



Hard Corals Fauna of Larak Island (Persian Gulf, Iran)

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ABSTRACT

The coral reefs areas in Iranian part of the Persian Gulf are very extensive, but despite its vast shoreline in its southern border very little research has been conducted on coral reefs. In the present study, the coral reefs in the station (i.e. northern east) and the station (i.e. west) was surveyed using Manta Tow Technique and GPS. Specimens of hard corals collected and photographed in the Larak Island for identification. The percentage cover of coral reefs was assessed using Reef Check and Manta Tow Technique. 22 species of hard corals belong to 14 genera and 7 families were identified in northern east Station and in west Station 14 species of hard corals belong to 10 genera and 8 families were identified. Faviidae was the diverse corals in stations. *Acropora* corals (90 %) were the most abundant family in the northern east station and *Favia* corals (45 %) were the most abundant family in the west station. Comparison of these two selected stations show that station is located in north east of Larak Island with 22 species was more richness in comparison with station of west of Larak Island with 14 species. Comparison of the coral community at the study area with other Iranian Islands showed that corals of Larak Island bear the low diversity.

Keywords: Coral Reef, Biodiversity, Larak Island, Dominant Species, Hard Corals.

INTRODUCTION

The Persian Gulf has a complex and unique tropical marine ecosystem, especially coral reefs, with relatively low biological diversity and many endemic species [1] In this area, the coral reef communities are occurred in the form of non-reef setting [2] and surrounded by some of the driest landmasses in the world, such that continental influences are limited [1]. While large parts of the region are still in a pristine condition, several anthropogenic threats notably habitat destruction, over-exploitation and pollution are ever-increasingly disturbing the coral reef communities; The coral reef communities in the Persian Gulf are less diverse than that of Indian Ocean [1]. The knowledge of coral reefs distribution on the Iranian waters of the Persian Gulf is very limited. Coral reefs are found encircling Iranian Islands [3] with fringing reefs being the dominant reef structure along the coastlines [4, 5].

The distribution and status of the coral reefs in Iranian waters are poorly known. Early study by Rosen [6] recorded only 15 genera of hard corals in the northern part of the Persian Gulf and Saudi Arabia. Harington [7] reported the presence of corals at the Sheedvar Island. Harger [8] noted 19 coral species at Hormuz Island. Rezai [9 and 10] examined the corals around different islands and identified 35 species of hard corals around Larak, Farur, Banifarur, Tonb-e-Kuchak, Tonb-e-Bozorg, Hendourabi and Kish islands. Rezaei [9 and 10] reported the presence of soft coral (*Sacrophyton sp.*) and hard coral (*Seratopora sp.*) for the first time around Larak Island. Sadat Sadeghi [11] surveyed hard corals around Kish Island and identified 19 species. Acroporidae were found to be the most diverse family, while Faviidae and Poritidae occurred most frequently. Otherwise, Agariciidae and Dendrophyllidae occurred rarely. Fatemi and Shokri [12] identified 27 species of hard corals belonging to 9 families and 20 genera from Nayband Bay, Kish and Farur islands. They found that Faviidae with 6 genera and 8 species was the most diverse family. Poritidae was the most abundant corals in all areas with 2 genera and 4 species. Shojae et al. [13] recorded

three species of hard corals including *Echinopora gemmacea*, *Leptoria irregularis* (Faviidae) and *Montipora incrassate* (Acroporidae) from north-east of Larak Island (Persian Gulf, Iran).

Given the paucity of information on species inventory of hard corals in Larak Island, the present study was undertaken to explore the species diversity and abundance of hard corals in this area.

MATERIALS AND METHODS

The survey of coral reefs around Larak Island was conducted using Manta Tow Technique described in the Methods for Ecological Monitoring of Coral Reefs [14]. A diver equipped with snorkel and fins was towed around the island over the depths of 2-5 m at an approximate distance of 200-250 m from the shore. The geographical position of starting and ending points were 26° 53' 21.86"N, 56° 21' 45.37"E and 26° 53' 14.25"N, 56° 23' 59.69"E, respectively (Fig. 1). The diver was towed at a speed of 3-5 km per hour, equivalent to a slow walk for two minutes.

The pattern of coral distribution around the island was recorded. The coral specimens were collected from two sites where corals were abundant. The specimens were carried to the boat and preserved in 70% Ethanol. The coral specimens were bleached using hydro peroxide. The specimens were photographed showing the whole specimen and the corallite structures.

Identification was done using Veron [15] and communication with Prof. Charles Sheppard at the Dept. of Biological Sciences, Warwick University. The materials are deposited in the Faculty of Marine Biology, University of Hormozgan, Iran.

RESULTS

According to the present study, a total of 25 species of coral reefs belong to 8 families and 15 genera have been identified. 22 species of hard corals belong to 14 genera and 7 families were identified in northern east Station and in west Station 14 species of hard corals belong to 10 genera and 8 families were identified. Faviidae was the diverse corals in stations. *Acropora* corals (90 %) were the most abundant family in the northern east station (table 1). And *Favia* corals (45 %) were the most abundant family in the west station (table 2).

