

Identifying ocean-related literature using the UN Second World Ocean Assessment report - Supplementary Material

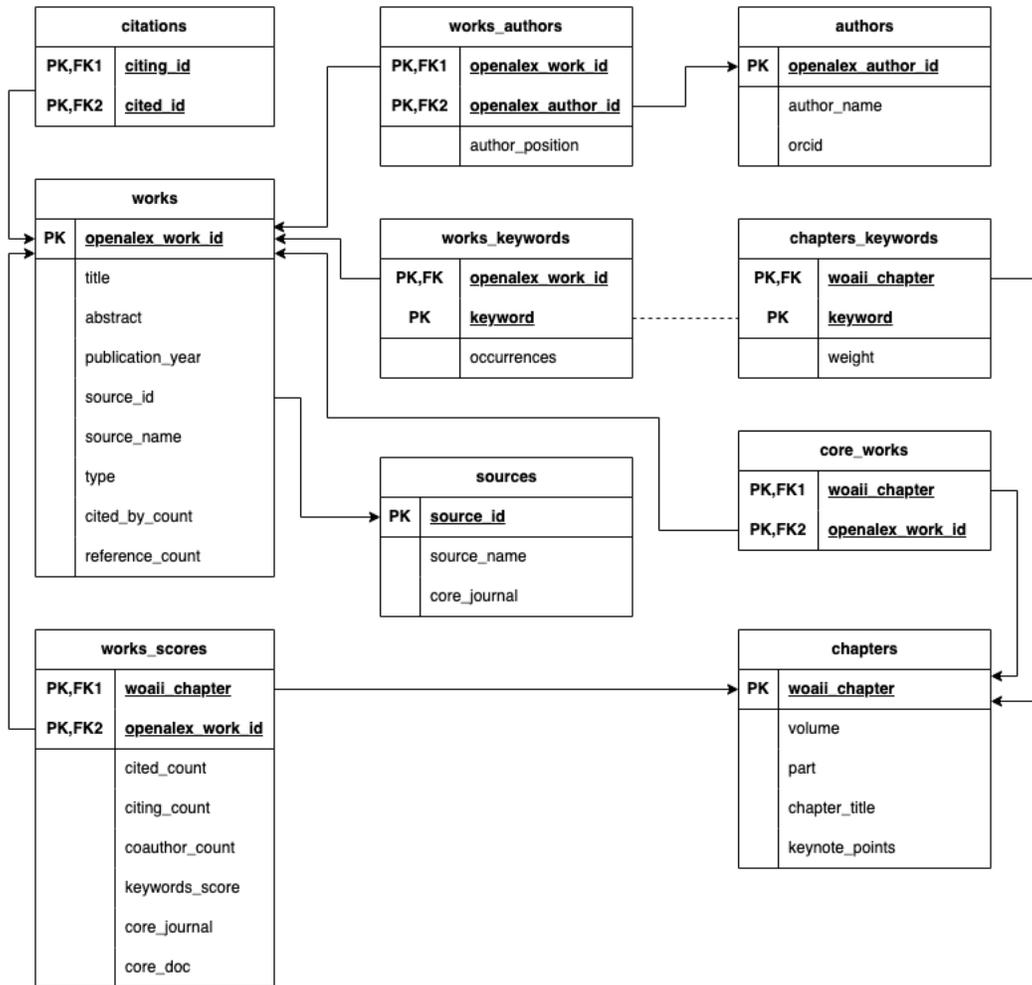


Figure 1. Visual of the Entity Relationship Diagram (ERD) with relevant keys, data, tables, and connections.

Table 1. Summary of descriptive data by chapters, including the number of documented cited, the number of documents with DOIs, the number of documents in OpenAlex, and the top cited sources.

