

MS No. egusphere-2025-138

Benthic ostracod diversity and biogeography in an urban semi-enclosed eutrophic riverine bay

Dear editor and reviewers,

We appreciate your decision and advice. Here we addressed all the comments from reviewers in the revised MS, and point-by-point responses are shown below.

Reviewer 1

I would like to congratulate the authors on putting together such a concise and well-prepared manuscript and study. My suggestions are almost entirely cosmetic for publication and are listed below:

Line 23: Here and elsewhere the terminology of “Hong Kong side/Shenzhen side” is a bit awkward. I would amend this sentence as follows and amend terminology throughout where appropriate “...characterized by inner-outer differences as well as differences between the Hong Kong and Shenzhen areas, where Hong Kong was more influenced by eutrophication, and Shenzhen more influenced by metal pollution.”

Response: We changed expression both on text and graph of “side” into “area”.

Line 27: Amend sentence “...importance of studying uncomplicated systems with finer sampling, ...”

Line 33: Amend sentence “River discharge, aquaculture and maritime activities cause eutrophication and pollution of coastal areas, ultimately leading to altered marine...”

Line 35: Amend sentence “...connected with the Pearl River Estuary...”

Line 37: Amend sentence “...mangrove ecosystems...”

Line 43: Amend sentence “Ostracoda (Crustacea) which are abundantly fossilized in marginal-marine sediments, have been...”

Line 47: Amend sentence “...Osaka Bay and the Baltic Sea...”

Line 54: Amend sentence “...conducted solely in mangrove...”

Line 55: Amend sentence “...restricted to one side...”

Line 71: Amend sentence “...have expanded over the last several decades...”

Line 84: Amend sentence “...locations that cover the entire...”

Line 115: Amend sentence “Hill numbers offer several major advantages and have been...”

Line 140: Amend sentence “Oyster shelves expand throughout most of ...”

Line 142: Amend sentence “The bathymetry of Deep Bay is...”

Response: Thanks. We amended accordingly.

Line 142: To say that the bathymetry of Deep Bay is high does not clearly convey what you mean. Do you mean to say that Deep Bay is shallow? Or that the bathymetry of Deep Bay is complex? Or are you saying that there is substantial sediment accumulation in Deep Bay causing a shallowing of the water depth in that area? Has anyone done a bathymetric survey of Deep Bay to ascertain what's going on?

Response: We changed the expression to make it clear, we would like to describe the bathymetry variation of Deep Bay, it is shallower in the inner bay, and deeper in the outer bay. The bathymetry is presented on Figure 1, the bathymetric survey is derived from Ye et al., 2018*.

Now this sentence is " The bathymetry of Deep Bay is shallower in the inner part and deeper in the outer part (Ye et al., 2018, Fig. 1). "

***Ye, R., Zhang, C., Kong, J., Jin, G., Zhao, H., Song, Z.-y., and Li, L.: A non-negative and high-resolution finite volume method for the depth-integrated solute transport equation using an unstructured triangular mesh, Environmental Fluid Mechanics, 18, 10.1007/s10652-018-9598-4, 2018.**

Line 169: Amend sentence "There tended to be lower..."

Line 170: Amend sentence "...with almost zero specimens."

Response: Thanks. We amended accordingly.

Line 190/Section 3.3 and onwards: The biofacies you describe should be capitalised (eg: Biofacies 3). The use of "part" is a bit awkward and is best removed. I would recommend using alternate language (such as "region" or "area") or just removing the word entirely (so long as it grammatically makes sense). For instance, Line 197 you can just say "The inner bay (Biofacies 3) was related to almost all environmental parameters included in this study (Fig. 6b) which indicated the inner bay is strongly influenced by eutrophication, hypoxia...."

Response: We changed biofacies into capitalised form accordingly. We changed/deleted the "part" word in text accordingly.

Section 4.3: How do the results of this study compare with other biological assessments done of any other micro- or macro- fauna (Phytoplankton? Corals? Algae? Forams? Oysters? Echinoderms?) in Deep Bay? Is there a similar Shenzhen vs Hong Kong influence/inner vs outer bay influence?

Response: Good point. We checked previous studies in Deep Bay, unfortunately, ecological studies were conducted solely in mangrove reserves which restricted to a small area of inner Deep Bay, our study is the first one which conducted detailed

biodiversity and biogeographic distributions for marine organisms in the broader area of Deep Bay with both Hong Kong and Shenzhen areas.

Reviewer 2

This paper is well organized and clearly written, with figures and diagrams of excellent quality. My suggestions are mostly technical corrections, which are listed below:

Line 49: Irizuki et al., 2015 is missing from the reference list.

Response: We were supposed to say “Irizuki et al., 2014”. Changed in text.

Line 445: Dewiyanti et al., 2021 is not cited in the text.

Response: We deleted this reference.

Line 476: Irizuki et al., 2014 is not cited in the text.

Response: Typo in text, we changed “Irizuki et al., 2015” to “Irizuki 2014”.

Line 487: Luo et al., 2014 is not cited in the text.

Response: We deleted this reference.

Line 511: Wang et al., 2019 is not cited in the text.

Response: We deleted this reference.

Line 318: Zhao and Whatley 1988 is missing from the reference list.

Response: We were supposed to say “Zhao and Wang, 1988”. Changed in text.

Line 542: Zhao and Wang, 1988 is not cited in the text.

Response: Typo in text, we changed “Zhao and Whatley, 1988” to “Zhao and Wang, 1988”.

Lines 370–376: Irizuki et al., 2008* also provided a detailed discussion on the relationship between phytal species (e.g., *Xestoleberis hanaii*) and oyster farming. It may be appropriate to cite their work here.

*Toshiaki Irizuki, Koji Seto, Ritsuo Nomura, *Paleontological Research*, 12(3):283-302

(2008). The impact of fish farming and bank construction on Ostracoda in Uranouchi Bay on the Pacific coast of southwest Japan-Faunal changes between 1954 and 2002/2005.

Response: Thanks. We added it in text and reference.

We also fixed these editorial comments:

a) Please note that coloured tables cannot be included in the final manuscript.

Response: Colors deleted

b) Please add the section "Author contribution" by using initials for the authors' names.

Response: We added

c) Please add the section "Competing interests".

Response: We added

Sincerely yours,

Jialu Huang and Moriaki Yasuhara