Earth System
Science
Data

Discussions

# Interactive comment on "Multi-scale data on intertidal macrobenthic biodiversity and environmental features in three New Zealand harbours" *by* Casper Kraan et al.

**Clément Garcia (Referee)**

clement.garcia@cefas.co.uk

Received and published: 7 January 2020

General comments: The data paper "Multi-scale data on intertidal macrobenthic biodiversity and environmental features in three New Zealand harbours" by Kraan et al. present an original method of macrobenthic sampling in three intertidal areas. The method focuses on the representation of species distribution at different spatial scales, from 30cm to 1km wide. I very much welcome the publication of such important data and am grateful to the authors for making them available to the scientific community. Such data are critical to respond to pressing research needs especially with respect to understanding scale-dependent change of biodiversity in the face of anthropogenic

disturbance and potential effects on ecosystem functioning. The dataset is thoroughly described and I'm confident it contains enough information for other researchers to make use of it in the future. I therefore recommend this paper for publication subject to minor revisions details in the sections below.

Specific comments: Abstract (P.1 l.4) and introduction (P.2 l.5) "it is virtually unknown how the relationships between abundance patterns and different biotic and environmental processes change depending on spatial scales" Is that for any ecological communities or only referring to the seabed fauna?

Abstract (P.1 l.9) Are there only bivalves, polychaetes and crustaceans? Further down, I found out that it wasn't the case, I suggest a formulation like 'dominated by'

Abstract (P.1 l.13) I was a bit disappointed that the authors did not measure the taxa-level biomass. I do appreciate the substantial work that has already been put into the database and that it may not have been possible to do so but as for 'gaining insight in the role of biodiversity in maintaining ecosystem functioning', it would have been great to have some idea of the biomass of each taxa at each station considering that ecosystem processes (e.g. energy flow or productivity) are more tightly linked to the biomass.

Introduction (P.2 l.2) "...diversity and abundance is fundamental" and biomass as well, see above.

Introduction (P.2 l.18) "i.e. bivalves, polychaetes and crustaceans...", same comment as before regarding the formulation. It feels like there are only those three taxa at the moment.

Introduction (P.2 l.22) Why is it time-effective?

Introduction (P.2 l.27) "from the mangroves to the mid-tidal" the first time I read this bit I thought you meant 'halfway down the intertidal', I realised further down that it wasn't the case. I'd suggest the reformulation: "to the lower end of the middle intertidal zone"

or something like that.

Introduction (P.3 l.4) "Shellhash", I did not know that word, thank you. It is however spelt in one or two words within the manuscript, be careful about consistency.

Mat & Met (P.4 l.13) (n= 1200), it took me awhile to work out where this number came from. Can you remind the reader that you have taken 400 cores in each of the three harbours here please?

Mat & Met (P.4 l.23) How was the seagrass coverage estimated? Was it in percentage, how was it done?

Mat & Met (P.4 l.24) How this number (n=960) relates to the previous one (n=1200), it wasn't 400 point per harbour this time then?

Mat & Met (P.5 l.11) Was the size-classes only done for bivalves?

Mat & Met (P.5 l.21) Can you give reference(s) for the standard methods?

Mat & Met (P.5 l.21) Does the start and end dates of sample measurements matter? If so, why?

Mat & Met (P.6 l.4) Can you give reference(s) for the standard methods?

Mat & Met (P.6 l.7) I think it should be mention earlier that you've also measured the carbon content (i.e. in the abstract along with the other environmental variables)

Mat & Met (P.6 l.16) I wouldn't list the failed samples here, this is a bit tedious for something in the main text, I suggest putting it somewhere else together with the other lost sample from the macrobenthic data (table, footnote, supplementary)

Technical corrections: Mat & Met (P.4 l.23) Shell hash in two words here, consistency

Mat & Met (P.5 l.19) "0.1gr." The convention for grams is "g"

Mat & Met (P.5 l.20) "Chlorophyll a", the "a" is not in italic

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