

Interactive comment on “Reconstructing three decades of total international trawling effort in the North Sea” by Elena Couce et al.

Anonymous Referee #1

Received and published: 27 September 2019

General Comments:

The manuscript presents a dataset of trawling effort in the North Sea, comprised of compiled as well as estimated data. The authors clearly explain why there is a need for such a dataset and ways in which it can be useful to future scientific studies. The manuscript is well written, and the language is clear and easy to understand.

The link for the dataset is functional, and metadata are included on the linked page. The map tab on the linked page shows the North Sea location. The map lacks the functionality of being able to display the trawl data, but this functionality is not critical. The data files (.csv and .shp) can be easily downloaded and opened. However, when viewing the shapefile in ArcCatalog, there are no metadata associated with the file. I recommend adding metadata to the file.

C1

The inclusion of the estimated data is what makes this dataset unique, as it otherwise would only be a compilation of datasets already in existence. It is therefore critical to have a measure of validity of these estimated data. While the authors acknowledge that there are errors associated with the estimated data, these are not quantified. The authors should consider if there are any methods which would be appropriate to validate their estimated data. For example, are there data outside of the study period (1985-2015) that could be used in order to conduct validation? If not, could data be removed and used as a testing dataset in order to statistically analyze how their methods perform? If the author thinks validation in this manner would not be appropriate or possible, they should consider whether there are any other methods by which they could quantify error. The other point that needs to be addressed with the estimated data is in regards to the methods used to select the length of the time period utilized in calculating average spatial distribution. This will be explained in the following section.

Specific Comments:

When performing the trawling effort reconstruction, the authors clearly state what data are being used to calculate the average spatial distribution of effort for each country. However, it is not explained why certain time periods are used and why different lengths of data are used for different countries. For example, for the 1985-1986 reconstruction, the Denmark spatial distribution is based on data from 1987-1989 (3 of the available 29 years for Denmark), whereas the French spatial distribution is based on data from 2000-2015 (16 of the available 16 years for France). Why was the number of years used not kept consistent when possible? How were decisions made about what length of time to use? This should either be kept consistent when possible (when the data are available to allow for it), or the authors should explain why using differing lengths of time is a more appropriate method.

If spatial distribution is assumed to change gradually over time as is stated in the assumptions, using a long time period when calculating average spatial distribution may result in loss of temporal specificity. Therefore, if a long time period is used for calcu-

C2

lating average spatial distribution, it should be explained why this is appropriate.

Assumption 2 of the trawling effort estimates acknowledges that under particular circumstances, major changes may occur in spatial distribution. Were any major changes seen in the compiled trawling data? If so, how was this considered when estimating data?

It is not made clear why there is no beam trawling data for Sweden. Is beam trawling not occurring, or is it occurring but there are no data?

The listed countries are the most significant contributors to trawling in the North Sea, but are there other countries also trawling here? If so, approximately how much of the trawling effort can be attributed to the countries included in this study? Can an approximate quantification be given?

I found the description of the explanation for the discrepancy between the STECF data and the Scotland and England data (presented on page 9) to be not entirely clear. It is also unclear whether similar discrepancies would have been expected between STECF and other countries if data for other countries had been available. Did similar discrepancies exist for Denmark (the other country with a country-specific dataset)?

Technical Corrections:

There is currently inconsistency in indenting paragraphs in the introduction section (some paragraphs are indented at the beginning and some are not).

There is inconsistency in whether the word 'data' is used as singular or plural throughout the manuscript.

In the abstract, the following sentence has potentially confusing wording: "The dataset was largely reconstructed using compiled effort data from 7 fishing effort time-series, each covering shorter time spans and some of the countries fishing the North Sea only." This could be clarified in the following way: "The dataset was largely reconstructed using compiled effort data from 7 fishing effort time-series, each covering shorter time

C3

spans and only some of the countries fishing the North Sea."

On Page 3 line 15, it states "For the 1977-1995 period...". This is confusing, since the remainder of the paper states 1985 as the beginning of the period included.

Typographical errors:

Page 8 line 15 - for the use of the data provided

Page 9 lines 15-16 - a factor of 2

Page 10 line 5 - rectangles

Page 11 line 13 - in relation to fishing pressure

Interactive comment on Earth Syst. Sci. Data Discuss., <https://doi.org/10.5194/essd-2019-90>, 2019.

C4