

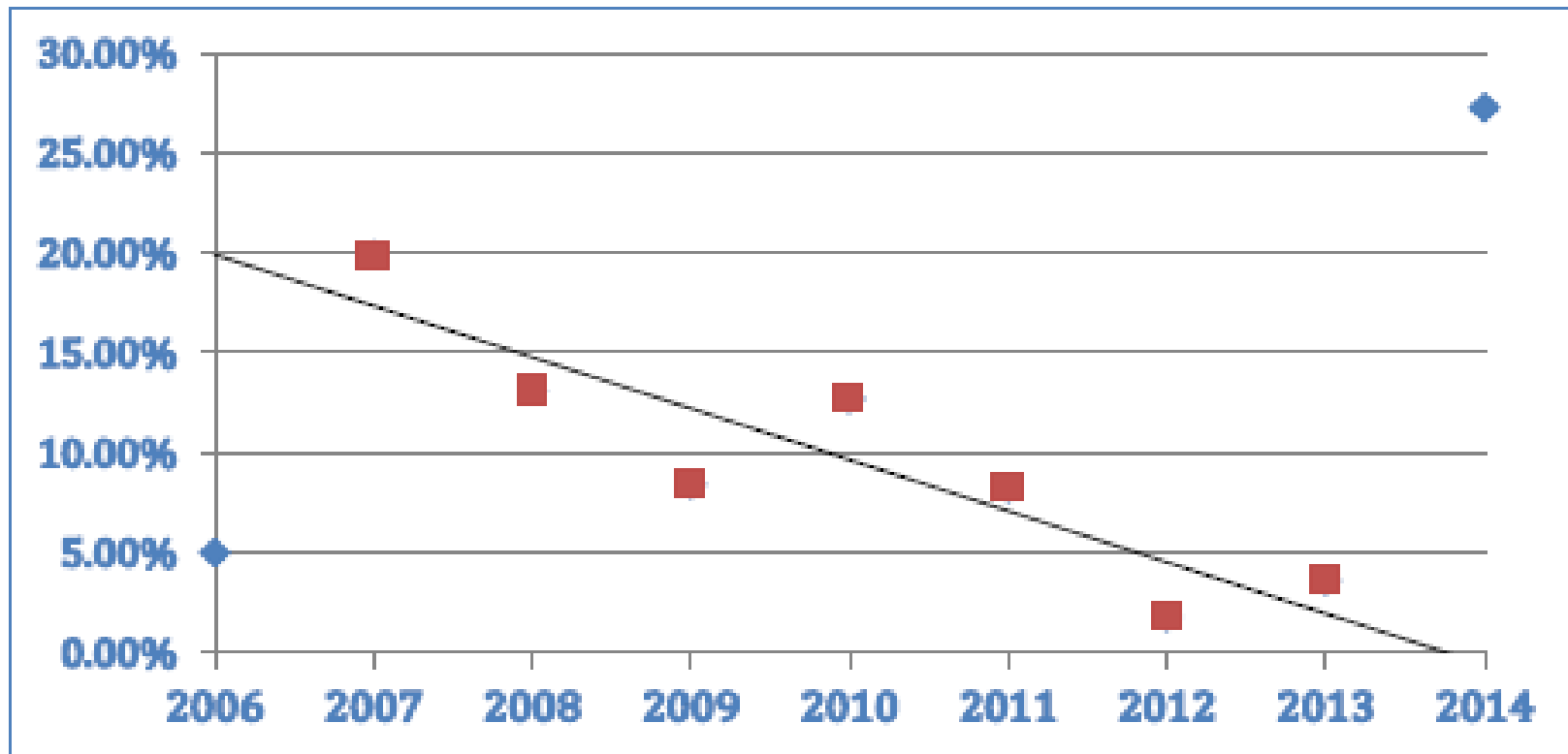
# Mid-water Trawls and EFH-CAs

Evaluating the extent of possible bottom contact

# The Data from the NMFS Informational Report

- 22,823 tows in the whiting fishery during the last 9 years
- 20,112 of them had no overlap with an EFH-CA (*table 4*)
- 2,711 hauls had some fraction of the track of the tow ( $> 0\%$ ) inside EFH-CA (*table 4*)
- Of the 2,711 hauls, 571 hauls were from the tribal fishery (*table 5*)
- Of the 2,711 hauls, only 522 hauls had more than one fish of any of the 53 benthic species (*table 9*)
- Of those 522 hauls, only 152 hauls had more than 10 kgs or 5 individual fish from the 53 benthic species (*table 10*)
- Only 6 hauls had benthic invertebrates (*table 4, appendix B*)

## The Data from the NMFS Informational Report



The number of hauls in EFH-CA's has dropped dramatically since rationalization (*Figure 2*)

