

Midwater Trawlers Cooperative  
Pacific Whiting Conservation Cooperative  
United Catcher Boats

Dorothy Lowman, Chair  
Pacific Fishery Management Council  
7700 NE Ambassador Place, Suite 101  
Portland, OR 97220

March 19, 2015

RE: Agenda Item E.5 – Groundfish Essential Fish Habitat Amendment Scoping including RCA and Area Adjustments

Dear Ms. Lowman,

Midwater Trawlers Cooperative (MTC), Pacific Whiting Conservation Cooperative (PWCC), and United Catcher Boats (UCB) provide these comments (and attached analyses) for consideration by the Pacific Fishery Management Council (Council) as they decide the scope of the Groundfish Essential Fish Habitat (EFH) Amendment. MTC, PWCC, and UCB represent most harvesting and at-sea processing participants in the Pacific whiting fishery. Based on the information provided in attached appendices and as discussed below, we recommend the Council not include new EFH regulatory measures that would apply to the whiting midwater trawl fishery because a thorough analysis of the whiting fishery data demonstrates that new regulatory measures are not needed.

Under this agenda topic, the Council is considering a very broad range of issues. Apparently, only one would apply to the midwater trawl whiting fishery. This issue was added to the mix by the joint proposal submitted by Oceana, Ocean Conservancy, and NRDC (hereafter Oceana et al.) in November 2013 (Agenda Item H.7.a, Attachment 7, November 2013).

As part of their proposal, Oceana et al. assert, “significant bottom contact is occurring by midwater trawls” and propose that new gear restrictions are necessary. It is our understanding that the basis of the Oceana et al. assertion is information developed by the whiting industry in response to a condition placed on the Marine Stewardship Council (MSC) certification of the Pacific coast midwater trawl whiting fishery. In contrast to the Oceana et al. assertion that significant bottom contact is occurring, the survey reported limited occurrences, generally over mud or sand bottom. In summary, a survey of the US fleet was conducted by the US Pacific Hake MSC clients in 2011. Responses were received from about one-third of the whiting fishing vessel fleet (i.e., catcher vessels and catcher/processors). A median of 8% of tows were reported

to have made bottom contact in the 2009 fishery, exclusively on muddy/sandy bottom. A median of 3% of tows were reported to have made bottom contact in the 2010 fishery, again on muddy/sandy bottom. It is important to note that these limited interactions with the sea floor were reported for the entire extent of the US whiting fishery from the US/Canada Border to the Oregon/California Border, that is, responses were about general fishing patterns, not fishing patterns specific to EFH Conservation Areas (EFH CAs).

In September 2014, the Council requested NMFS develop information about potential bottom contact by the midwater trawl whiting fishery in EFH CAs. The NMFS analysis was an attempt to estimate the frequency of bottom contact by vessels in the whiting midwater trawl fishery. In December 2014, NMFS requested feedback about their analytical approach and findings. The whiting sectors formally responded to this request with several suggestions to refine and improve the NMFS analysis (that letter is provided as Appendix 1). Our expectation is that NMFS will respond to these suggestions in an April 2015 report to the Council.

In response to the NMFS analysis and to help us better understand interactions between whiting midwater trawl gear and EFH CAs, Mr. Dave Fraser and Mr. Karl Haflinger developed analyses to review the probability of whiting catcher vessel and catcher/processor bottom contact in EFH CAs. Their analyses are provided as Appendix 2 and Appendix 3. In essence, Messrs. Fraser and Haflinger built upon the work developed by NMFS by adding Vessel Monitoring System (VMS) tow-level data overlaying EFH CAs, identifying voluntary closure areas, conducting finer-level analyses of the species composition-data proxy used by NMFS, and analyzing fish life history characteristics that influence where fish are in the water column.

The findings are, in summary:

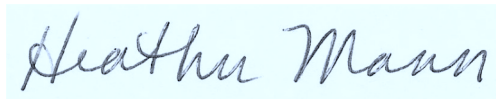
- There are few haul locations within any of the EFH CAs.
- There are relatively less after rationalization.
- Applying a “1kg per haul” filter for shortspine and rex sole eliminates most of those haul locations.
- Only a few EFH CAs have bathymetry that makes bottom contact with a whiting trawl plausible.
- Of the subset of hauls with any point in an EFH CAs, the associated VMS tracks show most of the haul occurred outside the area, thus reducing the probability bottom contact occurred inside an EFH CA.
- Of the subset of tracks with EFH CA, very few show any amount of shortspine (the most common “indicator” species).
- Of the subset of those tracks, applying a “10 kg per haul” filter for shortspine eliminates the remainder.

These analyses are provided to the Council to help inform your April 2015 decision about the scope of the EFH Amendment. They demonstrate that it is highly unlikely that the whiting fishery is adversely affecting groundfish EFH. In practical terms, it makes no sense for a whiting fisherman to risk fouling or losing their gear by fishing on hard bottom. The whiting fishery has demonstrated a keen ability to fish cleanly and efficiently, as well as to address issues through voluntary action, all of which are critical to success in the fishery. Therefore, in a proactive

effort to make it even more unlikely that whiting gear will make bottom contact in EFH CAs, the whiting industry has embarked on an educational campaign to ensure that fishing vessel operators know the locations of EFH CAs by including them on charts and plotters used in the fishery, as well as highlighting the importance of avoiding bottom contact in these areas.

In summary, these analyses show that there is no need for alternatives that would place new restrictions on the whiting fishery. Accordingly, MTC, PWCC, and UCB recommend that the Council not include new EFH regulatory measures that would apply to the whiting midwater trawl fishery. Thank you for considering our information and recommendation.

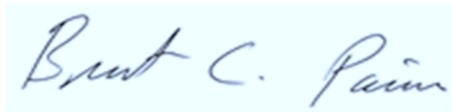
Sincerely,

A handwritten signature in blue ink that reads "Heather Mann". The signature is written in a cursive style and is set against a light blue rectangular background.

Heather Mann  
Midwater Trawlers Cooperative

A handwritten signature in blue ink that reads "Daniel A. Waldeck". The signature is written in a cursive style and is set against a light blue rectangular background.

Daniel A. Waldeck  
Pacific Whiting Conservation Cooperative

A handwritten signature in blue ink that reads "Brent C. Paine". The signature is written in a cursive style and is set against a light blue rectangular background.

Brent Paine  
United Catcher Boats

## Appendix 1

DATE: January 19, 2015

TO: Waldo Wakefield, Michelle McClure NWFSC

FROM: UCB/MTC/PWCC

RE: Analysis of Whiting Data Within and Outside EFH Conservation Areas for Bottom Contact

Waldo/Michelle,

Thank you for providing the whiting fleet with the December 17th presentation of your preliminary analysis of whiting data for bottom contact in EFH conservation areas, and for the invitation to provide input in the form of suggestions for specific analyses and/or species to include or exclude from the analysis.

We wish to take the opportunity to offer a number of suggestions.

### **Conduct a separate analysis of Tribal whiting fishing.**

Tribal fishing occurs in different areas than non-tribal whiting fishing. A review of the observer data show that no non-tribal fishing by the At-sea fleet occurred in "Olympic 2", however that area accounts for 44% of the hauls with "indicator" species. Tribal fishing has its own regulations and the tribal fleet doesn't have the flexibility on where they can fish. Therefore it makes sense to conduct a separate analysis for the whiting fleet that does not include tribal activity.

### **Partition the data between sectors.**

Fishing strategies and gear vary between the Catcher Processor (CP) and Catcher Vessel (CV) sectors. It would be informative to separate the analysis of the data between sectors.

### **Partition the data by discreet EFH areas.**

The amount of whiting fishing activity varies among EFH areas as does the encounter rate of "indicator" species. If there is an issue, the analysis should be done in a manner that allows the reviewer to focus on where the issue is.

### **Clarify the characterization of the "probability" of bottom contact.**

In the Sept. 2014 report to the PMFC there was a table described as a "*Summary of estimated frequency of "probable" bottom contact by vessels using midwater trawl gear in the at-sea hake fishery.*" Probable bottom contact was defined as the presence of either one or more benthic or demersal fish or invertebrate taxa in the catch.

Webster defines "probable" as "likely to occur" or "having more evidence for than against." Ideally, there would be a metric for bottom contact that would lend itself to statistical analysis with confidence interval around probabilities. Unfortunately, we are forced to use proxies which have serious limitations.



### **Integrate bottom versus fishing depth differential into the analysis.**

One obvious proxy is to determine differential of the reported fishing depth to the reported bottom depth and compare the differential to the typical net opening for a class of vessels. One limitation is that the information is for a single point in a haul and that bottom depth and fishing depth may vary over the course of a tow. Another is that there is variation in the net openings depending how a given net is rigged.

None the less, it is uncommon for a CV whiting net rigged to open more than 20 fathoms to be fished in contact with bottom. At a given time and in a given area, whiting schools tend to behave similarly, thus if a net is set and the schools are off bottom at the beginning of a tow, they are likely to be off bottom for the duration of the tow.

While a depth differential of 20 fathoms is not proof a net was in contact with bottom, and a depth differential of 30 fathoms for a CV whiting net is not proof that at some point in a tow the net wasn't in contact with bottom, the probability of bottom contact is greatly reduced as the reported differential approaches and exceeds 30 fathoms.

Depth differential analysis should be done separately for CPs and CVs as the size of net openings differs substantially.

### **Present the “indicator” species data in a way that allows the reviewer to better assess the “probability” of bottom contact.**

The analysis presented at the Dec. 17<sup>th</sup> Ad Hoc meeting using “indicator” species as a proxy for bottom contact began to look at factors such as: 1) portion of tow within EFH, 2) benthic fin fish, 3) invertebrates, 4) quantities of “indicator” species, and 5) combinations of “indicator” species.

It makes sense that the greater the amount of each of these elements of the proxy, the greater the probability that bottom contact may have occurred. There is no bright line, around which we can place confidence intervals, as to what constitutes a threshold for “probable” bottom contact using proxies. Whatever proxy is selected there will be tows above the threshold that did not have bottom contact, and tows below the threshold that did.

We have reviewed the observer data in detail with respect to the 5 factors outlined in the Dec. 17<sup>th</sup> presentation, using the suggestions offered above. Based on our review, we suggest the following threshold be incorporated into the analysis:

#### Proxy Threshold for “Probable” bottom contact

Our recommended proxy for “probable” bottom contact in an EFH bottom trawl closure area is 10 kg of a combination of benthic species. The “probability” of bottom contact in an EFH area above that threshold should be discounted:

- 1) If the fishing depth (head rope) is more than 30 fathoms from the bottom (this is generous and so should cover variance in net sizes.),
- 2) If the tow occurred during the night hours (see the Sea State “white paper”)
- 3) Based on the % of the tow that overlapped an EFH conservation area.

- 4) Based on information about bottom substrates of the area towed (if the area towed is high relief and rocky bottom substrate it is unlikely that a fisher would knowingly allow the net to contact bottom).

This proxy for “probable” contact is offered based on the fishing conditions, terrain, gear, and whiting behavior specific to the West Coast whiting fishery.

#### Benthic Invertebrates

Benthic Invertebrates provide a stronger signal of bottom contact. However, based on Sea State’s review of the 2006 to 2013 At Sea observer data, there was a total of only 8 such organisms out of the 138 hauls by non-tribal vessels with a point in an EFH bottom trawl closure areas.

#### **Basis for Recommendations**

In support of the recommendations in this cover letter, we are submitting two documents.

**1- “Review of the Probability of Bottom Contact by Whiting Trawls in EFH Bottom Trawl Closure Areas”** - compiled from materials provided by Karl Haflinger of Sea State Inc.

This review utilized the At-sea sectors’ NORPAC observer data from 2006 to 2013 from the whiting fishery to look at catch composition of hauls within specific EFH conservation areas. It also used NORPAC observer data from the CP pollock fleet and CP flatfish fleet in the Bering Sea to examine evidence of diurnal movements of flatfish species in the water column.

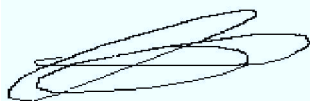
**2- “Review of the Probability of WMC/SWC Sector Bottom Contact in EFH Bottom Trawl Closure Areas”** by dave fraser, Manager, Whiting Mothership and Shorebased Whiting Cooperatives.

This paper was prepared accessing the observer data for the Whiting Mothership Cooperative and the fish ticket data for the Shorebased Mothership Cooperative as well as VMS trackline data for member vessels on the Sea State Inc. coop website using Sea State’s mapping tools.

We believe the reviews in the two attached documents outline the types of additional analyses that are necessary to assess the probability of bottom contact by whiting nets in EFH conservation areas.

Thank you for your consideration.

dave fraser



On behalf of:  
United Catcher Boats  
Midwater Trawlers Cooperative  
Pacific Whiting Conservation Cooperative

## Appendix 2

### Review of the Probability of WMC/SWC Sector Bottom Contact in EFH Bottom Trawl Closure Areas

This paper was prepared accessing the observer data for the Whiting Mothership Cooperative and the fish ticket data for the Shorebased Mothership Cooperative as well as VMS trackline data for member vessels on the Sea State Inc. coop website using Sea State's mapping tools.

The objective of this review is to assess the utility of using threshold amounts and/or combinations of "indicator" species as a proxy for "probable" bottom contact in EFH bottom trawl closure areas by whiting catcher vessels.

Many of the EFH Bottom Trawl Closure Areas do not overlap with MS sector whiting fishing activity. Of those that do, a number of them are areas that are deeper than 300 fathoms. MS sector catcher vessels don't have the capacity to fish their nets deeper than 300 fathoms, so bottom contact is not even a possibility in those deeper areas.

The following table classifies the EFH bottom trawl closure areas by depth and whether there is any MS sector whiting fishing in the area.

area_name	depth range	fished by MS CVs?
Olympic 2	less than 300 fm	no MS fishing
Biogenic 1	deeper than 300 fm	minimal MS fishing
Biogenic 2	deeper than 300 fm	some MS fishing
Grays Canyon	less than 300 fm	some MS fishing
Biogenic 3	deeper than 500 fm	no MS fishing
Thompson Seamount	deeper than 1000 fm	no MS fishing
Astoria Canyon	deeper than 500 fm	minimal MS fishing
Nehalem Bank/Shale Pile	WMC closed area	no MS fishing
Siletz Deepwater	deeper than 500 fm	no MS fishing
Daisy Bank/Nelson Island	overlaps WMC closure	minimal MS fishing
Newport Rockpile/Stonewall Bank	not fished -shallow rockpile	no MS fishing
Heceta Bank	overlaps WMC closure	no MS fishing
Deepwater off Coos Bay	deeper than 700 fm	no MS fishing
Bandon High Spot	overlaps WMC cautionary area	some MS fishing
President Jackson Seamount	deeper than 1000 fm	no MS fishing
Rogue Canyon	deeper than 700 fm	some MS fishing

We have plotted the haul locations for all observed MS CV whiting tows from 2008 through 2014 in the following series of charts. Green dots represent locations with <40 tons of whiting, yellow dots 40 to 300 tons, and red >300 tons. The charts show EFH bottom trawl closures (brown polygons), WMC closed areas (red polygons), and WMC "cautionary" areas (yellow polygons). The WMC closed and cautionary areas have only

been in effect since rationalization, as a result there are some haul locations within areas that are no longer fished by the MS sector fleet.

The following charts show where whiting fishing between 2008 and 2014 has overlapped with EFH bottom trawl closure areas, before evaluating whether those tows involve bottom contact.

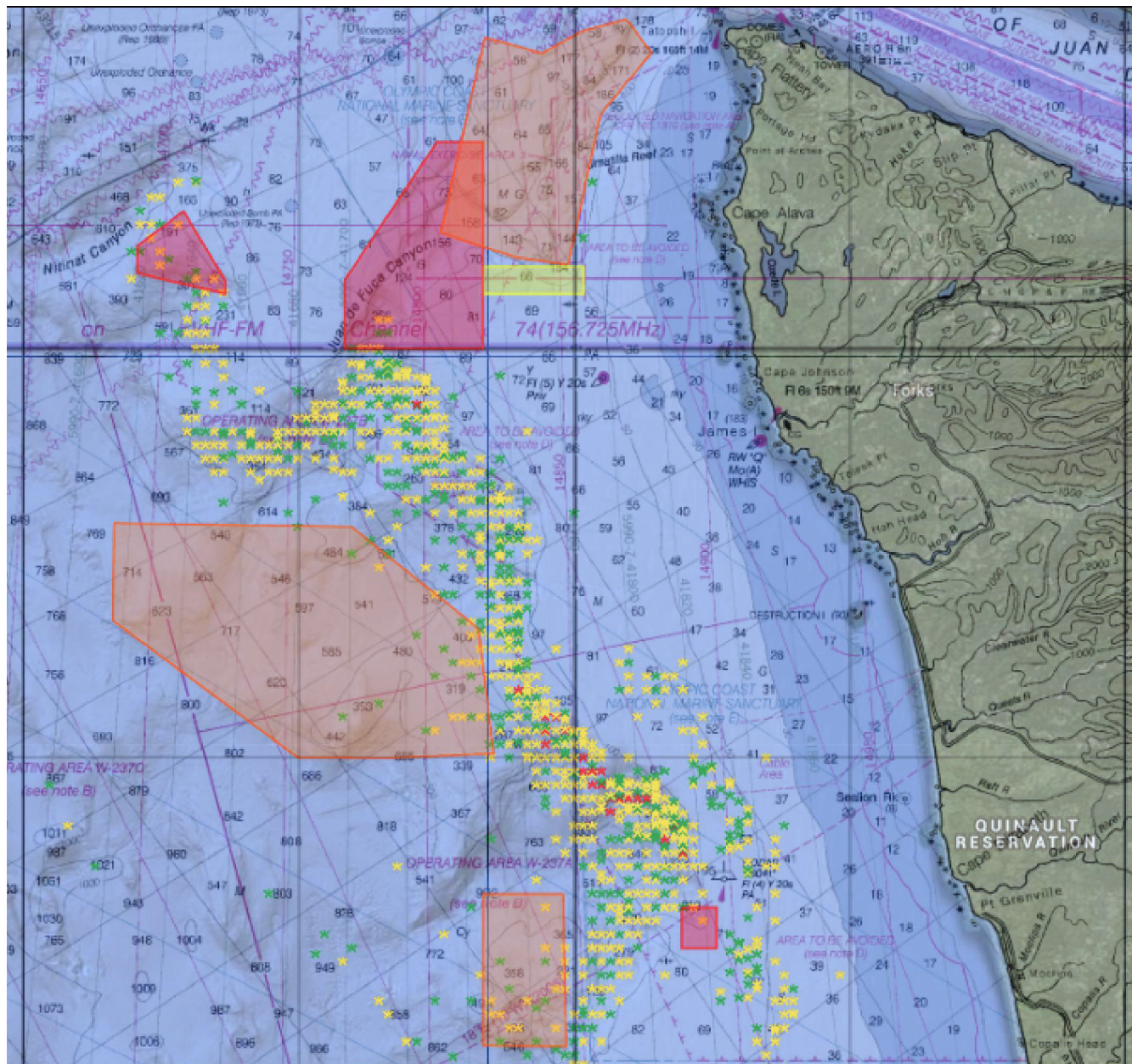


Figure 1 - In this chart of the northern Washington coast, the only EFH bottom trawl closure areas with significant MS sector whiting fishing are the east corner of “Biogenic 1” and the south end of “Biogenic 2.” However the depth of both areas makes the possibility of bottom contact by MS CVs extremely remote.