Chapter	Chapter Title	N Refs	N DOIs	N OpenAlex IDs	Source Name
3	Scientific understanding of the ocean	84	62	59	Frontiers In Marine Science (13), Geophysical Research Letters (3), Deep-Sea Research. Part 2. Topical Studies In Oceanography/Deep Sea Research. Part II, Topical Studies In Oceanography (2), Journal Of Geophysical Research. Oceans (2), Nature Communications (2), Nature Geoscience (2), PLOS ONE (2), Science (2), Science Of The Total Environment (2)
4	Drivers	46	27	26	Fish And Fisheries (3), Frontiers In Marine Science (3), Marine Policy (3)
5	Trends in the physical and chemical state of the ocean	149	143	139	Geophysical Research Letters (15), Journal Of Climate (13), Science (10)
6A	Plankton	218	209	206	Frontiers In Marine Science (11), Marine Ecology. Progress Series (11), Nature (10), Science (10)
6B	Marine invertebrates	87	60	58	Marine Pollution Bulletin (4), Scientific Reports (4), Frontiers In Marine Science (3), Marine Ecology. Progress Series (3)
6C	Fishes	72	40	39	Global Change Biology (3), ICES Journal Of Marine Science (3), Deep-Sea Research. Part 1. Oceanographic Research Papers/Deep Sea Research. Part I, Oceanographic Research Papers (2), Marine Policy (2), Marine Pollution Bulletin (2), PLOS ONE (2), Proceedings Of The National Academy Of Sciences Of The United States Of America (2), Science (2)
6D	Marine mammals	73	64	63	Marine Policy (4), Ecology And Evolution (3), Frontiers In Marine Science (3), Proceedings Of The National Academy Of Sciences Of The United States Of America (3), Royal Society Open Science (3), Scientific Reports (3)
6E	Marine reptiles	92	63	63	Biological Conservation (7), Endangered Species Research (6), Frontiers In Marine Science (4), Zootaxa (4)

6F	Seabirds	60	49	48	Proceedings Of The National Academy Of Sciences Of The United States Of America (4), Conservation Biology (3), Frontiers In Marine Science (3), Journal Of Applied Ecology (3)
6G	Marine plants and macroalgae	138	124	120	IUCN Red List Of Threatened Species (55), Aquatic Botany (3), Botanica Marina (3), Coastal Research Library (3), Elsevier Ebooks (3), Marine Pollution Bulletin (3), Nature Geoscience (3)
7A	Intertidal zone	17	14	13	Ambio (2), Journal Of Experimental Marine Biology And Ecology (2), CRC Press Ebooks (1), Carbon & Climate Law Review (1), Communications In Statistics. Theory And Methods/Communications In Statistics, Theory And Methods (1), Frontiers In Ecology And The Environment (1), Global Change Biology (1), MARE Publication Series (1), Marine Pollution Bulletin (1), Ocean & Coastal Management (1), Renewable & Sustainable Energy Reviews (1), Science (1)
7B	Biogenic reefs and sandy, muddy and rocky shore substrates	118	107	106	Ocean & Coastal Management (6), Scientific Reports (6), Elsevier Ebooks (5), Science Of The Total Environment (5)
7C	Atoll and island lagoons	115	108	108	Coral Reefs (5), Geomorphology (5), Global And Planetary Change (5)
7D	Tropical and subtropical coral reefs	123	100	98	Coral Reefs (8), Frontiers In Marine Science (7), Scientific Reports (6)
7E	Cold water corals	89	85	83	Deep-Sea Research. Part 1. Oceanographic Research Papers/Deep Sea Research. Part I, Oceanographic Research Papers (9), Frontiers In Marine Science (8), Limnology And Oceanography/The L & O On Cd-Rom (5), Scientific Reports (5)
7F	Estuaries and deltas	96	90	89	Estuarine, Coastal And Shelf Science (8), Elsevier Ebooks (7), Proceedings Of The National Academy Of Sciences Of The United States Of America (4)

