

ORIGINAL RESEARCH ARTICLE

Distribution of Marine Gastropods in Tuticorin Coast, Gulf of Mannar, India

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Received 12 Dec 2012; Revised 10 Apr 2013; Accepted 22 Apr 2013

ABSTRACT

The distribution of Marine gastropods was collected from different coastal area of Tuticorin district from Gulf of Mannar. In the present investigation, 20 species of gastropods were recorded in August 2012 to November 2012. Among the gastropods fauna, *Hemifusus pugilinus* (Born, 1778) was followed 14 species was not dominate and five species like, *Babylonia spirata* (Linnaeus, 1785), *Babylonia zeylanica* (Bruguiere, 1789), *Chicoreus ramosus* (Linnaeus, 1785), *Murex tenui rostrum* (Lamarck, 1822) *Haustellum haustellum* (Linnaeus, 1758) *Lambistrun catasebae* (Kiener, 1843). Most of the species are commonly found in the respuram coastal area.

Key words: Marine gastropods, Tuticorin coast, Gulf of Mannar.

1. INTRODUCTION

The Coastal environment plays a vital role in nation's economy by virtue of the resources, productive habitats and rich biodiversity. India has a coastline of about 7,500 kms. The coastline of Tamil Nadu has a length of about 1076 kms constitutes about 15% of the total coastal length of India and stretches along the Bay of Bengal, Indian Ocean and Arabian Sea. Mahabalipuram and North Madras near Ennore. Rich deposits of heavy minerals are available in Muttam-Manavalakuruchi coast. Coastal ecosystems have key inbuilt features or functions. Tamil Nadu is endowed with one of the largest and richest fisheries in India. The State has 1.9 lakh sq. m of EEZ covering the three coastal zones already described, besides 21 coral islands in the Gulf of Mannar, with rich habitats of corals, coastal lagoons (Pulicat lake and Muthupet swamp) and estuaries. They include spiny lobsters, crabs, flower shrimps, coral fish, sea bass, groupers, sea breams, mullets, gastropods (abalones, chanks) pearl oysters, etc. Nearly one-third of the seaweed resources of the Indian Ocean are found along the coast of Tamil Nadu, particularly the Gulf of Mannar (CASI, 2000). The Gulf of Mannar situated in the southeastern coast of India extending from Rameswaram in the north to Tuticorin in the south along with its marine environment has been declared as India's first

Marine Biosphere Reserve. First account on marine gastropods of Gulf of Mannar was reported by Melvill and Stander (1878). Recently, Subba Rao (2003) has compiled detailed information on gastropod resources and identification keys in Gulf of Mannar region. So far about 484 species of molluscs were reported from this region, out of which 260 species are gastropods (Melkani *et al.*, 2007; Kannaiyan and Venketraman, 2008). The gastropods and bivalve fisheries are of sustenance nature and used for edible purpose, source of lime, as decorative shells (or) for industrial purpose. Conservation and management of gastropod species in the Gulf of Mannar region need a detailed inventory on current diversity, distribution patterns along the coastal regions. In the present observations on the diversity of Marine gastropods were studied from Tuticorin Coast from Gulf of Mannar.

2. MATERIALS AND METHODS

2.1. Study area

The study areas and 3 sampling stations were selected namely station – I (Tharuvaikulam), Station – II (Thereshpuram) and Station – III (Vellapatti) located at southeast coast area of Tuticorin district, Gulf of Mannar, India, during August – 2012 to November 2012.

2.2. Sample collection

The samples were mainly collected by handpicking based on one time sampling during low tide period. A part from that sample has also been collected from crab net, trawl net, thallumadi etc. from regular fish landings. The data obtained from quadrat methods and fish landing were pooled in respective area, the data were used for gastropod richness in the coast of Tuticorin. The samples were brought to the laboratory and they were rinsed, adhering debris removed and sorted

out species and then transferred to 4% formalin. Identification of gastropods was done according to descriptions of (Ramesh *et al.* 2002).

2.3. Identification of Gastropods

The shell characters such as shape, spire length and shape, mouth opening, opercula shape, umbilicus shape and size, colour and ornamentation of the shell are used mainly for the identification of gastropods (Fig 1) Subba Rao NV (2003).