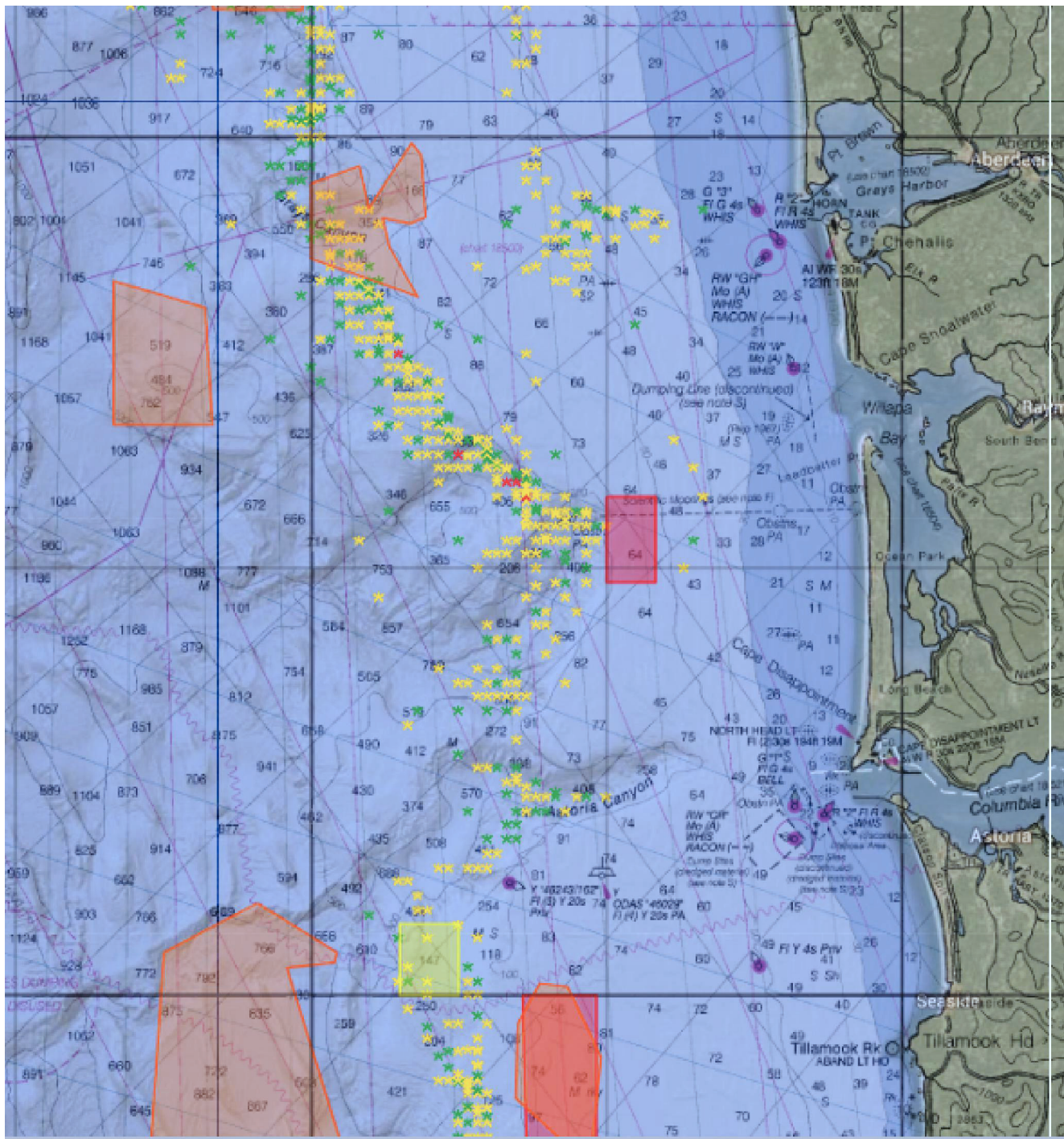


Figure 2 - In this chart of the southern Washington coast the only EFH area with significant MS sector whiting fishing “Grays Canyon”. While the depth of this area includes areas as shallow as 100 fathoms, the bathymetry is extremely irregular, so no captain would risk intentional bottom contact in this area.



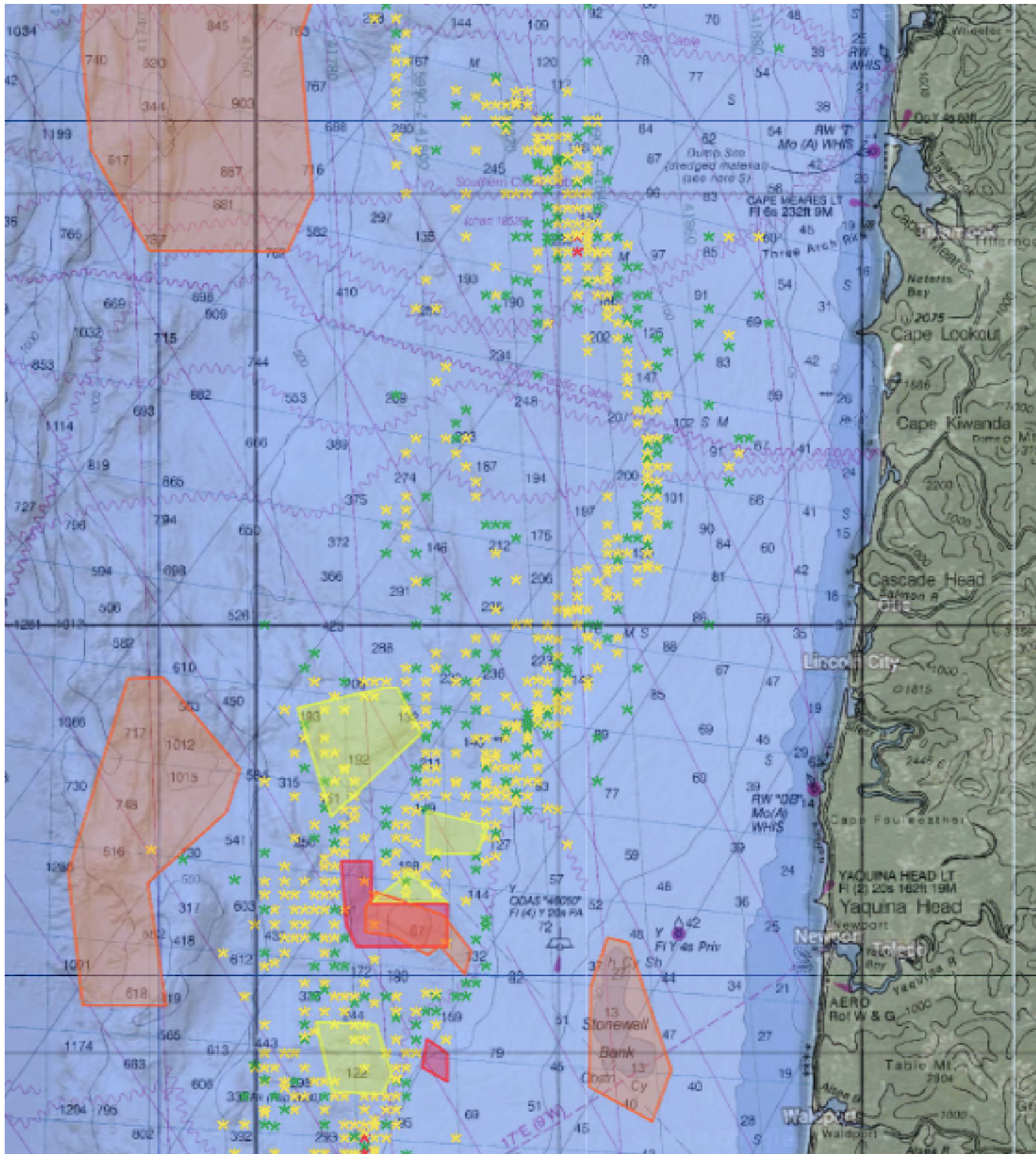


Figure 3 - In this chart of the northern Oregon coast there is no significant MS sector whiting fishing in any of the EFH bottom trawl closure areas. There were just a couple haul locations in the Nelson Island EFH area. However, that area has been subject to a self-imposed closure by the Whiting Mothership Cooperative since Amendment 20.



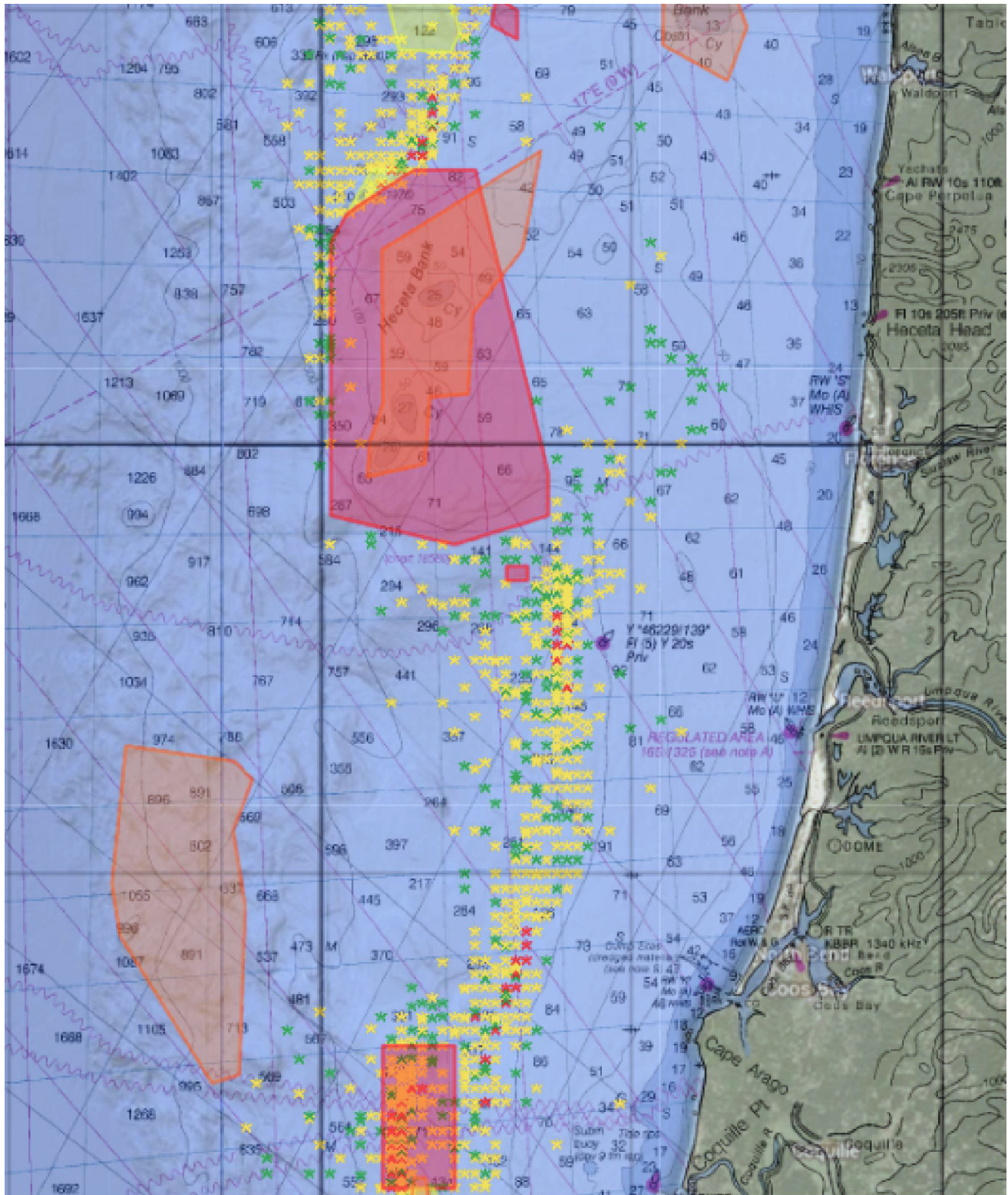


Figure 4 - In this chart of the Oregon mid-coast there is no significant MS sector whiting fishing in any of the EFH bottom trawl closure areas. (The red rectangle off Cape Arago is a WMC “hot spot” closure that went into effect in the fall of 2014, the haul locations in that box reflect fishing from 2008 to summer of 2014 prior to adopting that closure.)



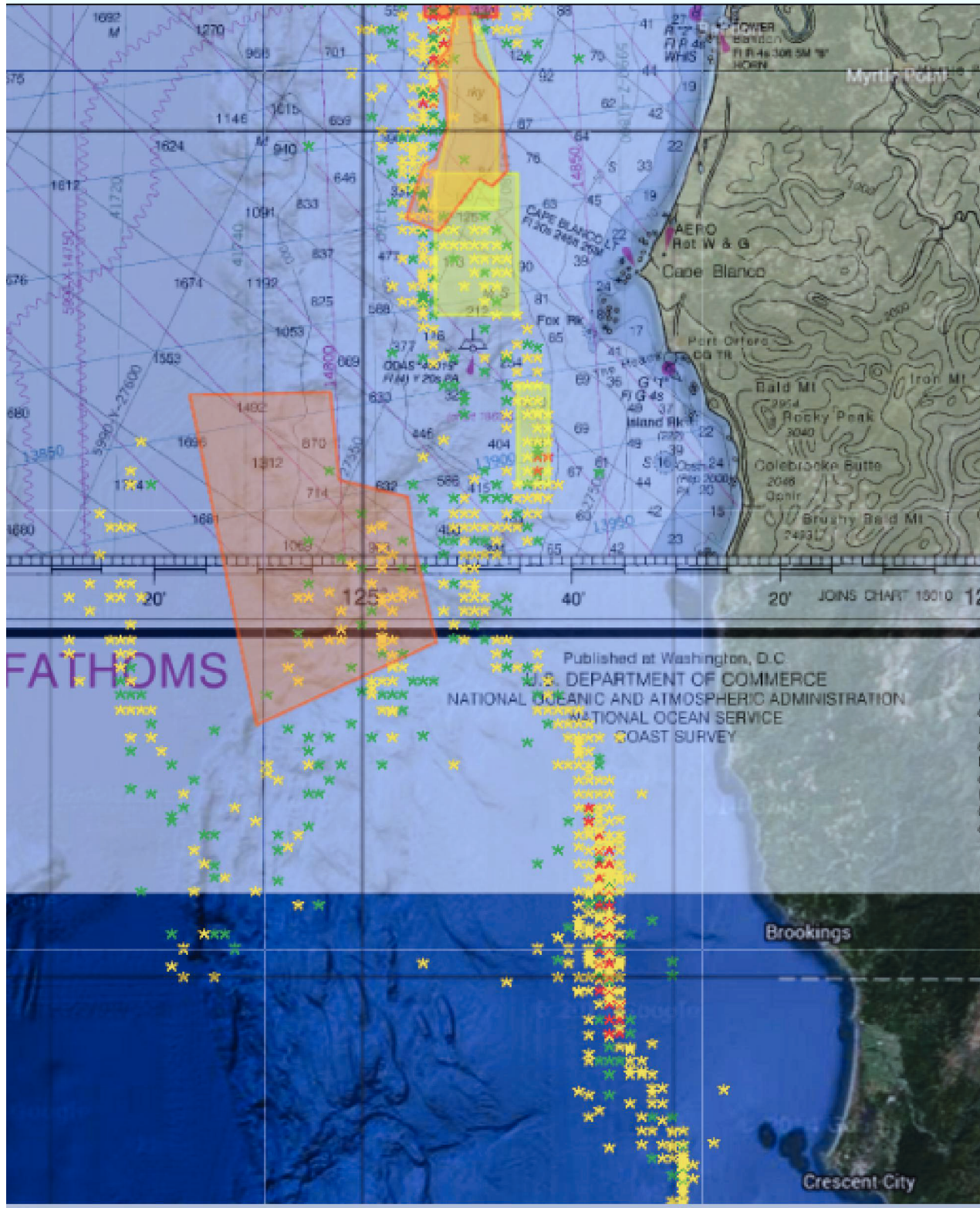


Figure 5 – This chart shows there has been significant MS sector whiting fishing in the “Rogue Canyon” EFH area, but bottom depths preclude contact by MS CVs fishing whiting. There are haul locations adjacent to the “Bandon High Spot”, but mostly just outside the EFH boundary, which overlaps a WMC “cautionary” area.



A review of figures 1-5 suggests that possible bottom contact within EFH bottom trawl closure areas by MS sector whiting CVs is limited to a small portion of Biogenic 1 & 2, Nelson Island, and the Bandon High Spot.

With the implementation of rationalized cooperative management of the MS whiting sector in 2011 there was dramatic shift in where and when the MS sector CVs fished in response to the bycatch constraints (including self-imposed closure and cautionary areas.) As a result, it may be more meaningful to focus on where the fleet fishes now, rather than before rationalization.

The following figure (fig.6) focuses on the Bandon High Spot and covers the 2011 through 2014. The haul locations symbols show the combined amount of shortspine and rex sole (the 2 “benthic” fish indicator species that showed up most often in the NWFSC Wakefield presentation). Red dots are more than 10 kgs, yellow dots between 1 kg and 10 kgs, green dots are more than 0 but less than 1 kg. No other EFH bottom trawl closure areas showed any haul locations by the MS sector whiting CVs during the 2011 through 20014 period exceeding the 1kg threshold of rex sole and shortspine.

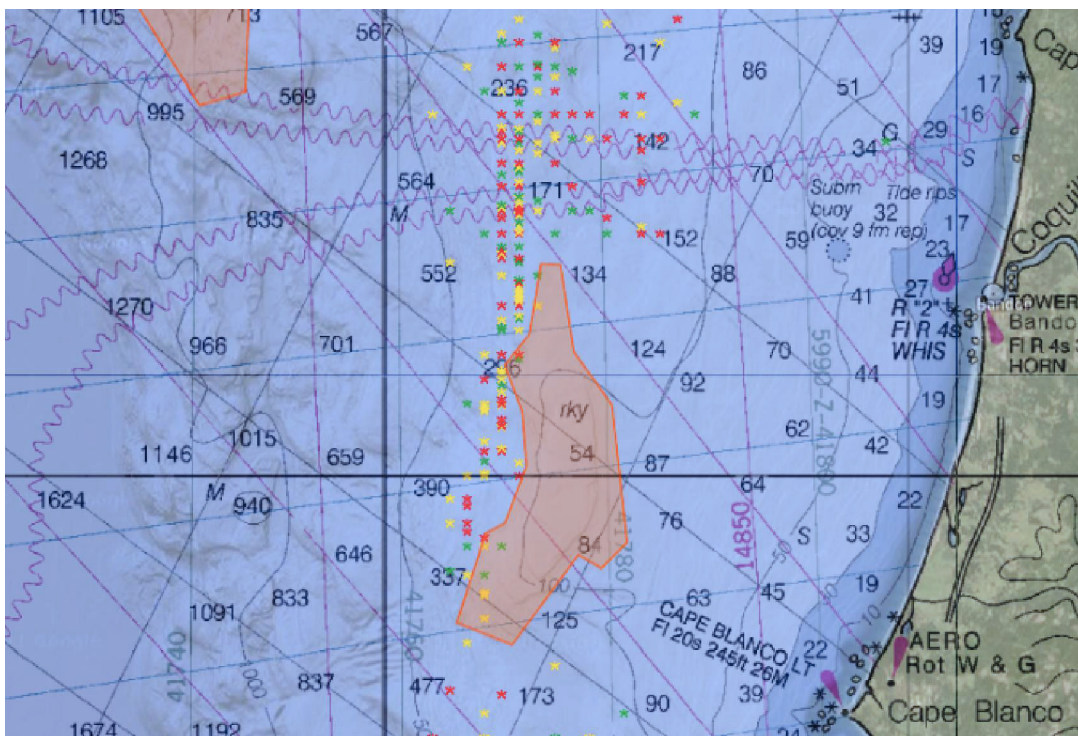


Figure 6.

The haul location data for the figures 1 through 5 extends from 2008 to 2014, so it is a slightly different data set from the NWFSC Wakefield presentation at the Dec. 17<sup>th</sup> Ad Hoc session. They also only reflect a single point. However, from 2012 to 2014, we are able to plot the full VMS tracklines of all MS CV whiting tows.

In the following figures, VMS tracklines with no shortspine are shown in white. Tracklines with some amounts of shortspine are in graduated shades of red.

