was the Municipality of Kočevje, and other project partners were the Institute of the Republic of Slovenia for Nature Conservation, the Slovenia Forest Service and the Kočevje Business Incubator (in December 2018, People's University of Kočevje merged with the Kočevje Business Incubator).

Municipality of Kočevje	Institute of the Republic of Slovenia for Nature Conservation	Slovenia Forest Service	Kočevje Business Incubator
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Project partners

The project ran from 1 September 2014 to 28 February 2019. The total value of the project amounted to EUR 2.270.013; 50 percent of the amount was funded from the European Commission's LIFE+ financial instrument, the Ministry of the Environment and Spatial Planning contributed 30 percent, while the remaining 20 percent was contributed by project partners.

2012	2013	2014	2015	2016	2017	2018	2019	2020
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Duration of the project

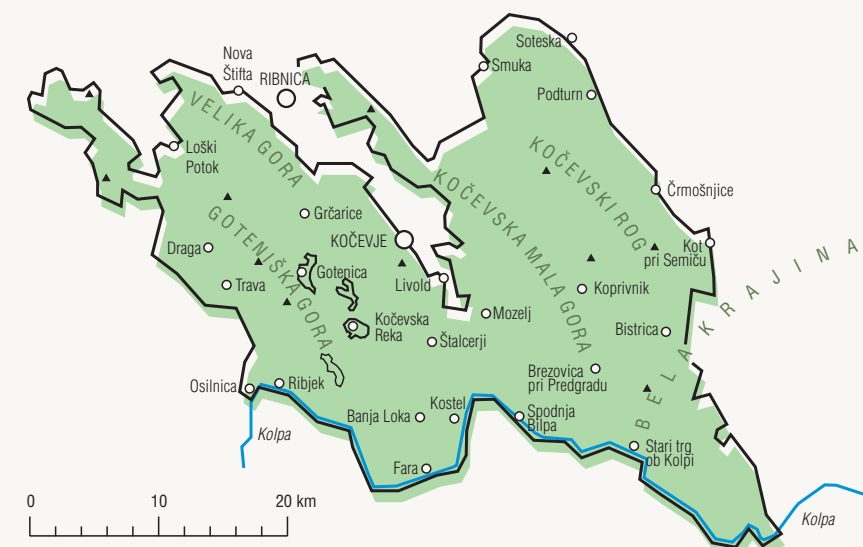
LIFE+ financial instrument of EU	MESP	Partners
50%	30%	20%

Financing of the project

The main objective of the project was to take specific actions to preserve nature in order to improve habitat conditions and eventually establish a favourable conservation status for the endangered forest birds (capercaillie, hazel grouse, white-backed woodpecker and three-toed woodpecker), the only pair of the white-tailed eagle in Kočevsko, and an extremely vulnerable underground ecosystem with the olm (*Proteus anguinus*) as the indicator of the groundwater condition.

PROJECT SITE – NATURA 2000 KOČEVSKO SITE

An area covering more than 100,000 hectares makes the Natura 2000 Kočevsko site the largest Natura 2000 site in Slovenia. It is situated in the south-eastern Slovenia and is part of the Dinaric Alps, which stretch further on to the Balkan Peninsula. The area's character reveals a diverse Dinaric karst landscape with numerous karst features and unique surface and underground river network. The site is even more characterised by mighty forests that cover more than 90 percent of the area, which is why Kočevsko is dubbed as the land of forests. Fir and beech forests predominate, while remnants of the virgin forests on high-karst plateaus are truly something special. Thanks to its conservation and remoteness, numerous rare and endangered flora and fauna species found their refuge in the forest, making Kočevsko one of the most complex and biologically diverse forest ecosystems in Europe.



PURPOSE OF THE PROJECT AND OBJECTIVES

The purpose of the project was to take specific actions to preserve nature in order to improve habitat conditions and eventually establish a favourable conservation status for the selected animal species and habitat type, and to create long-term system solutions to manage the project site and become a demonstrative example for further expansion of the best practice to Nature 2000 sites.

Field work within the project included various measures to increase the quantity of dead biomass. By putting up feeding fences the feeding base for grouse was improved and by developing a specific traffic system on forest roads quiet zones were created.

Actions aimed at protecting the habitat of the white-tailed eagle included setting up video surveillance above the nest and the winter feeding site, creating a fishing regime on and along the lake, and developing infrastructure for visitors of Kočevska Reka with a new didactic trail, observation towers and an information centre.

