This paper investigates hypotheses regarding nearshore fish and invertebrate population responses to the Deepwater Horizon oil spill using an ecosystem model that can simultaneously evaluate mortality sources from predation and fishing pressure, and a general equilibrium model to evaluate perturbations to the integrated fishery-food web system. The paper is well-written and clear.

I did not originally review this paper but note that the authors were responsive to previous reviewer recommendations. My primary suggestion is to include the detailed methods for the general equilibrium model in the main body of the text, since these methods generate the bulk of results presented and discussed. Including these methods in the main text rather than in a supplement is likely to increase understanding greatly with little increase in overall manuscript length.

Minor edits:

Line 215: "nearby Ecopath models" I assume this means models of adjacent geographic areas but it may be worth spelling out for clarity

We have changed “nearby” to “geographically close.”

Lines 218-224: It sounds like the biomass increases that were necessary to balance the model are justified as a catchability adjustment for the survey. Can you give a range of increase (x-y% from original model) and note whether the most extreme increases are in line with other evidence, if any (e.g. catchability or total biomass backed out from assessments)?

We have added the range by which the biomasses were increased on line 224. No other

estimates of population abundance specifically in nearshore waters exist for these

groups, as there are no relevant stock assessments to use.

Lines 250-296: This section gives a nice overview of the general equilibrium model, but most of the results and conclusions come from this model, and I found myself wishing that the details on general equilibrium model methods currently in the supplement were included in the main body of the text. The supplement description is excellent and of the same quality as methods currently in the main text, so could be included directly. It appears this would only add ~2 pages to a manuscript that does not seem excessively long to me.

We have integrated these supplementary methods into the main methods text and

deleted the supplementary material (but retained the supplementary Table and Figures).

Line 322: this is predation \*by the selected subset of predators\* correct? Not overall predation. If so, it may be worth adding this clarification.

We have added “by the selected subset of predators" after “predation.”

Line 345: could leave out "surprisingly" here, given the straightforward explanation provided in the next sentence.

We have deleted “surprisingly.”

Lines 506-515: I agree that these ranges are wide and that looking at medians is a reasonable first step. This is one place the general equilibrium model could be replaced (if one were concerned about more realistic bounds) by a slightly more complex analysis such as the ecosense approach in Rpath which uses a dynamic simulation to weed out the most unrealistic parameter combinations (see Whitehouse and Aydin 2020). I'm not suggesting this be done for this paper, but it could be noted in the discussion. It has been noted before that the full set of functional response parameters that can be generated at random may have only a small proportion of combinations that result in viable ecosystems (Gaichas et al. 2012). I'm not sure whether median from the unfiltered parameter set would correspond to the median response of the filtered set, so a word of caution might be warranted.

We have noted this in the discussion through the addition of a sentence at the end of this

paragraph: “These unrealistic model configurations could potentially be removed using

the ecosense approach in Rpath which uses a dynamic simulation to weed out the most

unrealistic parameter combinations (Whitehouse and Aydin 2020).”

Table 1: @footnote typo "paramter"

Typo has been corrected.

Fig. 2: Can fisheries be included in the trophic level plot?

We have added a node for the fishery.

Fig. 4: Is there a way to add maybe a dotted line or some other way to divide the groups of mortality source bars for each prey species? I can't immediately tell which predation mortality source goes with which prey (same comment applies to Fig S1)

We have added light gray boxes behind every other prey group in both figures. We

agree this makes the figures much easier to read.