7G	Seagrass meadows	44	36	36	PLOS ONE (3), Ambio (2), Bioscience/Bioscience (2), Limnology And Oceanography/The L & O On Cd-Rom (2), Marine Pollution Bulletin (2), Nature Communications (2), Proceedings Of The National Academy Of Sciences Of The United States Of America (2), Science (2)
7H	Mangroves	119	109	109	Estuarine, Coastal And Shelf Science (11), Remote Sensing (6), Global Change Biology (5), Ocean & Coastal Management (5)
7I	Salt marshes	74	67	65	Ecological Engineering (6), Estuaries And Coasts (4), Estuarine, Coastal And Shelf Science (4), PLOS ONE (4)
7J	Continental slopes and submarine canyons	225	204	202	Progress In Oceanography/Progress In Oceanography (28), Frontiers In Marine Science (17), Deep-Sea Research. Part 1. Oceanographic Research Papers/Deep Sea Research. Part I, Oceanographic Research Papers (15)
7K	High-latitude ice	96	80	78	Polar Biology (8), Deep-Sea Research. Part 2. Topical Studies In Oceanography/Deep Sea Research. Part II, Topical Studies In Oceanography (4), Biology Letters (3), Nature Communications (3), PLOS ONE (3), Proceedings Of The National Academy Of Sciences Of The United States Of America (3), Scientific Reports (3)
7L	Seamounts and pinnacles	104	80	79	Deep-Sea Research. Part 2. Topical Studies In Oceanography/Deep Sea Research. Part II, Topical Studies In Oceanography (10), Frontiers In Marine Science (9), Deep-Sea Research. Part 1. Oceanographic Research Papers/Deep Sea Research. Part I, Oceanographic Research Papers (8)
7M	Abyssal plains	136	119	116	Nature (6), Proceedings Of The National Academy Of Sciences Of The United States Of America (6), Deep-Sea Research. Part 2. Topical Studies In Oceanography/Deep Sea Research. Part II, Topical Studies In Oceanography (5), PLOS ONE (5),

					Progress In Oceanography/Progress In Oceanography (5), Science (5)
7N	Open ocean	96	86	82	Frontiers In Marine Science (11), Science (7), Nature Climate Change (6), Nature Communications (6)
7O	Ridges, plateaux and trenches	78	61	61	Deep-Sea Research. Part 1. Oceanographic Research Papers/Deep Sea Research. Part I, Oceanographic Research Papers (11), Deep-Sea Research. Part 2. Topical Studies In Oceanography/Deep Sea Research. Part II, Topical Studies In Oceanography (8), Frontiers In Marine Science (6)
7P	Hydrothermal vents and cold seeps	116	93	93	Frontiers In Marine Science (8), PLOS ONE (6), Deep-Sea Research. Part 1. Oceanographic Research Papers/Deep Sea Research. Part I, Oceanographic Research Papers (4), Marine Policy (4), Science (4), Scientific Reports (4)
7Q	Sargasso Sea	64	35	35	Science (3), Eos (2), Global Change Biology (2), Science Advances (2)
8A	Coastal communities and maritime industries	97	42	42	Journal Of Coastal Research (3), Elsevier Ebooks (2), PLOS ONE (2), Springer Ebooks (2), Water Research (2)
8B	Human health as affected by the ocean	126	101	100	Marine Pollution Bulletin (6), Marine Drugs (4), Toxins (4)
9	Pressures from changes in climate and atmosphere	118	102	101	Nature Climate Change (13), Nature (7), Science (6)
10	Changes in nutrient inputs to the marine environment	145	121	120	Continental Shelf Research (7), Global Biogeochemical Cycles (6), Science (6)
11	Changes in liquid and atmospheric inputs to the marine environment from land (including through groundwater), ships and offshore installations	211	154	153	Marine Pollution Bulletin (14), Chemosphere (12), Environmental Science & Technology (10)
12	Changes in inputs and distribution of solid waste, other than dredged material, in the marine environment	129	91	91	Marine Pollution Bulletin (25), Environmental Pollution (14), Frontiers In Marine Science (5), Scientific Reports (5)
13	Changes in erosion and sedimentation	91	74	72	Ocean & Coastal Management (10), Journal Of Coastal Research (5),

