Data Repository – PART I

Detailed account of Systematic Mapping of peer reviewed literature

Systematic Mapping

To conduct a systematic assessment of ocean sector interactions in the peer review literature, we employed a systematic mapping methodology. Systematic mapping provides a rapid assessment of the breadth of a research area to provide a detailed and structured synthesis of the reviewed literature (James et al. 2016, Gough et al. 2017). To define the scope of the field and to identify relevant articles for in-depth analysis a step-wise was employed; outlined below.

Step 1: Defining benchmark articles

The first step consists of defining a collection of benchmark articles that capture the field of interest of the study. In our case, benchmark articles served the primary purpose of exemplifying the type of treatment of sector interactions we were interested in. This was essential, as a majority of literature on ocean sectors consider only one sector, without thorough examination of its interactions with others. Benchmark articles also help define search words and form a starting point for developing inclusion/exclusion criteria. In systematic mapping inclusion/exclusion criteria can be developed during the process (Gough et al. 2017), however a starting point is needed to narrow the focus of the search.

⇨ ***Criteria for selection of benchmarking articles in this study***:

- Must contain discussion of explicit cross-sectoral interaction
- Should contain 'ocean/sea/marine'
- Must include both large-scale competing claims (such as areas beyond national jurisdiction) AND marine spatial planning

Benchmark articles selected for this study:

Merrie, A., D. C. Dunn, M. Metian, A. M. Boustany, Y. Takei, A. Oude Elferink, Y. Ota, V. Christensen, P. N. Halpin, and H. Österblom. 2014. An ocean of surprises - trends in human use, unexpected dynamics and governance challenges in areas beyond national jurisdiction. Global Environmental Change 27(1):19–31.

White, C., Halpern, B.S. and Kappel, C.V., 2012. Ecosystem service tradeoff analysis reveals the value of marine spatial planning for multiple ocean uses. *Proceedings of the National Academy of Sciences*, *109*(12), pp.4696-4701.

Lacroix, D., and S. Pioch. 2011. The multi-use in wind farm projects: more conflicts or a win-win opportunity? Aquatic Living Resources 24(2):129–135.

Ramirez-Llodra, E., P. A. Tyler, M. C. Baker, O. A. Bergstad, M. R. Clark, E. Escobar, L. A. Levin, L. Menot, A. A. Rowden, C. R. Smith, and C. L. van Dover. 2011. Man and the last great wilderness: Human impact on the deep sea. PLoS ONE 6(8).

Levin, N., S. Kark, and R. Danovaro. 2017. Adding the Third Dimension to Marine Conservation. Conservation Letters.

Coffen-Smout, S., and G. J. Herbert. 2000. Submarine cables: A challenge for ocean management. Marine Policy 24(6):441–448.

Douvere, F., and C. N. Ehler. 2009. New perspectives on sea use management: Initial findings from European experience with marine spatial planning.

Mazor, T., H. P. Possingham, D. Edelist, E. Brokovich, and S. Kark. 2014. The Crowded Sea: Incorporating Multiple Marine Activities in Conservation Plans Can Significantly Alter Spatial Priorities. PLoS ONE 9(8):e104489.

Wang, W., H. Liu, Y. Li, and J. Su. 2014. Development and management of land reclamation in China. Ocean and Coastal Management 102(PB):415–425.

Pérez-Collazo, C., D. Greaves, and G. Iglesias. 2015. A review of combined wave and offshore wind energy. Renewable and Sustainable Energy Reviews 42:141–153.

Jouffray, J.B., Blasiak, R., Norström, A.V., Österblom, H. and Nyström, M., 2020. The Blue Acceleration: The Trajectory of Human Expansion into the Ocean. One Earth, 2(1), pp.43-54. (*a pre-print of this paper was used*)

Step 2: Determining search words

The first iteration of search terms was derived from the ocean uses (claims) reviewed by Jouffray et al. (2020), and complemented by using the titles and abstracts of the other benchmark articles. During the process of determining search words, a number of issues appeared which required decisions. For transparency, these are listed in Table 2.

Table 2. List of decisions made during the identification of search words, and use of search strategy.