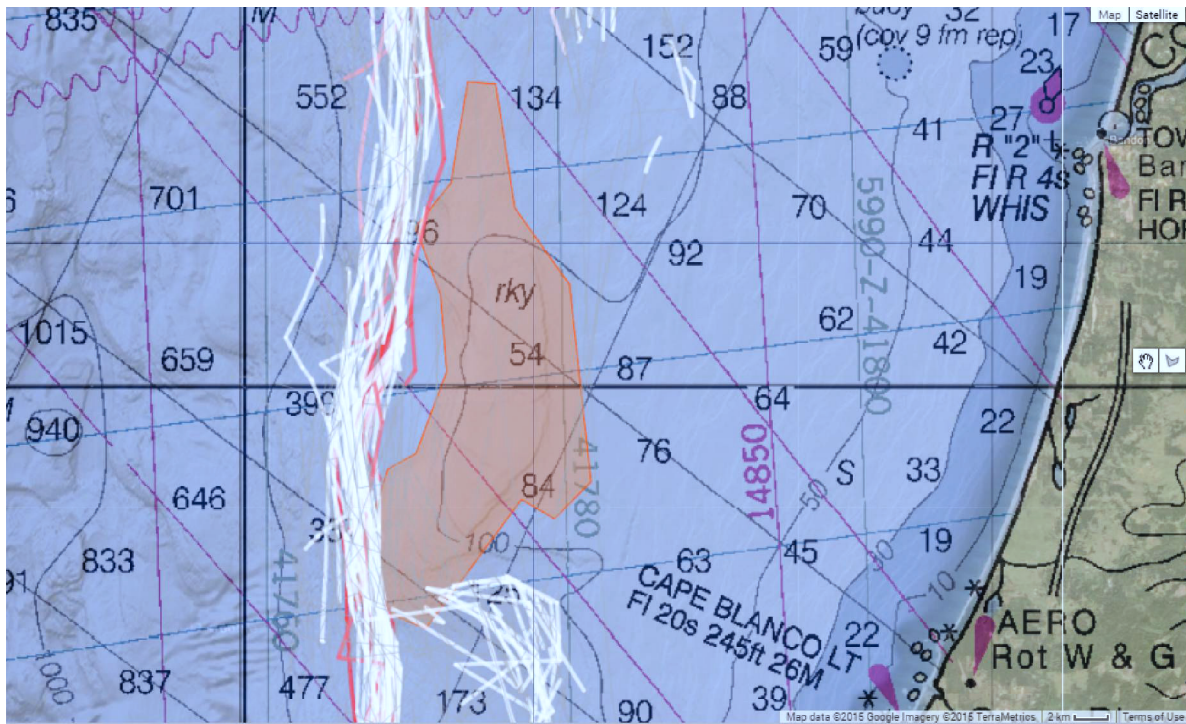


Figure 7 – All hauls for 2012. Hauls with more than 1 kg of shortspine in red.

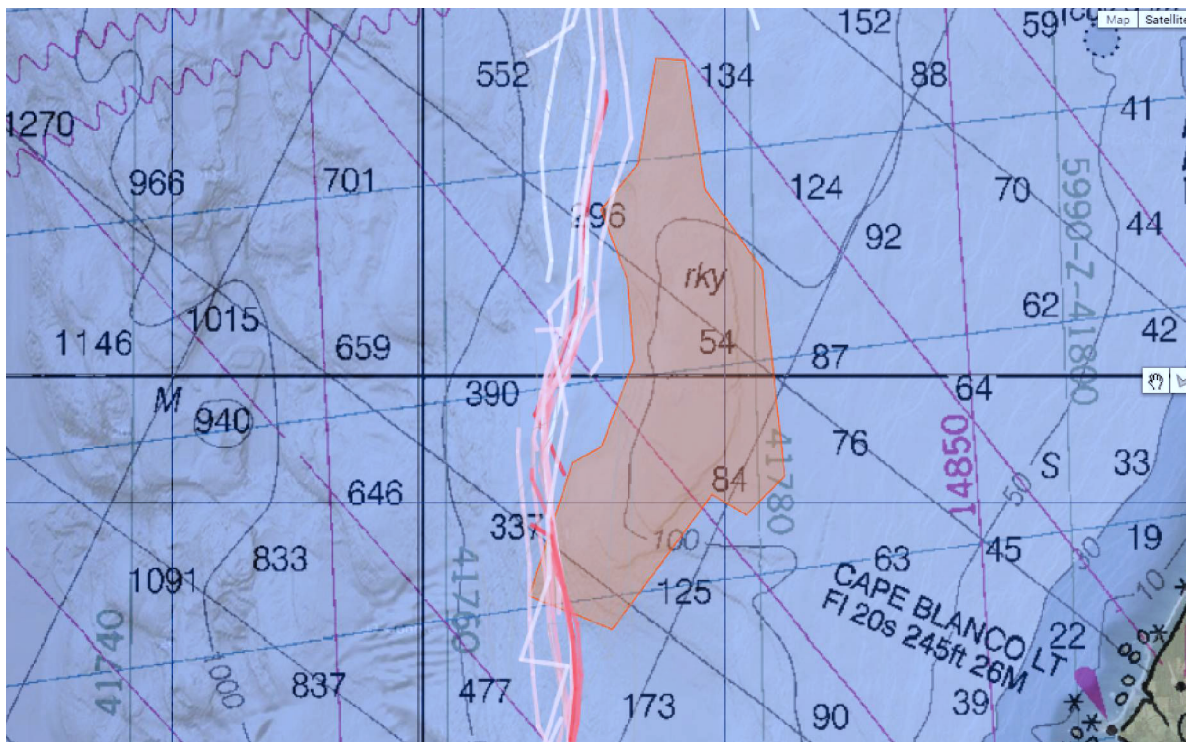


Figure 8. The same data as figure 7, but filtered for only those hauls with >0 kg of shortspine (the darker red the trackline, the more shortspine.) The haul with the most shortspine had just 5 kgs, with a reported fishing depth of 180 fathoms.



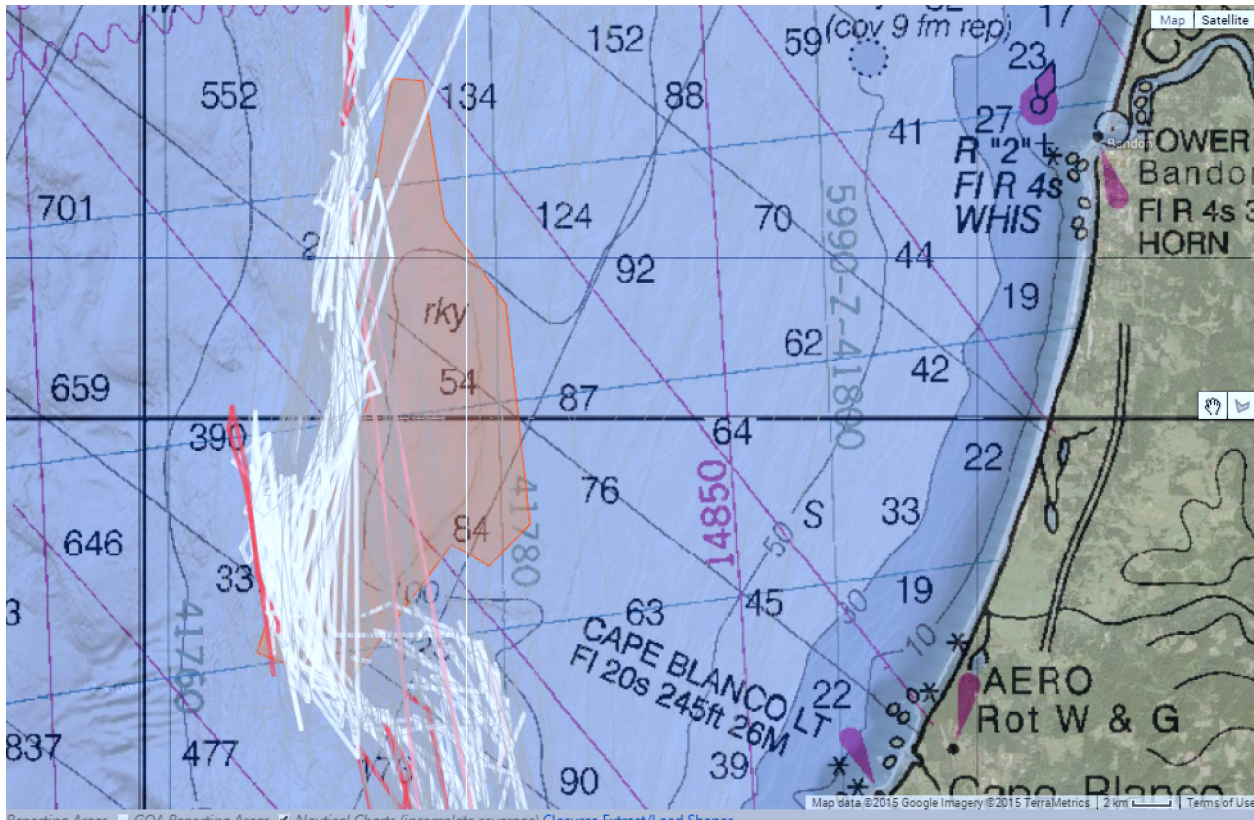


Figure 9 – All hauls for 2013. Hauls with more than 1 kg of shortspine in red. While there were several tracklines that had some portion of the track inside the EFH bottom trawl closure, only one haul had any shortspine (1kg).

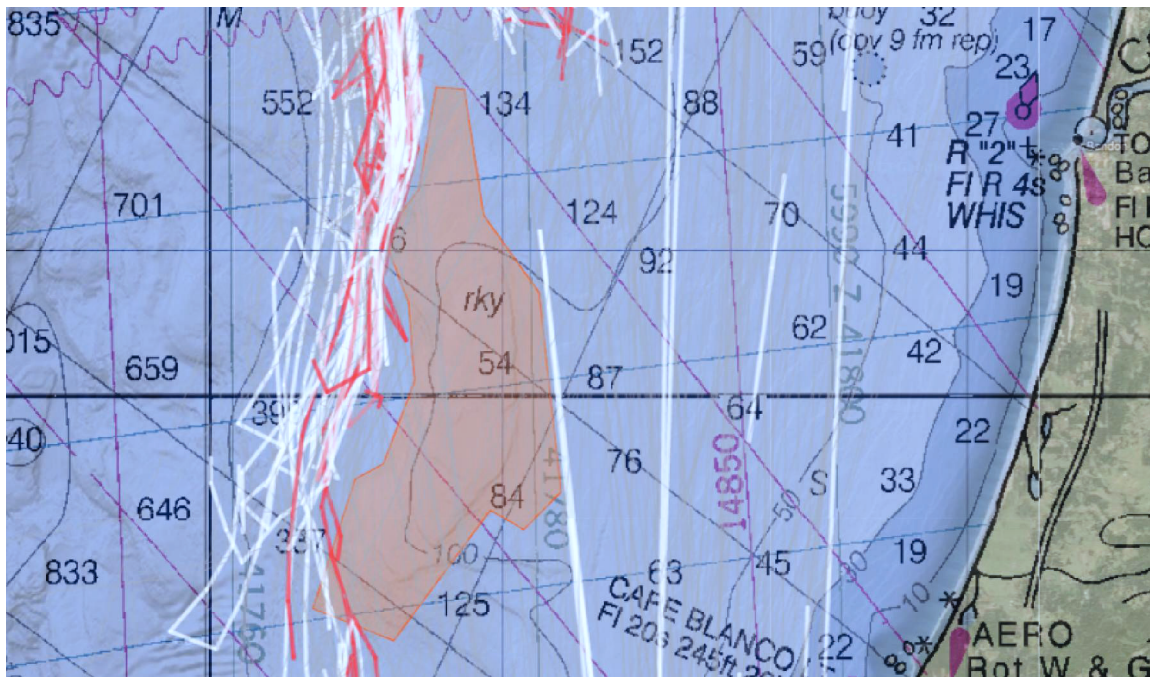


Figure 10 – All hauls for 2014. Hauls with more than 1 kg of shortspine in red.



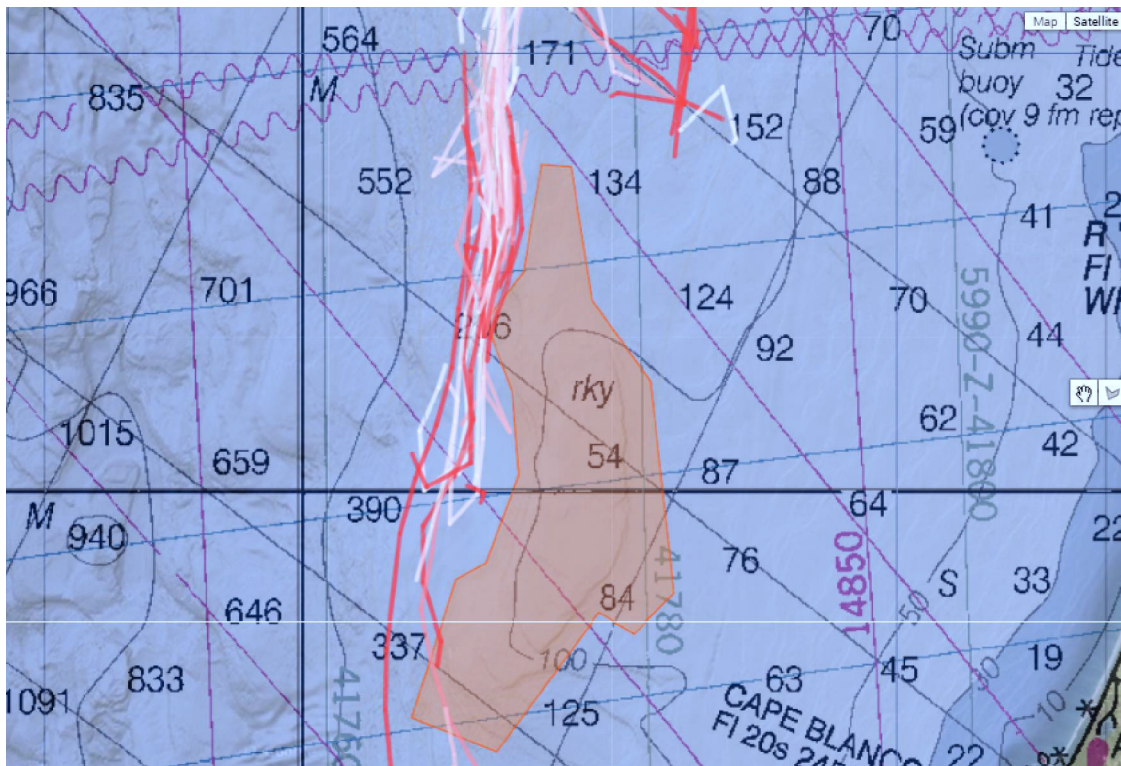


Figure 11. The same data as figure 10, but filtered for only those hauls with >0 kg of shortspine (the darker red the trackline, the more shortspine.) The haul that crossed the SW corner of the EFH bottom trawl closure had 3 kg of shortspine, with a reported fishing depth of 148 fathoms.

The only other EFH bottom trawl closure area with any MS CV tracklines was Grays Canyon in 2013. Only one tow has shortspine (9 kgs) with a reported fishing depth of 110 fm but only a small portion of the trackline was inside the EFH area.

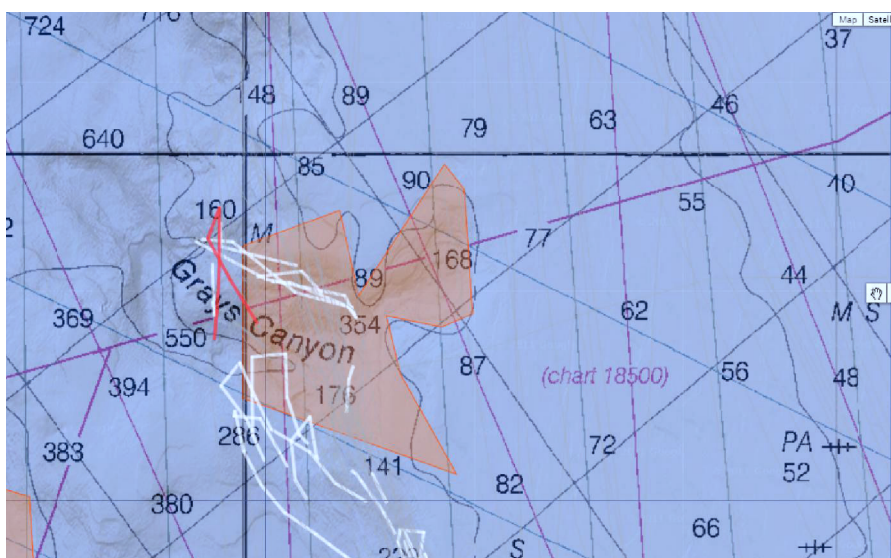


Figure 12 – Grays Canyon 2013 tracklines.

During 2014 there were many MS sector whiting tows made within the Rogue Canyon EFH bottom trawl closure area.



Figure 13 - 2014 tracklines in the Rogue Canyon area. There were no shortspine taken within the EFH bottom trawl closure area. It is interesting to note the 3 kg of shortspine showed up in one tow SW and outside the area where the bottom depth is over 1000 fathoms (reported fishing depth was 200 fathoms.) This is an indication of just how far off bottom and off the shelf some 'benthic' species can wander at times.

We also have access to shorebased VMS tracklines for members of the Shorebased Whiting Cooperative (SWC), which represented 2/3rds of the shorebased whiting harvest in 2014. The shorebased tracklines aren't as precise because we lack set and haul times. As a proxy, we apply a speed filter to eliminate portions of the track that are less than, or more than, towing speeds. However, if a vessel is emptying a codend into the fish hold while traveling at towing speed, it will appear to be part of the tow. The thin segments of the tracklines are the transit speeds, while the thicker segments are the portions of the tracks at towing speeds.

A review of SWC tracks for 2012 (fig. 14 below) shows a few tracks within the Grays Canyon EFH bottom trawl closure area with more than 0 kgs of shortspine, but they appear to be mostly the end segments of tows to the south of the area. None of these tows had more than 5 kgs of shortspine. None of the other EFH bottom trawl closure areas show any SWC tow tracks with shortspine in 2012.



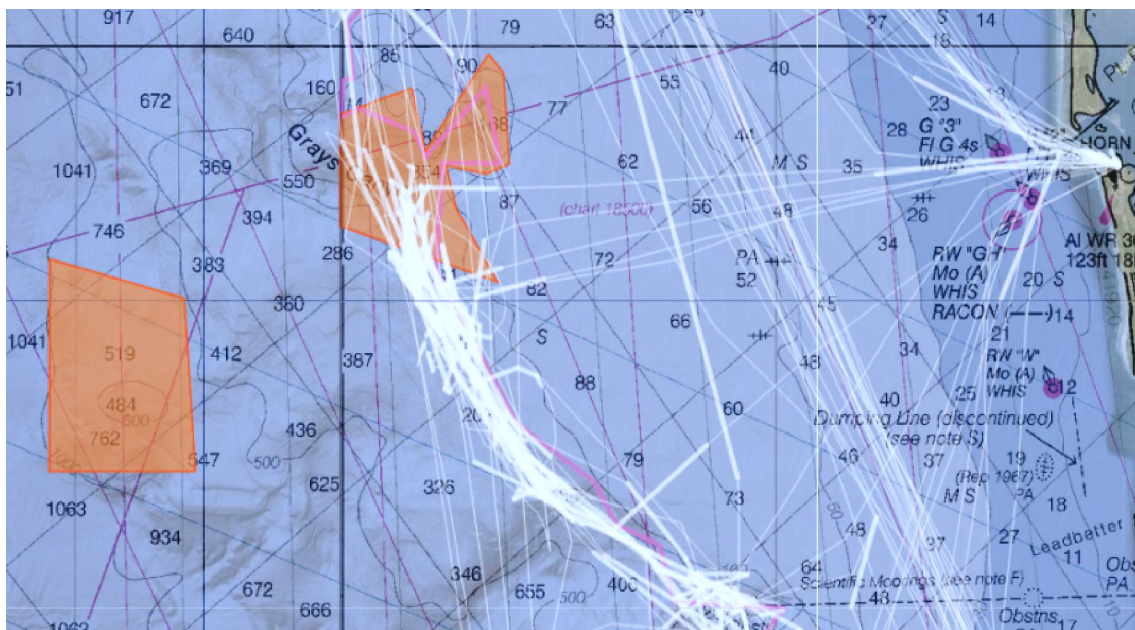


Figure 14 – 2012 SWC tracklines with any amount of shortspine (thinner lines are transit tracks above towing speeds.)