With the aim of protecting the underground habitat, extensive biological and chemical analyses of groundwater were carried out, while the main emphasis was on cleaning the most polluted water caves and closing access to the caves with wooden or metal fences. We worked towards fostering communication with competent professional services and main polluters of groundwater.

In addition to performing conservation measures, a large part of the activities was directed at education, public awareness and dissemination of project results, cooperation with various institutions and international integration. One of the main objectives of the project was also to transform the negative paradigm about Natura 2000 and raise awareness of the general public about potential socio-economic benefits that Natura 2000 sites may provide to local communities.





PROJECT
ACTIVITIES
AND RESULTS



WHITE-TAILED EAGLE (*Haliaeetus albicilla*)

The white-tailed eagle has been attracting a lot of interest in Kočevsko ever since the 1980s, when its nest was discovered in the nearby vicinity of the artificial Reško lake by Kočevska Reka, which served as the first confirmation that the species was nesting in the region.

The mighty glider with a wingspan of up to 2.5m is our largest bird of prey as well as one of the largest representatives of eagles in the world. It is suspected that the eagle chose the area because it is peaceful and there are numerous food options thanks to the lake and the nearby Kolpa river.

There is a pair of white-tailed eagles continuously present around the area the Reško lake. In 2018, the pair successfully bred and raised two offspring.

THREATS

The white-tailed eagle is very sensitive to disturbances, particularly during the nesting period. The nest of the white-tailed eagle and the lake in Kočevska Reka attract numerous visitors, such as hikers, nature lovers, fishermen and hunters, while aircraft flights also disturb their peace. This exposes nest to direct and indirect commotion caused by humans, while the negative impact of disruptions on the nesting pair keeps increasing with time due to the exposed position and growing number of visits to the lake.

In winter months, when the lake freezes, the selection of food for the white-tailed eagle is scarce. This is particularly critical for the female that has higher energy requirements as she is preparing for nesting.





IMPLEMENTED MEASURES

Video surveillance system above the nest of the white-tailed eagle and the winter feeding site with the purpose of restricting and reducing human impact. The system enables direct transmission of what is happening in the nest and around.

Putting up a winter feeding station – feeding ground, which is first of its sort for birds of prey in Slovenia, and stocking the ground with carcasses from December to the end of June.

Fish stocking in the Reško lake.

Putting up 500 m of fence on the eastern side of the lake to prevent access of livestock to the lake.

Setting up a floating barrier on the water to indicate the limit of the fishing reserve.

Establishing the quiet zone on the upper part of the lake and its immediately vicinity.

Putting up three observation towers and setting up the Eagle's forest didactic trail with the purpose of educating and raising awareness, reducing human impact and redirecting visitors to the area of the reserve, which is not used by the pair of white-tailed eagles for nesting.



Winter feeding station for the white-tailed eagle



A footage of the white - tailed eagle's nest (made by video surveillance system)



Observation tower »The Nest« placed on Eagle's trail by the Reško Lake

OLM (*Proteus anguinus*)

The olm (also called the blind cave salamander) is an amphibian and the only representative of cave-dwelling vertebrates from the *Proteus* genus in Europe.

The world renowned endemic that lives only in waters that flow under the Dinaric Karst (Slovenia, Italy, Croatia, Bosnia and Herzegovina, Montenegro) has been sighted in several locations in Kočevsko. The most known habitat is the groundwater that flows in the hinterlands of the Rakitnica spring, Rinža river below the hills Stojna and Velika Gora, and also the water caves of the Kočevsko polje basin, with underground water currents flowing towards the springs in the Krka and Kolpa river valleys.

It lives only in unpolluted and oxygen-rich groundwater, which makes it an indicator species whose presence confirms the good condition of groundwater. It is particularly sensitive to the content of nitrates, which adversely affect the olm in concentrations as low as 10 mg NO₃/l or less.

THREATS

The key threats are all forms of pollution of the Karst landscape. Intensive farming, municipal waters, illegal deposits of industrial and municipal waste into pits and caves, and numerous unauthorised landfills in the areas of influence of underground currents. They pose a threat to the olm's existence and survival in the environments, where it was once commonly present.





IMPLEMENTED MEASURES

The state of contamination of 90 caves in the vicinity of towns and roads in the project site was examined, resulting in an accumulation of around 2000 m³ of different types of waste.



Cleaning of 7 caves, where more than 165 m³ of different types of waste was removed; considering the quantity and position, waste had potential impact on the cave habitat.