Decision	Motivation
Not using Google Scholar for search terms	Although Google Scholar is a great tool for article retrieval (i.e. it covers many articles) it is not as well suited for systematic searches. The primary reason for not using it in this study is due to the limitations on search strings. Since this is a very broad field it will likely require a complex Boolean search string in order to capture the breadth without immensely increasing the hits, and thus workload. Additionally, since Google Scholar is not a database, but a web crawling platform, the reproducibility is very low and it is highly influenced by search history (if using normal computer) and geographic location (if using "blank" computer). In method above, Google Scholar can be used to retrieve articles from reference lists, as the article is already known and the precision rate is thus high.
The third selection criteria, although based on scale of research combines a variety of different words (see table S2.2)	In (relevant) large-scale studies the language often focuses on the jurisdiction/area, such as deep-sea, high seas, exclusive economic zone (EEZ) or are related to ocean governance. In relevant smaller scale studies, they instead focus on "marine spatial planning", conservation or management. This is probably due to that all smaller scale studies are already within only one area.

No words directly related to fish feed industry or dietary supplements industry.	Since collection of materials for fish feed or dietary supplements, if related to ocean use, is through fishing, these industries will fall under the same words.
Terms “blue economy” and “blue growth” will not be included	Often when articles discuss these terms the focus of the research is on the concept of the blue economy itself, not its constituent sectoral parts. If the article is about the interaction between sectors within the blue economy, these will be captured by sectoral search terms.

Step 3: Refining the search string

This step involved developing search strings for search of peer-reviewed literature. Table 3 documents the initial search strings and criteria.

Table 3 Initial search strings and criteria for inclusion

Criteria	Search string section
Cross-sectoral interaction (NOTE: Since there is no way of specifying “pick two” in Boolean search strings, all variations have to be included, hence length of string).	(fish* AND (aquaculture OR cable* OR shipping OR hydrocarbon* OR (wind AND energy) OR (wave AND energy) OR (oil OR gas) OR pipe* OR metals OR minerals OR desalination OR “genetic resources” OR bioprospect* OR disposal OR drill* OR mining OR extract* OR “land reclamation” OR “protected areas” OR tourism)) **OR** (aquaculture AND (fish* OR cable* OR shipping OR hydrocarbon* OR (wind AND energy) OR (wave AND energy) OR (oil OR gas) OR pipe* OR metals OR minerals OR desalination OR “genetic resources” OR bioprospect* OR disposal OR drill* OR mining OR extract* OR “land reclamation” OR “protected areas” OR tourism)) **OR** (cable* AND (fish* OR aquaculture OR shipping OR hydrocarbon* OR (wind AND energy) OR (wave AND energy) OR (oil OR gas) OR pipe* OR metals OR minerals OR desalination OR “genetic resources” OR bioprospect* OR disposal OR drill* OR mining OR extract* OR “land reclamation” OR “protected areas” OR tourism)) **OR** (shipping AND (fish* OR aquaculture OR cable* OR hydrocarbon* OR (wind AND energy) OR (wave AND energy) OR (oil OR gas) OR pipe* OR metals OR minerals OR desalination OR “genetic resources” OR bioprospect* OR disposal OR drill* OR mining OR extract* OR “land reclamation” OR “protected areas” OR tourism)) **OR** (hydrocarbon* AND (fish* OR aquaculture OR cable* OR shipping OR (wind AND energy) OR (wave AND energy) OR (oil OR gas) OR pipe* OR metals OR minerals OR desalination OR “genetic resources” OR bioprospect* OR disposal OR drill* OR mining OR extract* OR “land reclamation” OR “protected areas” OR tourism)) **OR** ((wind AND energy)AND (fish* OR aquaculture OR cable* OR shipping OR hydrocarbon* OR (wave AND energy) OR (oil OR gas) OR pipe* OR metals OR minerals OR desalination OR “genetic resources” OR bioprospect* OR disposal OR drill* OR mining OR extract* OR “land reclamation” OR “protected areas” OR tourism)) **OR** ((wave AND energy)AND (fish* OR aquaculture OR cable* OR shipping OR hydrocarbon* OR (wind AND energy) OR (oil OR gas) OR pipe* OR metals OR minerals OR desalination OR “genetic resources” OR bioprospect* OR disposal OR drill* OR mining OR extract* OR “land reclamation” OR “protected areas” OR tourism)) **OR** ((oil OR gas) OR pipe* AND (fish* OR aquaculture OR cable* OR shipping OR hydrocarbon* OR (wind AND energy) OR (wave AND energy) OR metals OR minerals OR desalination OR “genetic resources” OR bioprospect* OR disposal OR drill* OR mining OR extract* OR “land reclamation” OR “protected areas” OR tourism)) **OR** (metals AND (fish* OR aquaculture OR cable* OR shipping OR hydrocarbon* OR (wind AND energy) OR (wave AND energy) OR (oil OR gas) OR pipe* OR minerals OR