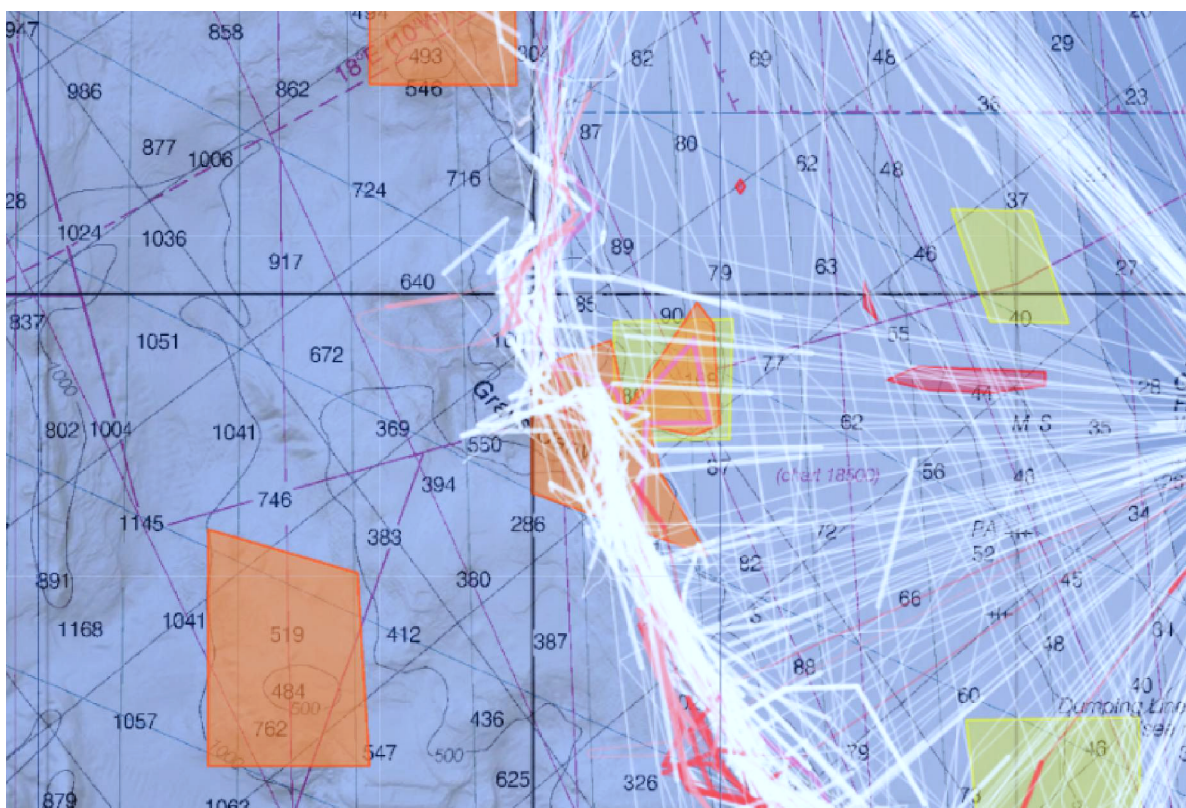


Figure 15 – All 2013 SWC tracklines around the Grays Canyon EFH area. No tracklines with towing characteristics had any amount of shortspine. The only other EFH bottom trawl closure area with any 2013 tracklines by

Shorebased Whiting Cooperative members was the Bandon Highspot, but there were just a couple tracks and no shortspine.

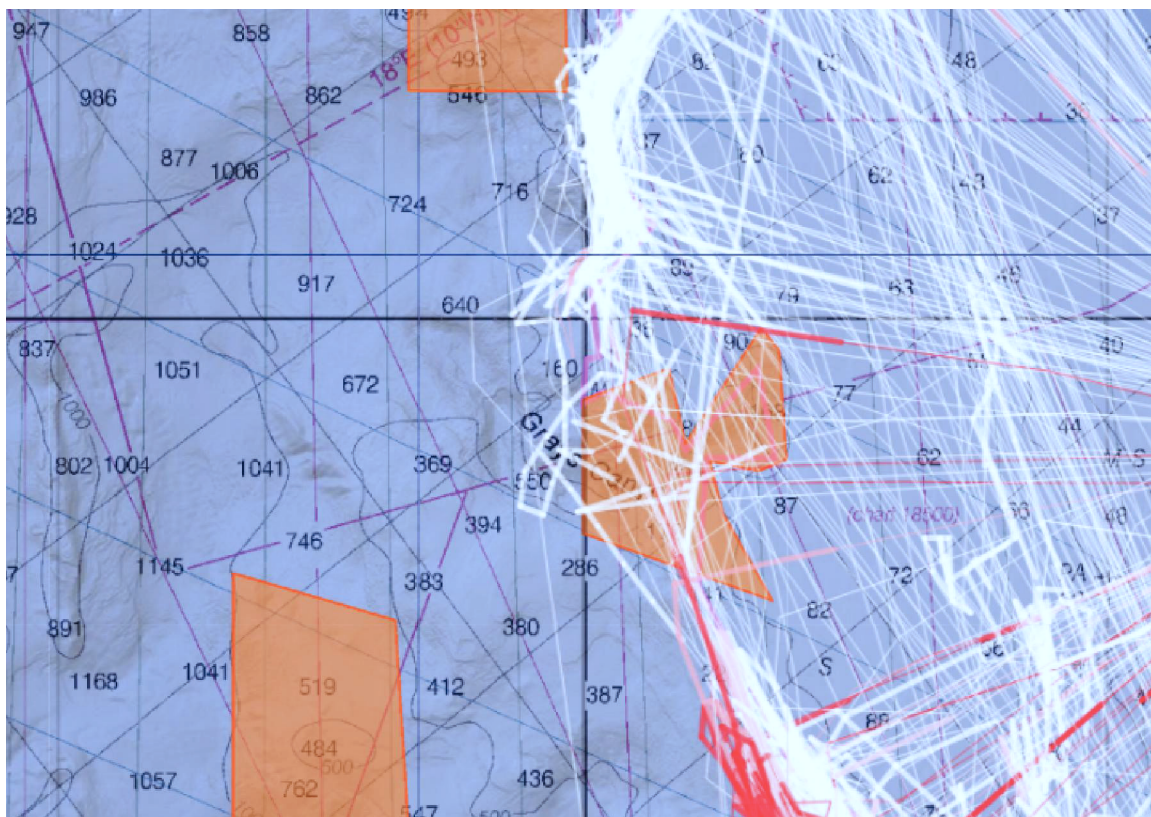


Figure 16 – All 2014 SWC tracklines around the Grays Canyon EFH area. No tracklines with towing characteristics had any amount of shortspine. In 2014 there were no SWC tracklines with towing characteristics in EFH bottom trawl closure areas.

The MS sector observer dataset since rationalization (2011 through 2014) provides “fishing depth” (the depth of the headrope of the net) and “bottom” depth. Net openings for CVs in the MS sector typically range from 15 to 25 fathoms, with a few as much as 30 fathoms. One rough proxy for assessing whether a whiting net footrope may have been fished in contact with the bottom is to compare the net opening to the difference between bottom depth and fishing depth. The obvious caveat is that the fishing depth and bottom depths are a single point in the tow and are likely to vary over the course of a tow.

Using the difference between bottom and fishing depth compared to net opening as a proxy for possible bottom contact (with the foregoing caveat), the tables below are intended to serve as a cross check on the plausibility that the presence of small amounts of “benthic” fish species are a reasonable proxy for bottom contact. Given typical MS CV net openings, tows with depth differentials of 20 fathoms or less are the most likely to involve some bottom contact. Tows with 21 to 30 fathom differential may involve some bottom contact, but are likely to do so. Tows with more than 30 fathom depth differentials are increasingly unlikely to involve bottom contact.



Overall, out of a total of 3350 MS sector hauls, 694 hauls or 21% had >0 kgs of shortspine, of which 178 hauls had 10 or more kgs of shortspine. Of the hauls with 10 or more kgs of shortspine, 142 hauls also had >0 kg of rex sole. The following tables are intended to provide an overview of depth differentials with combinations and amounts of “benthic” fish species to see if there are any strongly significant correlations.

Difference Headrope vs Bottom	# of Hauls	# of Hauls with Shortspine	% of Hauls with Shortspine	# with >10 kg Shortspine	% with >10 kg Shortspine	Sum Shortspine mt
0 to 20 fms	223	81	36.3%	27	12.1%	2.41
21 to 30	643	292	45.4%	74	11.5%	3.70
31 to 40	565	182	32.2%	59	10.4%	2.68
41 to 50	309	56	18.1%	6	1.9%	0.37
51 to 60	209	26	12.4%	6	2.9%	0.27
61 to 70	167	18	10.8%	3	1.8%	0.18
> 70 fms	1233	39	3.2%	3	0.2%	0.15

The percentage of hauls with >0 kg shortspine appears inversely correlated with the depth differential, or the smaller the distance between the headrope of the net (fishing depth) and the bottom, the higher the likelihood of encountering shortspine rockfish. The correlation appears stronger in hauls with >10 kgs of shortspine. Note that even in hauls where the depth differential makes bottom contact extremely unlikely (60 to 70 fathoms), there are still 10% of hauls with some shortspine. The presence of shortspine alone is not a sufficient basis for concluding there was bottom contact.

Difference Headrope vs Bottom	# of Total Hauls	# Hauls with Rex Sole	% of Hauls with Rex Sole	Sum Rex Sole mt
0 to 20 fms	223	69	30.9%	0.85
21 to 30	643	213	33.1%	1.84
31 to 40	565	147	26.0%	0.84
41 to 50	309	38	12.3%	0.12
51 to 60	209	22	10.5%	0.08
61 to 70	167	16	9.6%	0.08
> 70 fms	1233	34	2.8%	0.07

The same inverse correlation holds with Rex sole, but again there is a significant percentage of hauls where the depth differential implies that bottom contact would be highly unlikely.

Difference Headrope vs Bottom	# of Total Hauls	# of Hauls with Sablefish	% of Hauls with Sablefish	Sum Sablefish mt
0 to 20 fms	223	39	17.5%	0.46
21 to 30	643	149	23.2%	3.18
31 to 40	565	87	15.4%	1.84
41 to 50	309	27	8.7%	0.77
51 to 60	209	20	9.6%	0.26
61 to 70	167	10	6.0%	0.08
> 70 fms	1233	45	3.6%	0.26



Sablefish was not listed as a “benthic” fish species, however it displays a similar, but weaker, inverse correlation. Again there are a significant percentage of hauls where the depth differential implies that bottom contact would be highly unlikely.

Table 4 - Hauls with >0 kgs of Lingcod				
Difference Headrope vs Bottom	# of Total Hauls	# of Hauls with Lingcod	% of Hauls with Lingcod	Sum of Lingcod mt
0 to 20 fms	223	42	18.8%	0.36
21 to 30	643	57	8.9%	0.72
31 to 40	565	47	8.3%	0.60
41 to 50	309	20	6.5%	0.24
51 to 60	209	8	3.8%	0.10
61 to 70	167	13	7.8%	0.12
> 70 fms	1233	37	3.0%	0.37

Lingcod was listed as a “benthic” fish species. Lingcod appears to have a weak inverse correlation.

Table 5 - Hauls with >0 kg Shortspine and Another Species										
Difference Headrope vs Bottom	# of Hauls with Shortspine AND:	AND # with Rex Sole	Sum Rex Sole mt in hauls w Shortspine	% of Shortspine hauls w Rex Sole	AND # with Sablefish	Sum Sablefish mt in Hauls w Shortspine	% of Shortspine hauls w Sablefish	AND # with Lingcod	Sum Lingcod mt in hauls w Shortspine	% of Shortspine hauls w Lingcod
0 to 20 fms	81	56	0.85	69.1%	31	0.42	38.3%	5	0.01	6.2%
21 to 30	292	164	1.74	56.2%	106	2.58	36.3%	5	0.08	1.7%
31 to 40	182	104	0.78	57.1%	55	1.45	30.2%	6	0.06	3.3%
41 to 50	56	24	0.11	42.9%	14	0.23	25.0%	2	0.00	3.6%
51 to 60	26	11	0.07	42.3%	8	0.16	30.8%	0	0	0.0%
61 to 70	18	9	0.07	50.0%	3	0.03	16.7%	0	0	0.0%
> 70 fms	39	16	0.06	41.0%	10	0.08	25.6%	2	0.00	5.1%

Table 5 looks at the co-occurrence of Shortspine with various other species. The strongest relationship was with Rex sole, while it didn’t seem to vary dramatically, the co-occurrence was strongest at smaller depth differentials.

Table 6 - Hauls with >10kg Shortspine and Another Species												
Difference Headrope vs Bottom	# of Hauls with >10 kg Shortspine AND:	Shortspine mt in hauls w >10 kgs	% of total Shortspine mt	AND # with Rex Sole	Sum of Rex Sole mt	% of Hauls w >10 kg Shortspine and w Rex	AND # with Sablefish	Sum of Sablefish mt	% of Hauls w >10 kg Shortspine and w Sablefish	AND # with Lingcod	Sum of Lingcod mt	Hauls w >10 kg Shortspine and w Lingcod
0 to 20 fms	27	2.26	94.0%	22	0.62	81.5%	15	0.35	55.6%	2	0.01	7.4%
21 to 30	74	3.12	84.2%	56	1.16	75.7%	34	1.35	45.9%	0	0.00	0.0%
31 to 40	59	2.33	86.9%	49	0.56	83.1%	27	0.99	45.8%	0	0.00	0.0%
41 to 50	6	0.26	71.7%	4	0.02	66.7%	2	0.01	33.3%	0	0.00	0.0%
51 to 60	6	0.22	80.2%	5	0.06	83.3%	4	0.14	66.7%	0	0.00	0.0%
61 to 70	3	0.16	87.8%	3	0.02	100.0%	0	0.00	0.0%	0	0.00	0.0%
> 70 fms	3	0.09	57.8%	3	0.01	100.0%	1	0.00	33.3%	0	0.00	0.0%

Table 6 looks at the co-occurrence of Shortspine with other species in a subset of 178 hauls where the amount of Shortspine is >10 kgs per haul. This subset accounts for 86% of the Shortspine bycatch with an average of 47 kg per haul. 80% of these hauls also had some Rex sole, while 47% had some Sablefish.

There does not seem to be a “bright line” amount or combination of species that would provide certainty that bottom contact occurred during a tow. It is apparent that it is possible to encounter small amounts of “benthic” fish without bottom contact. When the depth differential is under 30 fathoms combined with multiple “benthic” fish species and where quantities of those species increase there is a greater probability of bottom contact. We would suggest considering a threshold of a combination of ‘benthic’ species exceeding 10kg and a depth differential less than 30 fathoms as a rough proxy for defining “probable” bottom contact.

Even at that threshold, the likelihood that bottom contact occurred within the EFH bottom closure area has to be discounted by the percentage of the VMS trackline that occurred outside the area.

The review of all the individual tracklines of tows with transected portions of EHF bottom trawl closure area didn’t show any hauls with more than 10 kg of shortspine rockfish.

To summarize:

- There are few haul locations within any of the EHC bottom trawl closure areas.
- There are relatively less after rationalization.
- Applying a “1kg per haul” filter for shortspine and rex sole eliminates most of those haul locations.
- Only a few EFH bottom trawl closure areas have bathymetry that makes bottom contact with a whiting trawl plausible.
- Of the subset of hauls with any point in an EFH bottom trawl closure area, the associated VMS tracks show most of the haul occurred outside the area, thus reducing the probability bottom contact occurred inside an EFH bottom trawl closure area.
- Of the subset of tracks with EFH bottom trawl closure areas, very few show any amount of shortspine (the most common ‘indicator’ species).
- Of the subset of those tracks, applying a “10 kg per haul” filter for shortspine eliminates the remainder.
- While the “possibility” of bottom contact in any of the EFH bottom trawl closure areas can’t be eliminated, the “probability” that any such tows have occurred subsequent to rationalization is extremely low.

dave fraser

WMC and SWC manager

**Review of the Probability of Bottom Contact by Whiting Trawls in EFH Bottom Trawl Closure Areas  
"White Paper" Compiled from Materials Provided by Sea State Inc.**

We attempted to duplicate the analysis provided during the Wakefield presentation at the Dec. 17<sup>th</sup> Ad Hoc meeting, beginning with the observer data set for the At-sea sectors from 2006 to 2013. The Wakefield presentation showed 1653 hauls with "Proportion of tow inside Cons. Area =.01". The Sea State data set yielded 1650 hauls with either end point "inside" (confirming we are looking at the same data set.) However, if tribal hauls are not included, the number of hauls "inside" drops to 1067.

Table 1 shows the distribution over years and areas of hauls with indicators of bottom contact. This may be best compared to the "At sea whiting Fishery" slide from the Wakefield presentation, that includes statistics for tows being considered in the conservation area at the .01 level, in which 284 hauls (17.2%) had  $\geq 1$  benthic taxa. Table 2 indicates that relatively few EFH areas have any hauls, with the Bandon High Spot having the most.

Table 1. Number of hauls with endpoints in area.

Total hauls	Total hauls in EFH	Hauls with bottom contact indicators	percentage
All data	1650	246	14.9%
<b>Non-tribal</b>	<b>1067</b>	<b>138</b>	<b>12.9%</b>
Tribal	583	108	18.5%

Table 2. Numbers of by area of the 138 (non-tribal) hauls with indicators of possible bottom contact.

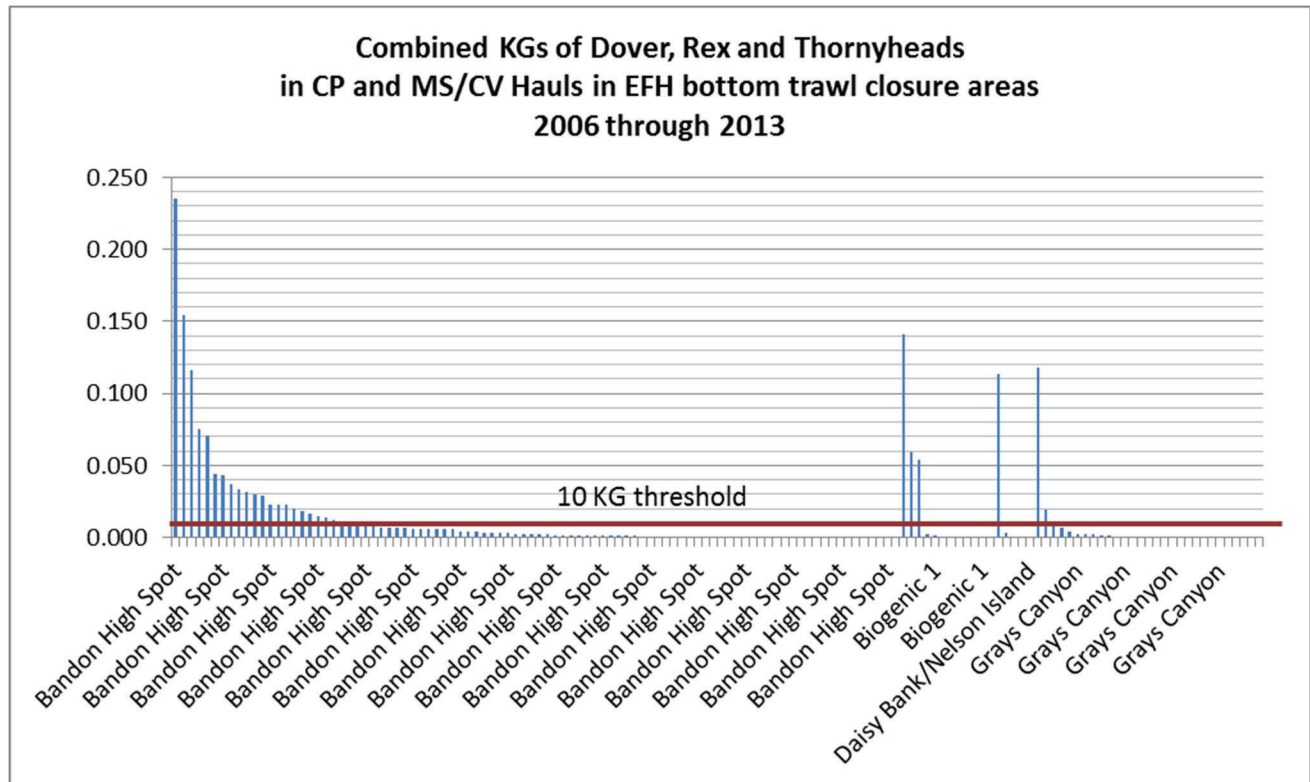
Year	Bandon High Spot	Biogenic 1	Daisy Bank/Nelson Island	Grays Canyon	Heceta Bank	Rogue Canyon
2006		2				
2007		1	3	8		
2008	4	6		3	1	
2009				2		
2010	52	1	2	5		
2011	13	1		6		
2012	9					1
2013	14	1		3		

Table 3 (below) is similar to a combination of tables in the slides called "At sea whiting fishery - inverts" and "At sea whiting fishery - fish" in the Wakefield presentation. The main difference is this table focuses on just the hauls that had any point within an EFH bottom trawl closure area. It is still based on the species that NMFS considered as indicators of bottom contact. Table further parses the data by discreet EFH areas.

Table 3.

