An account on bivalves populations in the Northern Adriatic Sea

Mirjana HRS-BRENKO

"Ruder Boskovic" Institute, Center for Marine Research, ROVINJ (**Croatia**)

In the northern Adriatic Sea bivalve species important in bottom communities, are occasionally under stressed environmental conditions (DEGOBBIS *et al.*, 1991), sometimes associated with mass mortalities such as those registered in 1974, 1983, 1988, and 1989 (JAKLIN & ZAHTILA, 1990; STACHOWITSCH, 1991).

From 1978 to 1991 bivalves were collected by dredges, grabs, and Scuba divers. In total 65 bivalve species were identified which number varied between 1 and 24 per station and per sample. The species numbers increased towards the west coast of the Istrian peninsula, and at stations located along the western coast of Istria, in comparison to stations located along the Italian coast (Fig. 1). Occasionaly, the highest species numbers, at stations 101 and 107, indicated probably an optimum species numbers in the bottom community, like in 1985 (Aug.), 1986 (Dec.), 1989 (Aug.), and 1990 (Nov.) (Fig. 2). The bivalve species composition was almost the same in these findings.

The species decrease especially in spring at stations 101 in May, June and July (1978, 1983, 1987, and 1988) could be attributed to the increased Po River discharge causing changes of some marine environmental factors. Late summer and early autumn species decreases were related to anoxic or/and hypoxic conditions in the bottom layers, after phytoplankton "blooms". The evidences sre clear at station 107 in 1979 (Dec.), 1984 (Dec.), 1988 (Oct.), and at 101 and 107 in 1989 (Dec.) (Fig. 2). The result of decreased oxygen content near the bottom, in autumn 1977, was observed in a sample from March 1978 with a few specimens of *Corbula gibba* and *Myrtea spinifera*. Several species with a wide ecological distribution such as *Corbula gibba, Myrtea spinifera, Nucula nitida, Pitar rude,* and some others like *Cultrensis adriaticus, Thyasira flexuosa,* and *Mysia undata* survived the critical periods depending on the degree of dissolved oxygen concentration in a particular sampling area. The recovery of bivalve populations begins in spring when most of the bivalve species start to reproduce. Such recovery is conspicous at station 107 from December 1989 (4 species) to November 1990 (20) with a decrease in April 1990 (13) (Fig. 2).

In conclusion, the recovery of bivalve populations was quite successful and rapid with almost all species noted previously in this area in the "normal" years. But the question is for how long, and how many such disastres will have to suffer some sensitive species before they completly disapper from the northern Adriatic Sea

Figure 1. The highest species numbers at various research stations from 1978 to 1990.

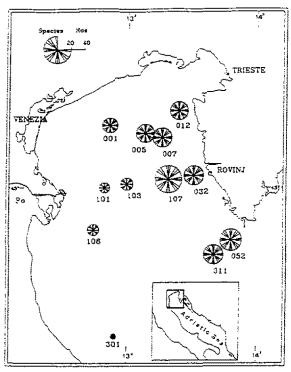
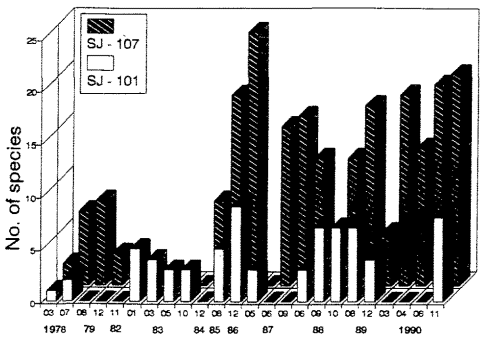


Figure 2. Bivalve species numbers at two stations surveyed.



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