To prevent further pollution of caves, the following measures were implemented: protection of entrance to 4 cleaned caves with wooden fences, which prevent access of vehicles and illegal waste disposal, metal gratings placed to the entrance of the cave Smetljiva jama, upgrade of the existing metal roadside barrier along the cave Vodna jama 1 at Klinja vas, and erection of 14 warning signboards in front of entrances to the selected caves to prohibit waste disposal.

Physical and chemical analyses of the quality of groundwater and biological stock survey of the cave fauna on 6 locations before and after the cleaning of caves and pits.



Cleaning of the cave Mullerloch



Protected entrance at cave Smetljiva jama



WHITE-BACKED WOODPECKER (*Dendrocopos leucotos*)

THREE-TOED WOODPECKER (*Picoides tridactylus*)

The existence of the endangered species of woodpeckers is crucially subject to the old fir-beech forests with a large proportion of deadwood, as well as primeval forests and forest reserves. The three-toed woodpecker resides in forests situated at more than 800m above sea level with dead coniferous trees, while the white-backed woodpecker prefers mature beech stands. They feed on bark beetles and beetle larvae that live in rotten and decaying wood.

THREATS

Both woodpecker species are endangered mainly due to the fragmentation of the appropriate living space and insufficient quantities of available dead tree volume that could foster the flourishing of the saproxylic beetle the woodpeckers feed on.



IMPLEMENTED MEASURES

Lease of 29 ha of eco-cells in private forests for the period of 20 years and permanent exclusion of 102 ha of eco-cells in state forests. This refers to the parts of forests on heavily-accessible, steep and rocky areas, which are not managed and are intentionally left to the natural course of development with the purpose of accumulating dead and decayed biomass.

Lease of 300 habitat trees in private forests for the period of 20 years. Habitat trees are dead and alive trees, left to develop naturally, inhabited by fungi and animal species, trees with cavities or nests of larger dimensions and particular shapes, which are important for the preservation of biodiversity, while also increasing feeding opportunities for the protected species.

Implementation of silvicultural measures, such as the tree girdling or ring-barking where a strip of bark (phloem) is removed to cut the flow of tree juices. This measure reduces the tree's vitality and facilitates its decay (deterioration). The measure was carried out in pole stands on an area of 200 ha as well as in stands in regeneration stage and the edge of eco-cells in the total quantity of 2771 m³.



The eco-cell area



*Tree girdling or
ring-barking in
stands in
regeneration stage*



WESTERN CAPERCAILLE (*Tetrao urogallus*)

HAZEL GROUSE (*Bonasa bonasia*)

In the 1980s, there were around 40 known sites of the western capercaillie in Kočevsko, but according to recent data, only individual sites on the ridges of Velika gora, Goteniški Snežnik, Borovška gora and Racna gora are inhabited by the capercaillie.

The hazel grouse was relatively widespread in the Kočevsko forest in the previous century. Frequent sightings were recorded on Karst fields and valleys heavily overgrown with forests and in the area of overgrowing Kočevsko villages, as there is a lot of shrubby undergrowth and herbal species.



THREATS

In the past, the areas in Kočevsko occupied by the capercaillie and the hazel grouse underwent many significant changes that affected their habitat.

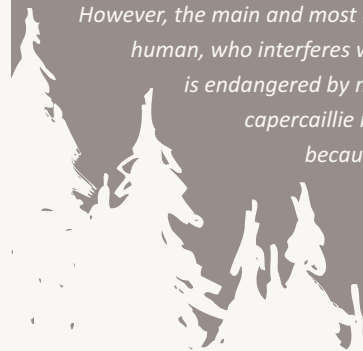
Due to increasingly warmer summers, storms, gradation of bark beetles and logging of old forests, the proportion of old, predominantly coniferous forests, where the capercaillie lives, is decreasing. In the resulting gaps and sunlit tree stands, beech trees are flourishing, whereas sunlit clearings with raspberry, strawberry and blueberry bushes are critically scarce.

The scope of overgrowing areas, forests in the making and forest edges, which provide the hazel grouse with a safe and favourable habitat, has significantly reduced by now. Overgrowing surfaces namely rather quickly transform into high forests, causing forest edges to disappear or completely change due to the moving of clearings, becoming depleted in terms of structure and species.

In addition to clearings being overgrown, the quantity of herbaceous plants and fruitful species is also impacted by nibbling of game animals, which affects feeding possibilities for both species.

Eggs and offspring of both species are endangered by predators of floor nests, such as wild hogs, crows, foxes, badgers, bears, mainly in the vicinity of feeding sites.

