

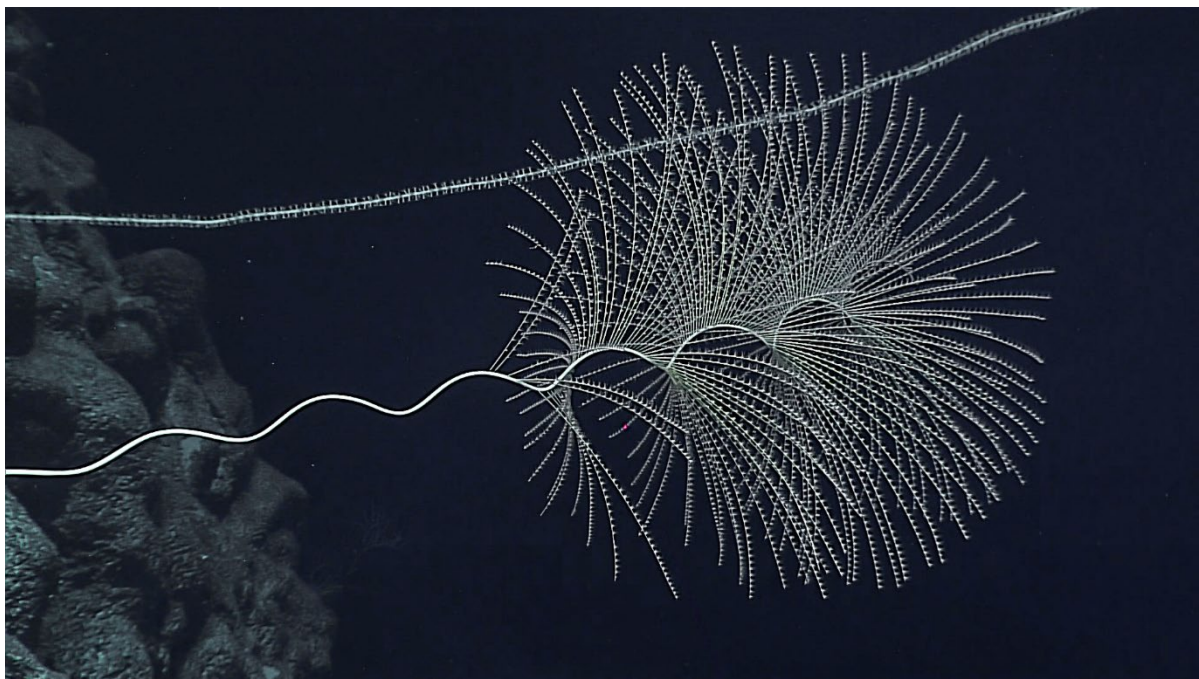


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# Preliminary List of Deep-Sea Coral Taxa in the American Samoa Region

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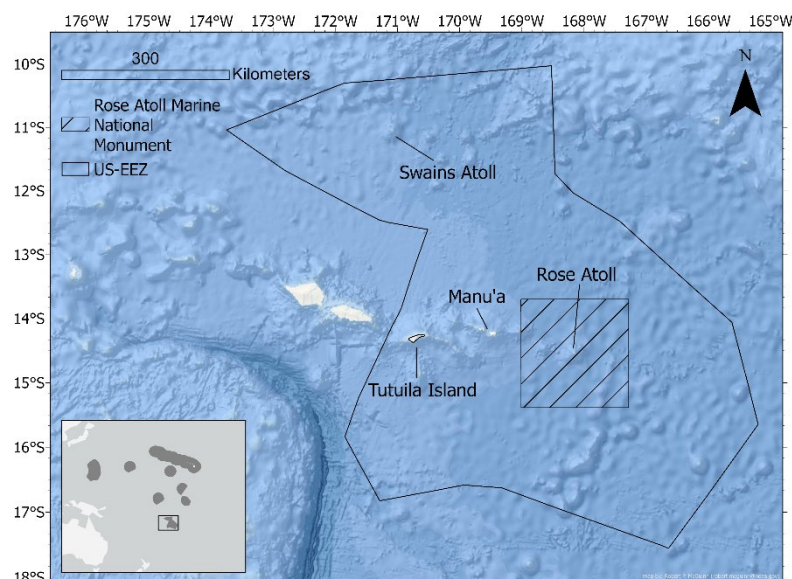
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## Preliminary List of Deep-Sea Coral Taxa in the American Samoa Region (v. 2021)

