Dear Mario Hoppema and other members of the editorial team,

Thank you very much for accepting this manuscript for publication. We here respond to each of the edits suggested.

The reviews asked for units in the figures. These are still not there, in particular for the abundances. Please add those. If it is not possible to insert them in the figures, then mention the units in the captions.

- Thank you for this suggestion. We had changed the figures from the first draft of this manuscript, but we accept that we should have made the figures more accessible. We have now added more context to figure captions, an example of which has been copied below:

- "**Figure 2:** Output of the RST model applied to simulated data, in which a regime shift was induced in 10% of 220 simulated phytoplankton species and 10% of 80 simulated zooplankton species. (a) Time series of the percentage chance of a regime shift occurring, with shaded areas showing the mean absolute deviation, (b) anomalies in the simulated Phytoplankton Color Index (PCI), and (c) its cumulative sum. (d-k) Cell abundance anomalies and corresponding cumulative sums in log-transformed abundances for the (d-g) phytoplankton and (h-k) zooplankton species showing the greatest ranges in anomalies. Vertical dashed lines indicate months when the estimated regime shift likelihood changed by over 20%. Shaded areas in panels (b), (d), (f), (h), and (j) represent the standard deviation around the 12-months rolling mean."

L5 predict or identify?

- This and a few other instances of "predict" have now been changed to "identify". The word "predict" is now only used when talking about the future and in the case of "predicting the likelihood of a regime shift".

L6 ... the latter of which has become ...

- We thank the editors for this suggestion, but do not believe this change will add clarity to the manuscript. Changing "A variety of methodologies to identify regime shifts have already been used in the North Sea, which has become an important case study..." to "A variety of methodologies to identify regime shifts have already been used in the North Sea, the latter of which has become an important case study..." would imply there is a former body of water being discussed. The only specific body of water discussed in the abstract is the North Sea.

L61 ... which are concerned ...
L164 respectively, not respectfully

L437 ... regions (van Leeuwen et al., 2015) ... (typo)
L698 H.G. Fransz, J.M. Colebrook, J.C. Gamble
L446-447 "producing Type 1 and 2 errors" Earlier in the text this was called Type I and Type II

- The recommended changes and typos have been fixed.

L445 ... applied in a study using the ... (delete previous, as this was already mentioned earlier in the sentence)

- Thank you for this suggestion. These sentences have been combined to improve clarity and readability of the manuscript.

- **Previous version:** "We therefore constructed artificial abundance data that mimic the characteristic of observed CPR data that allowed an extensive validation of our model. This approach had previously been successfully applied in a previous study using the novel multi-scale multivariate split moving window methodology to identify North Sea regime shifts (Beaugrand et al., 2014)."

- **Current version:** "We therefore constructed artificial abundance data that mimic the characteristic of observed CPR data which allowed an extensive validation of our model, an approach successfully applied in the multi-scale multivariate split moving window methodology to identify North Sea regime shifts (Beaugrand et al., 2014)."

We wish to thank all reviews and editors again, and thank you for accepting this manuscript for publication in Ocean Science.

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