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Interactive comment on "Digital map of the Coral Triangle: An online atlas for marine biodiversity conservation" *by* Irawan Asaad et al.

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1. Referee comments

The Introduction section provides a good generic introduction to online databases and web maps but would benefit from a little more detail on the threats and conservation efforts in the Coral Triangle region that need better spatial data. Who exactly would benefit and why? Outline specific examples where this online map product will enhance decision making in the region? For example, in Line 189-192 of the Discussion you mention the importance of spatial prioritization and 'enable an efficient decision making process'. It would be good if you introduce these projects and processes in the Introduction.

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2. Response

We have amended the Introduction and have included the background, conservation efforts, the importance and who are the beneficiaries of this atlas.

3. It is now read:

"To take advantage of the potential of web-mapping, here we developed a web-mapping application for the Coral Triangle (CT) region of the Indo Pacific realm, a global hotspot for marine biodiversity conservation due to its superlative species richness and endemicity (Hoeksema, 2007; Allen, 2008; Veron et al., 2009; Polidoro et al., 2010; Walton et al., 2014; Saeedi et al., 2016). Because the region has the highest density or marine species of anywhere in the ocean, it is a priority for marine conservation. Furthermore, a large amount of biodiversity and natural resources data have been collected for decades by scientists and numerous conservation programmes. However, data repositories are scattered, and access to such data are limited. Previously, a systematic geographic prioritization to develop Marine Protected Area (MPA) system was conducted (Asaad. et al., 2018a; 2018b), but this alone does not make the information easily available to the public. In addition, previous online atlas of the CT was developed to support coral reef management and provided biophysical and MPA data from the region (Cros et al., 2014), however an updated, more systematic and comprehensive "biodiversity informatics" datasets are required to showcase all of the available data in the region. Further, this web-atlas is aimed to support the objective of the CTI-CFF initiative (the Coral Triangle Initiative on Coral Reefs, Fisheries and Food Security). The CTI-CFF initiative is a multilateral partnership of six countries (Indonesia, Malaysia, Papua New Guinea, the Philippines, Solomon Islands, and Timor-Leste) to working collaboratively to conserve and sustainably manage their coastal and marine resources (CTI-CFF, 2009, 2013). One of the objectives of this initiative is to establish and effectively manage Marine Protected Areas (MPA) network, which emphasizes the importance of developing and managing MPA throughout the region. In addition, an MPA system framework was developed to guide the development of network of MPAs

in the region (Walton et al., 2014). Thus, the collections of geospatial data collated on this online GIS database are designed to support and assist in the development of marine protected areas and management of marine resources in the region. By giving an access to policymakers, scientific communities, and the general public to the most comprehensive, up-to-date and integrated spatial information available for the Coral Triangle"

1. Referee comments

Table 1 was repeated again on pages 19-22 in my version of the PDF.

2. Response

We have remove the table of dataset specification in the appendices

1. Referee comments

- Line 60-61 - typo

- Line 75 - typo with tense 'develop' should be 'developed' and 'geo-reference' should be 'geo-referenced'

- Line 79 - typo 'and and'

- Line 84 -ArcGIS Pro 2.0 was instead of 'The ArcGIS Pro 2.0 were

- Line 85 - and design three instead of 'designed these three'

- Line 86 - was used instead of 'were used'

- Line87 - computer or other electronic device connected to (no need for plurals)

- Line 88- hosted by ArcGIS Online not 'by the ArcGIS Online'

2. Response

We have corrected all of the typos

1. Referee comments

Line 95 - refer to Table 1 at the end of each bullet point where appropriate

2.. Response

We have added the citation (Table 1).

1. Referee comments

- Line 96-97 - Briefly mention how these layers were defined and provide citations

2. Response

We have provided the brief info of each layers and citation in the Table 1.

1. Referee comments

Line 98 - Briefly mention how these layers were defined and provide citations

Response

We have provided the brief info of each layers and citation in the Table 1.

1. Referee comments

Line 106 - The Table 1 has been referred to as 5.1 and occasionally a chapter has been referred to so please revise throughout to be consistent for this manuscript. Same for your figure numbers. It sounds like this manuscript was originally written as a chapter

Line 110 - see comment above

2.Response

We have corrected all of the table and figure number

1. Referee comments Line 110-111 - provide URL for documentation if available online

2. Response

We have provided the URL of original sources in the reference sections, and also provided a metadata of each layer. For your considerations, we have attached the metadata in the last section of this reviewer responses.

1. Referee comments

Table 2 - I don't think you need to show the widgets. These are generic to ESRI app developer and do not provide useful information. It is something that you expect to see in a user manual.

2. Response

We slightly disagree. Although the provided widgets are generic to ESRI apps, but we opted to show the widgets so users (particularly the non-GIS users) may explore the functionality of the atlas based on the provided widgets.

1. Referee comments

In your description of methods there is no mention of uncertainty or error in your datasets. The metadata should include information to allow the user to assess uncertainty. You should also provide discussion on this issue and on any perceived scale (temporal and spatial) limitations of the data in this manuscript

2. Response

We have provided the metadata and describe the uncertainty and limitation of our data

1. Referee comments

- Line 188 - to develop geospatial tools to support instead of 'and develop a geospatial tool'

- Line 206 - typo - remove 'and' after 'provided'

- Line 213 - typo - remove 'areas' before 'priority'

- Line 217 - remove 'this' before 'digital maps'

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2. Response

We have corrected the typos

1. Referee comments

229-238 - The conclusion is basically just a repetition of the same information in the manuscript. It would be more useful for you to think about future applications (e.g., modelling biological distributions, predicting spatial change, mapping vulnerability to threats, spatial resilience) and improvements to tool functionality.

2. Response

We have amended the conclusions.

3. It is now read:

"To take advantage of the potential of web-mapping, here we developed a web-mapping application for the Coral Triangle (CT) region of the Indo Pacific realm, a global hotspot for marine biodiversity conservation due to its superlative species richness and endemicity (Hoeksema, 2007; Allen, 2008; Veron et al., 2009; Polidoro et al., 2010; Walton et al., 2014; Saeedi et al., 2016). Because the region has the highest density or marine species of anywhere in the ocean, it is a priority for marine conservation. Furthermore, a large amount of biodiversity and natural resources data have been collected for decades by scientists and numerous conservation programmes. However, data repositories are scattered, and access to such data are limited. Previously, a systematic geographic prioritization to develop Marine Protected Area (MPA) system was conducted (Asaad. et al., 2018a; 2018b), but this alone does not make the information easily available to the public. In addition, previous online atlas of the CT was developed to support coral reef management and provided biophysical and MPA data from the region (Cros et al., 2014), however an updated, more systematic and comprehensive "biodiversity informatics" datasets are required to showcase all of the available data in the region. Further, this web-

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Please also note the supplement to this comment:
https://www.earth-syst-sci-data-discuss.net/essd-2018-80/essd-2018-80-AC3-supplement.pdf

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