# The Data from the NMFS Informational Report

EFHCA	# Hauls Inside	# Hauls w/ Benthic Taxa	%	# Hauls w/ >10 kg Benthic Taxa	%
Olympic 2	577	112	19.4%	40	6.9%
Biogenic 1	424	7	1.7%	2	0.5%
Biogenic 2	98	9	9.2%	5	5.1%
Grays Canyon	167	29	17.4%	4	2.4%
Biogenic 3	1	0	0.0%	0	0.0%
Nehalem Bank/Shale Pile	3	2	66.7%	2	66.7%
Astoria Canyon	5	0	0.0%	0	0.0%
Siletz Deepwater	34	1	2.9%	0	0.0%
Daisy Bank/Nelson Island	29	9	31.0%	1	3.4%
Newport Rockpile/Stonewall Bank	1	0	0.0%	0	0.0%
Heceta Bank	8	2	25.0%	0	0.0%
Deepwater off Coos Bay	1	0	0.0%	0	0.0%
Bandon High Spot	725	338	46.6%	97	13.4%
Rogue Canyon	137	2	1.5%	0	0.0%
Seaward of the 700-fm contour	501	11	2.2%	1	0.2%
<b>ALL EFHCAs Combined</b>	<b>2,711</b>	<b>522</b>	<b>19.3%</b>	<b>152</b>	<b>5.6%</b>

Only two EFH-CAs had more than 5 hauls with more than 10 kg of benthic species.

# Quotes From the NMFS Informational Report

Section 7 of the report states when a tow does intersect an EFH-CA -

*"The vast majority of tows occurred over soft substratum (89.7% inside and 94.4% outside the EFHCAs, respectively)."*

Section 5 of the report examines the sensitivity to the inclusion of indicator species based on their affinity to the bottom. As stated in section 1 -

*"...thornyheads and rex sole have the greatest impact on the proportion of tows that are identified as having possible seafloor contact."*

So how “sticky” are they?

# Bottom “Affinity” of Rex & Thornyheads

The total weight of thornyheads for all hauls with either set, haul, or both points inside EFHCAs was just over 1 ton - *that's less than 0.001% the 330,000 ton biomass of thornyheads.*

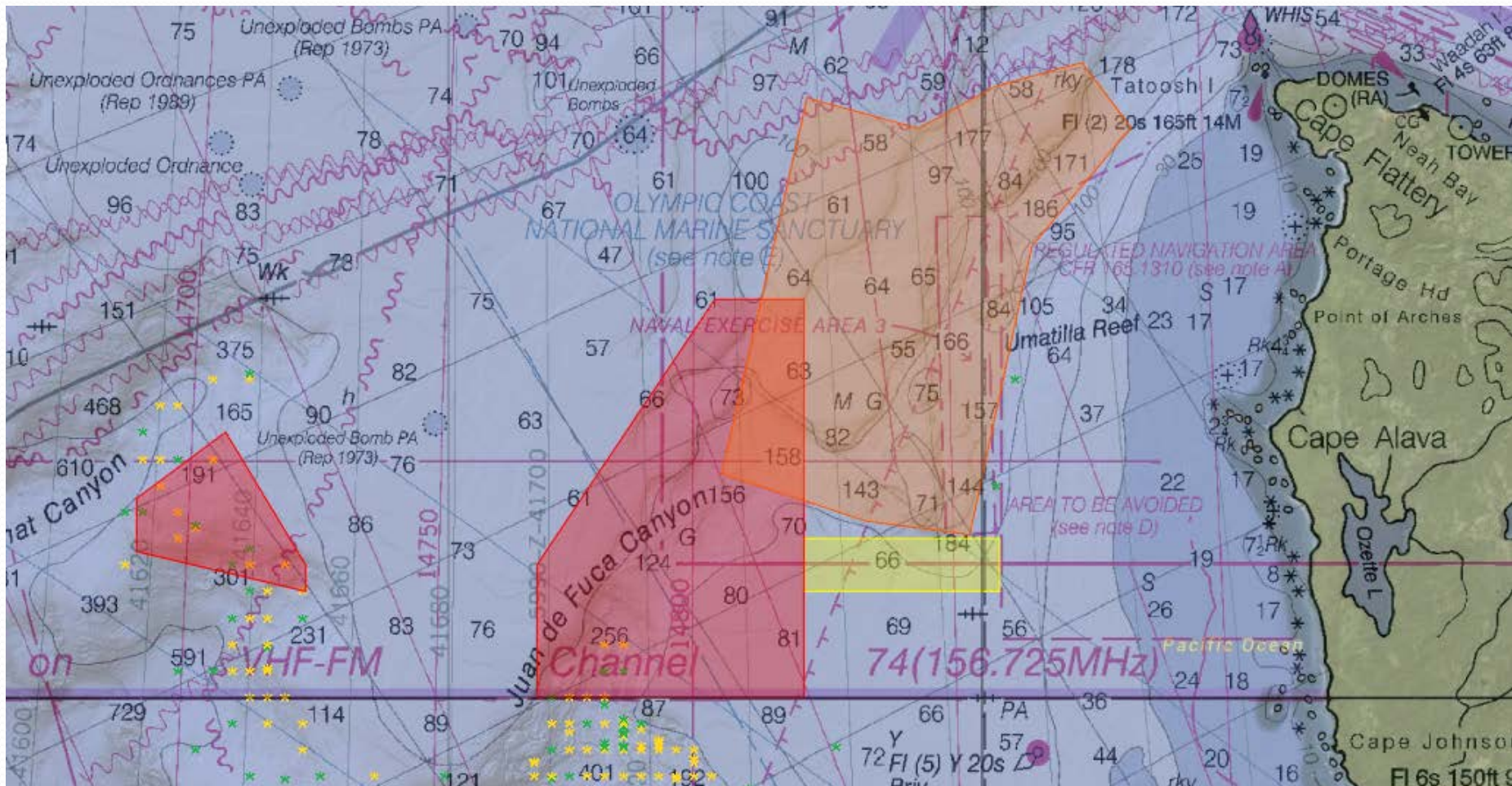
The experience of fishers suggests that while it may not be typical for thornyheads and rex sole to be very far off bottom, the “affinity” for bottom of rex and thornyheads is not absolute.