	desalination OR “genetic resources” OR bioprospect* OR disposal OR drill* OR mining OR extract* OR “land reclamation” OR “protected areas” OR tourism)) **OR** (minerals AND (fish* OR aquaculture OR cable* OR shipping OR hydrocarbon* OR (wind AND energy) OR (wave AND energy) OR (oil OR gas) OR pipe* OR metals OR desalination OR “genetic resources” OR bioprospect* OR disposal OR drill* OR mining OR extract* OR “land reclamation” OR “protected areas” OR tourism)) **OR** (desalination AND (fish* OR aquaculture OR cable* OR shipping OR hydrocarbon* OR (wind AND energy) OR (wave AND energy) OR (oil OR gas) OR pipe* OR metals OR minerals OR “genetic resources” OR bioprospect* OR disposal OR drill* OR mining OR extract* OR “land reclamation” OR “protected areas” OR tourism)) **OR** (“genetic resources” AND (fish* OR aquaculture OR cable* OR shipping OR hydrocarbon* OR (wind AND energy) OR (wave AND energy) OR (oil OR gas) OR pipe* OR metals OR minerals OR desalination OR bioprospect* OR disposal OR drill* OR mining OR extract* OR “land reclamation” OR “protected areas” OR tourism)) **OR** (bioprospect* AND (fish* OR aquaculture OR cable* OR shipping OR hydrocarbon* OR (wind AND energy) OR (wave AND energy) OR (oil OR gas) OR pipe* OR metals OR minerals OR desalination OR “genetic resources” OR disposal OR drill* OR mining OR extract* OR “land reclamation” OR “protected areas” OR tourism)) **OR** (disposal AND (fish* OR aquaculture OR cable* OR shipping OR hydrocarbon* OR (wind AND energy) OR (wave AND energy) OR (oil OR gas) OR pipe* OR metals OR minerals OR desalination OR “genetic resources” OR bioprospect* OR drill* OR mining OR extract* OR “land reclamation” OR “protected areas” OR tourism)) **OR** (drill* AND (fish* OR aquaculture OR cable* OR shipping OR hydrocarbon* OR (wind AND energy) OR (wave AND energy) OR (oil OR gas) OR pipe* OR metals OR minerals OR desalination OR “genetic resources” OR bioprospect* OR disposal OR mining OR extract* OR “land reclamation” OR “protected areas” OR tourism)) **OR** (mining AND (fish* OR aquaculture OR cable* OR shipping OR hydrocarbon* OR (wind AND energy) OR (wave AND energy) OR (oil OR gas) OR pipe* OR metals OR minerals OR desalination OR “genetic resources” OR bioprospect* OR disposal OR drill* OR extract* OR “land reclamation” OR “protected areas” OR tourism)) **OR** (extract* AND (fish* OR aquaculture OR cable* OR shipping OR hydrocarbon* OR (wind AND energy) OR (wave AND energy) OR (oil OR gas) OR pipe* OR metals OR minerals OR desalination OR “genetic resources” OR bioprospect* OR disposal OR drill* OR mining OR “land reclamation” OR “protected areas” OR tourism)) **OR** (“land reclamation” AND (fish* OR aquaculture OR cable* OR shipping OR hydrocarbon* OR (wind AND energy) OR (wave AND energy) OR (oil OR gas) OR pipe* OR metals OR minerals OR desalination OR “genetic resources” OR bioprospect* OR disposal OR drill* OR mining OR extract* OR “protected areas” OR tourism)) **OR** (“protected areas” AND (fish* OR aquaculture OR cable* OR shipping OR hydrocarbon* OR (wind AND energy) OR (wave AND energy) OR (oil OR gas) OR pipe* OR metals OR minerals OR desalination OR “genetic resources” OR bioprospect* OR disposal OR drill* OR mining OR extract* OR “land reclamation” OR tourism)) **OR** (pipe* AND (fish* OR aquaculture OR cable* OR shipping OR hydrocarbon* OR (wind AND energy) OR (wave AND energy) OR (oil OR gas) OR(“protected areas” OR metals OR minerals OR desalination OR “genetic resources” OR bioprospect* OR disposal OR drill* OR mining OR extract* OR “land reclamation” OR tourism)) **OR** (tourism AND (fish* OR aquaculture OR cable* OR shipping OR hydrocarbon* OR (wind AND energy) OR (wave AND energy) OR (oil OR gas) OR pipe* OR metals OR minerals OR desalination OR “genetic resources” OR bioprospect* OR disposal OR drill* OR mining OR extract* OR “land reclamation” OR “protected areas”))

