THE FIRST FIND OF *PORTUNUS PELAGICUS* (DECAPODA, BRACHYURA) IN THE STRAITS OF MESSINA (CENTRAL MEDITERRANEAN SEA)

Antonio Bonanno, Francesca De Domenico, Adriana Profeta and Nunziacarla Spanò*

Dipartimento di Biologia Animale ed Ecologia Marina, Università degli Studi di Messina, S. Agata Messina, Italia - * spano@unime.it

Abstract

Portunus pelagicus was collected during a survey carried out in the Straits of Messina in the autumn of 2002. This is the first find of this species for this area. Four specimens were caught at two different stations at 25 and 40 m depth, respectively, in the soft bottom colonized by *Caulerpa taxifolia*. In this paper the physical characteristics of water and sediment are reported. Finally considerations on the relevant changes in the benthic environment following the settlement of *Caulerpa taxifolia* prairies, are reported.

Key-words: Straits of Messina, Caulerpa taxifolia, Portunus pelagicus

Introduction

Four specimens of the brachyuran crab *Portunus pelagicus* (L.) (Decapoda, Brachyura, Portunidae), 3 male and 1 female, were found along the Sicilian coasts of Straits of Messina (Central Mediterranean Sea) during a research project entitled "Anomalie biotiche e abiotiche nello Stretto di Messina", carried out in the 2001-2003 years. The aim of this project is the benthic modifications caused for invasion of alloctonous species *Caulerpa taxifolia* (Vahl) C. Agardh. This find, the first from the Straits of Messina, contributes to the knowledge of distribution of *P. pelagicus*.

Methods and materials

The sampling was carried out by scuba divers along the Sicilian coasts from Capo Peloro to Torrente Annunziata (Fig. 1). A total of 31 samples was taken at a depth of 7-60 m in the years from 1999 to 2003. For each samples 50dm^3 of sediment were taken, on the surface area of 0.25m^2. Specimens of benthic macrofauna collected were fixed in 70% alcohol solution in the laboratory. At both stations temperature and salinity were measured using a multiparameters probe. Sediment samples collected were used for granulometric analysis (1).

Moreover were carried out video recording by scuba divers, for monitoring the distribution of *Caulerpa taxifolia* in the Straits of Messina.

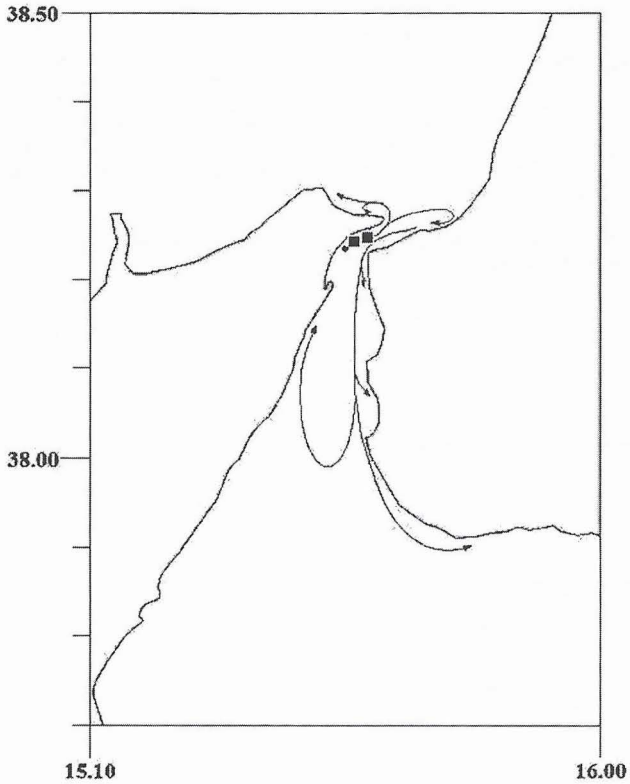

Fig. 1. Monitoring distribution of *Caulerpa taxifolia* in the Straits of Messina in the year 2003. Squares show sampling stations of *Portunus pelagicus*.

Results and discussion

The analysis carried out on the benthic macrofauna found on *Caulerpa taxifolia*, showed 38 species and 369 specimens of crustacea decapoda. In total, four specimens of *Portunus pelagicus* were collected at 31 sampling stations.

The specimens were caught in the northern part of Straits of Messina at 25 and 40 m depth in front of Ganzirri village.

The granulometric features of this site showed coarse sand sediment. The values of salinity and temperature are reported: 37.8% and 26°C respectively for both sites.

The other species of decapods are reported in the same stations: *Alpheus macrocheles, Dardanus arrosor, Eurynome aspera, Parthenope massena* and *Xantho poressa*.

The Straits of Messina represent a junction of the two basin, the Ionian one and the Tyrrhenian one. This is a peculiar environment which the hydrological regime has a fundamental role in the distribution of the benthic populations. Moreover the topography and hydrodynamic level of this area allow the establishment of communities exclusive to the Mediterranean Sea (2; 3).

The presence of *Caulerpa taxifolia* has been reported in The Straits of Messina since 1993 (4; 5).

In general, the investigations in the Straits of Messina on macrozoobenthic communities (crustacea decapoda) of *Caulerpa taxifolia* showed an increase of number of species and specimens. On the contrary the populations, variable and heterogeneous are destructured and still changing (6).

The presence in such sample of atlantic species must be noted, as *Parthenope expansa* and *Pilumnus inermis* already reported in this area (7; 8). It is very important this record of the lessepsian species *P. pelagicus* in the Straits of Messina. The presence of atlantic and lessepsian species in the Straits of Messina is an other evidence of the importance of this zone, which are reported the eastern and western migratory flows.

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