					Geomorphology (4), Scientific Reports (4)
14	Changes in coastal and marine infrastructure	42	22	22	Ocean & Coastal Management (3), Marine Policy (2), Applied Geography (1), Australian Journal Of Maritime And Ocean Affairs (1), Brill Nijhoff Ebooks (1), Cambridge University Press Ebooks (1), Climate Change Management (1), Earth And Planetary Science Letters (1), Elsevier Ebooks (1), Environmental Science & Policy (1), Frontiers In Ecology And The Environment (1), International And Comparative Law Quarterly (1), International Journal Of Marine & Coastal Law/International Journal Of Marine And Coastal Law (1), Journal Of Coastal Conservation (1), Marine Geology (1), Ocean Engineering (1), Photoniques (1), Proceedings Of The National Academy Of Sciences Of The United States Of America (1), Renewable & Sustainable Energy Reviews (1), Scientific Reports (1)
15	Changes in capture fisheries and harvesting of wild marine invertebrates Changes in capture fisheries and harvesting of wild marine invertebrates	106	63	62	Marine Policy (11), Science Advances (7), Proceedings Of The National Academy Of Sciences Of The United States Of America (5)
16	Changes in aquaculture	32	15	15	PLOS ONE (2), Proceedings Of The National Academy Of Sciences Of The United States Of America (2), Reviews In Aquaculture (2)
17	Changes in seaweed harvesting and use	21	9	9	Botanica Marina (2), Algae (1), Aquaculture (1), European Journal Of Phycology (1), Frontiers In Marine Science (1), Journal Of Cleaner Production (1), Phycologia (1), World Bank, Washington, DC Ebooks (1)
18	Changes in seabed mining	57	41	40	Marine Policy (7), Springer Ebooks (4), Frontiers In Marine Science (2), Marine Environmental Research (2), Ore Geology Reviews (2), PLOS ONE (2), Science (2), Scientific Reports (2)
19	Changes in hydrocarbon exploration and extraction	50	10	10	All Days (1), Energy Procedia (1), Environmental History (1), Environmental Management (1), Environmental Monitoring And Assessment (1), Environmental

					Sciences Europe (1), Limnology And Oceanography, Methods (1), Ocean & Coastal Management (1), PLOS ONE (1)
20	Trends in inputs of anthropogenic noise into the marine environment	125	94	94	The Journal Of The Acoustical Society Of America/The Journal Of The Acoustical Society Of America (18), PLOS ONE (7), Scientific Reports (6)
21	Developments in renewable energy sources	90	59	59	Renewable & Sustainable Energy Reviews (10), Journal Of Marine Science And Engineering (4), Biological Conservation (2), Cambridge University Press Ebooks (2), Elsevier Ebooks (2), Energy (2), IOP Conference Series. Earth And Environmental Science (2), Springer Ebooks (2)
22	Invasive species	112	76	74	Biological Invasions (9), Marine Pollution Bulletin (6), Aquatic Invasions (4), Management Of Biological Invasions (4), Springer Ebooks (4)
23	Developments in the exploration for and use of marine genetic resources	72	61	60	Marine Drugs (5), Natural Product Reports (3), Science (3)
24	Marine hydrates – a potentially emerging issue	51	37	37	Marine And Petroleum Geology (6), Philosophical Transactions - Royal Society. Mathematical, Physical And Engineering Sciences/Philosophical Transactions - Royal Society. Mathematical, Physical And Engineering Sciences (3), Proceedings Of The National Academy Of Sciences Of The United States Of America (3), Science (3)
25	Cumulative effects	133	116	115	Ocean & Coastal Management (8), Science Of The Total Environment (7), ICES Journal Of Marine Science (6), Marine Ecology. Progress Series (6)
26	Developments in marine spatial planning	60	32	31	Marine Policy (5), Ocean & Coastal Management (5), Impact Assessment And Project Appraisal (2), Journal Of Environmental Management (2), Springer Ebooks (2)
27	Developments in management approaches	81	60	59	ICES Journal Of Marine Science (6), Marine Policy (5), Frontiers In

					Marine Science (4), Ocean & Coastal Management (4)
28	Developments in the understanding of overall benefits from the ocean to humans	60	41	40	International Journal Of Marine Energy (3), Marine Policy (3), Ecological Economics (2), Ocean & Coastal Management (2), Science (2), Science Advances (2), Springer Ebooks (2)

Table 2. Summary data about the number of references linked to the works cited at the end of each chapter of the WOAI as well as the number of citations.

