

SCLERACTINIAN CORALS OF PEACOCK ISLAND WILDLIFE SANCTUARY, ANDAMAN & NICOBAR ISLANDS

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ABSTRACT

Peacock (Pocock) Island, wildlife sanctuary, is located on the northern side of North Andaman. A total of 81 species of hard corals belong to 30 genera and 10 families are reported during the year 2012-13. It shares approximately 15% of total scleractinian corals of Andaman & Nicobar Islands whereas around 10% of global context. Among the reported corals, 5 species are Vulnerable (VU) as categorized by IUCN. The present paper dealt with the species components of scleractinian corals with their global and regional status.

Key words: *Scleractinian* corals, vulnerable, Peacock Island, Andaman & Nicobar Islands.

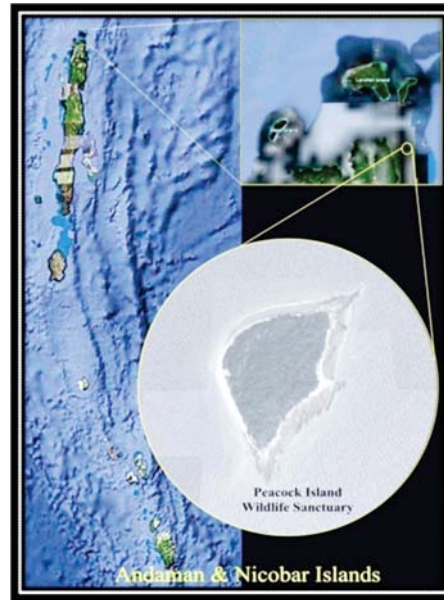
INTRODUCTION

Andaman & Nicobar Islands are the well known biological hot spots with a maximum number of protected area in comparison with other States and Union Territories of India. Total number of 106 protected areas including 96 Sanctuaries, 7 National Parks, 2 Marine National Parks and 1 Biosphere Reserve are the representative of well diversified biodiversity of Andaman & Nicobar Islands (Venkataraman *et al.*, 2003). North Andaman region represents a total of 40 sanctuaries among those total numbers in both the Andaman Sea at eastern side and Bay of Bengal at western side (Venkataraman *et al.*, 2012). Peacock (Pocock) Island, spread across 0.62 sq. km., one of the islands of North Andaman group of islands more precisely Landfall group of islands, declared as the wildlife sanctuary under MoEF, GoI, Notification No. 113-86/CF/WL/50-Vol.I dated 16.02.1987 to conserve the terrestrial biodiversity (Kumar, 1997; A and N Administration, 1987). The marine life including coral reefs shares the diversified Indo-West Pacific faunal region (Hoeksema and Dai, 1982). Coral are most important to

the progressive world due to its high productivity as well as nutrient recycling capability (Mann, 1982). The existence of coral reef biodiversity is the ecological tutor for the maintenance of entire biogenic habitat of marine world through the support of a great deal of associated faunal communities (Smith, 1978). The present paper describes the total scleractinian species composition of Peacock Island with its status analysis.

MATERIAL AND METHODS

The study was conducted at the Peacock Island (Coordinates: Lat. 13°33.777'N & Long. 93°03.130'E) during 2012-2013 to explore the scleractinian coral at the continental shelf region (Map 1) by employing SCUBA diving and snorkeling. Digitization of individual species was made by underwater camera (Sony-Cyber Shot, Model-T900, marine pack, 12.1 megapixels) to record the scleractinian corals. The recorded species, individual photographs were identified in conjunction with Veron and Pichon (1976, 1979, 1982), Veron *et al.* (1977) Veron and Wallace (1984), Veron (2000) and Wallace (1999).



Map 1: Peacock Island, Andaman & Nicobar

RESULTS AND DISCUSSION

A total number of 81 species of *scleractinian* corals belong to 30 genera and 10 families were identified from the Peacock Island Wildlife Sanctuary during the present study (Table 1 and Fig 1). A maximum number of 30 species belong to the family Faviidae the minimum of only one species was reported under family Astrocoeniidae (Fig 2). The IUCN status analysis revealed

that, among the 81 species, 78 species were evaluated under the IUCN category and criteria while the 3 species were under Not Evaluated (NE) category. Among the Evaluated scleractinians, 5 species are Vulnerable (VU), 31 species are Near Threatened (NT), 39 species are Least Concern (LC) and 3 species are in Data Deficient (DD). It was also observed that, 70 species are common and 11 species are rare on the regional occurrence analysis of Andaman & Nicobar Islands.