This annex to the U.S. Pacific Islands chapter in “The State of Deep-Sea Coral and Sponge Ecosystems of the United States” (Parrish et al. 2017) provides a list of deep-sea coral taxa in the Phylum Cnidaria, Classes Anthozoa and Hydrozoa, known to occur in U.S. waters around American Samoa (Figure 1). Most of these records are derived from observations and collections conducted in 2005 by the University of Hawai‘i’s Hawai‘i Undersea Research Laboratory; and new deep-sea explorations in 2017 (Kelley et al. 2019) as part of the National Oceanic and Atmospheric Administration (NOAA) Campaign to Address Pacific monument Science, Technology, and Ocean NEeds (CAPSTONE). CAPSTONE was a 3-year campaign from 2015 to 2017 designed to provide critical new information on the deep-water resources within the U.S. national marine monuments and sanctuaries located throughout the Pacific (Kennedy et al. 2019, Parke et al. 2021). In 2019, the Ocean Exploration Trust E/V *Nautilus* conducted further deep-sea remotely-operated vehicle (ROV) explorations in the American Samoa region.

For the purposes of this list, deep-sea corals are defined as azooxanthellate, heterotrophic coral species occurring in waters 50 m deep or more. We provide details on the reported depth distribution of each species (Table 1). This list is based largely on surveys that were conducted deeper than 250 m. Therefore, the list does not include many species that occur in shallower waters. **Taxon identifications should be considered preliminary, as most were made from video without collected samples.** Taxonomic names



are generally those currently accepted in the World Register of Marine Species ([WoRMS](https://www.marinespecies.org/)), and are arranged by order, and alphabetically within order by family, genus, and species. Data sources (references) listed are those principally used to establish geographic and depth distribution.

**Figure 1.** The U.S. exclusive economic zone (EEZ) surrounding the islands of American Samoa. The shaded area is the Rose Atoll Marine National Monument.

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*Cover Photo:* A large chrysogorgiid (*Iridogorgia magnispiralis*) and a long, unbranched black coral at a depth of 2030 meters on a steep slope of Moki Seamount in American Samoa. Image credit: NOAA Ocean Exploration

**Table 1.** List of known deep-sea coral taxa in the Phylum Cnidaria, Class Anthozoa and Class Hydrozoa, and their reported distributions in U.S. waters of American Samoa (U.S. EEZ around the Islands of Tutuila, Ofu, Tau, Swains Atoll and Rose Atoll). Blue shaded fields indicate newly described species since 2017. “NR” indicates a lack of reported depth information. References are numbered to correspond with citations following the table, along with notes (in superscript letters) pertaining to individual taxa.

Higher Taxon	Species	Depth range (m)	References
<b>Class Anthozoa</b>			
<b>Subclass Hexacorallia</b>			
<b>Order Antipatharia</b>			
Family Antipathidae	<i>Antipathes</i> sp. cf. <i>A. griggi</i> Opresko, 2009 (Reported as <i>Antipathes dichotoma</i> Pallas, 1766)	<110 <sup>a</sup>	1
	<i>Antipathes</i> sp. cf. <i>A. grandis</i> Verrill, 1928	20-140 <sup>a</sup>	1
	<i>Stichopathes</i> sp.	229-437	2,3
Family Aphanipathidae	<i>Acanthopathes</i> sp.	281	2
	cf. <i>Aphanostichopathes</i> sp. (reported as <i>Stichopathes</i> sp.) <sup>b</sup>	892-2097	2,3,4
	<i>Asteriopathes</i> sp.	233-234	3
	<i>Pteridopathes tanycrada</i> Opresko, 2004	166-181	3
Family Cladopathidae	<i>Heteropathes</i> cf. <i>americana</i>	604-627	2
	<i>Hexopathes</i> sp.	498	2
	<i>Trissopathes</i> sp.	1843-2392	2,3
Family Myriopathidae	<i>Cupressopathes</i> sp.	181-931	2,3
	<i>Myriopathes</i> sp. cf. <i>M. ulex</i> (Ellis & Solander, 1786) (= <i>Antipathes ulex</i> )	25-364 <sup>a</sup>	1
Family Schizopathidae	<i>Bathypathes</i> sp.	517-2189	3,4
	<i>Bathypathes</i> sp. cf. <i>B. patula</i> Brook, 1889	2356-3697	2,5
	<b><i>Bathypathes pseudoalternata</i> Molodtsova, Opresko &amp; Wagner, 2022<sup>c</sup></b> [not <i>Alternatipathes alternata</i> (Brook, 1889)]	2189	3,6
	<i>Dendropathes</i> sp.	684-681	3
	<i>Lillipathes</i> sp.	1298-1954	3,4
	<i>Parantipathes</i> sp.	565-2475	2,5
	<i>Stauropathes</i> sp.	1688-1799	3
	<i>Umbellapathes</i> sp.	322-1670	2,7
Family Stylopathidae	<i>Stylopathes</i> sp.	484	3,4
	<i>Tylopathes</i> sp.	923	2
<b>Order Scleractinia</b>			
Family Caryophylliidae	<i>Caryophyllia</i> sp. cf. <i>C. (Caryophyllia) atlantica</i> (Duncan, 1873)	751	3
	<i>Caryophyllia (Caryophyllia) scobinosa</i> Alcock, 1902	302-2450 <sup>d</sup>	8
	<i>Caryophyllia (Caryophyllia) near perculata</i> Cairns, 1991	434	5

