Gold of the Park: pilot project for the production of organic oil in the Reserve

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Area description
Torre Guaceto is a Statal Natural Reserve since 2000, and it is the only one of continental Italy to include a land and a marine area. It is included in Carovigno and Brindisi municipalities and covers a surface of 1500 ha, including a wetland of 200 ha, a mediterranean shrub and pinewood area of 70 ha, a littoral area of 8 km, and an agricultural area with olives and cereals of 800 ha. In addition there are 5 small islands for a total surface of 2000 ha.

Habitats
Torre Guaceto includes:
- a RAMSAR wetland of international importance
- a SPA – Dir.79/409/CEE
- a SAC – Dir.92/43/CEE

There are three “priority Habitats”: coastal lagoons; salty steppes; coastal dunes with Juniperus spp.
In addition, five "Habitats of community interest” are found: dunes with Brachypodietalia meadows and annual vegetation; mobile dunes of the littoral belt with Ammophila arenaria ("white dunes"); annual vegetation of the marine deposit line; rocky shore with mediterranean vegetation and endemic Limonium spp.; Quercus ilex and Quercus rotundifolia forests.
There are also three “Habitats of regional interest”: reedbeds; re-implantation; shrubs. These habitats include most of the vegetation cover – 70% is represented by reedbeds.
Finally, the cultivated land occupies 79% of the total surface.

Transitional water ecosystems
In Torre Guaceto transitional ecosystem are intertwined with freshwater and marine ecosystems. The different typologies of water ecosystems can be summed in four main categories:
- freshwater bogs, with limited river inputs and water coming mainly from rain and underground upwelling;
- brackish channels connecting bogs and sea;
- Canale Reale with a basin of 383 km² extended in an anthropized area external to Torre Guaceto, whose waters flow directly out at sea;
- marine protected area with A zone bordering with the reserve wetland area.
When the functional and structural characteristics of the transitional ecosystems were studied, particular attention was given to the interactions and dynamics among these four water compartments, and on the risk of pollution of the marine protected area with waters coming from Canale Reale.

**Torre Guaceto brackish system**
The brackish area covers 119,41 ha. The wetland is cut by a network of channels that were built when the wetland was partially reclaimed.
The water input is coming only from rain and underground upwelling. Southernward, Canale Reale borders with the reedbed. Canale Reale waters go in A zone of marine protected area and do not seem to interfere with the wetlands. However, the aquifer is affected by Canale Reale drainage basin (superficie 383 km²), and this aquifer provides a variable freshwater input in the wetland area. The wetland is completely covered by reedbeds.

**Chemical-physical characteristics of the water environment**
The system is characterised by high nitrogen concentrations, but phosphorus is the limiting factor for productivity. Hence, the area can be considered meso-oligotrophic, as confirmed by chlorophil values.
The high nitrogen concentrations are probably related to the hidrological characteristics of the area, to anoxic conditions and to high concentrations of certain chemical compounds that could be modified with a higher water exchange in channels and underground. The nutrient charge can be related to the biomass present, the type of cultivations, the type of soil, and to seasonal and precipitation factors. Canale Reale drainage basin undergoes strong human pressure due to the development of agricultural activities.

**Agricultural system – Intensity of cultivation and impacts**
77% of the reserve is covered by cultivations. This highlights the potential impact of agriculture on the ecological balance of transitional ecosystems. Different cultivation types have different impacts, deriving from variable mechanical, chemical and hydrological needs. Century-long olive groves and meadows have a low impact. Meadows alternated with vegetable cultivations have a medium impact, because vegetables such as tomatoes and artichocks require high water quantities and fertilizers. The highest impact is associated to monocultures. Such areas are the closest to the reserve, making the impacts particularly strong.
The level of chemicals used (pesticides and fertilizers) has been estimated for the different cultures. On the base of such estimation, a gradient of impact was drawn:
• low impact – extensive century-long olive groves
• medium to low impact – vineyards
• medium impact – cereals alternated to tomatoes
• high impact – tomato monoculture

“Gold of the Park” – Pilot project for the development of sustainable agriculture inside the reserve
The Reserve management body has always put high efforts in promoting the participation of stakeholders in the enhancement of a sustainable development of the area.
In order to reduce the anthropic impacts on transitional waters, the highest attention has been focused on the regulation of agricultural activities. The objective of reducing fertilizers, pesticides and other chemicals, and of regulating irrigations, can be pursued by developing organic agriculture methods. The lowest productions have been balanced by the creation of a reserve trademark, that gives an additional value to the products, being
obtained with high quality cultivation standards. Such trademark is used by all farmers working inside the reserve, that are associated by the certification “Torre Guaceto”. The first steps have been moved with olive groves, the next ones will focus on vegetables. As part of the INTERREG CADSES IIIB TW ReferenceNet Program, a pilot project for the development of sustainable agriculture, called “Gold of the Park”, has been carried out. The main objective is to give the right value to one of the most characteristic products of Torre Guaceto: olive oil produced by century-long plants that strongly characterise the landscape.

The olives are produced according to organic agriculture regulations (Reg. CE 2092/91) and are transformed in certified organic oil. The final product is sold with Torre Guaceto Trademark in order to testify its quality. The pilot project has a two-year duration (2005-06).

During the first year, 8 olive farms were included in the project, for a total of 17 ha of olive groves that have produced 2000 kg of organic oil. In the second year the farms were 16 for a total of 30 ha of olive groves. 50 more ha are of a farm that is going to produce organic wine and meals. Hence, 80 ha are devoted to organic agriculture, covering 10% of the total cultivated surface of the protected area. This is a good achievement, considering that the conversion to organic started only two years ago.

Torre Guaceto has provided the organic farms with several concessions, including:
• technical formation and assistance to farmers;
• promotion of organic oil using the trademark “Riserva di Torre Guaceto”, organizing and participating to exhibitions (e.g. Sana - Bologna, BIOFAC - Norimberga, Vinitaly and Sol – Verona, Slow Food events);
• assistance during the formation and start up of an Association of Organic Farmers that will follow the promotion and commercialization of organic products in the future.

Special prices were also applied for the use of tools and facilities during all phases of organic oil production.

The organic oil is of very high quality and of low acidity (0.3), despite the farmers initial worries. Also, the farmers would have never expected such a success for their organic oil, that was given very high visibility and value. The oil was sold at 12.50 euro per bottle, which was very rewarding for farmers. Torre Guaceto farmers are now very satisfied with the initiative, and they have even constituted the “Community of Torre Guaceto natural reserve organic farmers”. The Community is already promoting organic oil production inside and outside the reserve borders and will soon participate to Terramadre, an international exhibition held in Torino that hosts Producer Communities based on compatible use of resources and on fairtrade from all over the world.

The president of the Community is a farmer that two years ago strongly obstructed the project and fought in order to exclude the cultivated land from the reserve borders. Now the farmers themselves ask to widen the reserve borders to include more olive groves in the Gold of the Park project.

In conclusion, this project demonstrates to the agricultural world that it is possible to achieve good economic results even within a reserve borders, in the respect of environmental safeguard needs and sustainable use of resources.