Table 1: List Scleractinian corals of Peacock Island Wildlife Sanctuary

Sl. No.	Species Name	IUCN 2012 Status	Occurrence in A & N Islands
Family ACROPORIDAE (Verrill, 1902)			
Genus Acropora (Oken, 1815)			
1.	<i>Acroporacuneata</i> (Dana, 1846)	Not Evaluated	Common
2.	<i>Acroporaformosa</i> (Dana, 1846)	Near Threatened	Common
3.	<i>Acroporahumilis</i> (Dana, 1846)	Near Threatened	Common
4.	<i>Acroporamonticulosa</i> (Bruggemann, 1879)	Near Threatened	Common
5.	<i>Acroporamicrophthalma</i> (Verrill, 1859)	Least Concern	Common
6.	<i>Acroporanasuta</i> (Dana, 1846)	Near Threatened	Common
7.	<i>Acroporapalifera</i> (Lamarck, 1816)	Not Evaluated	Common
8.	<i>Acroporanatalensis</i> (Riegl, 1995)	Data Deficient	Common
9.	<i>Acroporavalenciennesi</i> (Milne Edwards & Haime, 1860)	Least Concern	Common
10.	<i>Acroporadigitifera</i> (Dana, 1846)	Near Threatened	Common
11.	<i>Acroporadivaricata</i> (Dana, 1846)	Near Threatened	Common

12.	<i>Acroporagemmifera</i> (Brook, 1892)	Least Concern	Common
13.	<i>Acroporarobusta</i> (Dana, 1846)	Least Concern	Common
Genus <i>Astreoporade</i> (Blainville, 1830)			
14.	<i>Astreoporamyriophthalma</i> (Lamarck, 1816)	Least Concern	Common
Genus <i>Montiporade</i> Blainville, 1830			
15.	<i>Montiporacorbettensis</i> (Veron and Wallace, 1984)	Vulnerable	Rare
16.	<i>Montiporainformis</i> (Bernard, 1897)	Least Concern	Common
17.	<i>Montiporagrisea</i> (Bernard, 1897)	Least Concern	Common
18.	<i>Montiporapeltiformis</i> (Benard, 1897)	Near Threatened	Common
19.	<i>Montiporatuberculosa</i> (Lamarck, 1816)	Least Concern	Rare
20.	<i>Montiporaverrilli</i> (Vaughan, 1907)	Data Deficient	Rare
Family AGARICIIDAE (Gray, 1847)			
Genus <i>Coeloseris</i> (Vaughan, 1918)			
21.	<i>Coeloserismayeri</i> (Vaughan, 1918)	Least Concern	Common
Genus <i>Pachyseris</i> (MED & H, 1849)			
22.	<i>Pachyserisgemmae</i> (Nemenzo, 1955)	Near Threatened	Common
Genus <i>Pavona</i> (Lamarck, 1801)			
23.	<i>Pavonavarians</i> (Verrill, 1846)	Least Concern	Common
24.	<i>Pavonavenosa</i> (Ehrenberg, 1834)	Vulnerable	Common
Family ASTROCOENIIDAE (Koby, 1890)			
Genus <i>Stylocoeniella</i> (Yabe & Sugiyama, 1935)			
25.	<i>Stylocoeniellaarmata</i> (Ehrenberg, 1834)	Least Concern	Rare
Family FAVIIDAE Gregory, 1900			
Genus <i>Barabattoia</i> Yabe and Sugiyama, 1941			
26.	<i>Barabattoiaamicorum</i> (Milne Edwards & Haime, 1850)	Least Concern	Common
Genus <i>Cyphastrea</i> (MED & H, 1848)			
27.	<i>Cyphastrea japonica</i> (Yabe and Sugiyama, 1932)	Least Concern	Common
28.	<i>Cyphastreachalcidicum</i> (Forskal, 1775)	Least Concern	Common
Genus <i>Diploastrea</i> (Matthai, 1914)			
29.	<i>Diploastrea helipora</i> (Lamarck, 1816)	Near Threatened	Common
Genus <i>Echinopora</i> (Lamarck, 1816)			
30.	<i>Echnioporapacificus</i> (Veron, 1990)	Near Threatened	Common
Genus <i>Favia</i> (Oken, 1815)			
31.	<i>Faviamatthaii</i> (Vaughan, 1918)	Near Threatened	Common
32.	<i>Favia maxima</i> (Veron and Pichon, 1977)	Near Threatened	Common
33.	<i>Faviapallida</i> (Dana, 1846)	Least Concern	Common
34.	<i>Faviarotumana</i> (Gardiner, 1899)	Least Concern	Common
35.	<i>Faviatruncatus</i> (Veron, 2002)	Least Concern	Common
Genus <i>Favites</i> (Link, 1807)			
36.	<i>Faviteshalicora</i> (Ehrenberg, 1834)	Near Threatened	Common
37.	<i>Favitesmicropentagona</i> (Veron, 2002)	Near Threatened	Common
38.	<i>Favitespentagona</i> (Esper, 1794)	Least Concern	Common