All should contain 'ocean/ sea/marine/ or similar'	(ocean OR marine OR sea OR offshore OR off-shore OR maritime)
Include both large-scale competing claims, AND marine spatial planning (including words such as planning/conservation/ management)	(deep-sea OR "deep sea" OR "high seas" OR "continental shelf" OR EEZ* OR "areas beyond national jurisdiction" OR coastal OR offshore OR off-shore OR seabed OR seafloor OR pelagic OR "marine spatial planning" OR conservation OR management OR governance)

Refining the search

Search terms were tested and refined by searching in Scopus. Refinements were made to decrease irrelevant hits and in order to capture all (or a high percentage) of the benchmark articles. The changes made to the search terms and the subsequent number of hits are shown in Table 4.

Table 4 Evolution of search terms

Change	Reason	No. search hits before	No. search hits after
Fish* to (fishery OR fisheries OR fishing)	Fish* also includes only the word fish which greatly increases the number of hits.	65,064	60,180
From searching title, abstract and keywords to only searching title and abstract	There were a lot of hits where the search words were showing up in the keywords **only** and not in the title and abstract.	60,180	36,523
Pipe* to pipeline	Same as fish*, becomes too vague	36,523	34,678
Shifting pipeline from free-standing requirement to clustered with oil and gas	Oil and gas are always transported from platforms to point of further transport/use via pipelines. Therefore, these terms can coincide without it being cross-sectoral.	34,678	30,485
Replaced (wind AND energy) with ("wind energy" OR "wind power) Likewise; (wave AND energy) with ("wave energy" OR "wave power")	Since wave AND energy captures a lot of physics articles discussing the energy of waves, e.g. gravitational waves.	30,485	28,213
Shifting drill* from free-standing to clustered with oil and gas and pipelines.	Same reason as clustering pipelines, drilling is part of the same sectoral industry.	28,213	22,445

Lump together hydrocarbon*, metals and mineral, as well as add the contingency of mining or extract*. Result: (hydrocarbon* OR metals OR mineral AND mining OR extract)	If they are separate there is a lot of articles discussing the role of metals and minerals and hydrocarbons in the ocean that are not related to the industry of extracting them.	22,445	9,437
Add exploration to both the mining, drilling and extraction terms.	In order to capture newer emerging sectors/uses. Additionally, it will become increasingly prevalent as known reserves begin to decline.	9,437	13,184
Add mining as a separate option again	In non-mining fields it is mainly discussed as mining (without specifying what type). Therefore needed to capture interactions seen from other sectors.	13,184	14,456
Add fishing to the fishery OR fisheries term	Going back to the benchmark literature, this was a highly used term that was lost in the refinement process.	14,456	15,790
Move hydrocarbon* to the oil and gas cluster	Wrongly clustered with the metals and minerals before. Hydrocarbons are clearly associated with the oil and gas industry.	15,790	13,845
Rephrase the oil or gas or hydrocarbon or pipeline term to contain AND drill OR exploration (and add) OR extract*	Similar reasoning for making this type of phrase in regards to metal and mineral mining, to target the industry action.	13,845	8,233
Re-arrange to move pipeline outside the AND clause.	Since pipelines are not explored, drilled or extracted but still refer to the same sector they should be within the main clause, but not in the sub-clause.	8,233	8,898
Add extra () to be very specific about order of precedence	In Scopus, OR takes precedence over AND whereas in Web of Science it is the opposite.	8,898	8,898
Move all ocean related terms to clause 2 and have only governance/ management terms in clause 3	There are many abstracts that have a very tenuous relevance to how the separate sectors can either work together or against	8,898	4,731

	each other, this needs to be more specified to limit large numbers of unrelated articles.		
Make split clause 2 (ocean clause) into 2	Since some of the specific words used to specify area are used in non-marine literature as well e.g. coastal, a separate clause is needed to assure only marine content. Place word offshore in this new sub-clause only.	4,731	1,926
Limit to articles in English	Due to language restrictions of coders.	1,926	1,863

Matching search terms with benchmark articles

Matching was done to assess the degree to which search terms captures the benchmark articles. Three articles were not recovered using our final search terms.

