Dear Dr. Iris Eline Hendriks,

Thank you for giving me the opportunity to submit a revised draft of my manuscript titled "A review on coastal urban ecology: Research gaps, challenges and needs" to *Frontiers in Marine Science*.

We appreciate the time and effort that you and the reviewers have dedicated to providing your valuable feedback on our manuscript. We are grateful to the reviewers for their insightful comments on our paper.

We have been able to incorporate changes to reflect most of the suggestions provided by the reviewers. We have saved the track changes that we made within the manuscript.

And we will add our responses to the reviewers’ comments and concerns point-by-point.

[How to respond to comments that you agree with]

Comments from Reviewer 1

Comment 1:[Paste the full comment here and italicize it.]Response:[Type your response here.]Thank you for pointing this out. I/We agree with this comment. Therefore, I/we have....[Explain what change you have made. Mention exactly where in the revised manuscript this change can be found –page number, paragraph, and line.]

Comment 2: [Paste the full comment here and italicize it.]Response: Agree. I/We have, accordingly, done/revised/changed/modified.....to emphasize this point. [Discuss the changes made, providing the necessary explanation/clarification. Mention exactly where in the revised manuscript this change can be found –page number, paragraph, and line.]

Comment 3: [Paste the full comment here and italicize it.]Response: I/We agree with this and have incorporated your suggestion throughout the manuscript.

[How to respond to comments that you disagree with]Comment 1:[Paste the full comment here and italicize it.]Response:[Type your response here.]Thank you for this suggestion. It would have been interesting to explore this aspect. However, in the case of our study, it seems slightly out of scope because.... [Provide a clear explanation/justification providing supporting evidence as far as possible.

In addition to the above comments, all spelling and grammatical errors pointed out by the reviewers have been corrected. We look forward to hearing from you in due time regarding our submission and to respond to any further questions and comments you may have.

EVALUATION 1

Q1

Please summarize the main theme of this systematic review.

Reviewer 1 | 10 Dec 2020 | 19:53

#1

I would say that it's a systematic map rather than a systematic review, but it covers research into coastal urban environments, showing the distribution of literature in this area in terms of topics, location, and urban ecology concepts. I expect the category of 'systematic review' has restricted what they have called the paper. Maybe it's fine. Note that the category of 3g below isn't really relevant to this though as it's not a systematic review in the sense of evaluating a specific intervention or research question etc. For 3k, a flow diagram is included but I'm not sure if it's PRISMA or not.

Q2

Please highlight the limitations and strengths.

Reviewer 1 | 10 Dec 2020 | 19:53

#1

It is an interesting and worthwhile paper. The authors are correct in that the coastal aspects of cities have generally been ignored, even though many large cities and megacities are found in coastal areas – though this may reflect the fact that only small portions of large cities are actually coastal. This study is more of a systemic map (broad pattern of available literature) rather than systematic review (synthesising literature to answer a specific question, e.g. how effective is a form of intervention), and it would be useful to draw on some of the systematic mapping literature to support the method, e.g. https://link.springer.com/article/10.1186/s13750-016-0059-6. Bringing this literature in and noting that it is a systematic map would help to position the paper as more than a review.  
  
The most useful information is found in the figures. The text does a good job of summarising the key points – there is potentially more that could be said (especially around the topics) but the figures do cover a lot of info and I don’t think the paper needs to be extended. As noted below, I would say that the network aspects (Figure 8) don’t add much and could be removed – or reinforced in the discussion if considered important. The discussion could also highlight the geographical patterns and gaps more. At the end of the discussion it might be useful to have a list of key priorities for future work based on the map presented here. But overall the paper is quite concise and clear, and the figures are effective.

