

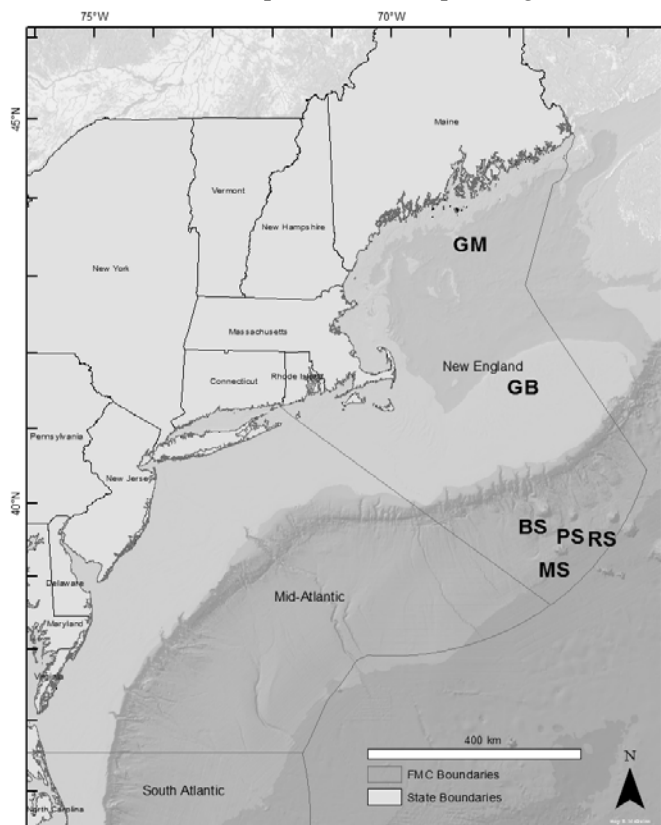
Deep-Sea Coral Taxa in the U.S. Northeast Region: Depth and Geographical Distribution

by David B. Packer¹, Martha S. Nizinski², Stephen D. Cairns³, and Thomas F. Hourigan⁴

1. NOAA Fisheries, Northeast Fisheries Science Center
2. NOAA Fisheries, Office of Science & Technology; National Systematics Laboratory, National Museum of Natural History, Smithsonian Institution, Washington, D.C.
3. Department of Invertebrate Zoology, National Museum of Natural History, Smithsonian Institution, Washington, D.C.
4. NOAA Deep Sea Coral Research & Technology Program, NOAA Fisheries, Office of Habitat Conservation

This annex to the Northeast U.S. chapter in “The State of Deep-Sea Coral and Sponge Ecosystems of the United States” lists deep-sea coral species in Phylum Cnidaria, Class Anthozoa, known to occur in the region (Figure 1). The list covers azooxanthellate, heterotrophic coral species that occur predominantly deeper than 50 m in U.S. waters from Maine to Cape Hatteras. Details are provided on depth ranges and known geographic distribution within the region (Table 1). The list is adapted from Packer et al. (2007) with the addition of new species and range extensions into Northeast U.S. waters reported since 2007, along with a number of species previously not included. Taxonomic names are generally currently accepted in the World Register of Marine Species (<http://www.marinespecies.org>), and are arranged by order, then alphabetically by family, genus, and species. Data sources (references) listed are those principally used to establish geographic and depth distributions.

Figure 1. The U.S. Northeast region showing the following major geographic features: GM = Gulf of Maine; GB = Georges Bank; BS = Bear Seamount; PS = Physalia Seamount; RS = Retriever Seamount; and MS = Mytilus Seamount.



Recommended citation: Packer DB, Nizinski MS, Cairns SD, Hourigan TF (2017) Deep-Sea Coral Taxa in the U.S. Northeast Region: Depth and Geographical Distribution. Online resource: <https://deepseacoraldata.noaa.gov/>.

Table 1. List of known deep-sea coral species in Phylum Cnidaria, Class Anthozoa, and their reported distributions in Northeast U.S. waters. Bold text and blue-shaded fields indicate newly described species, new list additions, or range extensions since Packer et al. (2007). No symbols before bold & blue-shaded species names indicate newly described species, asterisks (*) denote new list additions, crosses (†) show name changes, and bold & blue-shaded depth and/or region fields represent range changes. “NR” indicates a lack of reported distribution or depth information. References are numbered to correspond with citations following the table.