39.	<i>Favitesvasta</i> (Klunzinger,1879)	Near Threatened	Common
Genus Goniastrea (MED & H ,1848)			
40.	<i>Goniastreaedwardsi</i> (Chevalier,1971)	Least Concern	Common
41.	<i>Goniastreaminuta</i> (Veron,2000)	Near Threatened	Common
42.	<i>Goniastreafavulus</i> (Dana,1846)	Near Threatened	Rare
Genus Leptoria (MED & H,1848)			
43.	<i>Leptoriaphrygia</i> (Ellis &Solander, 1786)	Vulnerable	Common
Genus Leptastrea (MED & H, 1848)			
44.	<i>Leptastreapurplea</i> (Dana, 1846)	Least Concern	Common
45.	<i>Leptastreatransversa</i> (Klunzinger, 1879)	Least Concern	Common
Genus Montastrea (Blainville, 1830)			
46.	<i>Montastreaannuligera</i> (MED & H, 1849)	Near Threatened	Common
47.	<i>Montastreacolemani</i> (Veron, 2002)	Near Threatened	Rare
48.	<i>Montastrea curta</i> (Dana, 1846)	Least Concern	Common
Genus Oulophyllia (MED &H, 1848)			
49.	<i>Oulophylliabennettae</i> (Veron and Pichon,1977)	Near Threatened	Rare
50.	<i>Oulophylliacrispa</i> (Lamarck, 1816)	Near Threatened	Rare
51.	<i>Oulophyllia levis</i> (Nememzo,1959)	Least Concern	Rare
Genus Oulastrea (MED & H , 1848)			
52.	<i>Oulastrea crispata</i> (Lamarck, 1816)	Least Concern	Common
Genus Platygyra (Ehrenberg, 1834)			
53.	<i>Platygyr aryukyensis</i> (Yabe & Sugiyama, 1936)	Near Threatened	Common
54.	<i>Platygyra contorta</i> (Veron, 1990)	Least Concern	
55.	<i>Platygyra sinensis</i> (MED & H, 1849)	Least Concern	Common
Family FUNGIIDAE (Dana,1846)			
Genus Fungia (Lamarck,1801)			
56.	<i>Fungiarepanda</i> (Dana, 1846)	Least Concern	Common
Genus Podabacia (MED & H,1849)			
57.	<i>Podabacialanakensis</i> (Veron, 2002)	Not Evaluated	Common
Family MERULINIDAE (Verrill,1866)			
Genus Hydnophora (Fischer de Waldheim,1807)			
58.	<i>Hydnophora microconos</i> (Lamarck, 1816)	Near Threatened	Common
59.	<i>Hydnophora rigida</i> (Dana,1846)	Least Concern	Common
Family MUSSIDAE (Ortmann, 1890)			
Genus Acanthastrea (MED & H, 1848)			
60.	<i>Acanthastrea hemprichii</i> (Ehrenberg, 1834)	Vulnerable	Common
Genus Symphyllia (MED & H, 1848)			
61.	<i>Symphyllia radians</i> (MED & H,1849)	Least Concern	Common
62.	<i>Symphyllia recta</i> (Dana,1846)	Least Concern	Common
Family PORITIDAE (Gray, 1842)			
Genus Goniopora (Blainville, 1830)			
63.	<i>Goniopora minor</i> (Crossland, 1952)	Near Threatened	Common

