

Earth Syst. Sci. Data Discuss., referee comment RC3
<https://doi.org/10.5194/essd-2022-126-RC3>, 2022
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Comment on **essd-2022-126**

Chuanmin Hu (Referee)

Referee comment on "Oil slicks in the Gulf of Guinea – 10 years of Envisat Advanced Synthetic Aperture Radar observations" by Zhou Najoui et al., Earth Syst. Sci. Data Discuss., <https://doi.org/10.5194/essd-2022-126-RC3>, 2022

The paper describes how the 11-year ENVISAT ASAR data were used to establish a database of oil slicks (both anthropogenic and natural origins) in the Gulf of Guinea, from which statistics for each country's EEZ and for the entire Gulf were obtained.

Overall, the writing is relatively clear, and the information is useful for monitoring and mitigating oil pollution. But before final publication I'd like to ask to authors to consider the following comments.

The paper needs a thorough English proof reading. There are countless grammar errors, for example: "these oil slicks detected regroup" is awkward. Line 102: there is extra "ASAR". Line 106: "free-oil" should be "oil-free." There are others.

Fig. 1. Are these EEZs labeled by number or by country in the database? For example, if we want to find EEZ for Togo, which is it on the map? Lat lon labels are too small to read, so are the notations. Also, what is the data source of these EEZs?

Line 98, there is this most recent one to add: Dong et al. (2022), chronic oiling in global oceans. It would be nice to compare the findings from these two studies for the Gulf in a follow-on study.

Fig. 4. What date? What location? What length scale? How is it stretched? Where is the platform?

Line 138 – 155. This description is good, but please some examples to show how these different forms are differentiated. How is the boundary of each slick extracted manually? By drawing the boundary with a steady hand? If so, show examples of the original images and the manually drawn boundaries.

Line 159, what is “photo-interpretation”? This is no photo used in the study, right? I suppose you wanted to say “image-interpretation”, correct? There are several other places with the same word.

Line 159 – 164. This normalization is very good.

Eqs. 4-5: what is GG?

Line 202 – 2016. I couldn't find how slicks due to ships, platforms, oil seeps are differentiated manually.

Fig. 5. It's better to show the image itself, and then have a call-out box to show the oil platforms with yellow dots.

Figs. 7 – 9: What does density mean? For example, if a location has a number of 200, what does it mean?

Fig. 10. This is an important figure. Can we interpret the values as, for a given year, if there is just 1 huge image covering the entire EEZ, the value represents the oil slick area from this imaginary image? I think this is what "normalization" means.

Fig. 10. What caused the sudden drop in ship-induced oil spill after 2008?

Figs. 11 & 12. All fonts need to be enlarged. Also, it's better to use a different y-axis range for different regions so the annual variations can be seen. Same for Figs. 13 & 14.