EFH_area	SpeciesCode	SpeciesName	Total numbers of individuals, all hauls	Total weight	Largest numbers in a haul	Largest weight in a haul
Bandon High Spot	55	Anemones	2	0.00	2	0.00
Bandon High Spot	58	Sea Pen/Sea w	2	0.00	2	0.00
Bandon High Spot	105	Rex Sole	3,196	0.68	941	0.20
Bandon High Spot	107	Dover Sole	352	0.14	51	0.02
Bandon High Spot	111	Slender Sole	11	0.00	9	0.00
Bandon High Spot	304	Sharpchin Roc	2	0.00	2	0.00
Bandon High Spot	319	Blackgill Rockf	3	0.01	3	0.01
Bandon High Spot	334	Aurora Rockfi	2	0.00	2	0.00
Bandon High Spot	337	Bank Rockfish	6	0.01	3	0.00
Bandon High Spot	350	Shortspine Th	1,529	0.41	398	0.12
Bandon High Spot	352	Longspine Thc	6	0.00	6	0.00
Bandon High Spot	500	Snailfishes	72	0.01	29	0.00
Bandon High Spot	603	Lingcod	12	0.05	4	0.02
Biogenic 1	58	Sea Pen/Sea w	4	0.00	2	0.00
Biogenic 1	105	Rex Sole	0	0.00	0	0.00
Biogenic 1	107	Dover Sole	3	0.00	3	0.00
Biogenic 1	210	Pacific Flatnos	2	0.00	2	0.00
Biogenic 1	240	Ronquils	2	0.00	2	0.00
Biogenic 1	319	Blackgill Rockf	2	0.00	2	0.00
Biogenic 1	349	Unidentified T	423	0.11	368	0.09
Biogenic 1	350	Shortspine Th	383	0.12	177	0.04
Biogenic 1	352	Longspine Thc	200	0.03	94	0.01
Biogenic 1	500	Snailfishes	14	0.01	12	0.01
Daisy Bank/Nelson	334	Aurora Rockfi	2	0.00	2	0.00
Daisy Bank/Nelson	350	Shortspine Th	483	0.12	475	0.11
Daisy Bank/Nelson	500	Snailfishes	2	0.00	2	0.00
Grays Canyon	102	Turbot (Green	2	0.00	2	0.00
Grays Canyon	105	Rex Sole	67	0.01	20	0.00
Grays Canyon	107	Dover Sole	255	0.08	205	0.07
Grays Canyon	108	English Sole	6	0.00	4	0.00
Grays Canyon	250	Eelpouts	19	0.01	8	0.01
Grays Canyon	350	Shortspine Th	325	0.08	214	0.05
Grays Canyon	352	Longspine Thc	3	0.00	2	0.00
Grays Canyon	500	Snailfishes	2	0.00	2	0.00
Grays Canyon	603	Lingcod	16	0.06	8	0.03
Heceta Bank	603	Lingcod	2	0.01	2	0.01
Rogue Canyon	105	Rex Sole	4	0.00	4	0.00

The combination of thornyhead species together with rex and dover sole account for 95% of the weight of 'indicator' species found in the non-tribal hauls with any point inside an EFH bottom trawl closure area. The total weight of thornyheads, rex and dover sole in these hauls over the 7 year period was only 1.78 metric tons.



Tows that overlap the Bandon High Spot accounted for 2/3rds of the hauls that had a point “inside” EFH bottom trawl closure areas, are roughly half of those were CP sector hauls from 2010. Sea State reviewed the VMS tracklines of CP sector hauls. In the right hand panel of figure below (fig. 2), VMS tracks with speeds less than 5 knot are shown in red (to filter out transit activity at speed in excess towing speeds), with the EHF bottom trawl closure boundaries in outlined black. Most of the tracklines were outside the EFH area, with a minimal amount of overlap of the SW corner. The left hand panel of figure shows the NMFS 150 fathom line (in purple) which also serves as the coordinates of the western boundary of the Bandon High Spot EFH area. The left hand panel also shows more detailed bathymetry with the 150 fathom isobaths in red. Note that the regulatory 150 fathom line diverges from the actual bathymetry in the SW corner of the EHF area which accounts for most of the overlap of whiting hauls with the Bandon High Spot. (See Appendix A for more detail.)

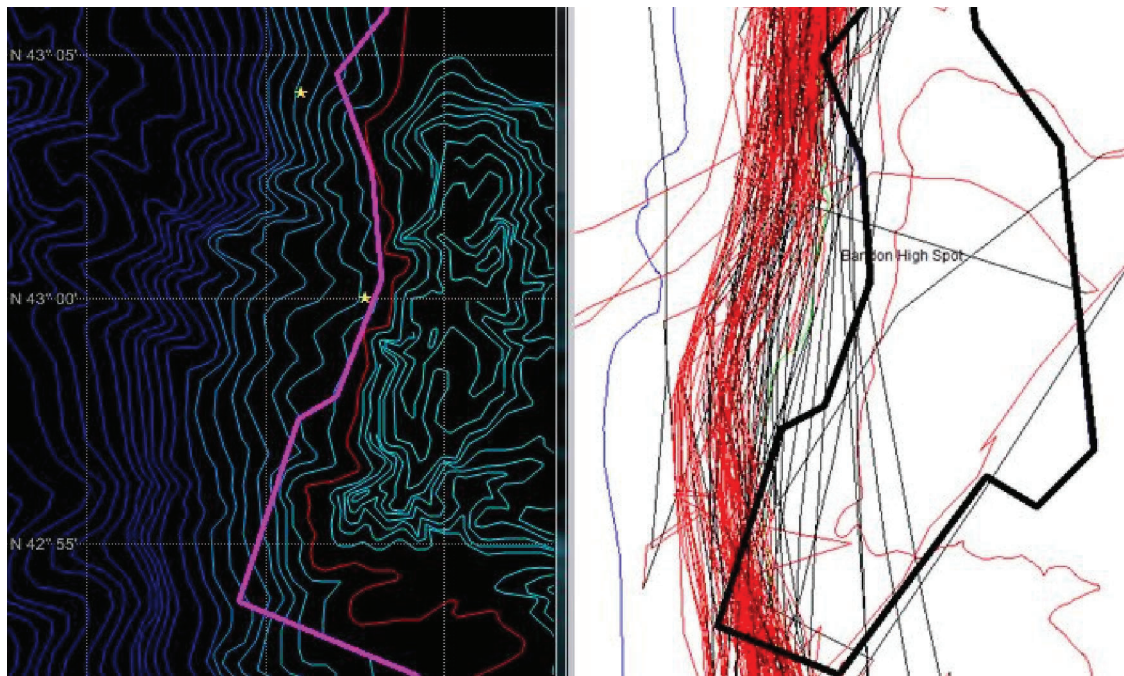


Figure 2

#### Assessing the likelihood that “indicator” species may be off bottom.

Based on fishers’ Traditional Ecological Knowledge (TEK), many benthic fin fish species disperse into the water column during the night. Fishers also report that they tend to fish somewhat further off bottom for whiting during night fishing. Additionally, fishers report that in times big tides, they are more likely to encounter rockfish far off bottom as of high currents carry the fish off the shelf.

In the chart below (fig.3) Sea State plotted the number of all whiting hauls by hour of the day (right hand axis), and the number of hauls with ‘indicator’ species (left axis). The chart shows that there are proportionally more night hauls that could be classified as likely having bottom contact based on indicator species. This might be a reasonable inference if nets were more likely to contact the bottom at night, but the reverse appears to be true. Although the trend is slight, Figure 4 shows the average difference between bottom depth and fishing depth actually increases at night, consistent with what fishers report.

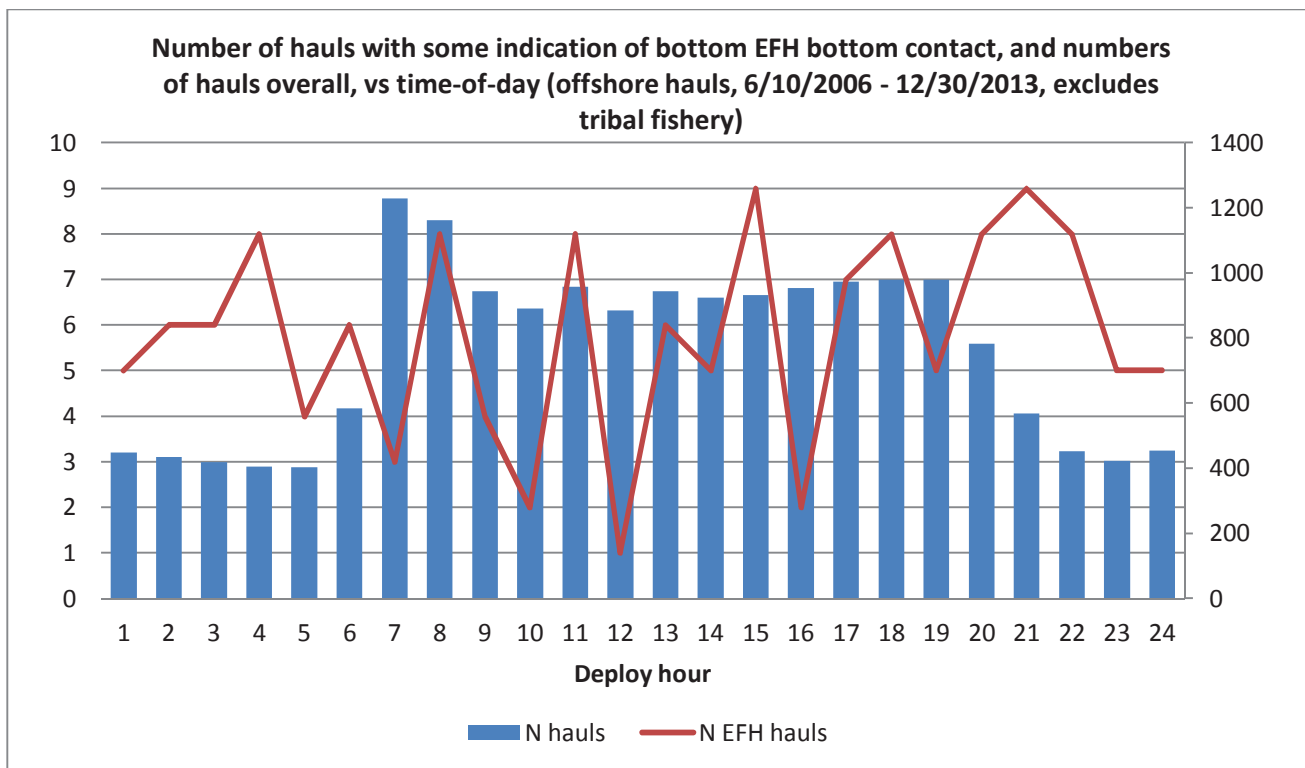


Figure 3.

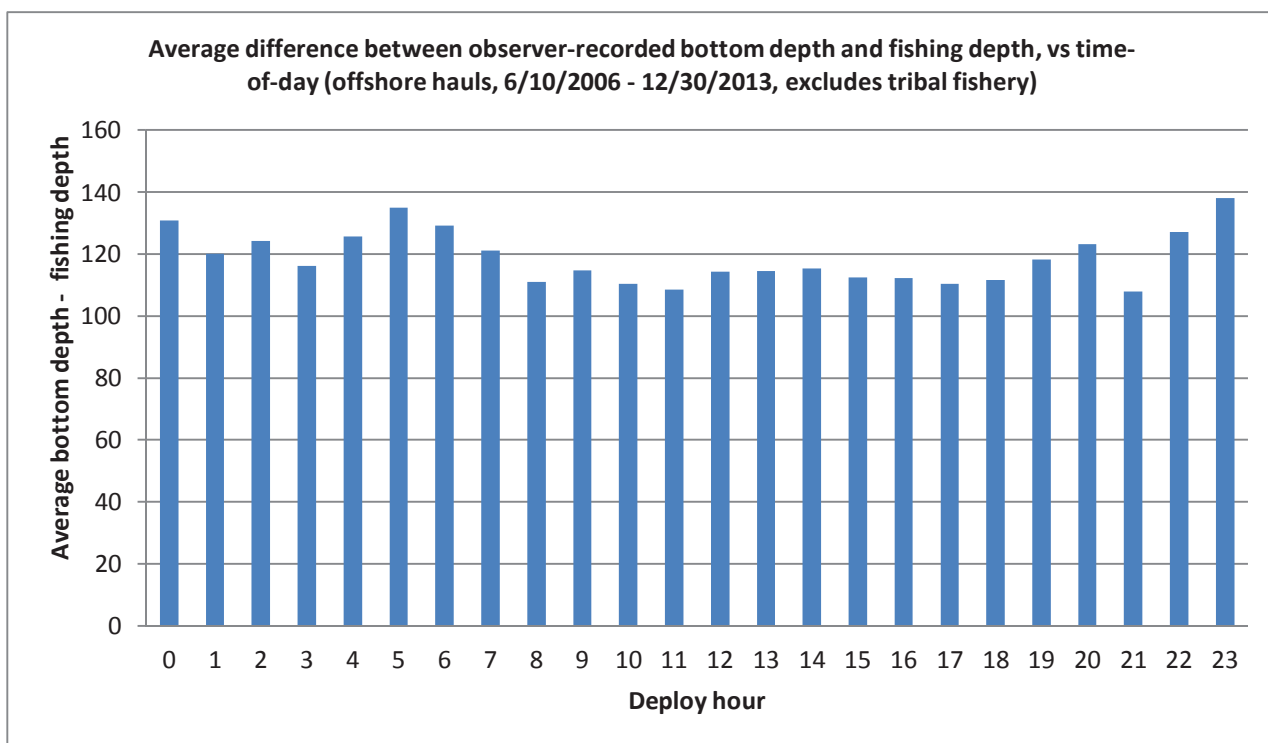


Figure 4.



An alternate explanation for the apparent increase in hauls that would be classified as contacting the bottom based on indicator species, despite the average differential between bottom and fishing depth increasing, would be that fish come off the bottom at night.

CPUE's for several of the bottom-contact indicator species increase at night in CP hake data from 2008-2014 (limited to CPs because it could be compiled quickly) - see Figure 5 below.

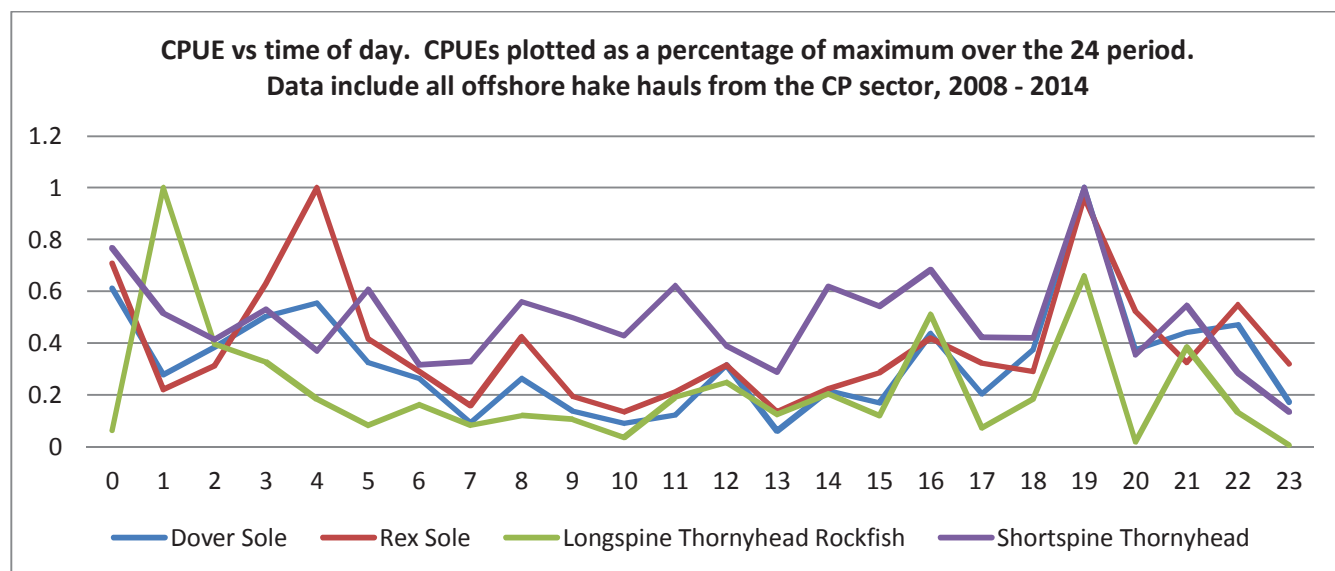


Figure 5.

Sea State examined data sets from other fisheries for indications of benthic fin fish species moving up in the water column particularly at night.

Figures 6 through 8 show that this kind of CPUE increase is common in fisheries where we have better data and contrasting gear types. For flatfish species, including Arrowtooth and flathead, which were used as potential bottom-contact indicators, CPUE decreases at night in Alaska for NPT gear that may open at most 2 fm above the bottom, while often increasing dramatically in PTR gear used for pollock.

Figure 6 examines the contrast in Arrowtooth flounder CPUE between the Bering Sea pollock fishery (which takes small incidental amounts of Arrowtooth) and the Bering Sea Amendment 80 (head and gut CPs) which target flatfish with bottom trawls. The plot shows a moderate decline in bottom trawl target CPUE at night and an inverse increase in pelagic trawl bycatch CPUE of Arrowtooth.

Figure 7 looks at the relative CPUEs of various flatfish incidentally caught in the Bering Sea CP pollock fishery as a function of time of day. This plot provides a very clear signal of dispersal of flatfish off bottom during the night.

Figure 8 looks at the relative CPUEs of various flatfish in the Bering Sea CP bottom trawl target fishery as a function of time of day. This plot again provides a very clear signal of dispersal of flatfish off bottom during the night.



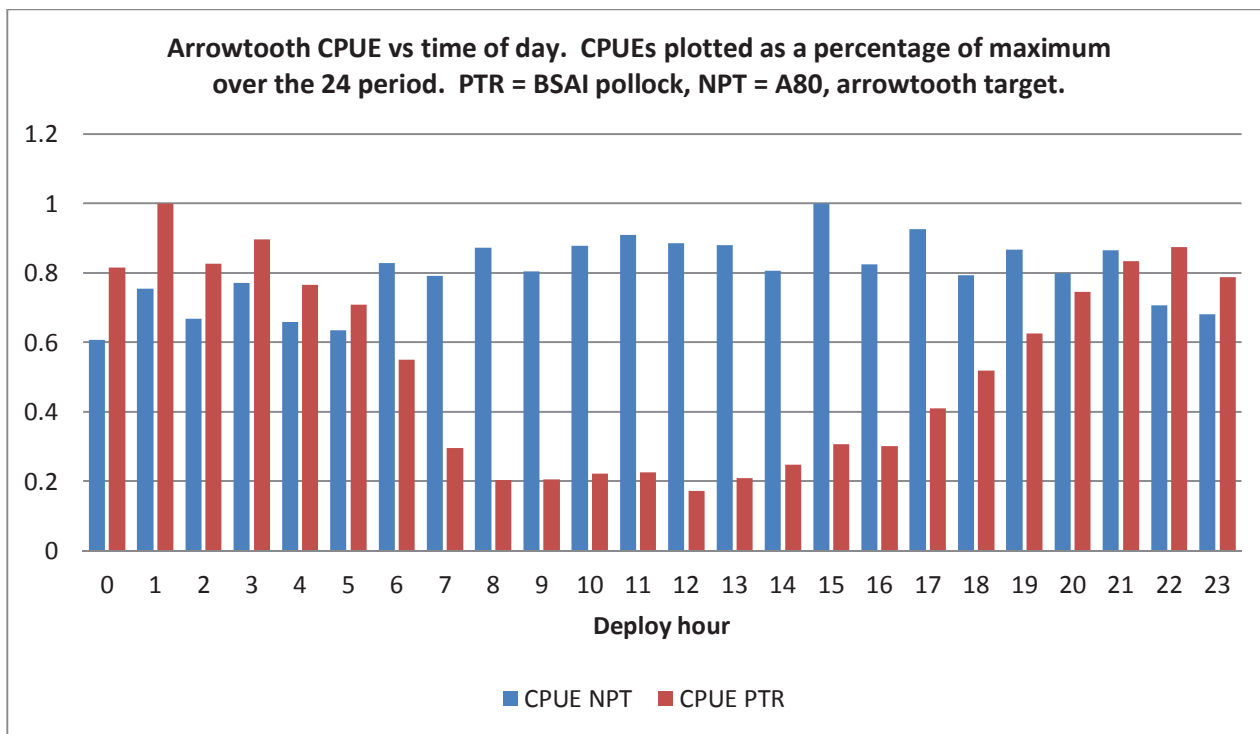


Figure 6.

