

Correlations between hydrodynamical parameters and catches of migrating fry  
(Lake Fusaro, Naples)

V. LA MURA and G. SPEZIE

Istituto di Meteorologia e Oceanografia, Istituto Universitario Navale, NAPOLI (Italia)

Lake Fusaro is located in the Gulf of Gaeta, the Tyrrhenian Sea, and its characteristics make it particularly suitable for aquaculture. Its hydrodynamics are strongly affected by the tidal activity of the open sea, whose maximum range in that area attains, at the time of syzygy, 30 cm; tidal currents are namely responsible for the water turnover in the lake, thanks to the connection with the Gulf of Gaeta provided by three channels, and in particular by the one in the middle, which definitely plays the most important role.

Among the species of fry migrating into the lake through those channels, the most common ones belong to the family of Mugilidi, namely to the genus *Liza aurata*, *Liza ramada*, *Liza saliens* and *Mugil cephalus*; none of them seems to be very much affected by the variations in temperature and salinity evidenced by our measurements.

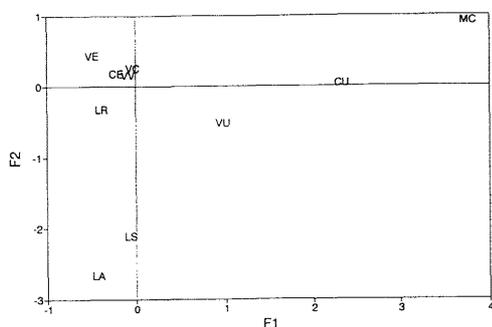
The main goal of this research is an investigation of the influence on the above mentioned species of a number of hydrodynamical factors, and in particular of the along-channel components of wind and current.

In order to assess correlations between catches and physical parameters we utilized the factor analysis of the correspondences, which represents one of the most recent methodologies within the field of ecological investigation.

Our study showed that catches of *Mugil cephalus* are correlated to well determined wind and current patterns, namely along-channel wind and flow regimes, while catches of *Liza aurata* and *Liza saliens* are more frequent in calm situations. Anyway, the tidal flow does not seem to affect them.

However, it has to be pointed out that the results of the statistical analysis are strongly affected by the still very little known behaviour of the fry fish, whose presence in the channels definitely depends upon the reproduction activity of the grown-up individuals, from the availability of food in the examined area, from the local meteorological conditions and, finally, from the intensity of the fishing activities along the domitian coasts.

Analysis of correspondences  
Distribution of Variables



LA = <i>Liza aurata</i>	CU = Outgoing flow
LR = <i>Liza ramada</i>	VE = Incoming wind
LS = <i>Liza saliens</i>	VU = Outgoing wind
MC = <i>Mugil cephalus</i>	VC = Current speed
CE = Incoming flow	VV = Wind speed

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Water birds of the Lagoon in the Egion Area - N. Peloponnese, Greece

S.N. MAGIORIS, K. ANAGNOSTOPOULOU and G. KALOGERAKIS

Univ. of Athens, Dept. of Biology, Section of Ecology & Taxonomy, ATHENS (Greece)

Introduction

This report contains data concerning the status of water birds which were observed during 1989 in the lagoon area of "Alikí", Egion region, in the Northern Peloponnese. The lagoon has been protected by the local community since 1978 and belongs to one of the important bird areas in the European Community. There is a little information about the avifauna of this area and especially about the water birds which use the lagoon for breeding, as a stepping stone during the migration and as a preferred biotope for wintering. These were the main reasons which led us to study this wetland.

Site description - Methods - Climatic conditions.

The lagoon is situated almost in the centre of the Northern Peloponnese, 3 km east of the town of Egion. It is a small shallow lagoon with a surface of 18 Ha. The reed beds, helophytes, rushes and tamarisks constitute the flora of the lagoon and of the tidal zone, while orchards, olive groves and vineyards dominate in the cultural zone. We visited the lagoon from January - December 1989, on a monthly basis, 2-4 days at a time, while during April and September we visited the area twice a month. Simple 2 km transect lines were walked which passed through all the particular types of habitat within the area. The exceptionally dry conditions during 1989 in this region, were unfavourable to the water birds and had negative effects both upon the number of bird species and the number of populations which stayed in the area in order to breed.

Results and Discussion

Concerning seasonal occurrence of avifauna we observed 54 water birds in total. (Table I). Eight of them are residents and occur all the year round. The rest are classified as follows: 23 sp. are passage migrants, of which 12 sp. of Charadriiformes stayed in the area during the summer in small numbers but did not nest; 7 sp. are summer visitors which came during spring; 12 sp. are winter visitors and 6 sp. are irregular visitors which can not be classified within any of the above categories because of insufficient data. In addition 33 bird sp. which have been recorded by scattered observations from Hellenic Ornithological Society in the past were not observed by us. Among the residents, the most numerous were the Herring Gulls, Coots and Mallards, while the most numerous of the breeding summer visitors were the Little Ringed Plovers.

Concerning the pattern of seasonal occurrence, during April we have a peak of 27 bird sp. attributable to spring migration which started during the second week of March and continued until mid-June. This is not a rare pattern when exceptionally dry conditions dominate in winter and spring. Most of the bird species and the largest numbers of individuals passed through during March and April. A second peak of 29 bird species which were recorded in August is attributable on the one hand to some autumn migrants as the autumn passage has started and on the other hand to the summer visitors which have not yet begun their migration. Between mid-September and mid-October is a poor time in terms of bird sp. as most of the winter visitors have not arrived yet and most of the migrants and summer visitors have departed. February is the poorest month for the opposite reasons. Pintails, Teals and Pochards were the most numerous of the winter visitors.

