

Fish abundance and distribution in s'Albufera, an oligohaline coastal marsh in Mallorca (Balearic Islands)

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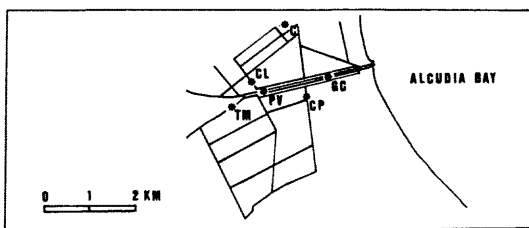
Although s'Albufera is the most important oligohaline coastal environment of the Balearic Islands, little is known about its fish community. From faunistic information, RIERA (1980) concluded that species richness decreased from the outlet of the central channel to the inner part of the marsh, due to the existence of a salinity gradient. In order to verify this pattern, and determine how fish biomass is distributed within the marsh, catch per unit effort (CPUE) was obtained by means of trammel nets at six sampling stations in early October (1991), when autumnal migrations to the sea had not yet begun.

Salinity was low at stations GC, PV, CP, TM and CL (4.3 ± 0.75 ppt), in which waters were neutral ($\text{pH} = 7.51 \pm 0.14$) and moderately rich in dissolved oxygen (predawn $[\text{O}_2] = 6.25 \pm 0.84$ ppm; sunset $[\text{O}_2] = 8.84 \pm 0.89$ ppm). Station C had a higher salinity (10 ppt) but did not differ from the others in oxygen concentration or pH.

If biomass is considered, the community is dominated by *Chelon labrosus* (25.15%), *Dicentrarchus labrax* (31.31%) and *Liza ramada* (26.10%). Other members of the community are *Anguilla anguilla* (3.05%), *Lichia amia* (1.82%), *Lithognathus mormyrus* (3.31%), *Liza aurata* (2.08%), *Liza saliens* (3.68%) and *Mugil cephalus* (5.45%). Diversity ($H' = 0.671 \pm 0.088$) and species number ($N = 4.2 \pm 0.99$) are nearly constant among fishing sites and they are not correlated with the distance to the sea through the central channel or the water quality parameters.

But this does not mean that fishes were homogeneously distributed. In fact, *A. anguilla*, *L. aurata* and *L. saliens* have a random distribution, whilst the other species seem to concentrate in the central channel (stations GC and PV) (F test). As a consequence, total CPUE, expressed as grams of fish per m² of net and hour of fishing, is higher at the stations on the central channel (GC: 16.30; PV: 15.61) than at those in peripheral areas (CP: 1.66; TM: 1.37; CL: 5.04; C: 0.58) (T test). As neither the distance to the sea nor any water quality parameter is correlated by other factors.

Peripheral channels and lagoons are not freely connected with the central channel, due to the existence of sluices and vegetal obstructions. Moreover, the central channel is richer in submerged fanerophytes than peripheral areas and high submerged plant abundance has been correlated with high fish populations (COMIN *et al.*, 1991). Therefore, studies on peripheral area accessibility and food availability are needed for a further understanding of fish distribution in the marsh.



REFERENCES

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