However, the main and most obstructive factor for both species is certainly human, who interferes with the forest. The hazel grouse is endangered by numerous forest traffic routes, while the capercaillie is affected by all disturbances in the habitat, because it doesn't get used to them.





IMPLEMENTED MEASURES

Putting up and labelling 20 new feeding fences (7 km) and labelling 10 existing fences with wooden signs to prevent birds from crashing into fences. A total of 7,500 seedlings of various tree species (spruce, fir, pine and seedlings of fruitful species, cherries, hawthorn and rowan trees) were planted into twenty fences. A portion of cherry seedlings was planted outside fences and protected against the nibbling of animals by tubes. By planting fruitful trees and bushes we can improve the feeding base of qualification species and impact (foster) the species variety of forests. Fences protect tree and shrub species from damages, which are caused by the nibbling, peeling and rubbing of herbivorous animals.

Logging and cutting of corridors; tree cutting improves visibility for the capercaillie on its habitats and establishes flight lines for the capercaillie to escape its predators.

Mulching of slopes of forest roads and overgrowing forest clearings (11.1 ha), with the purpose of allowing additional light to penetrate the stands to enable herbs, berries, raspberry shrubs and grass to grow.

Setting up of a quiet zone for the capercaillie (1794 ha) and placement of 20 mechanical road blocks with a traffic sign and notification board about the quiet zone. Quiet zones are extensive parts of the forest, in which activities that disturb and consequently threaten the wild animals are limited (in time and space) or are completely prohibited. In quiet zones logging and timber hauling as well as construction/preparation of forest traffic routes are limited in time and space.

Removal of 21 hunting facilities (lookouts, salt licks, feeding sites) from the central areas of the capercaillie. Higher frequency or presence of predators in the area of feeding sites may be the cause of increasing random plundering of capercaillie and their nests.





Tree seedlings planted in feeding fences



Mulching of slopes of forest roads and overgrowing forest clearings



Feeding site for forest animals



Mechanical road block with a traffic sign and notification board marking the quiet zone for the western capercaillie

ACTIVITIES FOCUSED ON EDUCATION, INTEGRATION, PROMOTION OF THE PROJECT AND RAISING PUBLIC AWARENESS

In Kočevska Reka, along the Reško lake, the Eagle's didactic trail was set up, 8 didactic aids and 10 information boards were placed, three observation towers with a view of the lake were built, and access routes were arranged. The didactic path and observation towers are located in the section of the forest reserve, which is not used by the two while-tailed eagles for nesting. In the building of the Tourist and Information centre in Kočevska Reka, the so-called Eagle's room was supplied with furniture and computer equipment. The erected infrastructure is intended for educational, tourist and recreational purposes, and after the end of the project it will pass over to the management of the Kočevje Public Institute for Tourism and Culture.

With the purpose of promotion and raising awareness numerous activities were carried out within the project. The project's website was created at <http://life-kocevsko.eu/> as well as the Facebook profile LIFE Kočevsko, a photo competition was organized, followed by several exhibitions of the best photos, and a promotional film was made. The project was featured 92 times in various local, national and international media, and presented in the Nature-Health Fair three times, 38 events were organized with the purpose of presenting the project to the general and professional public, and 8 introductory workshops were carried out with key participants. The project educational activities were conducted in the field and on various locations. In Kočevska Reka, on the Eagle's trail and in the Eagle's room natural science days for primary school children (431 pupils) were organized, while several workshops were organized across different primary schools (62 pupils). Three training courses on the interpretation of nature and forest education for teachers, professional and tourist workers, and also 36 educational workshops for foresters and hunters were carried out. The project gave rise to 30 new technical documents. There were 10 attendances at professional training courses, intended for spreading and exchanging knowledge, conferences and consultations, 18 networking activities with affiliated projects, and 2 cross-border professional field trips.



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LIFE Kočevsko (LIFE13 NAT/SI/000314)

Layman's Report

PREPARATION OF THE CONTENT:

*Tina Kotnik (Slovenia Forest Service), Suzana Levstek (Municipality of Kočevje),
Anja Mezsaroš (Municipality of Kočevje), Tanja Struna (Kočevje Business Incubator),
Denis Žitnik (Institute of the Republic of Slovenia for Nature Conservation)*

TRANSLATION:

Previsto d. o. o.

PHOTO CREDITS:

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MINISTRSTVO ZA
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OBČINA KOČEVJE



ZAVOD ZA GOZDOVE
SLOVENIJE



ZAVOD REPUBLIKE SLOVENIJE
ZA VARNOST NARAVE



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