Chapter	Total Refs	Total Cits	Max Refs	Max Cits	Mean Refs	Mean Cits	Median Refs	Median Cits	SD Refs	SD Cits
3	4024	8370	381	1173	68,2034	141,8644	51	55	65,5909	240,1126
4	984	4903	111	1715	37,8462	188,5769	37	56	30,5099	343,0671
5	7084	85819	259	12275	50,964	617,4029	38	179	45,8475	1575,4314
6A	13594	75291	392	4874	65,6715	363,7246	52	155	59,0887	657,0158
6B	2834	7281	258	950	48,8621	125,5345	42	42	42,9481	198,7155
6C	1998	8890	169	2243	49,95	222,25	40	75,5	40,0858	416,7072
6D	3055	5866	156	1106	48,4921	93,1111	39	60	37,3648	152,1707
6E	3422	4729	639	836	54,3175	75,0635	45	26	83,1122	132,6961
6F	2752	17203	293	8149	57,3333	358,3958	37	122,5	53,7248	1171,5822
6G	3667	14725	282	3782	30,3058	121,6942	6	6	44,9023	429,8958
7A	361	4827	81	2320	25,7857	344,7857	19	151	25,598	628,2315
7B	6701	13643	541	1721	62,6262	127,5047	53	38	62,3922	269,3194
7C	5322	11683	210	2626	49,2778	108,1759	44,5	35,5	32,6164	295,3632
7D	6459	27648	251	4248	63,9505	273,7426	53	98	46,4098	581,8657
7E	5918	9820	250	978	70,4524	116,9048	58,5	49	49,7183	150,6167
7F	6653	23288	527	2430	73,9222	258,7556	53,5	91,5	72,963	521,3459
7G	2586	24785	297	8496	66,3077	635,5128	53	117	51,7881	1570,391
7H	5905	40592	222	7416	53,1982	365,6937	48	75	38,5809	975,2588
7I	3266	17338	185	3782	49,4848	262,697	46	106,5	33,8068	520,6348
7J	17014	24841	1160	1716	81,019	118,2905	62	47,5	102,0784	218,3053
7K	3991	5755	293	725	51,1667	73,7821	44	38,5	42,8787	118,4498
7L	5305	9435	337	1372	57,043	101,4516	47	46	50,8343	178,1059
7M	7618	22333	242	2066	61,935	181,5691	52	107	47,3521	283,7491
7N	5884	23980	237	1252	64,6593	263,5165	51	133	47,182	303,8607

7O	4035	8434	237	2042	60,2239	125,8806	50	50	48,543	257,9695
7P	8130	14447	622	1763	82,1212	145,9293	57	63	83,4697	250,1373
7Q	1979	11419	196	3317	54,9722	317,1944	39	87	49,9322	614,4821
8A	1632	5665	177	1715	37,9535	131,7442	39	45	33,2909	302,4814
8B	6903	22768	1040	1797	68,3465	225,4257	44	105	112,6309	335,6806
9	6788	48251	317	6049	63,4393	450,9439	48	158	54,4139	924,7393
10	6744	58517	201	5216	55,2787	479,6475	43	133	37,4193	905,2066
11	8752	28823	248	2755	57,2026	188,3856	44	69	43,1148	394,3943
12	5131	62015	225	9765	50,802	614,0099	46	173	37,6869	1458,1714
13	3554	10829	220	823	46,1558	140,6364	40	66	37,9751	189,2297
14	671	14019	87	12275	29,1739	609,5217	32	61	22,9419	2544,8748
15	2642	23927	163	12275	37,7429	341,8143	33,5	86,5	29,9413	1462,3608
16	756	2648	170	537	50,4	176,5333	35	99	37,5229	168,3792
17	639	1571	121	462	71	174,5556	73	72	38,878	173,9052
18	2719	6260	195	694	56,6458	130,4167	42,5	72	54,3309	160,4931
19	235	721	53	283	23,5	72,1	27	45	20,0845	82,491
20	3183	13717	284	1227	32,8144	141,4124	24	67	37,9995	212,2675
21	3116	9171	333	1137	52,8136	155,4407	36	52	60,5841	234,6962
22	3790	15906	277	2907	48,5897	203,9231	35,5	62,5	47,2398	416,1215
23	5290	17372	763	2344	85,3226	280,1935	52,5	70	132,3331	537,3542
24	1940	25555	326	8496	51,0526	672,5	31,5	234	67,2152	1763,3388
25	6411	21929	258	5310	54,7949	187,4274	47	56	35,6855	580,7348
26	851	2734	129	598	27,4516	88,1935	23	27	26,6018	142,3551
27	2708	12374	239	2982	42,9841	196,4127	32	72	43,364	442,8514
28	2174	8492	258	1749	49,4091	193	39,5	69	54,8678	341,7165