Lacroix, D., and S. Pioch. 2011. The multi-use in wind farm projects: more conflicts or a win-win opportunity? Aquatic Living Resources 24(2):129–135.

Lacroix et al., 2011 cannot be found on Scopus

Merrie, A., D. C. Dunn, M. Metian, A. M. Boustany, Y. Takei, A. Oude Elferink, Y. Ota, V. Christensen, P. N. Halpin, and H. Österblom. 2014. An ocean of surprises - trends in human use, unexpected dynamics and governance challenges in areas beyond national jurisdiction. Global Environmental Change 27(1):19–31.

Merrie et al., 2014 does not mention two separate sectors in the title or abstract alone, even though the article is clearly cross-sectoral. Since the words used in Merrie et al, 2014 are very specific (e.g. “crowded ocean”) this is not useful to add to the search term to include this specific article as it likely does not catch much more.

Pérez-Collazo, C., D. Greaves, and G. Iglesias. 2015. A review of combined wave and offshore wind energy. Renewable and Sustainable Energy Reviews 42:141–153.

Pérez-Collazo does not mention management or spatial planning or governance or conservation in the abstract, which likely explains why there was not a match. However, due to the number of hits when this is not included as a search term the fact that this article was not recovered in our search is deemed acceptable.

This matching reveals three limitations to our methodology, first that we only capture articles in the Scopus and Web of Science databases; secondly that we miss articles that use highly specific words in their abstracts (not the general words used in string, see table S2.4); and thirdly that articles that have not made the connection to management/governance/planning are missed. For the first two, there is no clear solution (see table S2.1 for database decision). The last limitation relates to the limits of what can be achieved in one project. Due to constraints in capacity to review all possible literature, and given our aim to inform ocean governance, this inclusion of management/governance/planning as search terms was deemed acceptable and justified.

Step 4: Searching Web of Science and Scopus

Once a final version of the search terms had been defined, this version was used to search both Web of Science and Scopus. Article titles and abstracts of all hits were downloaded, and analysis of search results was saved (and is available on request). The search was done in September 2018, thus only captures literature up until this date.

The final search string is outlined in Table 5. Note that the string needs to be input as three separate sets, and then combined with AND (otherwise the order of precedence is not correct), this is done under the advanced search. Search was limited to only English language sources and limited to "Title and Abstract" in Scopus and to TS (Topic) in Web of Science Core Collection on Web of Science.

Table 5 Final search string and criteria for inclusion

Criteria	Search string section
Cross-sectoral interaction (NOTE: Since there is no way of specifying "pick two" in Boolean search strings, all variations have to be included, hence length of string).	(((fishery OR fisheries OR fishing) AND (aquaculture OR cable* OR shipping OR ("wind energy" OR "wind power") OR ("wave energy" OR "wave power") OR ((oil OR gas OR hydrocarbon*) AND (drill* OR exploration OR extract*)) OR pipeline) OR ((metals OR minerals) AND (mining OR extract* OR exploration)) OR desalination OR "genetic resources" OR bioprospect* OR disposal OR "land reclamation" OR "protected areas" OR tourism OR mining)) **OR** (aquaculture AND ((fishery OR fisheries OR fishing) OR cable* OR shipping OR ("wind energy" OR "wind power") OR ("wave energy" OR "wave power") OR ((oil OR gas OR hydrocarbon*) AND (drill* OR exploration OR extract*)) OR pipeline) OR ((metals OR minerals) AND (mining OR extract* OR exploration)) OR desalination OR "genetic resources" OR bioprospect* OR disposal OR "land reclamation" OR "protected areas" OR tourism OR mining)) **OR** (cable* AND ((fishery OR fisheries OR fishing) OR aquaculture OR shipping OR ("wind energy" OR "wind power") OR ("wave energy" OR "wave power") OR ((oil OR gas OR hydrocarbon*) AND (drill* OR exploration OR extract*)) OR pipeline) OR ((metals OR minerals) AND (mining OR extract* OR exploration)) OR desalination OR "genetic resources" OR bioprospect* OR disposal OR "land reclamation" OR "protected areas" OR tourism OR mining)) **OR** (shipping AND ((fishery OR fisheries OR fishing) OR aquaculture OR cable OR ("wind energy" OR "wind power") OR ("wave energy" OR "wave power") OR ((oil OR gas OR hydrocarbon*) AND (drill* OR exploration OR extract*)) OR pipeline) OR ((metals OR minerals*) AND (mining OR extract* OR exploration)) OR desalination OR "genetic resources" OR bioprospect* OR disposal OR "land reclamation" OR "protected areas" OR tourism OR mining)) **OR** (("wind energy" OR "wind power") AND ((fishery OR fisheries OR fishing) OR aquaculture OR cable* OR shipping OR ("wave energy" OR "wave power") OR ((oil OR gas OR hydrocarbon*) AND (drill* OR exploration OR extract*)) OR pipeline) OR ((metals OR minerals) AND (mining OR extract* OR exploration)) OR desalination OR "genetic resources" OR bioprospect* OR disposal OR "land reclamation" OR "protected areas" OR tourism OR mining)) **OR** (("wave energy" OR "wave power") AND ((fishery OR fisheries OR fishing) OR aquaculture OR cable* OR shipping OR ("wind energy" OR "wind power") OR ((oil OR gas OR hydrocarbon*) AND (drill* OR exploration OR extract*)) OR pipeline) OR ((metals OR minerals) AND (mining OR extract* OR exploration)) OR desalination