Distribution: NE = widespread in Northeast US waters; MA = off Massachusetts; RI = off Rhode Island; NY = off New York; NJ = off New Jersey; VA = off Virginia; NC = off North Carolina.

Habitat: C = Canyons; SH = Shelf; SL = Continental slope and rise; GM = Gulf of Maine; GB = Georges Bank; BS = Bear Seamount; PS = Physalia Seamount; RS = Retriever Seamount; MS = Mytilus Seamount. Additional information on the distribution of many species is found in Packer et al. (2007).

Higher Taxon	Species	Distribution	Depth range (m)	References
Class Anthozoa				
Subclass Hexacorallia				
Order Antipatharia				
Family Antipathidae	*Stichopathes sp.^a	VA(SL)	262	1
Family Leiopathidae	<i>Leiopathes</i> sp.	BS	1643, 1754	1,2
Family Schizopathidae	*Bathypathes spp.	NE(C,BS,RS,MS)	1195-3262	3,4
	*Parantipathes sp.	NE(C,BS,RS)	983-2045	1,3,4
	*Stauropathes sp. 1	NE(C,MS)	1025-3262	4
	<i>Telopathes magna</i> MacIsaac & Best 2013	NE(C,SL),BS,RS	1073-1983	4,5,6
Order Scleractinia				
Family Caryophylliidae	<i>Caryophyllia (Caryophyllia) ambrosia ambrosia</i> Alcock, 1898	MA-NY(SL,BS)	1487-2286	1,7,8
	<i>Caryophyllia (Caryophyllia) ambrosia caribbeana</i> Cairns, 1979	NY-NJ(C,SL)	1869-1975	1,7
	<i>Dasmosmilia lymani</i> (Pourtalès, 1871)	NE(C,SL)	37-700	6,7,9,10,11,12,13,14
	<i>Desmophyllum dianthus</i> (Esper, 1794)	NE(C,SL,BS)	183-2250	4,6,7,8,9,10,15,16,17
	<i>Lophelia pertusa</i> (Linnaeus, 1758)	NE(C,BS)	146-1300	4,6,7,8,9,15,16,18
	*Premocyathus cornuformis (Portalès, 1868)	NE(SL,BS)	1098-2200	1
	<i>Solenosmilia variabilis</i> Duncan, 1873	NE(C,BS)	220-1383	4,6,7,9,10,19
	<i>Vaughanella margaritata</i> (Jourdan, 1895)	BS	1100-1320	1,7,8
Family Deltocyathidae	<i>Deltocyathus italicus</i> (Michelotti, 1838)	MA-NJ(SL,GM)	403-2634	7
Family Dendrophylliidae	<i>Enallopsammia profunda</i> (Portalès, 1867)	GB(C)	1211-1748	1,7
	<i>Enallopsammia rostrata</i> (Portalès, 1878)	BS	300-1646	7,19

Higher Taxon	Species	Distribution	Depth range (m)	References
Family Flabellidae	<i>Flabellum (Ulocyathus) alabastrum</i> Moseley, 1873	NE(C,SL),GM,BS	357-2500	6,7,8,9,10,11,15,16,19
	<i>Flabellum (Ulocyathus) angulare</i> Moseley, 1876	NE(C,SL)	2266-3186	7,8,9,10,15,16
	<i>Flabellum (Ulocyathus) macandrewi</i> Gray, 1849	NE(C,SL),GM	180-667	7,8,9,10,15,16
	<i>Javania caillieti</i> (Duchassaing & Michelotti, 1864)	NE(C)	30-1809	4,6,7,9,10
Family Fungiacyathidae	<i>Fungiacyathus (Fungiacyathus) fragilis</i> Sars, 1872	RI-NJ(C,SL)	412-460	7
Family Rhizangiidae	<i>Astrangia poculata</i> (Ellis & Solander, 1786)	MA-NC(SH)	0-263	7,20