Genus <i>Porites</i> Link, 1807			
64.	<i>Porites attenuata</i> (Nemenzo 1955)	Vulnerable	Common
65.	<i>Porites compressa</i> (Dana, 1846)	Least Concern	Common
66.	<i>Porites cylindrica</i> (Dana, 1846)	Near Threatened	Common
67.	<i>Porites evermanni</i> (Vaughan, 1907)	Data Deficient	Rare
68.	<i>Porites stephensoni</i> (Crossland, 1952)	Near Threatened	Common
69.	<i>Porites lobata</i> (Dana, 1846)	Near Threatened	Common
70.	<i>Porites densa</i> (Vaughan, 1918)	Least Concern	Common
71.	<i>Porites monticulosa</i> (Dana, 1846)	Least Concern	Common
72.	<i>Porites rus</i> (Forsk., 1775)	Least Concern	Common
73.	<i>Porites solida</i> (Forsk., 1775)	Least Concern	Common
74.	<i>Porites vaughani</i> (Crossland, 1952)	Least Concern	Common
Family POCILLOPORIDAE (Gray, 1842)			
Genus <i>Pocillopora</i> (Lamarck, 1816)			
75.	<i>Pocillopora adamicornis</i> (Linnaeus, 1758)	Least Concern	Common
76.	<i>Pocillopora aeydouxii</i> (MED & H, 1860)	Near Threatened	Common
77.	<i>Pocillopora meandrina</i> (Dana, 1846)	Least Concern	Common
78.	<i>Pocillopora verrucosa</i> (Ellis & Solander, 1786)	Least Concern	Common
Genus <i>Stylophora</i> (Schweigger, 1819)			
79.	<i>Stylophora pistillata</i> Esper, 1797	Near Threatened	Common
Family SIDERASTERIDAE (Vaughan & Wells, 1943)			
Genus <i>Psammocora</i> (Dana, 1846)			
80.	<i>Psammocora obtusangula</i> (Lamarck, 1816)	Near Threatened	Rare
81.	<i>Psammocora digitata</i> (MED & H, 1851)	Near Threatened	Common