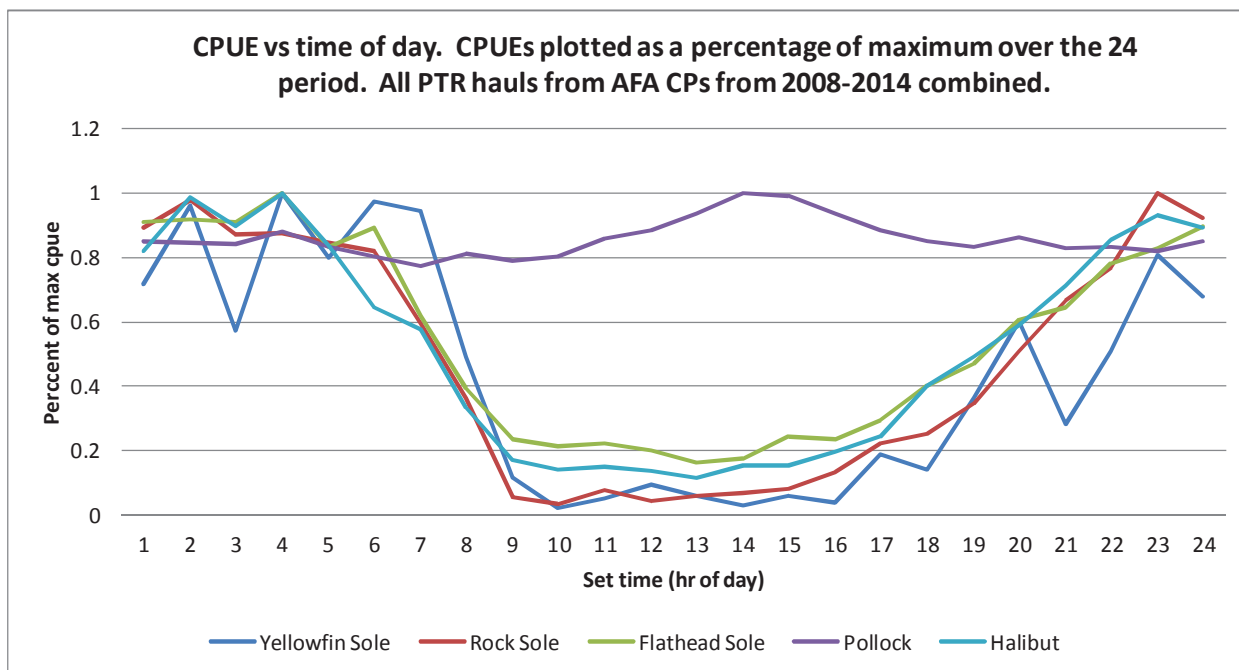


Figure 7.

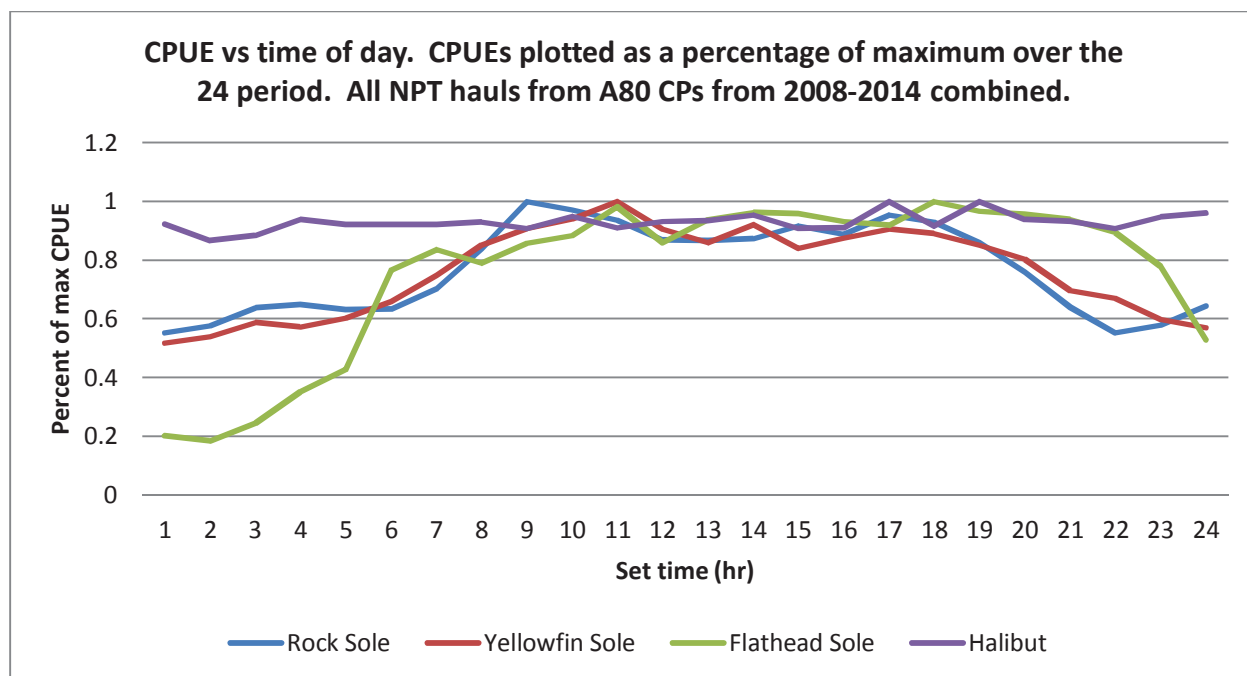


Figure 8.

### Summary

Sea State tables were produced by including any tow that had a set or haul location that was inside EFH. This is the most conservative assumption possible and based on examination of actual VMS locations of tow, overestimates the number of hauls in EFH conservation areas. Even those hauls in EFH under this method are often only barely overlapping EFH (see Appendix A, below.)

We suggest that hauls with <10kgs of 'indicator' finfish species in EFH bottom trawl closure areas have less than a 50/50 chance of having been in contact with the bottom. Applying this threshold reduces the number of hauls in EFH areas with possible bottom contact to 2% or less without discounting for time of day or depth differential.

The data on indicator species in the whiting fishery should be partitioned between tribal and non-tribal fisheries.

The data should be further partitioned among the individual EFH areas.

There is evidence in the data and from TKE that benthic fin fish species disperse in the water column to varying degrees under certain conditions.

Using benthic finfish species as a proxy for bottom contact may provide some indication of possible bottom contact, but in assessing the degree of probability, it is important to look at quantities (counts and/or weights).

The probability of the presence of a given quantity of 'indicator' species resulting from bottom contact should be discounted for hauls during night fishing.

Where possible the depth differential between bottom depth and fishing depth should be considered in assessing the probability that the presence of a given quantity of 'indicator' species resulted from bottom contact.

The small number of hauls with more than de minimus amounts of benthic fin fish and with any overlap EFH conservation areas, lends itself to tow by tow assessment of the amount of overlap, using VMS data.



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January 19, 2015

We reviewed a number of CP VMS tracks associated with tows with an observer reported end point in the Bandon High Spot area. We found several examples like figure 1 below where the VMS track didn't enter the EFH conservation area. The discrepancy is presumably a result of rounding off the lat/lon coordinates recorded by the observer.

In the following figures, red stars mark observer set and haul positions and red lines are vessel VMS positions. (Additional red, green and blue 'squiggly' lines are bathymetric contours. The Bandon High Spot is outlined in black.)

**CP on 8/30/2010** One observer end point is in the Bandon High Spot, but none of the VMS track points actually occurs in the EFH conservation area. This is likely due to truncating of exact position to degrees and minutes.

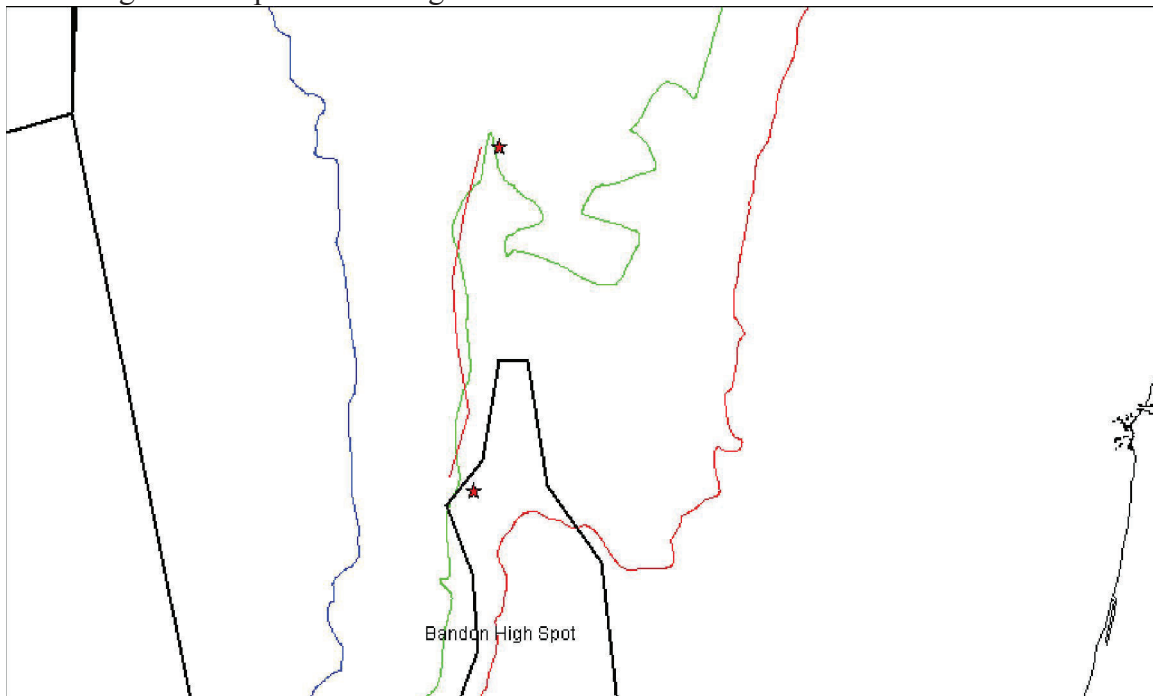


Fig. 1

Figures 2 and 3 below show other scenarios where the end point data can be misleading.

**CP on 9/15/2010** The tow location recorded in the observer data completely misrepresents this haul. The north end of the VMS track is approximately 43 16. It appears the discrepancy, which places an end point within the EFH conservation area, is likely due to observer recording 43 06 rather than 43 16 as one end point.

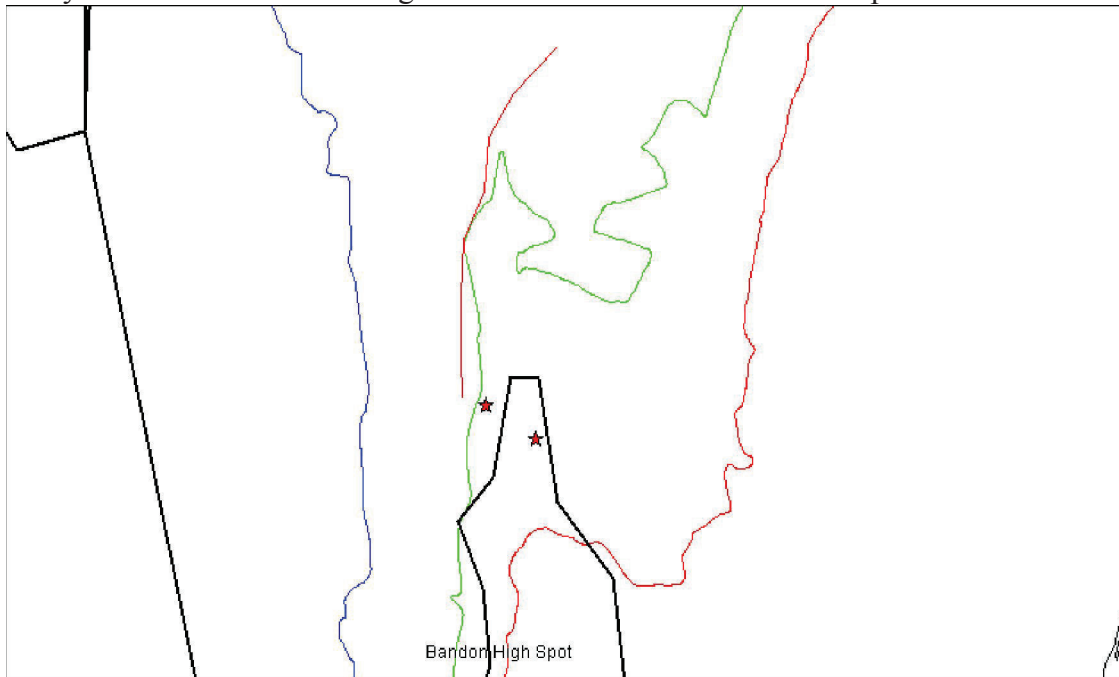


Figure 2

**CP on 9/19/2010** This is fairly typical of a correct set of observer locations (compared to VMS track). The VMS track shows that only a small part of the tow was actually in the EFH conservation area.

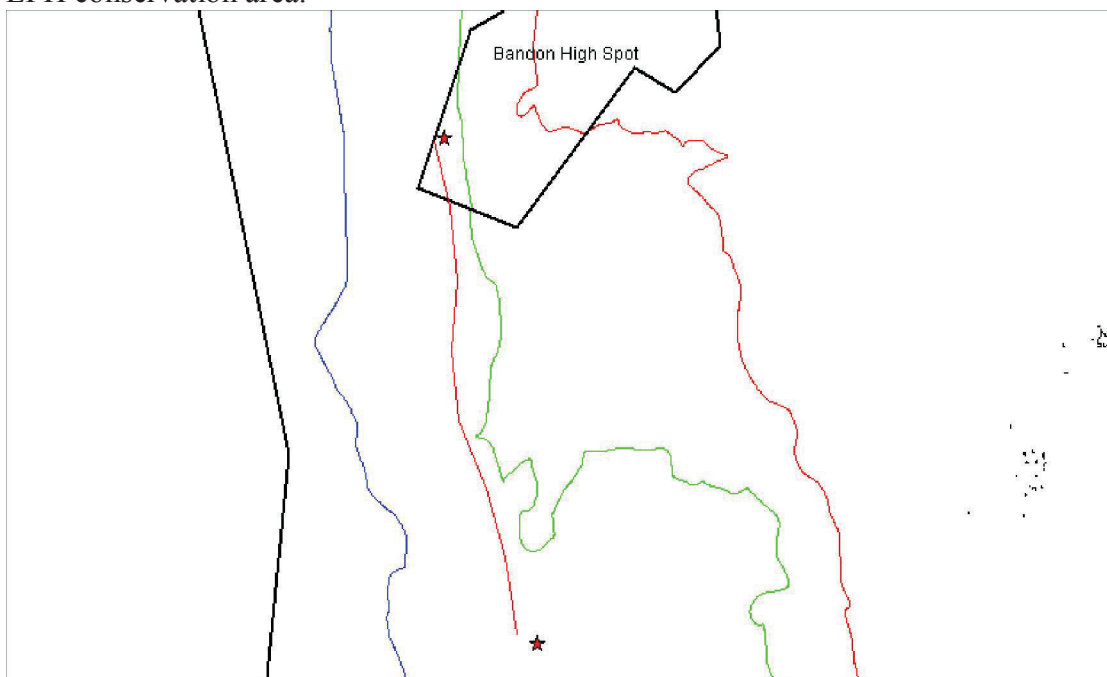


Figure 3

**Alliance of Communities for Sustainable Fisheries**

**256 Figueroa Street #1, Monterey, CA 93940**

**(831) 373-5238**

[www.alliancefisheries.com](http://www.alliancefisheries.com)

Ms Dorothy Lowman, Chair

March 20, 2015

Pacific Fishery Management Council

7700 NE Ambassador Place, Suite 101

Portland, Oregon 97220-1384

RE: Groundfish Essential Fish Habitat

Dear Chair Lowman,

The Alliance of Communities for Sustainable Fisheries (ACSF) is a 13-year-old 501(c)(3) not-for-profit educational organization, founded to connect fishermen with their communities, and to represent fishing interests in state and federal processes. The ACSF is a regional organization, with commercial fishing leader representatives from Monterey, Moss Landing, Santa Cruz, Morro Bay and Pillar Point harbors and Port San Luis on our Board of Directors. Port communities and several recreational fishing organizations also have representatives on our Board. Thus, the ACSF represents a large cross-section of fishing and community interests for the Central Coast of California.

The bottom-trawl sector of the ACSF worked successfully with Monterey Bay National Marine Sanctuary (MBNMS) staff and other environmental organizations to shape a proposal to the Council for modifications to groundfish EFH boundaries in the area of the sanctuary. We have no doubt that the proposal suits the needs of this fishery. Based on this, the ACSF has previously indicated support for the MBNMS proposal.

Upon subsequent discussions with the full ACSF Board of Directors, who represent a variety of other fisheries and gear types, the Board voted to oppose any changes to existing groundfish EFH boundaries in the MBNMS region, with particular concern over areas 14 and 15 in the southern area of the sanctuary proposal. The main reason for this opposition is concern that the new areas proposed for EFH closure for bottom trawling due to the presence of coral, could be subject to future efforts by some to also be closed to other fixed gears, and even recreational fishing.

Thank you for considering this comment.



Kathy Fosmark  
Co-Chair



Frank Emerson  
Co-Chair

David Kirk  
Po Box 1503  
Arroyo Grande, Ca 93421

March 30, 2014

Ms. Dorothy Lowman , Chairman  
Pacific Fishery Management Council  
7700 NE Ambassador Place, Suite 101  
Portland, Or 7220-1384

Re: The creation of additional EFH areas as result of Amendment 19 five year review.

Dear Chairman Welford and members of the Council,

On behalf of the Port San Luis Commercial Fisherman's Association, I am writing in opposition to the creation of additional EFH designated areas. We feel that in order a for a sustainable fish community to be economically viable, we need more areas opened, and no new closed areas. We fear that the existing closures we have are setting us up to fail in Morro Bay and Port San Luis. Adding more areas will guarantee that commercial fishing will be economically affected. Therefore, we applaud Monterey Bay National Marine Sanctuary's willingness to reopen historically trawled areas of importance to fisherman.

As a result of the PSLCFA and the Morro Bay Commercial Fisherman's Association concerns regarding the MBNMS proposal, a meeting was held in Morro Bay in April with Karen Grimmer, of MBNMS, and trawl fisherman that participated in the negotiation and compromise regarding the Collaborative Groundfish Essential Habitat Proposal. Although the trawlers seemed happy with the trade, we have concerns that in the future, other gear types besides trawl will be affected. We have many small vessels that target crab and other fish and invertebrates, using gear that makes contact with the bottom. Historically, our two harbors have fished rock fish from Point Conception to Point Sur.

NMFS Habitat Assessment Improvement Plan (HAIP; NMFS 2010) established a framework for conducting habitat assessments, and evaluated national science needs of a region-by region basis to achieve greater levels of habitat assessment excellence. The HAIP drew from the example of the Pacific Fishery Management Council's 2005 Environmental Impact Statement on EFH designation and minimization of adverse impacts to the West Coast groundfisheries that formed the basis for Amendment 19. That assessment represented a compilation of information on the status of habitats important to the groundfisheries and impact of fishing on those habitats. In particular, comparative analyses of catch and diversity of groundfish species could be conducted between EFH Conservation Areas and areas with no prohibitions in order to evaluate performance of Amendment 19 closures. NMFS objective is to analyze these spatial areas, comparing species richness and size and maintain closures for periods long enough to support research on the impacts of the closure on both habitat and species and establish closures in a full range of habitats and across relevant gear types in the context of a planned experiment. I suggest they study small areas adjacent to the MPA's not spatial closures of over 100 square miles near our ports, and do studies with other organizations studying the MPA's. I feel

it makes sense in California for Ocean Science Trust to do a collaborative study with NMFS. Ultimately the Council identified groundfish EFH as well as all waters from the high tide line (and parts of estuaries) to 3500 meters in depth. This should be studied in its entirety to achieve an objective analysis of EFH and the problems that exist since all of this area is connected by the movement of water, organisms, temperatures, and negative impacts. Designated areas are taking a step backwards in achieving an understanding of EFH, in my opinion.