Higher Taxon	Species	Depth range (m)	References
Family Caryophylliidae cont.	<i>Trochocyathus</i> sp.	504	5
Family Dendrophylliidae	<i>Dendrophyllia alcocki</i> (Wells, 1954)	345	5
	<i>Eguchipsammia</i> sp.	254-380	2
	<i>Enallopsammia rostrata</i> (Pourtales, 1878) [= <i>Enallopsammia amphelioides</i> (Alcock, 1902)]	370-1425	2,3
	<i>Endopsammia regularis</i> (Gardiner, 1899)	8-73	5,9
Family Flabellidae	<i>Flabellum</i> sp.	347-557	3
	<i>Polymyces wellsii</i> Cairns, 1991	336-1162	2,3
Family Oculinidae	<i>Madrepora oculata</i> Linnaeus, 1758 (= <i>Madrepora kauaiensis</i> Vaughan, 1907)	472-478	3

Higher Taxon	Species	Depth range (m)	References
<b>Class Anthozoa</b>			
<b>Subclass Octocorallia</b>			
<b>Order Alcyonacea</b>			
Family Acanthogorgiidae	<i>Acanthogorgia</i> sp.	308-1666	2,3,5
Family Alcyoniidae	<i>Anthomastus</i> sp.	243-1759	2,3,5
	<i>Pseudoanthomastus</i> sp.	343-1739	2,3,5
Family Chrysogorgiidae	<i>Chrysogorgia admete</i> Bayer & Stefani, 1988	1992	5
	<i>Chrysogorgia chryseis</i> Bayer & Stefani, 1988	1597-2211	3
	<i>Chrysogorgia flavescens</i> Nutting, 1908	2354	2
	<i>Chrysogorgia geniculata</i> (Wright & Studer, 1889)	513-2433	2,3,5,7
	<i>Chrysogorgia stellata</i> Nutting, 1908	2042-2349	2,3
	<i>Iridogorgia magnispiralis</i> Watling, 2007	1628-2990	2,7
	<i>Metallogorgia melanotrichos</i> (Wright & Studer, 1889)	1651	7
	<i>Pseudochrysogorgia</i> sp. <sup>e</sup>	2362	5,10
Family Coralliidae	<i>Ramuligorgia militaris</i> (Nutting, 1908) (= <i>Pleurogorgia militaris</i> Nutting, 1908)	1568-3926	2,3,5
	<i>Hemicorallium</i> sp.	1321-2028	3
Family Ellisellidae	<i>Ellisella</i> sp.	257	5
Family Keratoisididae <sup>f</sup> (formerly Isididae, in part)	<i>Jasonisis</i> sp.	1573-2439	2,3
	cf. <i>Lepidisis</i> sp. <sup>g</sup>	2449	5
	<i>Orstomisis</i> sp.	482-575	2,3
Family Nephtheidae	<i>Scleronephthya</i> sp.	234-352	2,3
Family Paragorgiidae	<i>Paragorgia</i> sp. <sup>h</sup>	447-1943	2,3,4,7
Family Parisididae	<i>Parisidisis</i> sp.	238-259	2
Family Plexauridae	<i>Paracis</i> sp.	217-737	2,3,4
	<i>Thesea</i> sp.	258	5
Family Primnoidae	<i>Callogorgia cracentis</i> Cairns, 2018	1703-1754	2