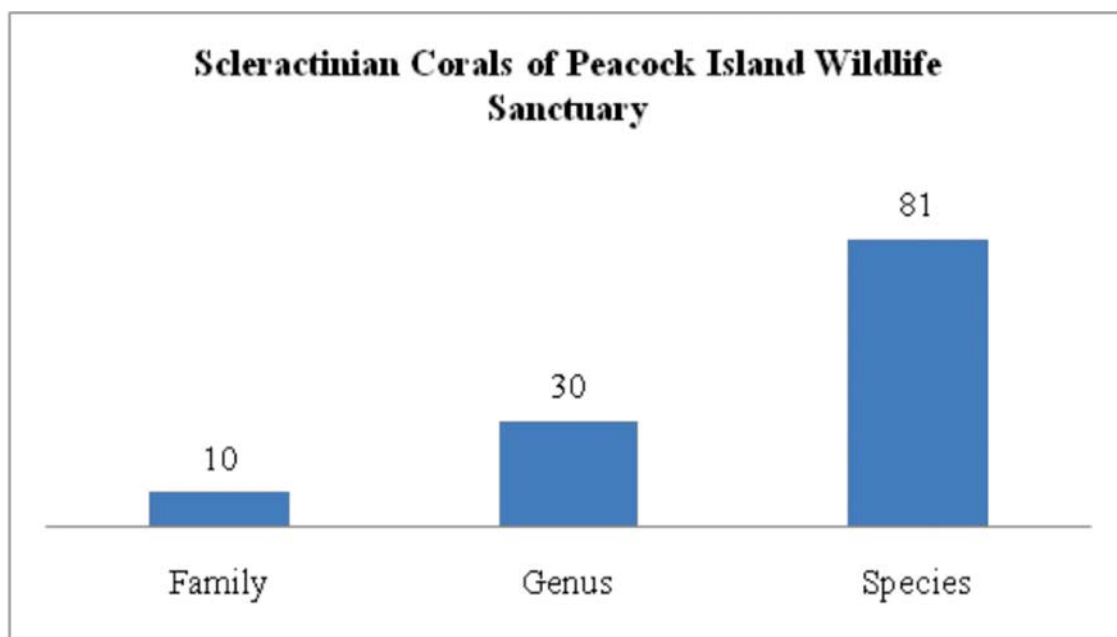


Fig 1: Diversity of scleractinian corals of Peacock Island Wildlife Sanctuary

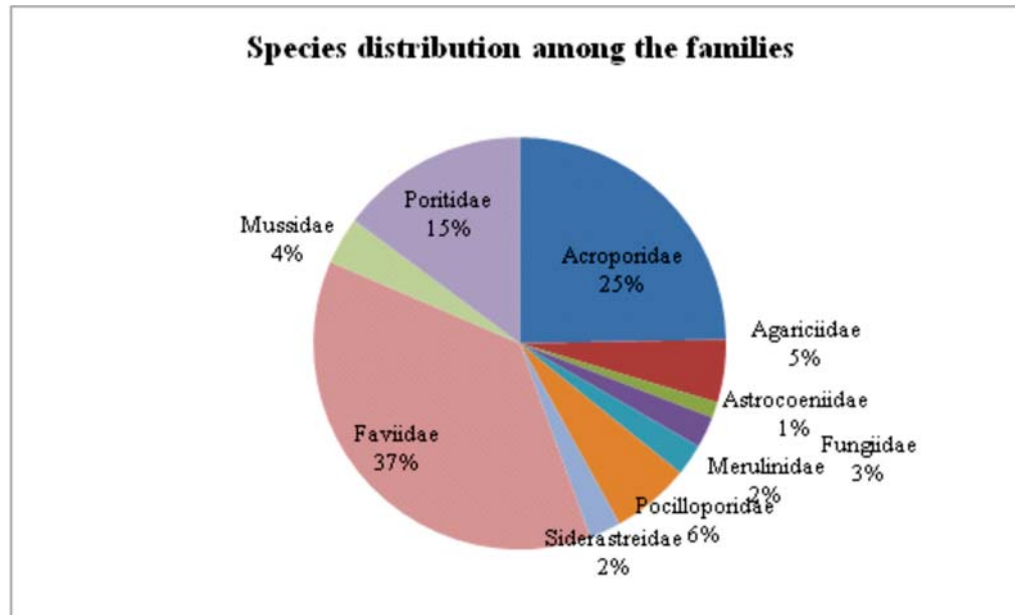


Fig 2: Species distribution among the scleractinian families

The frequency of scleractinian distribution is quite diverse throughout the world. The favorable habitat in tropical region has given conducive atmosphere for in maximum number of species. The diversifications are mostly concentrated in shallow water region of the world's ocean (Chen, 1999). The Andaman & Nicobar Islands harbors a wide variety of scleractinian corals on its continental shelf in the form of fringing type reefs within the shallow regions (Venkataraman *et al.*, 2003). The studies on scleractinian lives and their explorations have given the scope to strengthen the database of scleractinian species from the baseline database to near about 520 species (Venkataraman *et al.*, 2003; Venkataraman & Satyanarayana, 2012; Tamalet *et al.*, 2012a). There is no such report on studies of scleractinian corals from Peacock Island Wildlife Sanctuary earlier, though the studies were made on several places of North Andaman. A report was made of scleractinian corals of Ross, Smith Island and Ariel Bay of North Andaman previously which showed the report of a maximum number of 166 species from Smith Island and the minimum of 80 species from Ross Island. The corals were reported maximum under 15 families in the Smith Island (Tamalet *et al.*, 2011). The presence of 81 species of scleractinian corals shares ~ 15% of total scleractinian corals of Andaman & Nicobar Islands whereas ~10% of the global database (Veron, 2000;

Venkataraman & Satyanarayana, 2012). A total of 90 species of faviids corals were reported from entire Andaman & Nicobar Islands till now whereas 77 species were reported from North & Middle Andaman (Tamalet *et al.*, 2012b, 2012c), of which Peacock Island shares 30 species. The status analysis of the species reveals that the 5 species of hard corals are Vulnerable (VU) category with the trend of facing threats of extinction as global status implication (IUCN, 20120). But the regional occurrence of scleractinian lives implies that the most of the corals (70 species) are common to Andaman & Nicobar Islands. Even though, 4 species of corals among Vulnerable are also quantified as common according to the regional occurrence. The presence of scleractinian corals in moderate number at Peacock Island Wildlife Sanctuary describes the supportive biogenic environmental clues for the search of more scleractinian lives around this island with the extensive exploration works.

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