Fig 1: Distribution of Marine gastropods in Tuticorin Coast



3. RESULTS AND DISCUSSION

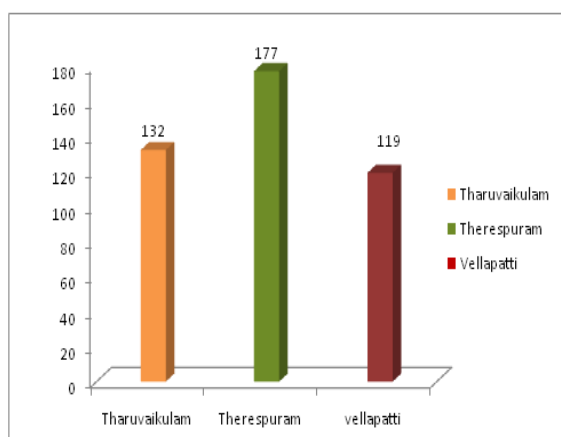
In the present study, about 20 species of gastropod were recorded from August 2012 to November (Table 1). The maximum density of gastropod was observed in station -II (Therespuram Coastal area). Among the gastropod group of fauna, *Babylonia spirata* (Linnaeus, 1785), *Babylonia zeylanica* (Bruguiere, 1789), *Chicoreus ramosus* (Linnaeus, 1758), *Haustellum haustellum* (Linnaeus, 1758), *Lambistruncata sebae* (Kiener, 1843) was dominant during the study period and other species followed by *Cypraea tigris* (Linnaeus, 1785), *Murex tenuis rostrum* (Lamarck, 1822), *Fusinus nicobarius* (Lamarck), *Murex pecten* (Soelae ponder & Vokes, 1988), *Cypraea onxy* (Linnaeus, 1758), *Phalium glaucum* (Linnaeus, 1758), *Tonna dolium* (Lamarck, 1882), *Hemifusus pugilinus* (Born, 1778), *Trochus radiatus* (Gmelin, 1791), *Oliva caerulea* (Roding, 1798), *Harp articularis* (Lamarck), *Chicoreus virgineus* (Roding, 1798), *Natica*

didyma (Roding, 1798), *Duplicaria duplicate* (Linnaeus, 1758) was not dominant (Table 1). Based on 1950s report, there were 450 species of Gastropods from Gulf of Mannar region and the recent report indicated that only 354 species in the same region (Smuel *et al.* 2005). The availability of maximum mollusc during summer months could be related to the increased water temperature activation the process of decomposition of these organic sediments. Even though, these species are heavily exploited from the region mainly for ornamental values of these shells for the entire country. The distribution of molluscan species in the coastal region of India was reported by earlier workers (Melvill, J.C and Suominen *et al.* 2003). In the present investigation, Gastropods fauna were very important role to play the coastal ecosystem of biodiversity. The maximum densities of gastropods were recorded from Therespuram Coast (Fig 2).

Table 1: Distribution of gastropods in Tuticorin coast from Gulf of Mannar, during August -2012 to November-2012

S. No	Species	Station-I (Tharuvaikulam)	Station-II (Therespuram)	Station -III (Vellapatti)
1	<i>Chicoreus ramosus</i>	5	13	6
2	<i>Duplicaria duplicate</i>	3	4	2
3	<i>Babylonia zeylanica</i>	12	18	14
4	<i>Fusinus nicobarius</i>	5	6	3
5	<i>Natica didyma</i>	2	4	2
6	<i>Murex pecten</i>	5	8	5
7	<i>Hemifusus pugilinus</i>	9	15	11
8	<i>Lambistruncata sebae</i>	11	14	9
9	<i>Tonna dolium</i>	3	4	4
10	<i>Haustellum haustellum</i>	9	17	12
11	<i>Cypraea onxy</i>	4	3	3
12	<i>Babylonia spirata</i>	20	24	15
13	<i>Xancus pyrum</i>	9	13	8
14	<i>Cypraea tigris</i>	3	4	5
15	<i>Phalium glaucum</i>	7	4	3
16	<i>Trochus radiatus</i>	8	5	4
17	<i>Oliva caerulea</i>	4	3	1
18	<i>Harp articularis</i>	6	6	5
19	<i>Chicoreus virgineus</i>	4	8	4
20	<i>Ficus ficus</i>	3	4	3
	Total	132	177	119

Fig 2: Gastropod diversity in three coasts from Tuticorin



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