Higher Taxon	Species	Distribution	Depth range (m)	References
Class Anthozoa				
Subclass Octocorallia				
Order Alcyonacea				
Family Acanthogorgiidae	<i>Acanthogorgia armata</i> Verrill, 1878	NE(C,GM)	200-2500	1,4,15,16,17,21,22,23,24,25
	<i>*Acanthogorgia aspera</i> Pourtalès, 1867	Norfolk Canyon	422-1341	6
Family Alcyoniidae	<i>Alcyonium digitatum</i> Linnaeus, 1758	Canada-NJ(SH,GB,GM)	40-100	21,22
	<i>*Alcyonium grandiflorum</i> Tixier-Durivault & d'Hondt, 1974	Norfolk Canyon	474-480	26
	<i>Anthomastus agassizii</i> Verrill, 1922	NE(C,SL,BS)	800-3186	8,10,12,15,16,21,22,23,27
	<i>Anthomastus grandiflorus</i> Verrill, 1878	NE(C,SL,BS)	750-2637	15,16,21,22,23
Family Anthothelidae	<i>Anthothela grandiflora</i> (Sars, 1856)	NE(C,GM)	200-2008	1,4,6,16,21,22,23,25,26
	<i>*Anthothela sp.</i>	Baltimore & Norfolk Canyons	474-594	26
Family Chrysogorgiidae	<i>Chrysogorgia agassizii</i> (Verrill, 1883)	Canada-NJ(SL)	1928-3186	10,21,22
	<i>Chrysogorgia tricaulis</i> Pante and Watling, 2011	BS, RS	BS: 1559; RS: 3860	3,28
	<i>Iridogorgia pourtalesii</i> Verrill, 1883	Unverified	594-1633	21,22

Higher Taxon	Species	Distribution	Depth range (m)	References
Family Chrysogorgiidae, cont.	*Metallogorgia melanotrichos (Wright and Studer, 1889)	BS,PS,RS, NE(C)	BS: 1491, 1559, 1639; RS: 1983, 2012	3,4,22,29
	<i>Radicipes gracilis</i> (Verrill, 1884)	BS,NE(C,SL)	1431-1650	3,4,19,21,22
Family Clavulariidae	<i>Clavularia modesta</i> (Verrill, 1874)	GM	30-125	1,21,22
	<i>Clavularia rudis</i> (Verrill, 1922)	NE(C)	750-1610	4,15,16,21, 22,23
Family Coralliidae	<i>Hemicorallium cf. bathyrubrum</i> (Simpson & Watling, 2011)	MS	2600-3270	4
Family Gorgoniidae	*Leptogorgia virgulata (Lamarck, 1815)^b	NY-NC(SH)	2-59	1,30,31
Family Isididae	<i>Acanella arbuscula</i> (Johnson, 1862)	RS,NE(C,SL)	411-3236	1,3,4,6,10,11, 12,15,16,20, 21,22,23,32, 33
	*Acanella eburnea (Pourtales, 1868)	Hudson Canyon	1946	1
	<i>Jasonisis</i> sp.	MS,NE(C)	700-3000 (approx.)	4
	<i>Keratoisis grayi</i> Wright, 1869	NE(C,SL),BS	320-3236	19,21,22
	<i>Lepidisis caryophyllia</i> Verrill, 1883	NE	646-3316	4,8,21,22
Family Nephtheidae	†<i>Drifa glomerata</i> Verrill, 1869 (= <i>Capnella glomerata</i> (Verrill, 1869))	Lydonia Canyon	200-561	16,21,22,23
	†<i>Duva florida</i> (Rathke, 1806) (= <i>Capnella florida</i> ; <i>Alcyonium multiflorum</i>)	Canada-VA(C,SL)	350-1500	6,11,12,15,16, 19,20,21
	<i>Gersemia fruticosa</i> (Sars, 1860)	NE(C,SL)	600-3100	15 21,23
	<i>Gersemia rubiformis</i> (Ehrenberg, 1834)	MA(SH,GM), VA(SH)	48-227	21,22
Family Paragorgiidae	<i>Paragorgia arborea</i> (Linnaeus, 1758)	NE(C),GM	300-1100	4,6,8,15,16, 20,21,22,23, 34,35
Family Plexauridae	*Paramuricea biscaya Grasshoff, 1977	BS,RS,NE(C)	1218-2155	22,36
	<i>Paramuricea grandis</i> Verrill, 1883	GM.NE(C)	400-2200	3,10,15,16, 21,22,23,27, 36
	*Paramuricea cf. grayi (Johnson, 1861)	GM	220-1353	36
	<i>Paramuricea placomus</i> (Linnaeus, 1758)	NE(C),GM	220-517	6,21,22,24, 25,36
	<i>Swiftia casta</i> (Verrill, 1883)	GB(SL)	1836-2233	8,21,22
	*Swiftia pallida Madsen, 1970	BS,NE(C)	580-1794	1,4,33
Family Primnoidae	*Calyptrophora antilla Bayer, 2001	BS	1684	1,22,37
	*Convexella cf. jungerseni (Madsen, 1944)	MS	2592-3271	4
	<i>Narella laxa</i> Deichmann, 1936	GB(SL)	3186	1,21,22,38
	<i>Paranarella watlingi</i> Cairns, 2007	MS,RS	3855	4,22,37

