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Biogeosciences
Discussions

Interactive comment on "Coral Patch seamount (NE Atlantic) – a sedimentological and macrofaunal reconnaissance based on video and hydroacoustic surveys" *by* C. Wienberg et al.

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This article was a pleasure to read, for its scientific content as well as for the clarity and detailed explanations of the different aspects of this study. The extensive bibliography is very good, and the authors make a good use of the figures to convey many different strands of information in the most concise manner. The description of the datasets is very thorough, although the details of the acoustic texture classification are not presented. I recommend this article for publication following minor revisions, based on the more detailed comments below.

I fully agree with the authors that, in their own words, "habitat information obtained by in

situ sampling may provide a rather scattered pattern about the entire seamount ecosystem", and that the combination with hydroacoustic surveying is essential. However, after reading and re-reading the article, I was left unsure of how the frequently-mentioned "hydroacoustic textural classification" worked. How are these acoustic textures computed? I admit this is something I have a direct interest in, and it was very pleasing to see some of my articles on the subject referenced here. But was it the approach used? The references seem instead to point to Howell et al. (2010, 2011), in which the acoustic textures are not really defined. It will be very nice to see a clear explanation of how these textures are defined, and how the supervised classification is performed in practice (were training areas selected? How? How many?). This is an important point, as it underpins how much confidence one can have in the actual classification. It works well, if it matches ca. 85% of the video observations, but how does it work? I am sure the authors can rapidly summarise the approach used to define these textures, and it will be a great advantage to this article.

I have a few other comments on the scientific side:

Page 18713, line 6: were the two grab samples (collected in 1997) analysed by the authors for the present study, or by others, earlier (in which case a reference would be necessary)?

Page 18714, line 9: the authors use the FGDC-CMECS (2012) scheme, which seems perfectly adequate. But how does it compare with the EUNIS classification scheme often adopted in other studies? Does it overlap, converge or differ? It might be interesting to relate the FGDC-CMECS classifications to their EUNIS equivalents (in brackets), just for easier comparison with other studies or approaches.

Page 18715, line 26: "Total propagated uncertainties (TPU)" are not defined. They should. What do they consist in, exactly?

Page 18717, lines 18/19: what does the "FMGT patch analyser" actually do? How does it work? Please explain with enough detail that no doubt is left.

In Section 2.3 (page 18717), I note the use of BPIs and other tools. The authors might be interested in the 2012 publication by Micallef et al. (doi:10.1016/j.csr.2012.03.008), which uses a parallel approach in a different setting (I was a co-author, and you might want to look at acoustic textural classification is described in detail, even though it is only a part of the overall classification approach) (note: there is NO NEED to reference it: it is mostly to emphasize the point on how the classification approach should be described in detail).

Only 1 CTD was deployed. Might it affect the validity of the acoustic corrections over the large area surveyed? And if so, is it enough to worry about? (this will not only depend on the processing scheme, but also on how textural classification is finally achieved). How variable is the general hydrography in this area? It would be nice to reassure the readers that this single CTD profile does not affect significantly the acoustic part of the survey.

Now for the really minor comments:

Page 18710, line 24: “pelagic ones” is not clear. What are the “ones”? I guess this must be “pelagic organisms”.

Page 18713, line 15: “self-made” sounds rather amateurish, and I would suggest “purpose-built”, which is more appropriate for such a high-tech system.

Page 18715, line 13: “maintained” rather than “adjusted”?

Page 18717, line 8: the term “side-scan” is indeed abusively used now to describe this product, and the authors are right to precise it is “called side-scan”. To make the point really clear, what about using quotes each time it appears in this paragraph?

Page 18720, line 12: can “more frequent” be quantified, e.g. with a percentage? (it might not be possible or meaningful)

Page 18721, line 11, “i.e.” rather than “i.a.”. Same comment for page 18729, line 6.

Page 18729, line 1: “threatens fish stocks” rather than “threats fish stocks”. Line 19: “severe fishing impacts . . .” rather than “severely fishing impacts . . .”.

That’s all. I hope these revisions can be done without too much hassle, as they are mostly clarifications (especially on the textural classification scheme), and I look forward to reading the revised article soon. It is a really good contribution to the field.

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