	OR “genetic resources” OR bioprospect* OR disposal OR “land reclamation” OR “protected areas” OR tourism OR mining)) **OR** (((oil OR gas OR hydrocarbon*) AND (drill* OR exploration OR extract*)) OR pipeline) AND ((fishery OR fisheries OR fishing) OR aquaculture OR cable* OR shipping OR (“wind energy” OR “wind power”) OR (“wave energy” OR “wave power”) OR ((metals OR minerals) AND (mining OR extract* OR exploration)) OR desalination OR “genetic resources” OR bioprospect* OR disposal OR “land reclamation” OR “protected areas” OR tourism OR mining)) **OR** (((metals OR minerals) AND (mining OR extract* OR exploration)) AND ((fishery OR fisheries OR fishing) OR aquaculture OR cable* OR shipping OR (“wind energy” OR “wind power”) OR (“wave energy” OR “wave power”) OR (((oil OR gas OR hydrocarbon*) AND (drill* OR exploration OR extract*)) OR pipeline) OR desalination OR “genetic resources” OR bioprospect* OR disposal OR “land reclamation” OR “protected areas” OR tourism OR mining)) **OR** (desalination AND ((fishery OR fisheries OR fishing) OR aquaculture OR cable* OR shipping OR (“wind energy” OR “wind power”) OR (“wave energy” OR “wave power”) OR (((oil OR gas OR hydrocarbon*) AND (drill* OR exploration OR extract*)) OR pipeline) OR ((metals OR minerals) AND (mining OR extract* OR exploration)) OR “genetic resources” OR bioprospect* OR disposal OR “land reclamation” OR “protected areas” OR tourism OR mining)) **OR** (“genetic resources” AND ((fishery OR fisheries OR fishing) OR aquaculture OR cable* OR shipping OR (“wind energy” OR “wind power”) OR (“wave energy” OR “wave power”) OR (((oil OR gas OR hydrocarbon*) AND (drill* OR exploration OR extract*)) OR pipeline) OR ((metals OR minerals) AND (mining OR extract* OR exploration)) OR desalination OR bioprospect* OR disposal OR “land reclamation” OR “protected areas” OR tourism OR mining)) **OR** (bioprospect* AND ((fishery OR fisheries OR fishing) OR aquaculture OR cable* OR shipping OR (“wind energy” OR “wind power”) OR (“wave energy” OR “wave power”) OR (((oil OR gas OR hydrocarbon*) AND (drill* OR exploration OR extract*)) OR pipeline) OR ((metals OR minerals) AND (mining OR extract* OR exploration)) OR desalination OR “genetic resources” OR disposal OR “land reclamation” OR “protected areas” OR tourism OR mining)) **OR** (disposal AND ((fishery OR fisheries OR fishing) OR aquaculture OR cable* OR shipping OR (“wind energy” OR “wind power”) OR (“wave energy” OR “wave power”) OR (((oil OR gas OR hydrocarbon*) AND (drill* OR exploration OR extract*)) OR pipeline) OR ((metals OR minerals) AND (mining OR extract* OR exploration)) OR desalination OR “genetic resources” OR bioprospect* OR “land reclamation” OR “protected areas” OR tourism OR mining)) **OR** (“land reclamation” AND ((fishery OR fisheries OR fishing) OR aquaculture OR cable* OR shipping OR (“wind energy” OR “wind power”) OR (“wave energy” OR “wave power”) OR (((oil OR gas OR hydrocarbon*) AND (drill* OR exploration OR extract*)) OR pipeline) OR ((metals OR minerals) AND (mining OR extract* OR exploration)) OR desalination OR “genetic resources” OR bioprospect* OR disposal OR “protected areas” OR tourism OR mining)) **OR** (“protected areas” AND ((fishery OR fisheries OR fishing) OR aquaculture OR cable* OR shipping OR (“wind energy” OR “wind power”) OR (“wave energy” OR “wave power”) OR (((oil OR gas OR hydrocarbon*) AND (drill* OR exploration OR extract*)) OR pipeline) OR ((metals OR minerals) AND (mining OR extract* OR exploration)) OR desalination OR “genetic resources” OR bioprospect* OR disposal OR “land reclamation” OR tourism OR mining)) **OR** (tourism AND ((fishery OR fisheries OR fishing) OR aquaculture OR cable* OR shipping OR (“wind energy” OR “wind power”) OR (“wave energy” OR “wave power”) OR (((oil OR gas OR hydrocarbon*) AND (drill* OR exploration OR

