Date Mussel (*Lithophaga lithophaga*) harvesting : evaluation of damage along the Sorrentine-Amalfitane Peninsula (Bay of Naples)

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The bivalve *Lithophaga lithophaga* colonizes calcareous rocks from the surface of the sea down to a depth of 20 m, with maximum density in the first five meters. The mussel bores cavities in calcareous rocks by means of acid or calcium-binding secretions, and lives in the cavities, extending them up to 20 cm into the hard substrate. Fishermen smash the rocks with axes or hammers to excavate the bivalve and thus destroy the substrate and the organisms living on it.

Lithophaga lithophaga grows very slowly, and takes about 20 years to reach minimum commercial size (5 cm). Therefore, after date mussel have been harvested it is several decades before the same sites can be fished again. Consequently, fishermen constantly seek and destroy new harvesting sites. In this light, the "exploitation by excavation" of date mussel "banks" can be considered "extractive" activity, like mining.

This is precisely what happens, in a manner always more devastating in these last years. With the recent increase in scuba diving, the situation has deteriorated dramatically, as shown by studies on the coasts of Dalmatia (HRS-BRENKO, 1991), Apulia (BOERO *et al.*, 1990), and of the Bay of Naples (RUSSO & CICOGNA, 1991, 1992).

The calcareous cliffs of the Sorrentine-Amalfitane Peninsula (about 70 km, from Vico Equense to Positano, Bay of Naples) have been proposed as a marine reserve (Law Nr. 979/1982). To evaluate damage to date mussel harvesting, the area was surveyed in the summer 1991 by 50 transects, extending from the surface of the sea down to a depth of 15 m, perpendicular to the coastline, 1 nautical mile apart.

Following BOERO *et al.* (1990), rock damage was evaluated by measuring the size and frequency of the "bare" patches due to the excavation activity, and classified as follows:

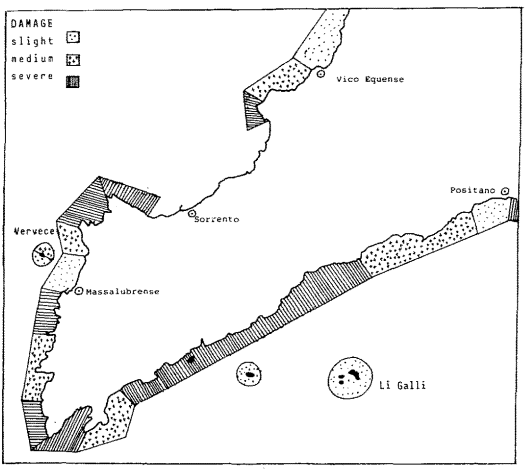
- rank 1: absence of damage;
- rank 2: slight damage (isolated patches, max. size 1/4 m2);
- rank 3: medium damage (scattered patches, max. size 1 m2);
- rank 4: severe damage (adjoining patches, size > 1 m2)

The results are shown in Fig.1. No sites without damage (rank 1) was recorded along the coast. Of the total investigated area, about 15% showed slight damage, about 35% medium damage, and about 50% severe damage.

The rank 2-type impact of harvesting was found around the rocks that extended far from the coast. Severe damages was observed on the steep cliffs near the main villages and along an extended area facing the Gulf of Salerno.

These results are alarming. Despite a law forbidding date mussel harvesting (D.M. 20/8/1988, and D.M. 2/8/1990), 50% of the total area showed "fresh" patches, indicating that excavation activity had been conducted during the year of the observations.

Stricter enforcement of the law and the sensibilization of the public opinion as to the problem are urgently required.



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