

Management activities with particular reference to bird monitoring in the Regional Natural Reserve Valle Canal Novo in 2005

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Introduction

Valle Canal Novo has been declared Reg.Nat.Res. in 1996 according to the Regional Law n. 42. It is composed by an ex-fish farm and some ex-cultivated lands, that are indicated for restoration interventions, in order to obtain wetlands at variable salinity gradient. A visitor centre has been created in the area that used to be a fish farm. The visitor center follows the model of "Wetlands Centres", and has maintained the typical lagoonal features, with several facilities for tourists and structures for educational and scientific purposes. It is a centre for the interpretation and conservation of the lagoonal environment. Conservation and fruition, research and recreation, have been associated since the beginning. Indeed, birds are one of the links between research and fruition in Valle Canal Novo, also because they are the best represented class in the reserve. Almost a half of European bird species is connected to water. The conservation of wetlands is therefore of the utmost importance for bird conservation as well. Also for this reason, since 1989 bird monitoring activities have been carried out in the reserve. Monitoring allows to follow the population status and trends throughout the years, and to define the most indicated management strategies to safeguard the birds and the reserve in general.

Area description

*Valle Canal Novo covers a surface of 121 ha, composed by an ex-fish farm of 35 ha, a small lagoonal area and some ex-cultivated areas, of about 80 ha, part of the Muzzanella reclamation. Valle Canal Novo (VCN) is a typical lagoonal area with water basins and saltmarshes, not interested by tides due to specific embankements. Two dykes allow to regulate water levels and flows inside the area. Freshwater incomes derive only from 3 aquifers and rain. Some interventions have allowed to vary salinity according to the areas, in a range between 0 and 17‰, and thus to significantly increase the biodiversity of the area. Water level varies according to the area: it is 30/40 cm in most places, except in some channels where it can reach 200 cm and in the northern part, where from february to october it is maintained at 0/10 cm to favour wader resting. The general feature is that of a salty fen, with halophitic plants such as: *Juncus maritimus*, *Limonium* sp., *Aster tripolium*, *Halimione portulacoides*, *Artemisia caerulescens*. In the years, the progressive higher levels of freshwater have been changing the features. In particular, *Juncus maritimus* and *Limonium* sp. are substituted by *Phragmites australis*; and this process is also having an effect on animal biocenosis. In the eastern part of the area, trees are also present or have been planted, in particular: *Salix* sp., *Populus alba*, *Eleagnus angustifolia*, *Alnus* sp., *Ulmus* sp., *Crataegus**

sp. Among the banks there are shrubs such as *Rubus fruticosus*, *Rosa canina* and *Tamarix gallica*. At the centre of the area there are some plants of *Prunus* sp. and *Ramnus catharticus*. Since 1989 they are used as roosts by *Egretta garzetta* and *Egretta alba*. In 1991 some trunks have been placed in order to provide additional heron roosts. The area of Muzzanella reclamation is also included in monitoring, although only 80 of the 300 ha are inside the reserve, whereas the rest are cultivated fields. However, the whole area can be considered a single environmental unit with very similar bioecological features. An area between Muzzanella and Valle Canal Novo is of particular interest for certain bird species, as it has very low disturbance and it has peculiar features, being an artificial canal that has never been completed. The natural reserve is in a strategic position for waterbirds. Indeed, it has also been declared a Ramsar site of international conservation interest for waterbird presence.

Safeguard and management

In 1985 the first interventions to create a centre of interpretation and conservation of wetland environment were carried out in Valle Canal Novo, stopping hunting and fishing activities and starting a first form of naturalistic management of the area. The management has always been aimed in particular at favouring the presence of birds. Interventions such as aquifer and water level control, tree plantation, regulation of visitor access, artificial feeding, avoidance of human disturbance have all contributed to increase bird presence. High importance have the reintroduction interventions. Since 1987 several types of waterfowl have been introduced: *Anser anser*, *Tadorna tadorna*, *Anas acuta*, *Netta rufina* and *Aythya nyroca*. In 1989 some pairs of *Cygnus cygnus* have also been introduced. In 1996 the area have been declared at all effects a regional natural reserve.

Monitoring methods

This report presents the results of the last bird monitoring cycle (year 2005). As already pointed out, bird monitoring is one of the most important activities in the area, due to its high relevance for resting, wintering and breeding waterbirds, many of which of community and international interest. Monitoring methods imply one or more checks per day, every day, along the reserve paths (the investigation has started 01.01.1989 and nearly all days have been covered since then). A visit per week is carried out in Muzzanella reclamation. In 2005 monitoring has been carried out on 353 out of 366 days. Daily monitoring occurred at different hours of the day, and was carried out by direct observation and by song identification. Several evening inspections have been done in order to count the herons present in the reserve roosts. Another important activity has been catching and ringing of birds and migration researches, carried out by Carlo Guzzon. Data has been collected on a standard form with information on date, hour, meteo, stations, notes, species, number of individuals, behavioural observations.

Monitoring results and discussion

In 2005, 187 bird species have been recorded in the reserve, including breeding, wintering, summering, migratory and accidental species. The species recorded from 01-01-1997 to 31-12-2005 in the area are 235. Since 1986 a total of 257 species have been observed. Two novel species have been recorded in 2005: *Aquila chrysaetos* (Linnaeus, 1758) and *Emberiza cirulus* (Linnaeus, 1766). The average species number per month is 93.42, with a maximum of 117 species in april and a minimum of 71 species in june. This values are rather high if compared with other lagoonal areas, especially considering the small size of the reserve. The monthly values of species richness (fig. 1) show that the annual trend is very similar to that recorded in other lagoonal reserves, as Foci dello Stella (Guzzon, 2004), Foce dell'Isonzo (Kravos, 2001) and Valle Cavanata (Rondi et al., 2003). The following table and figure show the monthly trend in species numbers in the years 1997 - 2005. The annual trend is similar

in the different years. Two main peaks in april and september are recorded, when the strongest migratory flow occurs. Between years differences may be mainly related to climatic conditions and in particular to raining levels, that affect the water levels in many reserve areas affecting also wader presence. Then the monthly values in species numbers are shown for the period 1997-2005. Species richness is indeed extremely high. Bird presences, abundances, diversity and trends recorded in the reserve are a reflection of the global situation of Grado and Marano lagoon. Many birds move throughout the lagoon, spending only part of their time inside the reserve. In general, inside the reserve an increasing trend in species number and individual number has been recorded, especially in the first years. The increase is probably related to the naturalistic management of the reserve, and in particular to water level control, and to the fact that hunting has ceased. In particular, from 1985 to the early Nineties an increase in waterfowl and waders has been recorded.



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