In conclusion, our associations would like to see more areas opened to fishing and greater efforts in correcting existing problems that threaten the abundance of fish. Closing additional closed areas will be detrimental to commercial fishing and fishing related businesses. There are other affective strategies to manage fish stocks without threatening fishing community's livelihoods.

Thank You,

David Kirk  
Port San Luis Commercial Fisherman's Association  
805-680-4798  
salmonkirk@gmail.com



March 20, 2015

Ms. Dorothy Lowman, Chair  
Pacific Fishery Management Council  
7700 NE Ambassador Place, Suite 101  
Portland, OR 97220

**RE: E.5 Groundfish Essential Fish Habitat Amendment Scoping, Including Rockfish Conservation Area (RCA) Adjustments**

Dear Ms. Lowman and Council members:

Thank you for the opportunity to comment on scoping for revisions to groundfish essential fish habitat (EFH) designation and conservation. In considering the scope of actions, alternatives, and impacts for further analysis, we urge the Council to adopt a scope that includes a full range of reasonable alternatives, including the comprehensive conservation proposal submitted by Natural Resources Defense Council (NRDC), Oceana, and Ocean Conservancy (OC) (NRDC/Oceana/OC Proposal).<sup>1</sup> Because this proposal maximizes habitat protection while minimizing fishing effort displacement, as affirmed in the National Marine Fisheries Service's own assessment of proposals, the Council should include its elements in a final range of alternatives to amend the Groundfish Fishery Management Plan (FMP).

Amendment 19 to the Groundfish FMP identified and described EFH for managed groundfish.<sup>2</sup> In 2006, the National Marine Fisheries Service took management measures to implement the regulatory provisions of Amendment 19, which included fishing gear restrictions and prohibitions, closing areas to bottom trawling, and closing areas to all fishing that contacts the bottom.<sup>3</sup> The Council initiated the EFH review process in 2010, pursuant to National Oceanic and Atmospheric Administration regulations.<sup>4</sup>

The EFH review process includes three phases: Phase 1, data consolidation; Phase 2, request for proposals to modify EFH, and Phase 3, management action.<sup>5</sup> Based in large part on eight proposals submitted to the Council during Phase 2, including the NRDC/Oceana/OC Proposal,

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<sup>1</sup> NRDC, Oceana, OC, Proposal to the Pacific Fishery Management Council to Modify Groundfish Essential Fish Habitat Designation, Conservation, and Enforcement (July 31, 2013), available at [ftp://ftp.pcouncil.org/pub/GF\\_EFH\\_Review%202011-2012/Oceana.NRDC.OC/](http://ftp.pcouncil.org/pub/GF_EFH_Review%202011-2012/Oceana.NRDC.OC/).

<sup>2</sup> Groundfish FMP Amendment 18/19 (Nov. 2005), available at <http://www.pcouncil.org/wp-content/uploads/A18-19Final.pdf>.

<sup>3</sup> 71 Fed. Reg. 27,408 (May 11, 2006).

<sup>4</sup> 50 C.F.R. § 600.815 (FMPs must include procedures the Council will follow to review and update EFH information. Such review includes soliciting information from interested parties, and must be conducted at least once every five years).

<sup>5</sup> Council Operating Procedures (COP) 22 (June 13, 2007, revised Sept. 11, 2008, April 12, 2011).

the Council determined that there was sufficient new information to move to Phase 3 of the EFH review.<sup>6</sup> To promote the efficacy of Phase 3, at the March 2014 meetings, the Council asked the Northwest and Southwest Fisheries Science Centers to investigate the question of groundfish effectiveness, accuracy, and completeness.

At the following Council meeting in June, environmental and industry representatives agreed to work together to find common ground and explore the possibility of a compromise EFH proposal. Oceana has supported this effort, along with NRDC and Environmental Defense Fund, and has met with a number of industry representatives in ports from Eureka, California to Astoria, Oregon. We have been encouraged by industry participation, and it remains the intent of Oceana and other participants that this collaborative approach will result in a positive outcome for both fisheries and habitat protection. In the meantime, we support scoping that includes a broad range of alternatives.

NEPA is the “basic national charter for protection of the environment.”<sup>7</sup> Congress enacted the statute “to help public officials make decisions that are based on understanding of environmental consequences, and take actions that protect, restore and enhance the environment.”<sup>8</sup> To meet this goal, NEPA requires that agencies prepare an Environmental Impact Statement (EIS) for all “major Federal actions significantly affecting the quality of the human environment.”<sup>9</sup> An agency’s solicitation and consideration of informed public opinion as a component of its decision making is fundamental to the NEPA process.

Scoping consists of the range of actions, alternatives, and impacts to be considered in an environmental impact statement.<sup>10</sup> To determine the scope of an EIS, agencies must consider “reasonable courses of action.”<sup>11</sup> Amendment 19 employed an Environmental Impact Statement (EIS) to analyze a range of alternative strategies to conserve and enhance groundfish EFH,<sup>12</sup> and the Council EFH five year review process has appropriately called for scoping here.

The NRDC/Oceana/OC proposal would designate sixty-six areas off the United States West Coast as closed to non-tribal bottom trawl gear, open nine areas that are currently closed to bottom trawling, require that bottom contact by midwater trawls be prohibited inside EFH conservation areas, designate major prey taxa as a component of groundfish EFH without any additional management measures, and close all waters from 3500 meters to the EEZ boundary to bottom trawling.<sup>13</sup> This proposal would protect an additional 1,579 square miles of hard

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<sup>6</sup> Pacific Fishery Management Council, Decision Summary Document 5 (Nov. 1-6, 2013), available at <http://www.pcouncil.org/wp-content/uploads/1113decisions.pdf>.

<sup>7</sup> 40 C.F.R. § 1500.1

<sup>8</sup> *Id.*

<sup>9</sup> 42 U.S.C. § 4332(C).

<sup>10</sup> 40 C.F.R. § 1508.25.

<sup>11</sup> 40 C.F.R. § 1508.25(b)(2).

<sup>12</sup> NMFS, Pacific Coast Groundfish FMP, Essential Fish Habitat Designation and Minimization of Adverse Impacts, Final EIS (Dec. 2005), available at [http://www.westcoast.fisheries.noaa.gov/publications/nepa/groundfish/final\\_groundfish\\_efh\\_eis.html](http://www.westcoast.fisheries.noaa.gov/publications/nepa/groundfish/final_groundfish_efh_eis.html).

<sup>13</sup> NRDC, Oceana, OC, Proposal to the Pacific Fishery Management Council to Modify Groundfish Essential Fish Habitat Designation, Conservation, and Enforcement (July 31, 2013), *supra* note 1; Memorandum from Ben Enticknap and Geoff Shester, Oceana, to Pacific Fishery Management Council, Coastwide EFH Conservation Proposal Summary (March 20, 2015) (attached).

substrate, and 339 square miles of mixed substrate from bottom trawling. It would include 12,579 coral observations and 4,958 sponge observations in EFH conservation areas. It would protect an additional 2,794 square miles of predicted highly suitable coral habitat from bottom trawling. Combined with deep-water closures, this represents a total increase of 143,794 square miles of seafloor protected from bottom trawling. It would also maintain over 29,000 square miles of the continental shelf and upper slope habitat as open to bottom trawling, and open 1.77% of the total groundfish bottom trawl intensity that took place before the current closures went into effect.

In Amendment 19, midwater trawls were excluded based on the assumption that they do not contact the seafloor. As described in the EFHRC Phase I report:

Midwater trawl fishing is permissible within all Amendment 19 EFH conservation areas since it was assumed to have no contact with the seafloor. Annually, midwater trawling occurs over 8-31% of EFH conservation areas where bottom trawling is prohibited, and bottom contact is estimated by the fleet to occur on up to 25% of tows predominantly in soft sediment habitats, as referenced in the Phase 1 Report.<sup>14</sup>

New analysis by the Northwest Fisheries Science Center (NWFSC) indicates that the original rationale for excluding midwater trawl vessels from EFH Conservation Area regulations is no longer valid. While the quantitative extent of bottom contact by midwater trawls cannot be precisely determined due to the lack of direct monitoring of bottom contact, the September 2014 NWFSC report indicated significant bottom contact based on the presence of benthic fish and invertebrate taxa in the catch.<sup>15</sup> The NWFSC is conducting a revised analysis, which we look forward to seeing. From the present data, however, it is clear that bottom contact is occurring both inside and outside EFH Conservation Areas, confirming the basis for prohibitions against bottom contact by midwater trawls, as articulated in the Oceana/NRDC/OC EFH proposal. Consequently, we request that the Council include regulations addressing midwater trawl bottom contact inside EFH Conservation Areas within the scope of this action.

Our proposal identified authority for the closure of all waters deeper than 3500m to bottom trawling.<sup>16</sup> After further discussions with the National Marine Fisheries Service, it appears that of these various options, the use of broad Magnuson-Stevens Act authority under either Section 303(b)(2)(A) or 303(b)(12), or both, may be a preferred option to achieve this policy objective. More specifically, these two options include:

1. Protecting the area without designating it as EFH using the discretionary authority in Section 303(b)(2)(A) of the MSA. This section of the law was added in the 2006 reauthorization and allows the designation of zones where specific gear types are not

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<sup>14</sup> Essential Fish Habitat Review Committee (EFHRC), Supplemental EFHRC Report 2 (April 2013), available at [http://www.pcouncil.org/wp-content/uploads/D6c\\_SUP\\_EFHRC\\_APR2013BB.pdf](http://www.pcouncil.org/wp-content/uploads/D6c_SUP_EFHRC_APR2013BB.pdf).

<sup>15</sup> NMFS Response to Council's Questions Concerning The Effectiveness, Accuracy, and Completeness of Pacific Coast Groundfish EFH (Sept. 2014), available at [http://www.pcouncil.org/wp-content/uploads/IR7\\_Sup\\_NMFS\\_EFH\\_EvalRpt\\_Sept2014BB.pdf](http://www.pcouncil.org/wp-content/uploads/IR7_Sup_NMFS_EFH_EvalRpt_Sept2014BB.pdf).

<sup>16</sup> NRDC, Oceana, OC, Proposal to the Pacific Fishery Management Council to Modify Groundfish Essential Fish Habitat Designation, Conservation, and Enforcement (July 31, 2013), *supra* note 1, at 33-34.

permitted.<sup>17</sup> Closures under this provision are not dependent on the identification of deep sea corals.

2. Protecting the area without designating it as EFH by using the discretionary authority contained in Section 303(b)(12) of the MSA. This section of the law was added in the 2006 reauthorization, and provides general management authority to conserve non-target species and habitats.<sup>18</sup>

We ask the Council to include this deep-water bottom trawl closure in the scope of this action, and suggest that the Council work with NMFS to identify the most appropriate authority to implement this closure as part of the EFH groundfish amendment.

Our proposal should be included in groundfish EFH scoping. In its report to the Council on groundfish EFH effectiveness, accuracy, and completeness, NMFS included an analysis of the proposals the Council received in its Phase 2 request for proposals.<sup>19</sup> In comparison, the NRDC/Oceana/OC proposal calls for the greatest protection of habitat and, simultaneously, the greatest area reopening within existing EFH areas.<sup>20</sup> The proposal also minimizes bottom trawl displacement—limiting it to 2.2%—and reopens areas representing 2.3% of bottom trawl fishing effort prior to the current closures.<sup>21</sup> Because it meets the two goals of maximizing habitat protection while minimizing effects on the bottom trawl industry, the proposal deserves consideration in full, as one of the alternatives analyzed in scoping groundfish EFH. Please include our proposal in your analysis.

Sincerely,



Ben Enticknap  
Pacific Campaign Manager



Geoffrey G. Shester, Ph.D.  
California Campaign Director

Attached: Summary of NRDC, Oceana, Ocean Conservancy Proposal to the Pacific Fishery Management Council to Modify Groundfish Essential Fish Habitat Designation, Conservation, and Enforcement

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<sup>17</sup> 16 U.S.C. § 1853(b)(2)(A), stating that “[a]ny fishery management plan which is prepared by any Council, or by the Secretary, with respect to any fishery, may . . . designate zones where, and periods when, fishing shall be limited, or shall not be permitted, or shall be permitted only by specified types of fishing vessels or with specified types and quantities of fishing gear.”

<sup>18</sup> *Id.* § 1853(b)(12), authorizing the Council or the Secretary to include management measures in any fishery management plan “to conserve target and non-target species and habitats, considering the variety of ecological factors affecting fishery populations.”

<sup>19</sup> NMFS Response to Council’s Questions Concerning The Effectiveness, Accuracy, and Completeness of Pacific Coast Groundfish EFH (Sept. 2014), *supra* note 15.

<sup>20</sup> *Id.* Table 3.

<sup>21</sup> *Id.* Tables 5 and 6.

DT: March 20, 2015,  
TO: Pacific Fishery Management Council  
FR: Ben Enticknap, Geoff Shester (Oceana)  
RE: Summary of Oceana, NRDC, Ocean Conservancy EFH Proposal

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On July 31, 2013 Oceana, Natural Resources Defense Council and Ocean Conservancy submitted a comprehensive conservation proposal to the Pacific Fishery Management Council to amend groundfish EFH designation, conservation and enforcement. The full proposal, maps and analyses are available in the November 2013 PFMC briefing book (see [Agenda Item H.7.a, Attachment 7](#)). Below is a summary of the components of this proposal.

### **1. EFH Conservation Areas**

- a. Designate 66 areas off the U.S. West Coast that would be closed to non-tribal bottom trawl gear. Some areas modify existing EFH Conservation Areas, some are new areas shoreward of the 700 fathom bottom trawl footprint, and some are adjacent to the 700 fathom footprint closure. Areas were identified to maximize protections for sensitive habitat features important to groundfish (e.g. corals, sponges, hard and mixed substrates) and avoid significant impacts to the industry.
- b. Open 9 areas that are currently closed to bottom trawling.

### **2. Enforcement Changes**

- a. Change the VMS ping rate from 1 hour to 15 minute intervals to more precisely indicate the location of vessel tracks while fishing is occurring.
- b. Require the use of hydraulic sensors to determine precisely when trawl nets are being retrieved and deployed.
- c. Require depth sensors to record the active fishing depth of the trawl net in relation to the seafloor.
- d. Require the recording and reporting of these sensory data by means of an electronic logbook.

### **3. Gear Regulation Changes (Midwater Trawl Gear)**

- a. In concert with proposed enforcement changes, require that bottom contact by midwater trawls be prohibited inside EFH Conservation Areas. Midwater trawls would be allowed to operate inside EFH Conservation Areas but not contact the seafloor in these areas. Midwater trawling occurs over 8-31% of EFH Conservation Areas where bottom trawling is prohibited, and bottom contact occurs on up to 25% of tows.

### **4. EFH Designation**

- a. **Prey:** Designate “major prey taxa” as a component of groundfish EFH but without any additional management measures. We proposed 31 major prey taxa based on development of a Major Prey Index assessing the diet composition for 11 groundfish species.

5. **Deep-water habitats (designation and footprint closure):** Designate EFH out to the edge of the EEZ, and close all waters from 3500 meters to the EEZ boundary to bottom trawling. The PFMC originally proposed this area be closed (in 2005) and NMFS did not approve it because EFH was only designated to 3500 meters. There are five pathways the PFMC and NMFS could take to implement this footprint closure. We propose consideration of:

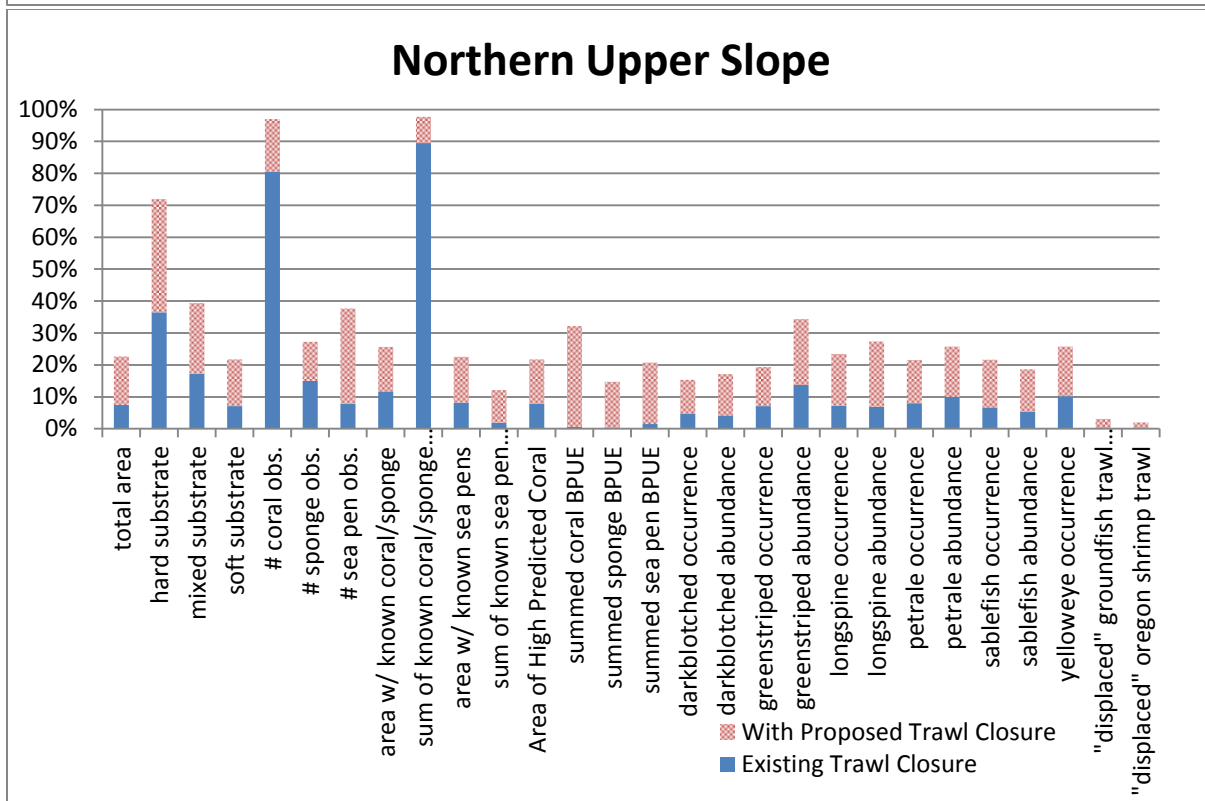
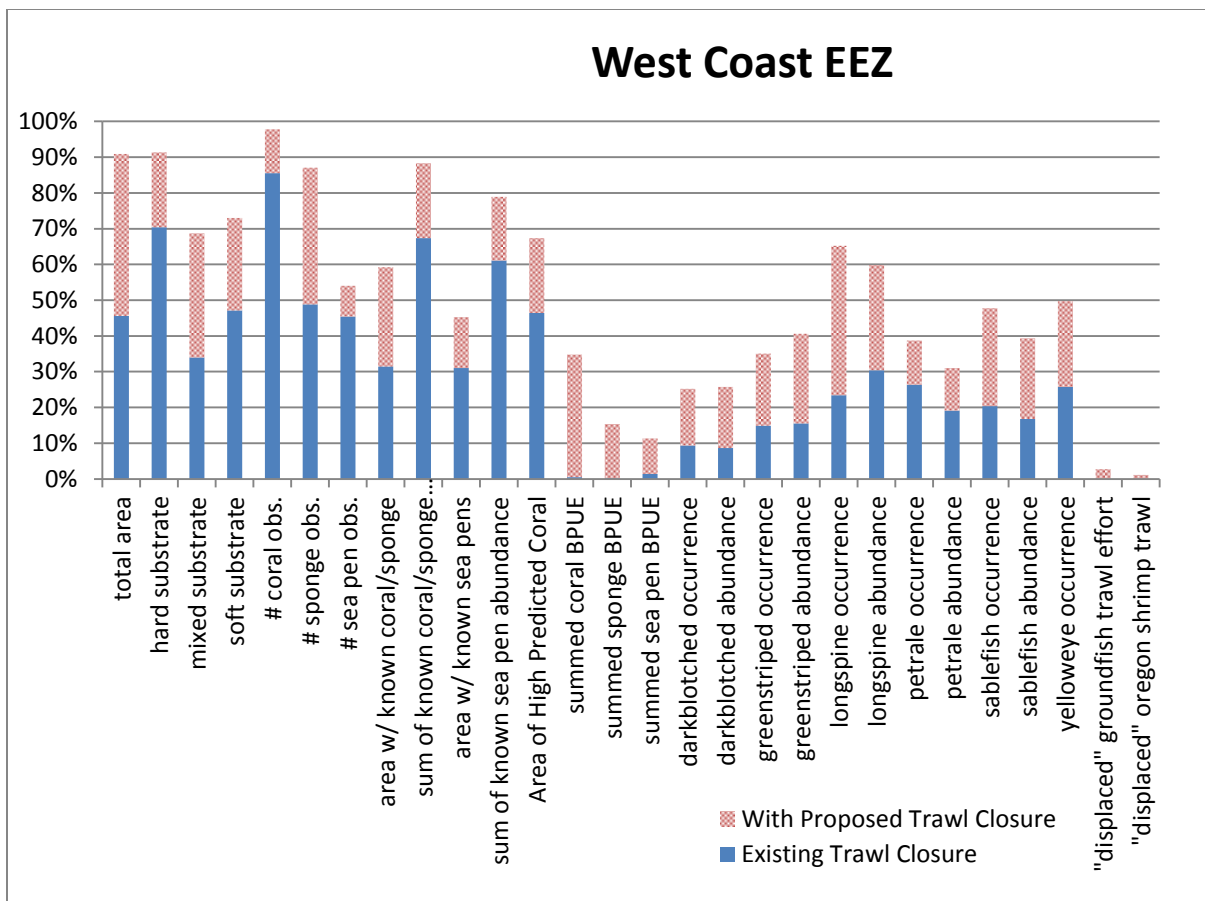
- i. Designating the area as EFH based on the deepest observation of FMP Groundfish species (3400m) plus an increased precautionary buffer to reflect the fact that most of the area deeper than 3400m has not been sampled.
- ii. Designate the area deeper than 3500 m as EFH based on new estimations of depths where FMP species may occur. This could be done via re-evaluation of data for existing FMP species, or by adding new species in the FMP (i.e. other grenadiers).
- iii. Protect the area without designating it as EFH via discretionary authority in the MSA to allow for gear restrictions to protect deep sea corals. Section 303(b)(2)(B) of the MSA added in 2006.
- iv. Protect the area without designating it as EFH using discretionary authority to designate zones where specific gear types are not permitted. Section 303(b)(2)(A) of the MSA, added in 2006.
- v. Protect the area without designating it as EFH using discretionary authority that provides general management authority to conserve non-target species and habitats. Section 303(b)(12) of the MSA, added in 2006.

