M NOTES FOR MATT summarized 9/7/23 by Cara

Figure numbers are for the version before this date.

See sablefish\_coverage\_XXXXXXXXX for edits in track changes

I put in bold the more important things.

See Word document with rewrites (new in track changes, or a comment.)

1. If you can, tables all left justified (text and table are in-line with main text). If not, I get it. We can leave it.
   1. I think I did this in the last version
2. Cindy has a comment about no white line on bottom (y-axis is not actually at 0?). See Figure 1, bottom row of cells. Not a high priority.
   1. Will work on this if I have time
3. Table 1: turn on OR off? Would that screw up all of our table numbering? We are not so sure we need it unless this ends up as a report not attached to the SAFE report.
   1. I think the table numbering will be tough if we try to toggle
4. Map: DELETE Done
5. Fig 2: DELETE - fixed gear prop. pot. Done
6. Figure 3 and 4 Good catch Cindy! I did
   1. Cindy “Shouldn’t the bar heights be the same between this fig and the previous?” I think she means the absolute catch panels. The catch in ODDS should be a lot less that realized catch? See Y-axis scale.
   2. AAAAA good catch. I had an error in a join that generated fig3. This is fixed.
7. **New Table** (below):
   1. This data is like the bottom panel of fig 4 (actual coverage of catch - %). Will now have a fig and table.
   2. b/c it is a summary table, only the last 5 years- and the avg 2013-present
   3. Model format after the tables you have already created.

Caption: The proportion of sablefish catch observed by observers or electronic monitoring (EM) by area and gear for the most recent five years and the average proportions from 2013 through the current year. The remainder of the catch had no observer coverage. Gear types include pelagic trawl (PTR), non-pelagic trawl (NPT), pot (POT), or hook and line (HAL). Areas include the Aleutian Islands (AI), Bering Sea (BS), Western Gulf of Alaska (WGOA), Central Gulf of Alaska (CGOA), West Yakutat (WY), and East Yakutat (EY).

|  |  | PTR | | NPT | | POT | | HAL | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Area | Year | % EM | % observer | % EM | % observer | % EM | % observer | % EM | % observer |
| AI | Avg 2013-present |  |  |  |  |  |  |  |  |
| AI | 2018 |  |  |  |  |  |  |  |  |
| AI | 2019 |  |  |  |  |  |  |  |  |
| AI | 2020……. |  |  |  |  |  |  |  |  |
| BS | Avg |  |  |  |  |  |  |  |  |
| BS | 2019……. |  |  |  |  |  |  |  |  |

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1. **New Table**: sample summary

Caption: The total catch in mt for each area and year, the number of individual fish lengths and otoliths collected, and the rate of length and otolith sampling, as lengths per mt of catch, for the five most recent years and the average from 2013-present. Areas include the Aleutian Islands (AI), Bering Sea (BS), Western Gulf of Alaska (WGOA), Central Gulf of Alaska (CGOA), West Yakutat (WY), and East Yakutat (EY).

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Area | Year | Catch | Lengths | Lengths/mt | Otolith | Otoliths/mt |
| AI | Avg |  |  |  |  |  |
| AI | 2018 |  |  |  |  |  |
| AI | 2019 |  |  |  |  |  |
| AI | 2020 |  |  |  |  |  |
| AI | 2021 |  |  |  |  |  |
| AI | 2022 |  |  |  |  |  |
| BS |  |  |  |  |  |  |

1. Figure 10 - line
   1. Caption says red is length/mt (need to reverse). done
   2. Legend: Please change “Proportion EM” to “Catch with EM/Total Catch (mt) in legend. done
   3. For axes: can we make them unfixed, or whatever that is called? Both lines should have their peak value at the panel at the top of the panel. We can make them independent between panels but not within a panel.
   4. Caption: Should you take out the text “Values are scaled to a mean of zero for comparison”? Done
   5. Caption: I forget…is lengths/mt for all gears? I think we decided it should be. If so, change text to “the rate of length sampling (lengths per metric ton; black) for all gear types.”.. Was just fixed gear. Changed to all gears
   6. Lines look a little weird in the last Word doc, like not smooth.
   7. Can we add more years on x-axis? done
2. **Change counts/proportion figs?** 
   1. FIG with 2 PANELS
      1. Fig. 3, 4, 5, 6, 9
      2. Concern in review: you can’t see the % well (values in the figs) reasonable….
      3. Option 1: Landscape pages (these figs only). Do side by side. Delete area names on 1 of the panels. Squish bars to be more narrow? All still on one page, but can see % better? I would prefer not to do this…
      4. Option 2: Separate proportion and catch panels and make them large and own figures. Very similar captions, but I can make new ones for each or you can - if needed. This would be easier. They are already separate figures that I lumped together.
3. Y-axis labels:
   1. When final changes are all done,
      1. Make sure values on the axis are at the bottom and top in all figure panels (like fig 7 and 8) - there is not one at the top. 10 should help with that
      2. Add more fractions to proportion figures if we can make the bars taller.
4. Colors can stay!

