

FAUNA OF INDIA CHECKLIST

JULY 2024

ONLINE VERSION 1.0



CNIDARIA: ANTHOZOA: HEXACORALLIA: ACTINIARIA

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DOI: <https://doi.org/10.26515/Fauna/1/2023/Cnidaria:Hexacorallia:Actiniaria>

Key words: Sea anemones, Nematocysts, Marine

Citation: Raghunathan, C. and Mondal, T. (2024). Fauna of India Checklist: Cnidaria: Anthozoa: Hexacorallia: Actiniaria. Version 1.0. Zoological Survey India. DOI: <https://doi.org/10.26515/Fauna/1/2023/Cnidaria:Hexacorallia:Actiniaria>

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ZOOLOGICAL SURVEY OF INDIA
Ministry of Environment, Forest & Climate Change

CNIDARIA: ANTHOZOA: HEXACORALLIA: ACTINIARIA

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Introduction: Sea anemones are benthic solitary and sessile polyps and are considerably larger and heavier than the polyps of hydrozoans. These seem to be bend passively with the current whether in the high energy littoral and sublittoral environments or in the more tranquil deep sea. Scattered record on temperate sea anemones surviving many decades in commercial aquaria, and the life span of small sea anemone calculated based on actuarial tables to be over 300 years. Some sea anemone species have powerful toxins in its nematocysts that it uses for feeding and defence.

Global diversity: The order encompasses more than 1177 described species in 20 families distributed globally.

Diversity in India: In India, 71 species belonging to 42 genera and 15 families in four suborders are recorded.

Diversity in States: Presented in table 1.

Table 1: Actiniaria of India, State-wise distribution

Sl. No.	State/Union Territory	No. Species	No. Endemic Species
1.	Andhra Pradesh	4	1
2.	Gujarat	21	0
3.	Goa	13	1
4.	Karnataka	14	3
5.	Kerala	13	0
6.	Maharashtra	27	3
7.	Odisha	10	3
8.	Tamil Nadu	18	2
9.	West Bengal	11	3
10.	Andaman & Nicobar	28	0
11.	Lakshadweep	5	0
12.	State Unknown	2	0
	INDIA TOTAL	71	4

Endemism: A total of four species viz., *Edwardsia jonesii* Seshaiya & Cuttress, 1969; *Edwardsia tinctrix* Annandale, 1915; *Nevadne glauca* (Annandale, 1915) and *Acontiophorum bombayense* Parulekar, 1968 are endemic to India.

Habitat: Sea anemones can live in a variety of habitats and adapt to changing conditions. They are found in most ocean's intertidal zones, some live in brackish water, but are especially abundant in

tropical oceans. They are found as attached to rocks, sea floor, shells, and some forms burrow in the mud or sand from the intertidal to deep oceans, including chemosynthetic environments (Hydrothermal vent).

Ecological Significance: Anemones are a vital component of reef ecosystems. These are vulnerable to the effects of climate change, as they have a symbiotic relationship with the same photosynthetic alga, zooxanthellae that is sensitive to anthropogenic effect, sentinel organisms for ecological monitoring of estuarine and marine environment.

Human Significance: Sea anemones are gaining popularity because of their potential role in the marine aquarium trade. Because of their long-life spans, slower relative growth rates, and lower reproductive rates, sea anemones are vulnerable to overexploitation. Sea anemones produce many biologically active polypeptides and proteins, which are a very important tool in neurophysiological and pharmacological researches.

Threatened species: Species from India are not assessed for IUCN threat categories.

Protected Species as per WPA (2022): A total of four species of sea anemone species belonging to family Edwardsiidae are belonging to Schedule-I category of Indian Wildlife (Protection) Amendment Act (2022).

Species under CITES: Indian sea anemones are not listed under any appendices of CITES.

Invasive alien species: No sea anemone species are reported as invasive in Indian waters.

Gap areas: Many coastal states have little or no knowledge of taxonomical and ecological studies of sea anemones. They have vast variety of diversity habitat like brackishwater, mangrove ecosystem, mudflats, intertidal region to subtidal regions but still more ecological studies needed to know their adaptations. Because very few studies have been conducted, this group is considered one of India's lesser known marine animals.

Systematic list: Species list cited below (Table 2).

Sl. No.	Species
1.	<i>Edwardsia jonesii</i> Seshaiya & Cuttress, 1969
2.	<i>Edwardsia tinctoria</i> Annandale, 1915
3.	<i>Edwardsia athalyei</i> England, 1990
4.	<i>Edwardsia mammillata</i> Bourne, 1916
5.	<i>Metridium dianthus</i> (Ellis, 1768)
6.	<i>Alicia sansibarensis</i> Carlgren, 1900
7.	<i>Haloclava capensis</i> (Verrill, 1865)
8.	<i>Mena limnicola</i> (Annandale, 1915)
9.	<i>Mena chilkaea</i> (Annandale, 1915)
10.	<i>Pelocoetes exul</i> (Annandale, 1907)
11.	<i>Pelocoetes minimus</i> Panikkar, 1938
12.	<i>Phytoetes gangeticus</i> Annandale, 1915
13.	<i>Phytoeteopsis ramunnii</i> Panikkar, 1936
14.	<i>Stephensonactis ornata</i> Panikkar, 1936
15.	<i>Actinodendron arboreum</i> (Quoy & Gaimard, 1833)
16.	<i>Actinodendron glomeratum</i> Haddon, 1898
17.	<i>Boloceractis gopalai</i> Panikkar, 1937