Q3

Check List

Reviewer 1 | 10 Dec 2020 | 19:53

#1

a. Is the English language of sufficient quality?  
- Yes  
  
b. Is the quality of the figures and/or tables satisfactory?  
- Yes  
  
c. Does the title state that the manuscript is a systematic review, meta-analysis, or meta-synthesis?  
- Yes  
  
d. Does the manuscript include recent developments?  
- Yes  
  
e. Does the systematic review include a balanced, comprehensive and critical view of the literature in the field?  
- Yes  
  
f. Does this manuscript refer only to published data (unpublished or original data is not permitted for this article type)?  
- Yes  
  
g. Is research question of the systematic review clearly defined in terms of populations, interventions, comparators, outcomes, and study designs (PICOS)?  
- No  
  
h. Is the systematic review built on methods that are clearly defined to identify, categorize, analyze and report aggregated evidence on a specific topic?  
- Yes  
  
i. Is the search strategy adequate and appropriate to minimize bias and errors?  
- Yes  
  
j. Does this systematic review conform to the relevant guidelines (e.g. PRISMA, Campbell, Cochrane guidelines)?  
- No  
  
k. Is a PRISMA flow diagram included?  
- No  
  
l. Does the manuscript cover the topic in an objective manner and based on sound empirical studies?  
- Yes

**Comment: We apreaPrisma diagram was fused to decision tree (figure 1)**

Q4

Please provide your detailed review report to the editor and authors (including any comments on the Q3 Check List - please pay particular attention to questions f and g):

Reviewer 1 | 10 Dec 2020 | 19:53

#1

This is an interesting and worthwhile paper. The authors are correct in that the coastal aspects of cities have generally been ignored, even though many large cities and megacities are found in coastal areas – though this may reflect the fact that only small portions of large cities are actually coastal. This study is more of a systemic map (broad pattern of available literature) rather than systematic review (synthesising literature to answer a specific question, e.g. how effective is a form of intervention), and it would be useful to draw on some of the systematic mapping literature to support the method, e.g. https://link.springer.com/article/10.1186/s13750-016-0059-6. Bringing this literature in and noting that it is a systematic map would help to position the paper as more than a review.  
  
The most useful information is found in the figures. The text does a good job of summarising the key points – there is potentially more that could be said (especially around the topics) but the figures do cover a lot of info and I don’t think the paper needs to be extended. As noted below, I would say that the network aspects (Figure 8) don’t add much and could be removed – or reinforced in the discussion if considered important. The discussion could also highlight the geographical patterns and gaps more. At the end of the discussion it might be useful to have a list of key priorities for future work based on the map presented here. But overall the paper is quite concise and clear, and the figures are effective.   
  
My more specific comments are:  
  
Lines 40-41: “Cities have been constantly growing in number and size, forming large megacities with 10 million inhabitants or more (United Nations 2018).” This makes it sound like all cities are now megacities, rather than that some cities are now megacities. It would be worth noting how many megacities there are in 2020, perhaps? UN says megacities are >10 million people but other sources consider them as larger.

**Comment: Sentence was parafrase**  
  
Line 45: 70’s = ‘70s.

**Comment: Corrected**  
  
Line 61: here and elsewhere, the paradigms need a distinguishing mark so that they are clear, e.g. paradigm in the city fall = paradigm ‘in the city’ fall. Or could use italics. Otherwise the paper becomes hard to read in places, especially distinguishing between the paradigms.

**Comment: Mentions to paradigms were changed to italic**  
  
Line 78: structures as ports = structures in ports?

**Comment: Corrected**  
  
Line 80: during the last decades = during recent decades

**Comment: Corrected**  
  
Line 82-83: “Despite recent interest on vulnerabilities, research has mainly focused on geomorphological contexts.” This could use some supporting citations.

**Comment: Citations were added**  
  
Line 95: how were ‘environment’ and ‘coast’ truncated? I see this is in the figure but would be useful to add here. So “urban ecology” was used but not “urban ecosystem” or just “urban eco\*”? Were studies counted multiple times - so if a study was on how pollution influences a coastal species, for example, was this included in two study models or just one?   
**Comment: Corrected in line 95-96 and 107-108**

Line 102: typo on ‘examining’

**Comment: Corrected**  
  
Line 117: Is the ‘network analysis’ what is described in lines 117-120? Are that any papers that refer to this as network analysis as well that can be cited, as the term is used is different ways? It’s a measure of interrelationships between papers in this case?

**Comment: Paragraph was corrected. We made a descriptive analysis of the network instead of a network analysis.**   
  
  
Line 121-127: I’m not familiar with R so can’t comment on the specifics, though this seemed fine as far as I could tell. Could the bibliometrix package citation feature in the paragraph above, since this is relevant to the network analysis?

**Comment: Paragraph was rearranged**  
  
Line 168: “coastal benthic a” – is this a typo?