---------------------------------------------------------------------------------------------**----Matt Stop----**

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Cara notes for Cindy (then Matt) August 23-30th, 2023: after Chris and Dan review

Reviews in next couple of weeks

1. Falvey? Idea from Chris only.
2. FMA? - they need to not object, but there is not really a wrong way to use this..? Craig has seen a version.
3. 0 - they can see it when we release it. Review from industry of a nov doc is unusual, or any doc.

Authorship (not for me, but for us…long story that I will make short.)

An aside - FMA question - emailed Nick Thom about a few of our results (email on 8/23). Why diff rates of sampling (len/mt)? Can we get more from HAL even if it ups the rate just for one gear?

Suggestions from Cara

1. See Word document with rewrites. I still have is called sablefish\_coverage\_08302023
2. Table 1: Catch: turn table 1 on/off table or just delete (catch in assessment and we have a figure).
   1. **Cindy turn on and off - what if working paper**
3. Space data in tables more narrow
   1. Emailed matt 8/23
   2. **DELETE MAP**
4. Fig 2: Delete - fixed gear that is pot.
   1. **DELETE - Cindy**
5. Fig 5 - data matching? See WY, HAL, 2021, 2022. Top and bottom panels do not seem to match?
   1. Emailed Matt 8/23
6. New Table : coverage. Create table with bottom panel of fig 4 (actual coverage of catch - %). Will have a fig and table, but this may be some of the most important data.
   1. Where value is the % of catch in each gear/area/year (like fig 4). How many years? Maybe all. Dan thought 1 avg and current year only as a quick look. I think more, maybe even all years.
   2. Order by year? (Dan) I am not a fan.
      1. D**o last 5 years, is it informative? Then add avg**

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  | PTR |  | NPT |  | Pot |  | HAL |  |
| Area | Year | % EM | % observer | % EM | % observer | % EM | % observer | % EM | % observer |
| AI | avg | 0.02 |  |  |  |  |  |  |  |
| AI | 2018?...2020 |  |  |  |  |  |  |  |  |
| AI | 2021 |  |  |  |  |  |  |  |  |
| AI | 2022 |  |  |  |  |  |  |  |  |
| BS |  |  |  |  |  |  |  |  |  |
| BS |  |  |  |  |  |  |  |  |  |
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1. New Table: sample summary
   1. Summary table (no gear). Overall impression of how we are doing - all catch.
   2. Dan suggested
   3. How many years?
   4. **Avg? Lasy 5 years, no avg**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Area | Year | Catch | Lengths | Lengths/mt | oto | oto/mt |
| AI | Avg |  |  |  |  |  |
| AI | 2018 |  |  |  |  |  |
| AI | 2019 |  |  |  |  |  |
| AI | 2020 |  |  |  |  |  |
| AI | 2021 |  |  |  |  |  |
| AI | 2022 |  |  |  |  |  |
| BS |  |  |  |  |  |  |
| BS |  |  |  |  |  |  |
|  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |

1. Figure 10 - line
   1. How to get 2 y-axes and not scale. Everyone is freaked out about the axis being understandable.
      1. Matt can’t use ggplot to do 2 axes
      2. “Not sure I really understand the rationale for scaling an easily understood proportion to a mean of zero? Seems unnecessarily complicated and really going to baffle stakeholders…” - Dan
      3. Are lengths collected for fixed gear? Do we want it to be?
      4. **DELETE - cindy think - change units in name EM mt/mt**
2. SPlit several figs into 2

F**IG 2 - me and Cindy** - a lot of catch that is not being observed but is in a category. Catch in partial and no coverage. TRIP IS DEFINED BY ODDS NOT VESSEL. TRY TO TAKE OUT DEFINING ON PAGE 1.

