

Naturalistic planning for the conservation and management of SACs and SPAs: ecotourism experiences and perspectives

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1. Isonzo River Mouth-Cona Island Nat. Reg. Res.

The reserve covers a surface of about 1300 ha at the mouth of Isonzo river and surrounding areas. Isonzo is the second biggest river in Friuli Venezia Giulia, springing in Slovenia and reaching the sea at Punta Sdobba, between Monfalcone and Grado, after 140 km (99 of which in Slovenia). The hydraulic regime is very variable. The reserve has a high naturalistic interest due to the high diversity of habitats, ranging from freshwater to brackish wetlands, from reedbeds to saltmarshes and mudflats, from riparian woodland to salt meadows. The high faunistic variety is related to the peculiar geographical position, between the rocky shores of Karst and the sandy beaches of Grado and Marano area. The area is particularly important for birds, especially waterbirds.

History and interventions

In 1850 "Cona" area was wide and wild: the channel Quarantia (called "Correntia") was a very small upwelling river. The vegetation was typical of freshwater fens, with reedbeds and woodland. In 1895 Isonzo river overflows in the Quarantia, and Cona becomes an island in the middle of Isonzo Delta. In 1938 a dyke is built to link Cona to the land, and Isonzo is embanked so that the river mouth is again at "Sdobba". Cona vegetation progressively changes due to the effect of salt and an area is embanked and cultivated. In 1976 the General Regional Urban Plan (PURG) is approved, and this defines an Area of Environmental Safeguard in Cona Island, but it does also define that another area, very close, can be used for touristic purposes.

The P.U.R.G. indicated also the need to create 14 natural parks and 76 areas of environmental safeguard (45 inside the parks), for a total of 230.000 ha of protected areas, that is 30% of the regional surface. The Parks were meant to link areas of environmental safeguard in wider territorial units. 4 Parks were in the mountains, 2 special (carst and lagoon), 8 riveline, including the Isonzo one. In this way, the area of Cona Island was protected for the first time as an environmental safeguard area inside the Isonzo river park. In 1983 the regional law n. 11 states that the safeguard areas must receive public funding. Staranzano municipality receives some fundings and gives Dr. Fabio Perco of S.c.rl. Naturstudio the charge to prepare a Project of Safeguard, Fruition and Environmental Education, that indicates the need to restore freshwater fens and woodlands, to realize a visitor center and naturalistic trails with observation points and hides. In 1989 Marinetta hide is built and 30 ha of fields are flooded. Another building is created as a visitor center, now hosting the "waterfowl museum". In 1991 Camargue

horses are introduced in order to control the vegetation. In 1996 the regional law n. 42 is approved, and the "Riserva Naturale Regionale della Foce dell'Isonzo" is designated (Staranzano, San Canzian d'Isonzo, Grado, Fiumicello). The reserve is included in a SAC/SPA (IT 3330005 Foce dell'Isonzo - Isola della Cona). Further interventions of naturalistic restoration and infrastructure creation are carried out in the following years. In 1999 European fundings are devoted to the restoration of the reserve area of pre-park (20 ha), the project is carried out by Naturstudio. A winding canal is excavated in the middle of ex-cultivated fields, and this is also used for drainage.

In detail, the following interventions have been carried out:

- 1) Excavation and naturalistic requalification of a canal in the ex-cultivated fields
- 2) Creation of a hygrophylus woodland
- 3) Trails and observation points
- 4) Environmental education trails with islets and ponds for amphibians
- 5) Small harbour
- 6) "Casa Bonazza" building restoration
- 7) Other buildings restoration.

- 1) Excavation and naturalistic requalification of a canal in the ex-cultivated fields

It is a drainage channel that partially already existed, parallel to the embankment of Canale Quarantia, connected to the main dyke for raining water drainage. The channel has been reflooded and excavated.

- 2) Creation of a hygrophylus woodland

The first part of the channel has been widened into a wetland area, and an embanked water basin has been created, with small islets. This area is devoted to the formation of fen and woodland.

The tree species that have been chosen are typical of riparian forests of Northern Adriatic plain coastal areas. In particular the following associations were included:

- *Salicetum albae* with *Populus nigra*; *Salix alba*; *Fraxinus angustifolia*; *Cornus sanguinea*; *Ligustrum vulgare*; *Frangula alnus*; *Crataegus monogyna*.
- *Salix cinerea* associations with *Alnus glutinosa*; *Fraxinus angustifolia*; *Populus nigra*; *Salix cinerea*; *Frangula alnus*; *Cornus sanguinea*; *Prunus spinosa*; *Ligustrum vulgare*.
- *Quercus* – *Carpinetum boreoitalicum* now *Asparago tenuifolii*- *Quercetum robori* with *Quercus robur* and *Carpinus betulus*, *Acer campestre*, *Ulmus minor*, *Fraxinus angustifolia*, *Prunus padus*, *Crataegus monogyna*, *Rhamnus catharticus*, *Viburnum opulus*, *Euonymus europaeus*, *Cornus mas*.