Table 3. Summary of the inclusion of full dataset works back to chapters after processing for ocean relationship criteria according to the combinations that performed better than 3 performance score thresholds (90%, 75%, and 60%). Indicated are the initial number of OpenAlex refs in the core set, the total number of works matched in the full set, the N and % of works matched at 90%, 75%, and 60%, as well as works excluded matching the criteria combinations below 60%.

Chapter	OA Refs	Total N of works matched	N works (90%)	N works (75%)	N works (60%)	% works (90%)	% works (75%)	% works (60%)	% works excluded
3	59	19891	9258	15801	17537	46,54	79,44	88,17	11,83
4	26	6917	3106	4980	5690	44,9	72	82,26	17,74
5	139	70442	20540	42151	62881	29,16	59,84	89,27	10,73
6A	207	93167	29245	57432	84032	31,39	61,64	90,2	9,8
6B	58	58903	20559	39169	57045	34,9	66,5	96,85	3,15
6C	40	33320	10171	20445	31746	30,53	61,36	95,28	4,72
6D	63	18122	7229	12879	16621	39,89	71,07	91,72	8,28
6E	63	10260	3648	6242	8580	35,56	60,84	83,63	16,37
6F	48	114821	30995	65590	110432	26,99	57,12	96,18	3,82
6G	121	41978	12757	26002	39955	30,39	61,94	95,18	4,82
7A	14	11254	3712	7129	9929	32,98	63,35	88,23	11,77
7B	107	24291	9599	16891	21259	39,52	69,54	87,52	12,48
7C	108	50645	16705	32094	47487	32,98	63,37	93,76	6,24
7D	101	43770	15012	28428	39235	34,3	64,95	89,64	10,36
7E	84	39157	16278	27781	36903	41,57	70,95	94,24	5,76
7F	90	43006	14139	27760	38875	32,88	64,55	90,39	9,61
7G	39	20129	6754	13562	18303	33,55	67,38	90,93	9,07
7H	111	31932	8164	17810	28356	25,57	55,77	88,8	11,2
7I	66	21671	6293	13524	19661	29,04	62,41	90,72	9,28
7J	210	42329	17895	29129	36412	42,28	68,82	86,02	13,98
7K	78	25347	9062	17013	23487	35,75	67,12	92,66	7,34
7L	93	15130	7276	11398	13644	48,09	75,33	90,18	9,82
7M	123	33104	12796	22268	28890	38,65	67,27	87,27	12,73
7N	91	35880	16256	27947	32428	45,31	77,89	90,38	9,62
7O	67	22499	8912	14560	20163	39,61	64,71	89,62	10,38
7P	99	25194	11104	18627	22099	44,07	73,93	87,72	12,28

