B-III24

Development of Sessile Macrobenthos Community in the Loano Artificial Reef

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The construction of the Loano artificial reef began in 1986 with the immersion of perforated concrete blocks (2x2x2 m) arranged in pyramids and small modules (concrete blocks 1.2x1.2x1.2 m) distributed over an area of 3x1 km (Relini and Moretti, 1986) 150 big new blocks were added in spring 1989 to protect outer part of the artificial reef damaged by trawlers (Relini and Orsi, 1989).

Observations on the colonization patterns of macrobenthos of hard substrata have been made from 1986 onwards by scuba divers; studies on the settlement and development of the community were carried out from May 1987 to May 1988 using asbestos panels (20x30x0.4 cm) immersed for periods of 1, 3, 6, 9 and 12 months, exposed at four depths (St. 1: 5m; St. 2: 10m; St. 3: 18m; St. 4: 30m). Two more cycles of observations were concerned with periods of exposure of 3, 6, 9, 12 months. A preliminary list of species and some descriptions of colonization were reported at Ancona during WPARM - C.G.P.M. (Relini and Cormagi, 1989).

In this paper are referred data on the development of community on substrata exposed for 3, 6, 9, 12 months at four stations from May 1988 to May 1989.

After 3 months (fig.1) the panels immersed at station 1 were covered mainly by Algae and small colonies of incrusting Bryozoans (*Schizoporella errata* and *Cryptosula pallasiana*) followed in order of importance by Hydroids (*Laomedea* and *Clytia*), Serpulids (*Pomatoceros triqueter, Spirobranchus polytrema* and *Hydroides elegans*), Folliculinid Protozoans, Forams, Bivalves (*Ostrea edulis* and *Musculus subpictus*), Barnacles (*Balanus trigonus*) and Ascidians (*Didemnum maculosum*). At station 2 the 3 months settlement is characterized by few Algae and incrusting Bryozoans (they are not dominant as at the station 1). More important are Spirorbids (*Pileolaria militaris*), Serpulids, Barnacles, Bivalves (*Ostrea* and *Anomia*), Hydroids, compound Ascidians and some Sponges.

At station 3 Hydroids (*Clytia, Bougainvillia, Obelia*), Barnacles, Algae, Serpulids are the main organisms. At station 4 the biomass and surface cover are much more lower, the settlers are Spirorbids, Folliculinids and few of Hydroids, Bivalves, Serpulids and incrusting Bryozoans.

On 6 months exposure substrata at Station 1 incrusting Bryozoans are still dominant followed by Hydroids, Serpulids, Barnacles, Bivalves, Didemnidae; there are also some Algae and non incrusting Bryozoans (*Aetea*). At station 2 community is composed by the same organisms described after 3 months but there are also Corallinaceae, large individuals of *Ostrea* and *Anomia*, Didemnidae are disappeared. At station 3 the dominance of Hydroids is substituted by that of Bryozoans (*Nolella gigantea* and *Aetea truncata*) while Serpulids and Barnacles are still important followed by Bivalves, Ascidians and Protozoans (Forams and Folliculinids). At station 4 settlement on 6 months panels is formed by Corallinaceae, Spirorbids, Serpulids, Bivalves, Barnacles and many species of Ciclostomes and Cheilostomes Bryozoans.

The colonization of substrata of 9 and 12 months (fig.1) exposure is similar so is described together. At station 1 it is a clear dominance of the Bryozoans *Schizoporella errata* which cover most of the surface; besides the organisms already described there are also some Mussels and Amphipods. At station 2 Corallinaceae, Spirorbids, Serpulids, Barnacles with Sponges, incrusting and non incrusting Bryozoans are the main organisms on annual substrata.

At station 3 most of surface is covered by Bryozoans followed by other organisms described on 6 months substrata. A similar pattern is shown at station 4 though the amount of settlers is lower.

The biomass found at different stations in August, November, February and May is referred in Table 1.

Tab. 1 - Wet weights (g/dm^2) on panels immersed for 3, 6, 9, 12 months.

	3m A-88	N-88	F-89	M-89	6m N-88	M-89	9m F-89	12m M-89
ST. 1	4.76	7.55	7.5	7.99	7.49	14.49	15.44	23.63
ST. 2	4.08	3.33	2.75	4.75	4.25	6.91	8	13.66
ST. 3	4.56	2.70	2.68	5.01	5.20	10.76	10.95	18.22
ST. 4	2.33	1.75	1.91	2.75	2.41	3.08	3.08	3.41

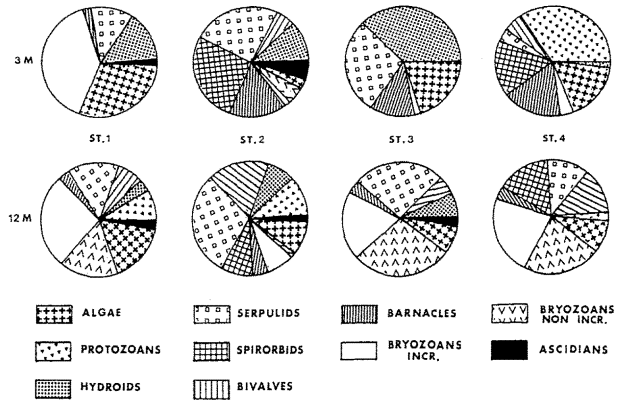

Fig. 1 - Percent cover of main settlers on substrates immersed for 3 and 12 months at four stations.

References

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