



SOR.BA Project

Requalification of the Bacchiglione river's springs and of the habitats within SPA IT 3220013 and SCI IT 3220040



forests

Habitat Directive

water habitats

improving biodiversity

renaturalisation

preservation
techniques

PROJECT DESCRIPTION

The **SOR.BA** project had the aim of requalifying the springs of one of the most important spring-fed rivers in Europe, the Bacchiglione in the province of Vicenza, through restoration of its original habitats and the reconversion of the site, used until recent times for fish farming activities, to its natural conditions. The measures concerned mainly the reconstruction of the hydraulic system as it was prior to the establishment of the fish farm, on the basis of land registry maps, and the production of plant species for the restoration of the original habitats. Main threats to the local ecosystem were represented by the intensive aquaculture, fragmentation of the land property and invasion of alien plant species, such as the black locust, in competition with the species of the habitat 91E0*. Consequent transformations had an impact on the species more closely related to the aquatic environment, such as fishes, amphibians, marsh turtles, and mainly ichthyophagous avian species. The initiative has been implemented in the area known as Dueville forest, including SPA IT322013 *Bosco di Dueville* and SCI IT322040 *Bosco di Dueville e risorgive limitrofe*, examples of diversified habitats typical for spring areas characterized by a large variety of plant and animal species.



The areas around the fish farming constitutes a 20 ha-large corridor of ecological connection to the biotope represented by the forest of "Centro Idrico di Novoledo", located to the North of the area. Its requalification has determined the creation of habitats 91E0*, 3260, 6410 and 6510, present in the surrounding areas. Thanks to the SOR.BA project habitats of the following fish, amphibious and bird species have been restored: European bullhead (*Cottus gobio*), Italian agile frog (*Rana latastei*), common kingfisher (*Alcedo atthis*), black-crowned night heron (*Nycticorax nycticorax*), little egret (*Egretta garzetta*) and Western marsh harrier (*Circus aeruginosus*).

OBJECTIVES

The goals of the project were: reduction of the land property's fragmentation for a better conservation and protection, deepening of the scientific knowledge base on the SPA IT322013's flora and fauna, and raising the local population's awareness about nature conservation and environmental sustainability issues.

PROJECT PHASES

The SOR.BA project has been implemented in a dynamic and coordinated way since the initial stages of environmental data acquisition and definition of the executive design, through the implementation of the project execution phases, till the end, concluding with dissemination and monitoring actions. In the preparatory phase, following the preliminary environmental surveys and the actions of requalification of the habitats, some modifications were proposed in relation to the Veneto Region's Chart of habitats, aimed at updating the Natura 2000 network data card of the SPA IT3220013 and SCI IT3220040. Moreover some land was purchased to create an ecological corridor of interconnection with the forest of "Centro Idrico di Novoledo".



The main foreseen conservation actions were the following:

- planting and growing autochthonous plant species, produced on site, for the requalification of the habitats 91E0, 3260, 6410 and 6510, in particular inside the former fish farming area and the ecological corridor;
- interventions of forest requalification and restoration of habitats 91E0 and 3260. Forest thinning and cleaning operations inside the former fish farming area. Actions aimed at reconstructing the habitat 91E0 and planting of species belonging to the basic formation of an alder forest; reconstruction and expansion of habitats 3260 with utilization of species of habitat 6410. Enrichment of the alder forest's basic formation with herbaceous components, including – along the most characteristic *Alnetea glutinosae* (e.g. *Thelypteris palustris*) – also nemoral species (*Quercus Fagetea*), high Cyperaceae belonging to *Phragmito-Magnocaricetea* (*Carex acutiformis*, *elata* or *Cladium mariscus*), and other species characteristic for wetland habitats (6410), but often present in the underbrush of alders (e.g. *Valeriana dioica*, *Caltha palustris*);
- reconstruction of the original morphology of the resurgences and of the initial course of the river, called *Bacchiglioncello* (habitat 3260), a branch of which, fed by 3 resurgences, had been buried. The original conformation of the area, called the “Mill of the forest” had been completely distorted resulting in a loss of biodiversity.

Intense monitoring activity has been carried out for the whole life cycle of the project, from all three - technical, administrative and economic - point of view:

- flora and fauna monitoring to check presence of species which could have benefit from the environmental requalification. In particular controls have been carried out on the fish fauna in the area of hydraulic requalification, and also on the teriofauna and birdlife.

Dissemination was foreseen and planned in function of different targets of public, including meetings with stakeholders, creation of environmental-educational pathways in the project area, carrying out of conferences and issuing of brochures and informative texts with the aim of enhancing awareness raising and information delivery to public.

PROJECT RESULTS

The project has restored and protected a degraded environment, and increased the scientific knowledge base on the flora and fauna of SPA IT322013, where the Bacchiglione flows. Moreover it has contributed to deepen local population's environmental culture with special attention to the area's safeguarding. The SOR.BA project achieved in particular the following goals:

- acquisition of **7,6 ha** of lands for the creation of an ecological corridor ensuring interconnection with the forest near “Centro Idrico di Novoledo”. This acquisition contributed to restoring the Natura 2000 network site's integrity and to resisting to the territory's fragmentation;
- growing and planting of **60.120** arborous and herbaceous plants used for the requalification of the habitats. In particular 20.000 of these were forest plants (18.550 trees and 1.450 shrubs) and 40.120 plants were of herbaceous species;
- interventions of forest cleaning and requalification of habitats for a total surface of approx. 6 ha of habitat 91E0 and 1 ha of habitat 3260;
- reconstruction of the Bacchiglioncello's original morphology with the reactivation of **3 spring holes** and hydraulic requalification of the area with placement of hydraulic artefacts;
- carrying out of stratified phytosociological surveys in the site's main natural environments. Elaboration of a **chart of the habitats' soil and vegetation uses**;
- implementation of ichthyofauna, avifauna and herpetofauna samplings. The identified fish species which found favorable conditions for the establishment in the requalified area were **17**. Concerning birdlife, during its monitoring 67 species were identified, while a total of **137** bird species were traced in the site, revealing this latter's role in attracting and concentrating species which would not have any alternative in the neighboring territory, therefore having an important role both as resting area for migratory birds, as well as protection area for the maintenance of nesting bird species. Concerning amphibians **3** species were detected representing 19% of the regionally registered presence. In particular, there has been a good strengthening of the Lataste's frog's adult population. For reptiles presence of 4 different species has been found, three of which - green whip snake, grass snake and western green lizard - have colonized the re-naturalized area for the first time;
- issuing of scientific publications on the flora and fauna of the project area; [Springs of the Bacchiglione river – fishes, amphibians and reptiles](#) and [Springs of the Bacchiglione river – Plants and birds](#);
- creation of environmental-educational cycling and walking pathways in the project area. The network of pathways, a total of **3.100 m**, has been provided with **33** information panels;
- implementation of **18** training days for primary and secondary schools of the towns Caldogno, Villaverla and Dueville with the participation of a total of **734** students;



- **networking activity** for the whole project duration with other LIFE project beneficiaries including exchange of best practices and of technical or scientific documents related to the habitats' management.



Acronym

SOR.BA

Number of reference

LIFE09 NAT/IT/00213

Reference Programme

[LIFE](#)

Beneficiary Coordinator

Provincia di Vicenza

Contacts

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EU contribution

612.000,00

Call Year

2009

Start Year

2011

End Year

2013

Beneficiary headquarters

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Region

Veneto

Description

Province of Vicenza, SIC IT3220040, ZPS IT3220013, habitat 91E0, habitat 3260, habitat 6410, habitat 6510.