Higher Taxon	Species	Distribution	Depth range (m)	References
Family Primnoidae, cont.	<i>Parastenella atlantica</i> Cairns, 2007	RS	1984	22,37
	<i>Primnoa resedaeformis</i> (Gunnerus, 1763)	NE(C),GM	91-548	4,6,8,10,15,16,20,21,22,23,24,25,27,34,39,40
	<i>Thouarella (Euthouarella) grasshoffi</i> Cairns, 2006	NE(C),BS	720-1760	4,21,22,37,41
Order Pennatulacea				
Family Anthoptilidae	<i>Anthoptilum grandiflorum</i> (Verrill, 1879) (= <i>Benthoptilum sertum</i> Verrill 1885 (in part))	NE(SL)	559-3316	1,15,23
	<i>Anthoptilum murrayi</i> K�lliker, 1880	NE(SL)	314, 1538 - 2387	1
Family Funiculinidae	* <i>Funiculina armata</i> Verrill, 1879	Canada-NJ(SL)	1538-2601	1
Family Halipteridae	† <i>Halipteris finmarchica</i> (Sars, 1851) (= <i>Balticina finmarchica</i>)	Canada-MA(SL)	229-2249	1,15,20,23
Family Kophobelemnidae	† <i>Kophobelemnon stelliferum</i> (M�ller, 1776) (= <i>Kophobelemnon scabrum</i> ; <i>Kophobelemnon tenue</i>)	NE(SL)	393-2199, 2491-4332	1,4,10,16,23,32
Family Pennatulidae	<i>Pennatula aculeata</i> Danielssen, 1860 (= <i>Pennatula borealis</i> M. Sars, 1846)	NE(SH,GM,SL),BS	119-3316	1,10,15,16,19,23
	<i>Pennatula grandis</i> Ehrenberg, 1834	NE(SL)	1850-2140	1,10
Family Protoptilidae	<i>Distichoptilum gracile</i> Verrill, 1882	NE(SL,C)	600-2844	1,4,10,11,12,16,23
	<i>Protoptilum carpenteri</i> K�lliker, 1872 (= <i>Protoptilum aberrans</i> K�lliker 1880)	NE(SL)	1334-2359	1
Family Scleroptilidae	† <i>Scleroptilum grandiflorum</i> K�lliker, 1880 (= <i>Scleroptilum gracile</i> Verrill 1884)	NE(SL)	1502-4332	1
Family Umbellulidae (= Ombellulidae)	† <i>Umbellula guentheri</i> K�lliker, 1880 (= <i>Umbellula guntheri</i>)	NJ-VA(SL)	2683-3740	1
	<i>Umbellula lindahli</i> K�lliker, 1875	NE(SL)	549-3338	1
Family Virgulariidae	<i>Stylatula elegans</i> (Danielssen, 1860)	NY-NC(SH,C,SL)	20-440	1,10,13,14,16,23
	* <i>Virgularia</i> sp.	NJ-DE(SH)	65-91, 360-410, 942	1

Notes

- Specimen previously identified as *Cirrhopathes* sp. and included as such in Packer et al. 2007, was been subsequently identified as *Stichopathes* sp. (likely *Stichopathes gravieri* Molodtsova, 2006 – D. Opresko, pers. comm.).
- Leptogorgia virgulata* is primarily a shallow-water species with nearly all specimens recorded at depths less than 50 m.

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