7Q	36	14038	6136	10301	12666	43,71	73,38	90,23	9,77
8A	43	51216	17718	33048	48545	34,59	64,53	94,78	5,22
8B	101	70069	12202	29538	61320	17,41	42,16	87,51	12,49
9	107	73466	21654	44283	66298	29,47	60,28	90,24	9,76
10	122	55276	14957	31597	46942	27,06	57,16	84,92	15,08
11	153	40166	7578	15593	30657	18,87	38,82	76,33	23,67
12	101	45440	8434	18897	36124	18,56	41,59	79,5	20,5
13	77	89746	26517	54607	86897	29,55	60,85	96,83	3,17
14	23	16168	5473	10259	15531	33,85	63,45	96,06	3,94
15	70	29800	11934	20893	26815	40,05	70,11	89,98	10,02
16	15	47441	16467	31112	46333	34,71	65,58	97,66	2,34
17	9	13906	3696	8446	13485	26,58	60,74	96,97	3,03
18	48	18161	6189	10584	16044	34,08	58,28	88,34	11,66
19	10	20323	6005	11082	19781	29,55	54,53	97,33	2,67
20	97	14246	4405	8453	12110	30,92	59,34	85,01	14,99
21	59	36548	10173	18745	31980	27,83	51,29	87,5	12,5
22	78	44624	12176	26010	41967	27,29	58,29	94,05	5,95
23	62	14601	2705	6090	10706	18,53	41,71	73,32	26,68
24	38	15833	2698	5740	10378	17,04	36,25	65,55	34,45
25	117	27790	12391	21169	25100	44,59	76,17	90,32	9,68
26	31	5838	2500	4034	4954	42,82	69,1	84,86	15,14
27	63	23424	8071	14217	19555	34,46	60,69	83,48	16,52
28	44	21590	5411	11432	19125	25,06	52,95	88,58	11,42

Each distinct keyword/key phrase was assigned an initial weight of 1, which was then divided by the number of chapters to which it was assigned. Keyword weights were then normalized on a per-chapter basis, by dividing them over the sum of all weights for keywords in the chapter. The text of the works' title and abstract were then stemmed and tokenized into n-grams for $n = [1-4]$, and the resulting tokens were compared to the stemmed forms of the keywords/key phrases. Keyword scores were generated for each chapter/work pairing by adding the weights of the chapter-linked keywords present in each work's text, yielding a score between 0 and 1 for each pair. Table 4 shows the final list of keywords in descending order by chapter (excluding Chapter 1- Summary and Chapter 2- Introduction).

Table 4. Final list of keywords.

	Chapter	Keyword
1	General	ocean
2	General	sea
3	General	marine
4	General	coast
5	5	sea currents
6	5	ocean currents
7	5	salinity
8	5	sea ice
9	5	sea level
10	5	thermal expansion
11	9	deoxygenation
12	9	el niño
13	9	erosion
14	9	flooding
15	9	marine heatwaves
16	9	ocean acidification
17	9	sea level
18	10	eutrophication
19	10	manure
20	10	river runoff
21	11	hydrocarbons
22	11	oil spills
23	11	persistent organic pollutants
24	11	personal care products
25	11	pharmaceuticals
26	12	dumping
27	12	entanglement
28	12	invasive species
29	12	marine debris
30	12	marine litter

31	12	microplastics
32	12	waste management
33	13	cliffs
34	13	coastal
35	13	coasts
36	13	erosion
37	13	habitat destruction
38	13	coastline
39	13	sandy beaches
40	13	sea level
41	13	shoreline
42	13	wave action
43	13	weathering
44	14	blue infrastructure
45	14	coastal infrastructure
46	14	land reclamation
47	14	marine infrastructure
48	14	natural systems
49	14	offshore
50	14	urban development
51	15	by-catch
52	15	fisheries
53	15	fishery-dependent
54	15	fishing gear
55	15	subsistence fishery
56	16	aquaculture
57	16	fish
58	16	seafood
59	17	aquaculture
60	17	bromoforms
61	17	carrageenan
62	17	kelp
63	17	phycocolloids
64	17	seaweed
65	17	typhoons
66	18	deepwater
67	18	mineral deposits
68	18	dredging
69	18	seabed
70	18	mining