Higher Taxon	Species	Depth range (m)	References
Family Primnoidae cont.	<i>Calyptrophora</i> cf. <i>angularis</i> (Nutting, 1908)	2941-3021	2
	<i>Calyptrophora diaphana</i> Cairns, 2012	403-425	3,4
	<i>Calyptrophora distolos</i> Cairns, 2018	2994	5,11
Family Primnoidae cont.	<i>Calyptrophora wyvillei</i> Wright, 1885	504-541	3
	<i>Candidella gigantea</i> (Wright & Studer, 1889)	1723-2310	3,4
	<i>Macroprimnoa ornata</i> Cairns 2018	2940-3033	2
	<i>Paracalyptrophora hawaiiensis</i> Cairns, 2009	434-448	2,5,11
	<i>Paracalyptrophora spiralis</i> Cairns, 2018	234-349	3,5,11
Subergorgiidae	<i>Annella mollis</i> (Nutting, 1910)	NA	5
	<i>Annella reticulata</i> (Ellis & Solander, 1786)	112-158	3
Victorgorgiidae	<i>Victorgorgia alba</i> (Nutting, 1908) <sup>i</sup> (= <i>Anthothela nuttingi</i> Bayer, 1956)	355-1847	2,3
<b>Order Pennatulacea</b>			
Family Anthoptilidae	<i>Anthoptilum</i> sp. <sup>i</sup>	1447-1572	2
Family Balticinidae <sup>i</sup> (=Halipteridae)	<i>Balticina</i> sp. (= <i>Halipteris</i> sp.)	1564	3
Family Pennatulidae	<i>Pennatula</i> sp.	563-590	3,4

Higher Taxon	Species	Depth range (m)	References
<b>Phylum Cnidaria</b>			
<b>Class Hydrozoa</b>			
<b>Order Anthoathecata</b>			
Family Stylasteridae	<i>Stylaster</i> sp.	289-343	3

### Notes:

- The depth distribution of several of the shallower taxa of black corals reported to occur in American Samoa is not documented. The depth ranges here are estimated based on reported depths elsewhere in the Central Pacific by (Wagner 2015)
- At least two different deepwater unbranched black coral morphotypes occurring at depths from 892-2097 were initially identified as *Stichopathes* sp. Based on Opresko et al. (2021), these appear to belong in the new genus *Aphanostichopathes* in the Family Aphanipathidae.
- Molodtsova et al. (2022) redescribed a black coral in the family Schizopathidae with alternating bilateral pinnules that had previously been identified as *Bathypathes alternata* [now *Alternatipathes alternata* (Brook, 1889)]. They reported this coral, *Bathypathes pseudoalternata*, found predominantly at shallower depths than *A. alternata*, from Swains Island Ridge.
- This is the full depth range reported for *C. scobinosa*, not the observations in Samoa
- USNM 1453668 - Identified as *Pseudochrysogorgia* sp.; listed as *Chrysogorgia* sp. 36 of Untiedt et al. (2021)
- Saucier et al. (2021) have revised the phylogeny of the bamboo corals (formerly Isididae), resulting in five families. The bamboo corals described from American Samoa all appear to belong in the new family Keratoisididae. These

represent a number of the different clades within the Keratoisididae proposed by Watling et al. (2022), but cannot yet be fully described.

- g. Unbranched bamboo corals had previously been identified as *Lepidisis* sp. Watling and France (2021) recently redescribed the genus *Lepidisis*. They note that many species previously described as *Lepidisis* probably belong in different genera, therefore we have revised this category to “cf. *Lepidisis* sp.” pending further investigation. Some of the West Coast specimens previously
- h. Some 2005 video observations were identified as *Paragorgia regalis* Nutting, 1912, but we have not found specimens to confirm this identification.
- i. Moore et al. (2017) have placed *Anthothela nuttingi* Bayer, 1956 (originally *Clematissa alba* Nutting, 1908) in the genus *Victorgorgia* based on morphological characteristics and phylogenetic reconstructions using mitochondrial gene regions.
- j. Specimens of “rock sea pens” identified as *Anthoptilum* sp. While most sea pens occur in soft sediments, rock sea pens have specially adapted peduncles that allow them to attach to hard substrata.
- k. Pérez et al. (2021) established Balticinidae and *Balticina* as the valid family and genus names for the sea pens most commonly identified as Halipteridae and *Halipteris*.

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