	extract*)) OR pipeline) OR ((metals OR minerals) AND (mining OR extract* OR exploration)) OR desalination OR "genetic resources" OR bioprospect* OR disposal OR "land reclamation" OR "protected areas" OR mining)) **OR** (mining AND ((fishery OR fisheries OR fishing) OR aquaculture OR cable* OR shipping OR ("wind energy" OR "wind power") OR ("wave energy" OR "wave power") OR ((oil OR gas OR hydrocarbon*) AND (drill* OR exploration OR extract*)) OR pipeline) OR ((metals OR minerals) AND (mining OR extract* OR exploration)) OR desalination OR "genetic resources" OR bioprospect* OR disposal OR "land reclamation" OR "protected areas" OR tourism)))
All should contain 'ocean/ sea/marine/ or similar'	(ocean OR marine OR sea)
Include both large-scale competing claims and smaller scale coastal	(offshore OR off-shore OR maritime OR deep-sea OR "deep sea" OR "high seas" OR "continental shelf" OR EEZ* OR "areas beyond national jurisdiction" OR coastal OR seabed OR seafloor OR pelagic)
AND marine spatial planning (including words such as planning/conservation/ management/ governance)	("marine spatial planning" OR conservation OR management OR governance)

Step 5: Checking titles and removing non-relevant articles

The samples were winnowed down gradually by first removing all duplicates and non-relevant titles (see Figure 1). A total of 4253 titles were screened, of which 1066 were discarded.

Step 6: Checking abstracts and removing non-relevant articles.

In the next step, all abstracts (3,187) were read and a set of 781 articles were retained for further analysis based on criteria for relevance outlined in Table 6.

Table 6 Criteria for relevance

Criteria	Description	Motivation
All should contain ocean, sea or marine	We are focused on **ocean** stewardship.	Although many freshwater systems are connected to the ocean, thus ultimately affecting the overall stewardship, a narrower focus was decided on in this paper. Land-based coastal sectors where similarly excluded.
Cross-sectoral interaction	The article should mention how **at least two** marine sectors interact.	The overall field of marine research is very broad, and trying to map the literature from all the individual sectoral fields is a massive undertaking. Since the focus of this paper is to look at the interactions between sectors, this was selected as a necessary criteria for the literature as well. Articles were only selected as relevant if they specifically looked at multiple sectors.
Include both large scale (global) or small scale (local and regional) interactions	The terminology used when discussing this topic varies between small and large scale, thus both types should be searched for.	Since we want to do a global review of sector interactions we do not want to be limited by local (marine spatial planning) or global (High seas, ABNJ) but capture all aspects.