**6. Proposal Benefits & Potential Displacement**

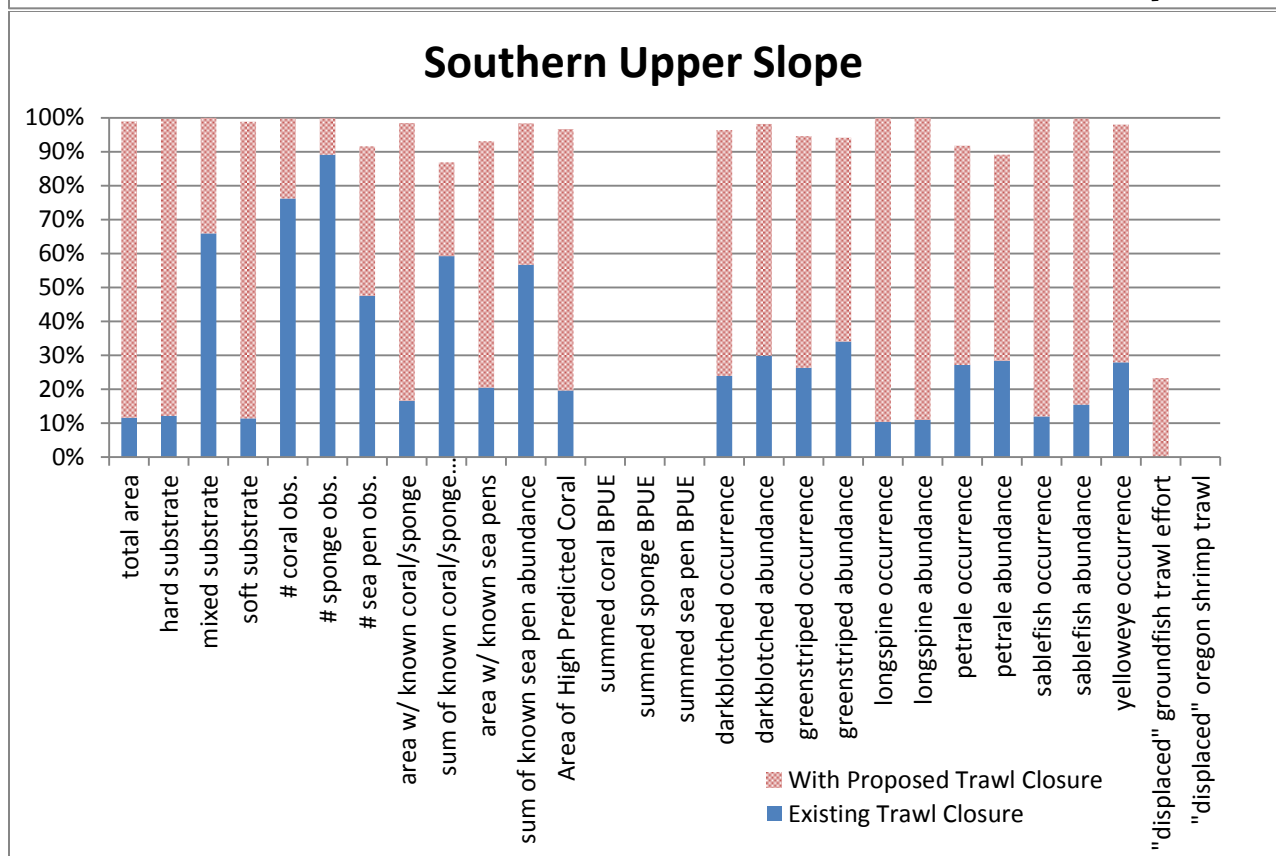
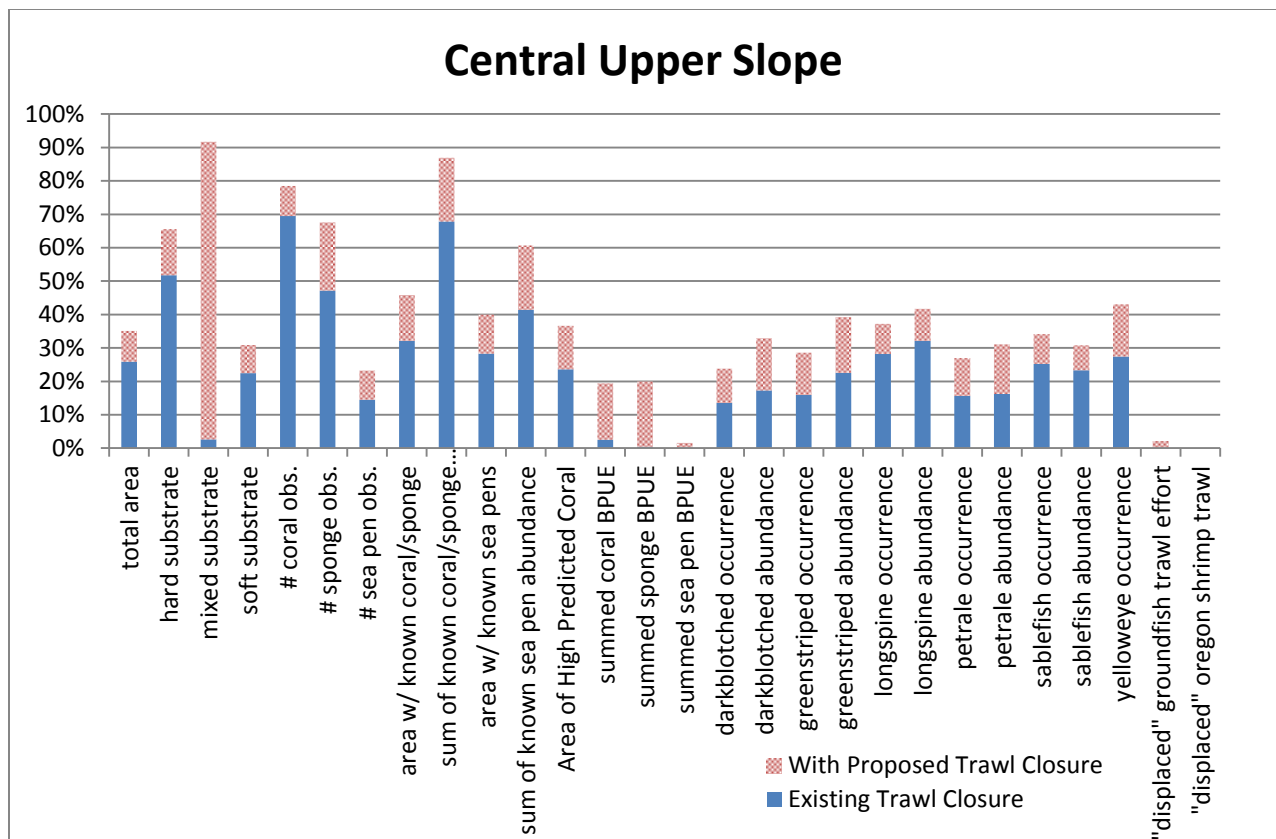
- a. An additional 1,579 square statute miles of hard substrate protected from bottom trawling (36% increase);
- b. An additional 339 square miles of mixed (hard and soft) substrate protected from bottom trawling (102% increase);
- c. Inclusion of 12,579 coral observations in EFH conservation areas (14% increase);
- d. Inclusion of 4,958 sponge observations in EFH conservation areas (78% increase);
- e. An additional 2,794 square miles of predicted highly suitable coral habitat protected from bottom trawling (45% increase); and
- f. A total increase of 143,794 square miles protected from bottom trawling overall (99% increase).
- g. This proposal would maintain over 29,000 square miles of the continental shelf and upper slope habitat as open to bottom trawling.
- h. Proposed open areas encompass 1.77% of the total groundfish bottom trawl intensity that took place before the current closures went into effect (2000-2005).
- i. The proposed 66 closed areas combined include 2.79% of recent (2006-2010) groundfish bottom trawl effort and 1.14% of shrimp trawl effort as provided by the State of Oregon (2007-2011).



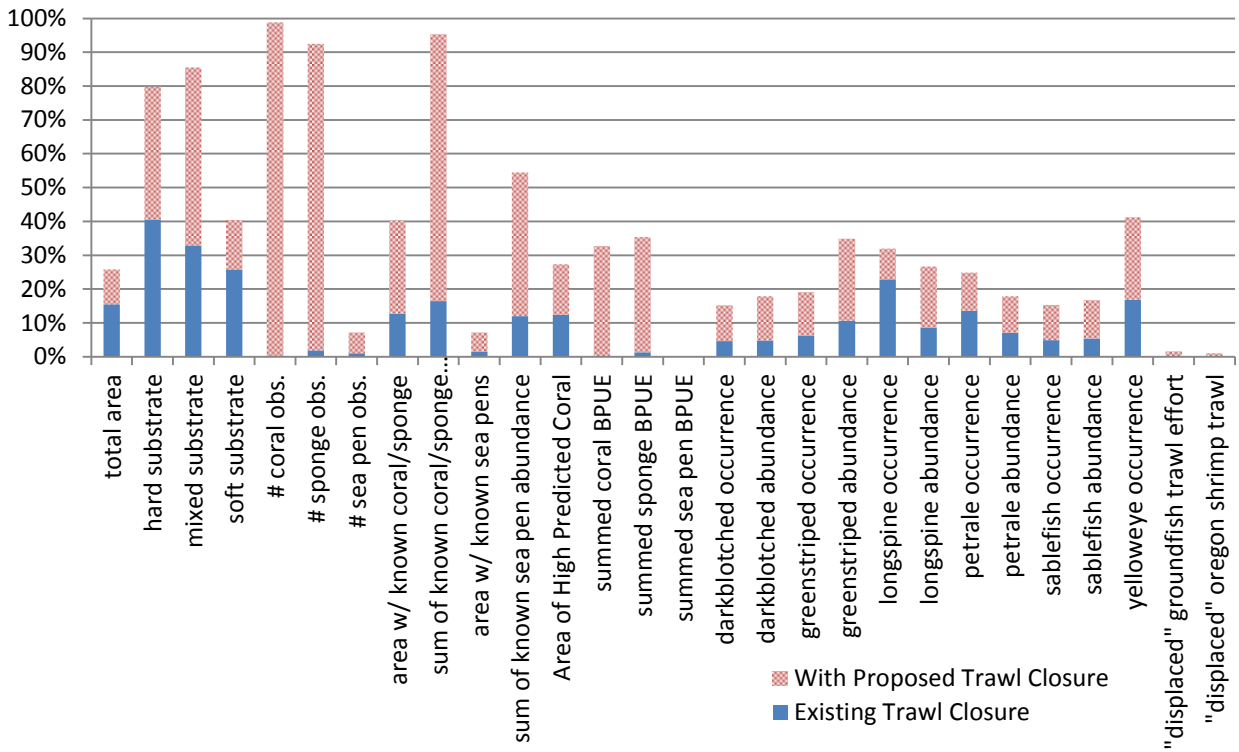




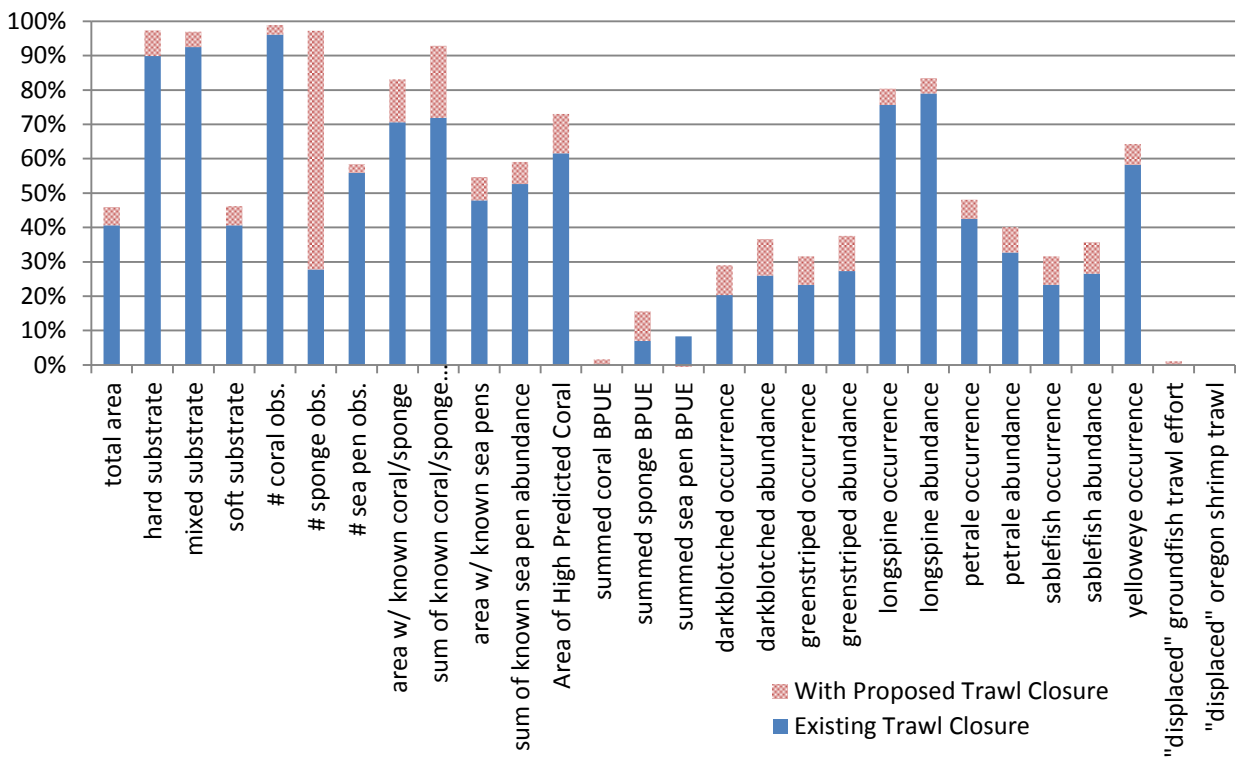




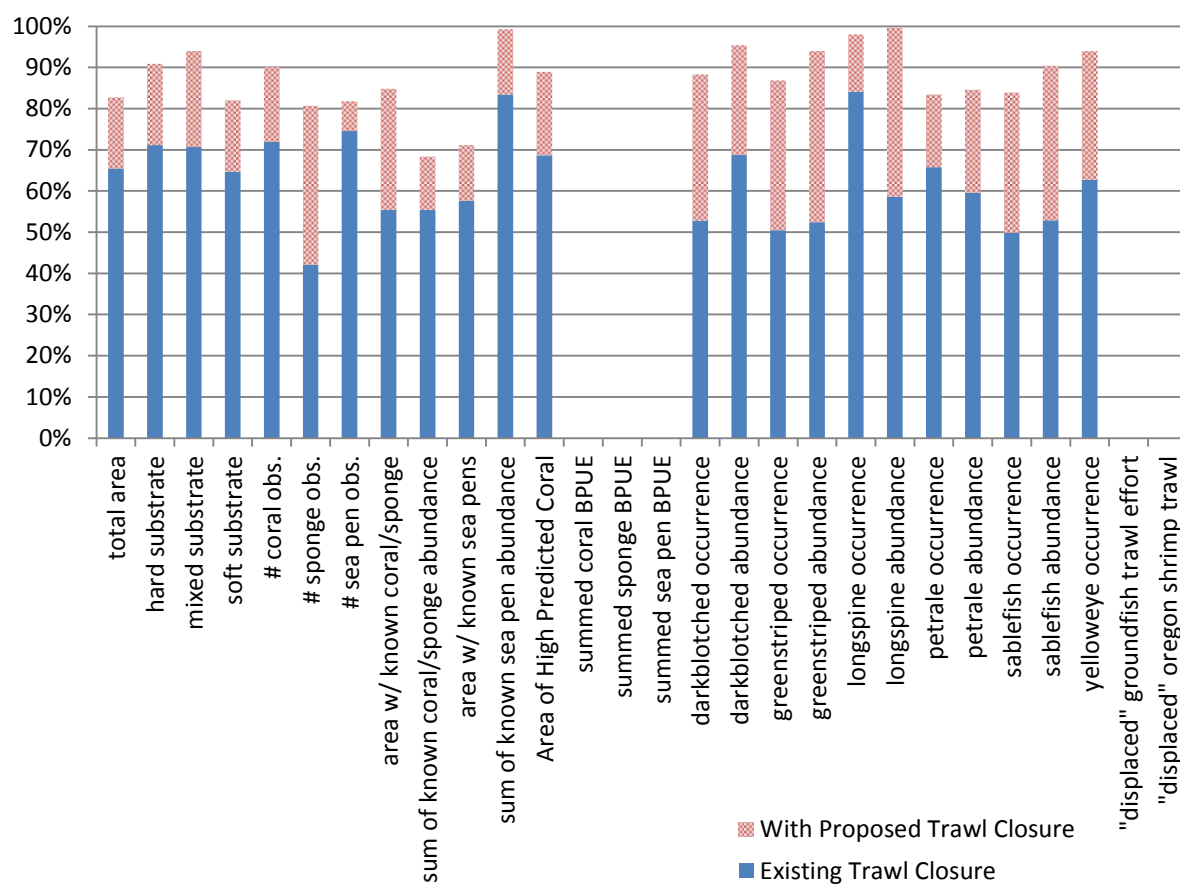
## Northern Shelf



## Central Shelf



## Southern Shelf



----- Forwarded message -----

From: **Lesley Paine** <[lesleyp26@gmail.com](mailto:lesleyp26@gmail.com)>

Date: Fri, Dec 12, 2014 at 6:21 AM

Subject: Protect the seafloor

To: [pfmc.comments@noaa.gov](mailto:pfmc.comments@noaa.gov)

The deep sea is very important to us. It is home to more than half of all biomass in our oceans. I am asking The Pacific Fishery Management Council to prevent the expansion of bottom trawling into pristine areas of deep water within its jurisdiction. A healthy and intact seafloor is critical to the health of the West Coast's ecosystems. I would love to see this legacy passed on to my children's children. My children are in elementary school and already talk about how interconnected the ecosystems are. They understand that what we do now affects them. Please protect ecologically important areas of ocean habitat.

Sincerely,  
Lesley Paine  
New Orleans