FIG with 2 PANELS - PUT ON LANDSCAPE AND DO SIDE BY SIDE. YOU CAN DELETE AREA ONE SIDE OF ONE PANEL.SQUISH BARS NARROW

1. Separate proportion and catch and make them large and own figures.
2. Discuss 3, 4, 5, 6, 9
3. “I think the second panel is probably most important in doc, but formatting is kind of terrible to actually get much out of it. It probably needs to be its own full size figure, so that the axis is not smooshed (more tick marks than just 0 and 1), etc.” - Dan
4. Y axis labels:
   1. Make sure values at bottom and top in all figure panels
   2. Add more fractions to proportion figures (if split)
   3. Fig 7 and 8 - Missing Y axis #s for the top bound on some panels.
5. Captions on tables needs to be left justified
   1. Matt said he can’t do it.
   2. OKAY - MATT NO
6. Map figure - make fig 1. - OR CUT b/c in SAFE?
7. Colors okay? (Dan)
   1. The second panel is better than following ones of similar info, but still too smooshed to make much out of what the actual proportions are (except when are/are not 0/1).
      1. Might want to consider colorblind friendly pallets(?) or maybe it already is (no idea).
         1. [https://cran.r-project.org/web/packages/viridis/index.htm](https://cran.r-project.org/web/packages/viridis/index.html)l
      2. Though I like the ggsci ones, though not colorblind friendly
         1. <https://cran.r-project.org/web/packages/ggsci/vignettes/ggsci.html>
      3. MATT CHECK THEM OUT? SEE FIGURE 3 FOR COLOR BLIND. FIG 9 SOMETHING LIGHTER FOR PRINTING?

**Dan, just a few**

Note: I can see that Dan had the mind set that this could be ultra automated for all species and the authors would not have to do very much. Chris and Dan also were looking for a more readable description of the data sources…or were not that interested at all. This resulted in ideas of shrinking, bulleting, and moving it to an appendix.

* Confused because text is all about observer coverage, but none of these tables actually have anything about coverage rates. The next two show samples taken, but not number of trips, percent of trips covered, or even percent of catch covered. Guess I’m a little confused by the disconnect between text and tables.
* This section is set up like there is going to be a summary of things like trips observed, proportion of catch observed, etc. There isn’t really any summary and none of the tables touch on that either (it is covered in the figures, though). Instead of a table of total catch, I think one that provides # trips observed, proportion of trips observed, catch observed, proportion of total catch observed…would be more useful. A summary table of averages next to current year values would be helpful. I also provide a few recommendations for in my last text comment on how a generalized summary of data might look like if trying to write this all in rmarkdown for multiple species, etc.
* (Cara added at top): A new ‘summary table’ would be useful that lists the time series average and current year: Catch observed, % catch observed (both for observers and EM), lengths taken, otoliths taken? The entries could then be directly called in the summary text in Rmarkdown to help summarize results.

Also suggested text from Dan

Note - I (Cara) did something like this in new version where each table and figure is referred to in a progression so that the reader knows what the goals are and where to find the answers. Not that it is good right now.

DAN (example text, but I am not really a fan of pulling in new data into text each year, but open to it this year or next year.)

“If goal is to make this a generalized r markdown doc and not trying to focus to any specific audience (since the proposed generic text is going to read kind of boring and robot-like), then could potentially add a generic couple of sentences that summarize the main table and fig results. I could envision something like (note that some portions could be repeated for each area, where needed…the corresponding Table/Fig citation should also be included):

The time series average of trips observed by observers is XX, the number observed in XX was XX. The average total number of trips observed with EM was XX. In XX, XX trips were observed with EM. The average proportion of all trips observed that were covered by EM is XX (since EM began in 2020), while the proportion was XX% in XX.

 The amount of catch observed was XXmt (XX% of yearly total catch) by onboard observers and XXmt by EM (XX% of yearly total catch). In XX, XXmt were observed by onboard observers representing XX% of the total catch. In XX, XXmt were observed by EM representing XX% of the total catch.

The average total number of length samples taken was XX….The average otoliths…Compared to the species with highest number of biological samples (i.e., species XX), the rate of sampling is XX% for lengths and XX% for otoliths.”