DISCUSSION

The species of hard coral identified in this study, numbering 25 Scleractinian species, occurs in two reefs form, patches and fringing reefs in Islands Larak. The species composition of the Persian Gulf corals is typically Indo-Pacific, with most species occurring in a wide geographical area [2].

The closest faunal proximity to other coral areas of the Indo-Pacific is to the Red Sea [2 and 5] due to the shared pale oceanographic history of restriction during the last sea-level low stand and simultaneous flooding during the Holocene transgression [12]. The coral species of Iran and those of the Gulf in general, are similar to those at the geographical periphery of reefs. Comparing the diversity of Larak Island with other studies in Islands of the Persian Gulf, showing that biodiversity in this Island is highest than from Island Qeshm with 22 species [16] and Nayband Island with 5 species and 21 species in Island Kish, Faror Island with 16 species [12] but comparing with other study at south of the Persian gulf show that the Iranian coasts have a lower coral species richness than the southern part of the Gulf, where 34 coral species are reported in Kuwait [17], 50 [18] and 55 [19] species in Saudi Arabia, 34 species in UAE [2] and 53 species in Oman [20]. While a more complete survey in Iran would result in more species, environmental conditions prevailing in central waters of the Gulf, such as stronger waves and currents, low-nutrient waters and especially pollution in recent three decades [21], may cause lower diversity. Riegl [2] points out those species-specific tolerances to low or high temperature are highly likely to be a deciding factor in community differentiation all over the Gulf [12]. Comparison of two stations shows higher species coral reefs in Lark's north east station to Larak west station. Form other effective factors can point to Seabed nature in mentioned stations. Sea bed in Lark's north east station has more extensive natural hard Structures of hard sediments genus by organic origin in comparison to bed sea Located in west of Larak. Coral Larvae after free live as pelagic Larva need to natural hard beds for positioning in seabed and starting benetic level [22].

Acroporidae Family by 7 species has high variety and large numbers in comparison of 1 species Kish Island, 2 species Qeshm [16]. *Acropora* genus is dominate coral reef of Larak Island. Rezaie [9], Shokri and Fatemi [12], Contributed reason of large variety of Coral reefs especially *Acropora* genus in Larak Island to Location of this Island in Hormoz strait and also Coral feeding of ocean waters rich of nutritious material.

Based on Riegel in 1999, *Acropora* corals grows in area with lowest stressed. Then we concluded that Lark has low stress level and it cause large variety coral and high density of *Acropora* family.

Table 1. Identified Hard Corals in North East at Island Larak of the Persian Gulf

Families	Genera	Species
Mussidae	<i>Acanthastrea</i>	<i>maxima, echinata</i>
Acroporidae	<i>Acropora</i>	<i>downingi, arabensis, clathrata, valida</i>
Acroporidae	<i>Montipora</i>	<i>tuberculosa, aequituberculata, incrassata</i>
Faviidae	<i>Goniastrea</i>	<i>peresi</i>
Faviidae	<i>Favia</i>	<i>pallida, speciosa</i>
Faviidae	<i>Plesiastrea</i>	<i>devantieri, versipor</i>
Faviidae	<i>Platygyra</i>	<i>daedalea</i>
Faviidae	<i>Leptoria</i>	<i>irregularis</i>
Faviidae	<i>Echinopora</i>	<i>gemmacea</i>
Agariciidae	<i>Pavona</i>	<i>Diffluens</i>
Poritidae	<i>Porites</i>	<i>compressa</i>
Siderastreidae	<i>Psammocora</i>	<i>Digitata</i>
Pocilloporidae	<i>Stylophora</i>	<i>subseriata</i>
Pocilloporidae	<i>Pocillopora</i>	<i>damicornis</i>
7	14	22

Table 2. Identified Hard Corals in west at Island Larak of the Persian Gulf

Families	Genera	Species
Mussidae	<i>Acanthastrea</i>	<i>Echinata</i>
Acroporidae	<i>Acropora</i>	<i>Downingi, Arabensis, Clathrata</i>
Faviidae	<i>Favia</i>	<i>Speciosa</i>
Faviidae	<i>Plesiastrea</i>	<i>Devantieri</i>
Faviidae	<i>Platygyra</i>	<i>Daedalea</i>
Poritidae	<i>Porites</i>	<i>Compressa</i>
Siderastreidae	<i>Psammocora</i>	<i>, Digitata, decussata</i>
Pocilloporidae	<i>Stylophora</i>	<i>Subseriata</i>
Agariciidae	<i>Pavona</i>	<i>Decussata</i>
Dendrophyllidae	<i>Turbinaria</i>	<i>Peltata</i>
8	10	14

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