- 3) Trails and observation points

A number of trails have been created in order to cross the whole area and reach the buildings and hides. The embankment can also be crossed using some stairs, and the saltmarsh can be reached. A ring trail and a boardwalk have also been created. All trails are provided with explanatory charts.

- 4) Environmental education trails with islets and ponds for amphibians

In the environmental education area close to the visitor centre, some trails on islets have been built in a shallow wetland area. Some small ponds that will host amphibians and aquatic fauna and vegetation have also been created in the area.

- 5) Small harbour

A small wood harbour has been created in the Quarantia embankment area. This is particularly convenient both to reach the open sea and to carry out maintenance work on the boats.

6) *“Casa Bonazza” building restoration*

The building “casa Bonazza” or “Stallone Dottori” is restored to be used as visitor centre, research station, environmental education centre and hostel.

7) *Other buildings restoration*

The previous visitor centre, inside Marinetta building, has been transformed in 2000 in a Waterfowl Museum. The building is on three floors and it reminds a typical lagoon “casone”. An area for horse recovery and feeding has been built closeby.

2. Doberdò and Pietrarossa Reg. Nat. Res.

Doberdò and Pietrarossa Reg. Nat. Res. is one of the biggest protected karstic areas, it covers 726 ha in the municipalities of Doberdò del Lago (Doberdob), Monfalcone and Ronchi dei Legionari. The area is of high naturalistic interest. The typical feature is given by two carstic depressions hosting two lakes. Doberdò lake is a rare example of superficial hydrography related to carsism. The presence of lakes in a dry karstic environment enhances the development of wetland ecosystems, usually not found in the karstic territory. For this reason the protected area has particularly high levels of biodiversity. A wide range of habitats is represented, from aquatic vegetation to wetlands, to fens, to hygrophylus meadows, to riparian forests. The typical karstic ‘landa’ is also found, a precious dry environment that is now disappearing. Also, bare areas with typical karstic features are found.

History and interventions

The territory is of great naturalistic interest, especially due to the presence of the two lakes associated to karstic features. The water level of the lakes is affected by Vipacco and Isonzo rivers. In 1976 the PURG defines the Areas of Environmental Safeguard F1 – Laghi di Doberdò e Pietrarossa, inside the “Parco del Carso”. In 1983 a first project of “Protection, environmental education and fruition of Doberdò and Pietrarossa lakes” is prepared by Soc. Naturstudio. In 1985 the first interventions were carried out, according to the regional laws 22/82 and 11/83: a series of naturalistic trails, the creation of observation points, the positioning of explanatory signals, the creation of a park and of an area of environmental requalification and animal reintroduction, all following the scottish school of “Countryside Interpretation”. In 1996 the Reg. Nat. Res. Laghi di Doberdò e Pietrarossa was designated according to law 42. The extension is of 726 ha, and the municipalities involved are Doberdò del Lago (Doberdob), Monfalcone, Ronchi dei Legionari. The area is included in SAC IT 3330003 “Laghi di Doberdò e Pietrarossa” and it is part of the community network “Natura 2000”. In 1998 a number of interventions of environmental requalification were funded by the EU in the pre-park area.

In particular:

- *restoration of ex-mine buildings to create a visitor center*
- *restoration of a water-pump building to create a “Paludario”*
- *interventions aimed at the fruition (parks, trails, etc)*

1) *Visitor centre*

The visitor centre is placed on M. Castellazzo right above the lake of Doberdò. It has been built restoring the buildings of an ex-mine, and keeping the traditional features of the area. Gradina visitor centre is a reference point for all guided visits and educational activities, and it explains the peculiarities of the karstic environment through a historical-naturalistic museum.

Museum

The museum starts with a room on karstic lakes, followed by a path in the past, showing the Prehistory of the area. The second room starts explaining the karstic phenomenon, then it moves through the typical environments. The lake has the widest attention, with a description of the aquatic fauna and of the trophic interactions. A final part is dedicated to history, and in particular to the First World War that was fought also in the area.

2) "Paludario"

Another important structure is the Paludario, where a series of tanks are placed in order to host all the typical species of the area, from reptiles to amphibians to fish.

3) External fruition

The fruition of the area has been improved through a series of interventions:

- a parking area close to the visitor centre and the Paludario;*
- a naturalistic trail that reaches the lake and is also fruible by handicapped people,*
- a panoramic view on the lake and its reedbed;*
- the restoration of CAI path that links "Casa Cadorna" and the visitor centre crossing a karstic area;*
- a children playing area;*
- explanatory panels and panks along the nature trail.*



Cigni nella zona della foce dell'Isonzo

Foto G. Sauli - 2005