Governance, management, planning or conservation	The articles should address the sectoral interaction from some type of planning, management, or governance angle.	Similarly to the cross-sectoral interaction criteria, there are many articles that discuss several sectors but do not address either the benefits or trade-offs that could arise from these. In order to hone in on articles of relevance for our question, the articles need to address some aspect of planning or management. This was determined based on the inclusion of the words governance, management, planning or conservation.
Articles focused solely on ecological impacts of a sector are not included	We are focused on interactions between ocean sectors.	Since we want to focus on articles that discuss interactions amongst ocean sectors, articles that are focused solely on conservation implications of ocean sectors are “not cross-sectoral” for our searching purposes. e.g. pollution from aquaculture farms.

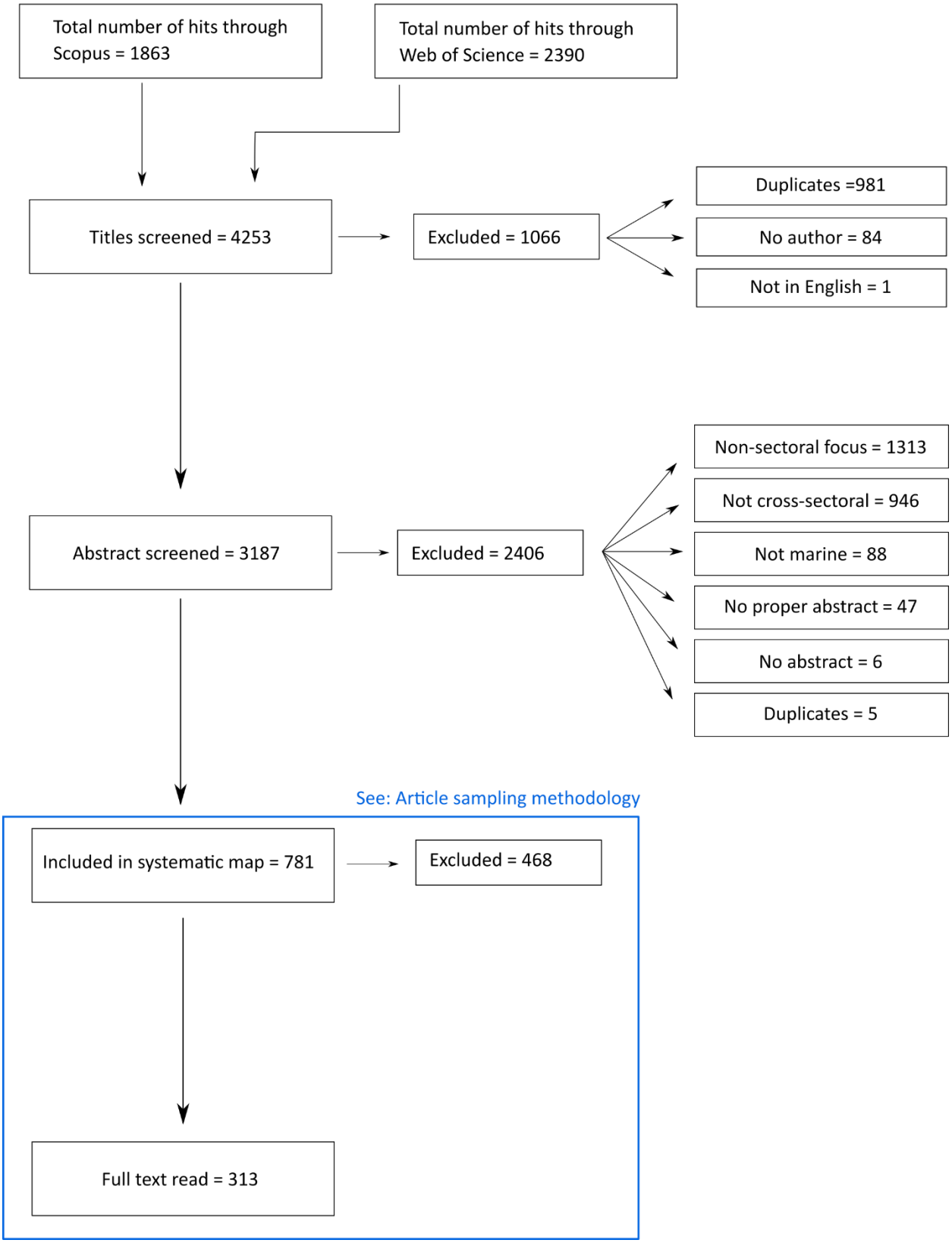

Figure 1. Prisma diagram outlining the systematic mapping methodology.