**Comment: Typo corrected**   
  
Line 195: “being this topic also taken” is not clear, maybe = this topic also appears [or is abundant] in the paradigm ‘for the city’… ‘added to’ perhaps means ‘in combination with’ or ‘alongside’, looking at figure 7?

**Comment: We considered both recommendations**  
  
Line 198-208: I’m not sure this network analysis (with Figure 8) adds much to the paper. If the lack of connections is important then this should be reinforced in the discussion. It may be useful to highlight that studies are disparate and do not link together much, and that there isn’t clear linkage or development between the three paradigms? I’m not sure why the studies are arranged in this way in the figure – presumably the X and Y positions don’t mean anything, it’s just to show different links?

**Comment: Two lines added to discussion**   
  
Line 232: typo on ‘shortfall’. Also, what does a shortfall in ‘long-term dynamic perspectives’ mean?

**Comment: Corrected with "temporal studies"**  
  
Line 276-277: “considering more than 70% of cities in the world have between 500,000 and 1 million inhabitants” – could use a reference here.

**Comment: We rewrite this sentence in order to make it more clear, using the reference and the correct information.**  
  
Line 281: in what way are “false dichotomies for conservation” created by the focus on near-shore environments?   
  
Line 295: represents “the loss OF UNDERSTANDING of an integral…”

EVALUATION 2

Q1

Please summarize the main theme of this systematic review.

Reviewer 2 | 28 Jan 2021 | 15:38

#1

This manuscript a well organized review of coastal urban ecology, focusing on situating them with the paradigms of ecology in, of, and for the city. The authors note that a key risk relates to the fact that lessons and recommendations of research are mainly from developed countries and large cities.

Q2

Please highlight the limitations and strengths.

Reviewer 2 | 28 Jan 2021 | 15:38

#1

This is a good and thorough review of the literature. The primary limitation though is how the "results" and "discussion" is presented. Sections 4.1 and 4.2, for instance, would benefit by elaborating on what the literature is actually saying by using examples. The literature does not seem to really be engaged with aside from trying to put it into buckets and providing numbers and percentages. If I were unfamiliar with the topic, I would be left unsure about some of the key arguments. Examples from the literature is needed.  
  
The discussion, however, does engage with the literature. I'd suggest trying to work into the results a review of the literature that highlights what some of the work is. The discussion/conclusion can be used to discuss the limitations in the field the authors note and provide some suggestions for future research. These items

**Comment: Examples of articles were added to Results section**

Q3

Check List

Reviewer 2 | 28 Jan 2021 | 15:38

#1

a. Is the English language of sufficient quality?  
- Yes  
  
b. Is the quality of the figures and/or tables satisfactory?  
- Yes  
  
c. Does the title state that the manuscript is a systematic review, meta-analysis, or meta-synthesis?  
- Yes  
  
d. Does the manuscript include recent developments?  
- Yes  
  
e. Does the systematic review include a balanced, comprehensive and critical view of the literature in the field?  
- Yes  
  
f. Does this manuscript refer only to published data (unpublished or original data is not permitted for this article type)?  
- Yes  
  
g. Is research question of the systematic review clearly defined in terms of populations, interventions, comparators, outcomes, and study designs (PICOS)?  
- Yes  
  
h. Is the systematic review built on methods that are clearly defined to identify, categorize, analyze and report aggregated evidence on a specific topic?  
- Yes  
  
i. Is the search strategy adequate and appropriate to minimize bias and errors?  
- Yes  
  
j. Does this systematic review conform to the relevant guidelines (e.g. PRISMA, Campbell, Cochrane guidelines)?  
- Yes  
  
k. Is a PRISMA flow diagram included?  
No answer given.  
  
l. Does the manuscript cover the topic in an objective manner and based on sound empirical studies?  
- Yes

Q4

Please provide your detailed review report to the editor and authors (including any comments on the Q3 Check List - please pay particular attention to questions f and g):

Reviewer 2 | 28 Jan 2021 | 15:38

#1

Q 2 does this for me. Generally, I see this as a good review but aspects of literature need elaborated in the results. Providing more examples from the literature would help rectify this. It's well written, uses clear methods, and I like how the authors situate the review with Pickett's paradigms. It's well done, but some moderate revisions will be needed to add some clarity for the reader in the results and discussion section.