18.	<i>Bolocerooides mcmurrichi</i> (Kwietniewski, 1898)
19.	<i>Nevadne glauca</i> (Annandale, 1915)
20.	<i>Acontiophorum bombayense</i> Parulekar, 1968
21.	<i>Aiptasia mutabilis</i> (Gravenhorst, 1831)
22.	<i>Neoaipiasia commensali</i> Parulekar, 1969
23.	<i>Exaipiasia diaphana</i> (Rapp, 1829)
24.	<i>Acontiactis gokhaleae</i> England, 1990
25.	<i>Diadumene schilleriana</i> (Stoliczka, 1869)
26.	<i>Diadumene lineata</i> (Verrill, 1869)
27.	<i>Paraphellia sanzoi</i> Calabresi, 1926
28.	<i>Calliactis polypus</i> (Forsskål, 1775)
29.	<i>Telmatactis decora</i> (Hemprich & Ehrenberg in Ehrenberg, 1834)
30.	<i>Nemanthus annamensis</i> Carlgren, 1943
31.	<i>Actinoporus elongatus</i> Carlgren, 1900
32.	<i>Actinoporus elegans</i> Duchassaing, 1850
33.	<i>Metapeachia tropica</i> (Panikkar, 1938)
34.	<i>Gyractis sesere</i> (Haddon & Shackleton, 1893)
35.	<i>Actinia equina</i> (Linnaeus, 1758)
36.	<i>Anemonia viridis</i> (Forsskål, 1775)
37.	<i>Anemonia indica</i> Parulekar, 1968
38.	<i>Synanthopsis parulekari</i> Den Hartog & Vennam, 1993
39.	<i>Anthopleura asiatica</i> Uchida & Muramatsu, 1958
40.	<i>Anthopleura anjuna</i> Den Hartog & Vennam, 1993
41.	<i>Anthopleura handi</i> Dunn, 1978
42.	<i>Anthopleura nigrescens</i> (Verrill, 1928)
43.	<i>Anthopleura waridi</i> (Carlgren, 1900)
44.	<i>Anthopleura panikkarii</i> Parulekar, 1968
45.	<i>Anthopleura buddemeieri</i> Fautin, 2005
46.	<i>Anthopleura elegantissima</i> (Brandt, 1835)
47.	<i>Anthopleura sola</i> Pearse & Francis, 2000
48.	<i>Bunodactis nikobarica</i> Carlgren, 1928
49.	<i>Bunodosoma granuliferum</i> (Le Sueur, 1817)
50.	<i>Bunodosoma goanense</i> den Hartog & Vennam, 1993
51.	<i>Cribrinopsis robertii</i> Parulekar, 1971
52.	<i>Entacmaea quadricolor</i> (Leuckart in Rüppell & Leuckart, 1828)
53.	<i>Glyphoperidium bursa</i> Roule, 1909
54.	<i>Macrodictyla doreensis</i> (Quoy & Gaimard, 1833)
55.	<i>Paracondylactis sinensis</i> Carlgren, 1934
56.	<i>Parabunodactis inflexibilis</i> (Carlgren, 1928)
57.	<i>Urticina clandestina</i> Sanamyan N., Sanamyan K. & McDaniel, 2013
58.	<i>Phymanthus loligo</i> (Hemprich & Ehrenberg in Ehrenberg, 1834)
59.	<i>Phymanthus buitendijki</i> Pax, 1924
60.	<i>Heteractis aurora</i> (Quoy & Gaimard, 1833)
61.	<i>Heteractis crista</i> (Hemprich & Ehrenberg in Ehrenberg, 1834)
62.	<i>Heteractis magnifica</i> (Quoy & Gaimard, 1833)
63.	<i>Heteractis malu</i> (Haddon & Shackleton, 1893)
64.	<i>Stichodactyla gigantea</i> (Forsskål, 1775)
65.	<i>Stichodactyla haddoni</i> (Saville-Kent, 1893)
66.	<i>Stichodactyla tapetum</i> (Hemprich & Ehrenberg in Ehrenberg, 1834)
67.	<i>Stichodactyla mertensii</i> Brandt, 1835
68.	<i>Bathydactylus valdiviae</i> Carlgren, 1928
69.	<i>Cryptodendrum adhaesivum</i> (Klunzinger, 1877)
70.	<i>Thalassianthus aster</i> Rüppell & Leuckart, 1828
71.	<i>Heterodactyla hemprichii</i> Ehrenberg, 1834

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