71	18	mineral resources
72	18	seabed
73	19	deepwater
74	19	hydrocarbons
75	19	offshore
76	19	oil and gas sector
77	19	oil platforms
78	19	gas platforms
79	19	renewable energy
80	19	spars
81	20	anthropogenic noise
82	20	seismic exploration
83	20	sonar
84	20	sound pollution
85	21	floating platforms
86	21	marine renewable energy
87	21	ocean current
88	21	offshore
89	21	renewable energy
90	21	tidal energy
91	21	wave
92	21	wind power
93	22	aquaculture
94	22	ballast water
95	22	biodiversity
96	22	biofouling
97	22	biological invasions
98	22	biosecurity
99	22	invasion vectors
100	22	invasive species
101	22	non-indigenous species
102	23	biotechnology
103	23	marine genetic resources
104	24	continental slopes
105	24	marine hydrates
106	24	methane hydrates
107	25	biodiversity loss
108	25	cumulative effects
109	25	cumulative effects assessments
110	25	ecosystem-based management

111	26	marine spatial planning
112	26	msp
113	27	ecosystem approach
114	27	marine resources
115	27	ocean management
116	27	sustainable development goals
117	28	ecosystem services
118	28	oxygen production
119	6A	acidification
120	6A	biodiversity
121	6A	diatoms
122	6A	food webs
123	6A	photosynthesis
124	6A	plankton
125	6A	trophic levels
126	6B	acidification
127	6B	benthic
128	6B	biodiversity
129	6B	invasive species
130	6B	invertebrate
131	6C	biodiversity
132	6C	bony fishes
133	6C	chimaeras
134	6C	coelacanths
135	6C	conservation status
136	6C	elasmobranchs
137	6D	baleen
138	6D	by-catch
139	6D	dolphins
140	6D	hunting
141	6D	marine mammals
142	6D	otters
143	6D	sirenians
144	6D	whales
145	6E	by-catch
146	6E	conservation status
147	6E	iguana
148	6E	marine reptiles
149	6E	sea snakes
150	6E	turtles

151	6F	alien species
152	6F	ecosystem services
153	6F	ecosystems
154	6F	fishing
155	6F	invasive species
156	6F	seabirds
157	6G	algae
158	6G	macroalgae
159	6G	mangroves
160	6G	seagrass
161	6G	seaweed
162	7A	intertidal
163	7B	biogenic reefs
164	7B	rocky shores
165	7B	muddy shores
166	7B	sandy shores
167	7C	atolls
168	7C	bleaching
169	7C	coral
170	7C	islands
171	7C	lagoons
172	7D	coral
173	7D	reefs
174	7D	crown-of-thorns starfish
175	7E	cold water coral
176	7E	cold water sponge
177	7E	continental margins
178	7E	coral
179	7E	mid-ocean ridges
180	7E	seamounts
181	7E	sponge
182	7E	trawling
183	7F	dams
184	7F	deltas
185	7F	estuaries
186	7G	blue carbon
187	7G	blue carbon sequestration
188	7G	seagrass meadows
189	7H	carbon sinks
190	7H	mangroves

191	7I	blue carbon
192	7I	brackish water
193	7I	carbon sinks
194	7I	mudflats
195	7I	salt marshes
196	7I	waterlogging
197	7J	continental shelf
198	7J	continental slopes
199	7J	submarine canyons
200	7K	antarctic
201	7K	arctic
202	7K	high latitude ice
203	7K	ice shelves
204	7K	ice-dependent species
205	7K	sea ice
206	7L	pinnacles
207	7L	seamounts
208	7M	abyss
209	7M	abyssal plains
210	7M	deep sea
211	7N	open ocean
212	7O	banks
213	7O	plateaux
214	7O	ridge
215	7O	trenches
216	7P	cold seeps
217	7P	hydrothermal vents
218	7Q	bermuda
219	7Q	sargasso sea
220	7Q	sargassum
221	8A	shipping
222	8A	tourism
223	8A	fisheries
224	8A	aquaculture
225	8A	seabed
226	8A	offshore
227	8B	algal blooms
228	8B	microplastics
229	8B	pollutants
230	8B	seafood

231	8B	tsunamis
232	8B	seawater