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| **Technical comments** | |
| This is a really well done analysis and it well written though copy editing is needed as there are several typographic errors. | We have gone through the manuscript and identified some of the typos mentioned, in particular consistent use of spatiotemporal (replacing any spatio-temporal). |
| The results can be a bit hard to follow because of the various species grouping and terminology. |  |
| I might suggest a summary of main points in bullet form would simplify understanding of the results. | Have included a leader paragraph to the results |
| In addition, some attention should be paid to the use of the terms for the factors. The text says they are referred to as average spatial variation, encounter probability and positive density. But this isn't entirely consistent in the results. I can't find a reference to average spatial variation. Encounter probability is sometimes average encounter probability and positive density is sometimes average positive density. That makes things a bit more confusing. |  |
| **Remarks to author** | |
| Very nice analysis of an important problem. I had some minor technical comments on terminology. I also note that the results section is rather dense to read and a summary would be useful that gives the primary relationships that emerge from the analysis both in terms of species associations and drivers (depth and substrate). Perhaps a table or a flowchart? |  |
| More substantively, I would suggest you give some more thought to the applicability of this type of analysis. As you note at line 236 "A role that science can play in supporting effectiveness of spatiotemporal avoidance could be to provide probabilistic advice on hotspots for species occurrence and high species density which can inform fishing decisions."  Yes that is possible but I suspect fishermen know most of the patterns you identify. That doesn't mean that forecasting is not useful, but it is unlikely to be the basis for regulation. That is particularly so since it would make it impossible to hold fishermen accountable for bycatch if you "forecast" that the bycatch would be low ("the government made me do it"). Rather, I think the applicability is to perhaps model the efficacy of any regulatory approach with technical measures for addressing the mixed catch problem and then designing additional measures to incentivize reductions in unwanted catch. |  |
| Another, more interesting application is to look at, in a sense, the reverse problem. That is, given that fishermen under the new EU regs will have a disincentive to encounter unwanted catch, is it possible to predict when things go wrong. So for example, if you look at the tow by tow catch data, when there is a large bycatch, how is that deviating from the model results you present here? And are their some common factors (fishing to top up a trip, fishing in the wrong place, weather, or other conflicts) that result in big deviations from expected catches given the factors you have identified. That might provide an interesting avenue for advice on reducing unwanted catches. |  |
| **Editorial board comments** | |
| In your revision please fully address the comments/suggestions made by reviewer #1.  In particular it would be great if you could address this particular point made by reviewer #1: "More substantively, I would suggest you give some more thought to the applicability of this type of analysis. As you note at line 236 "A role that science can play in supporting effectiveness of spatiotemporal avoidance could be to provide probabilistic advice on hotspots for species occurrence and high species density which can inform fishing decisions." |  |