- Bottom trawl rex sole CPUE drops at night
- High opening bottom trawls have better thornyhead CPUE
- Around canyons and steep edges fish can be swept off the bank by big tides



# Olympic 2

(Not fished by non-tribal fleet)



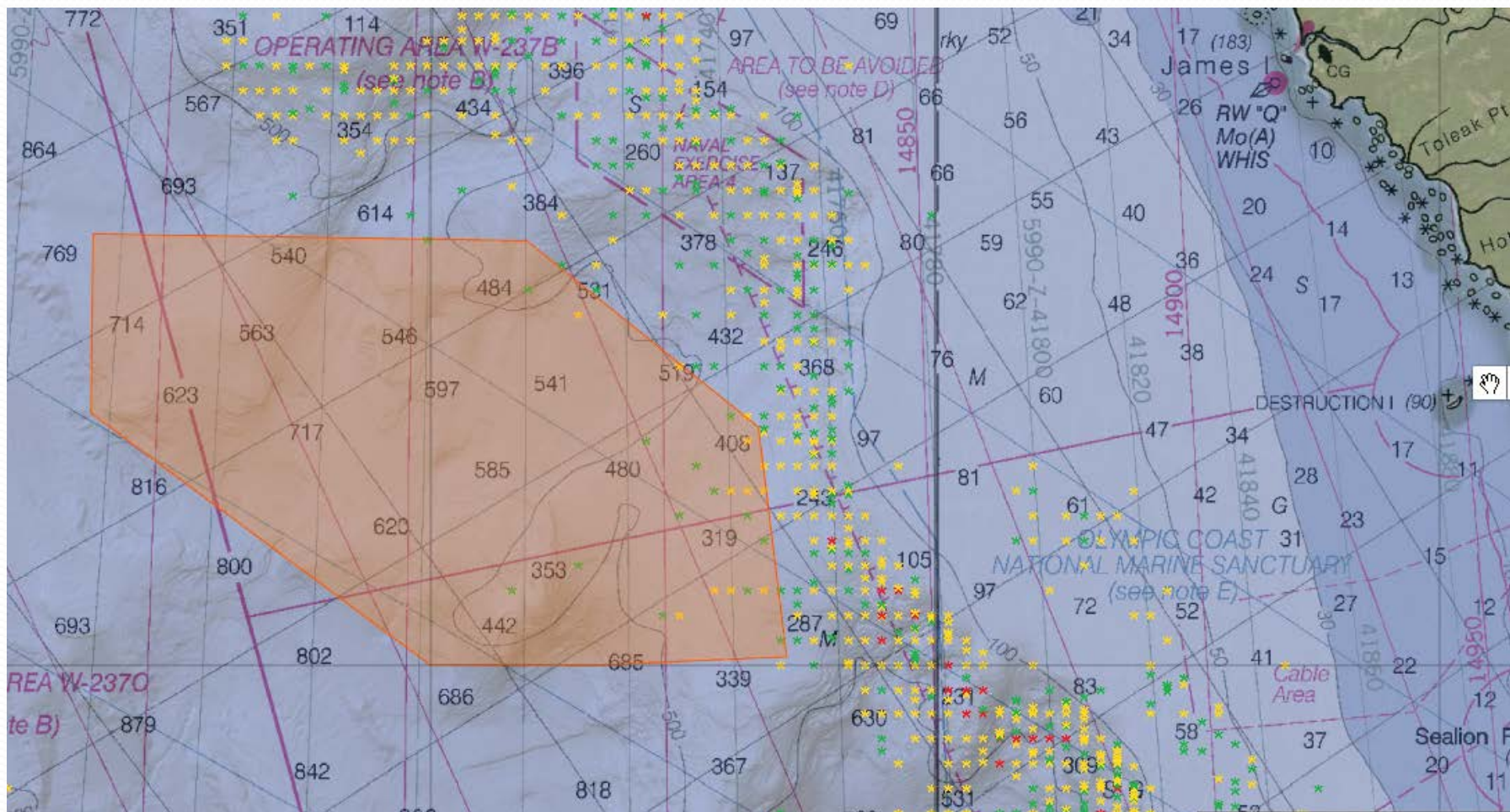
EFH CA

WMC Closure

WMC Cautionary

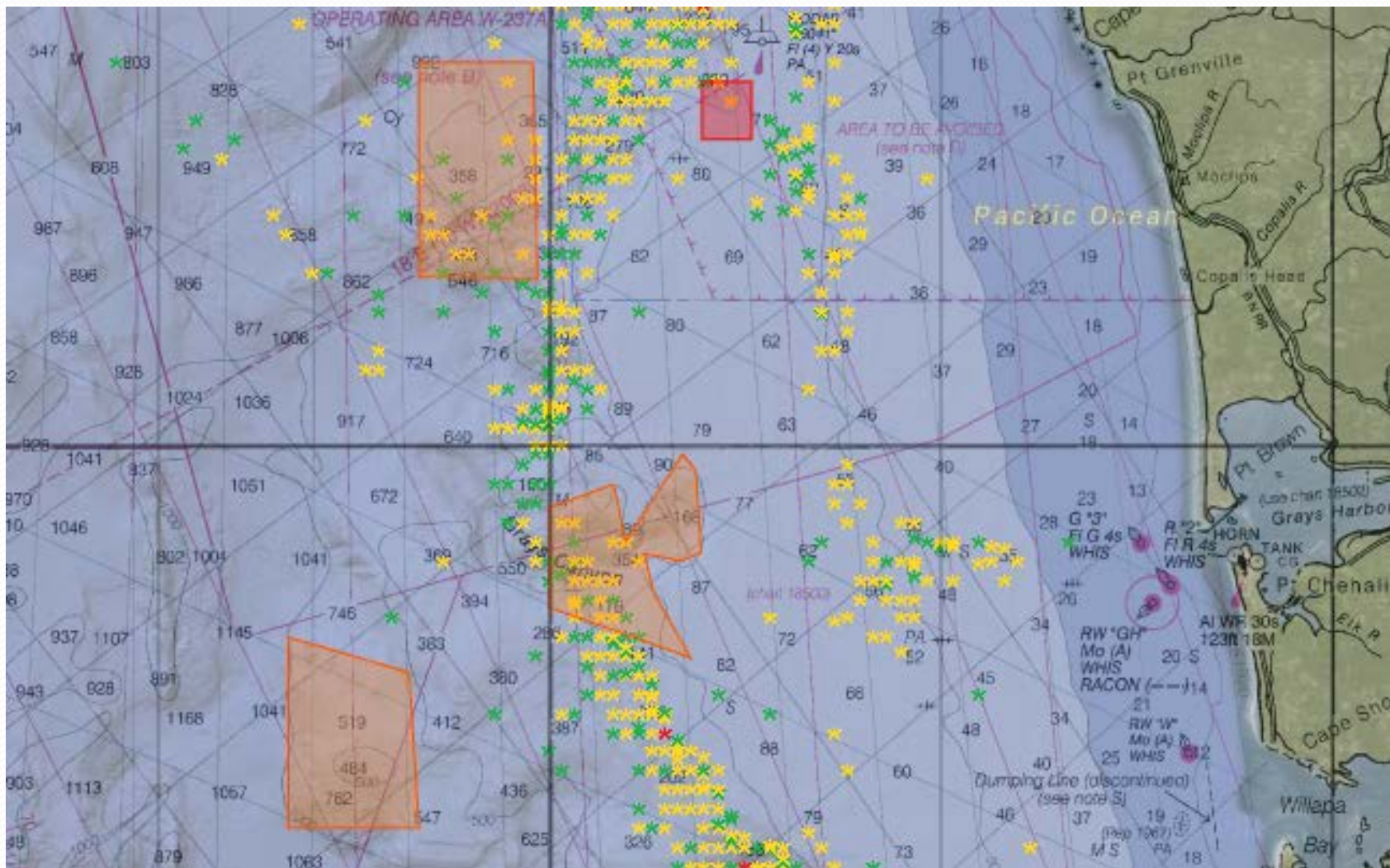


(Too deep for bottom contact)

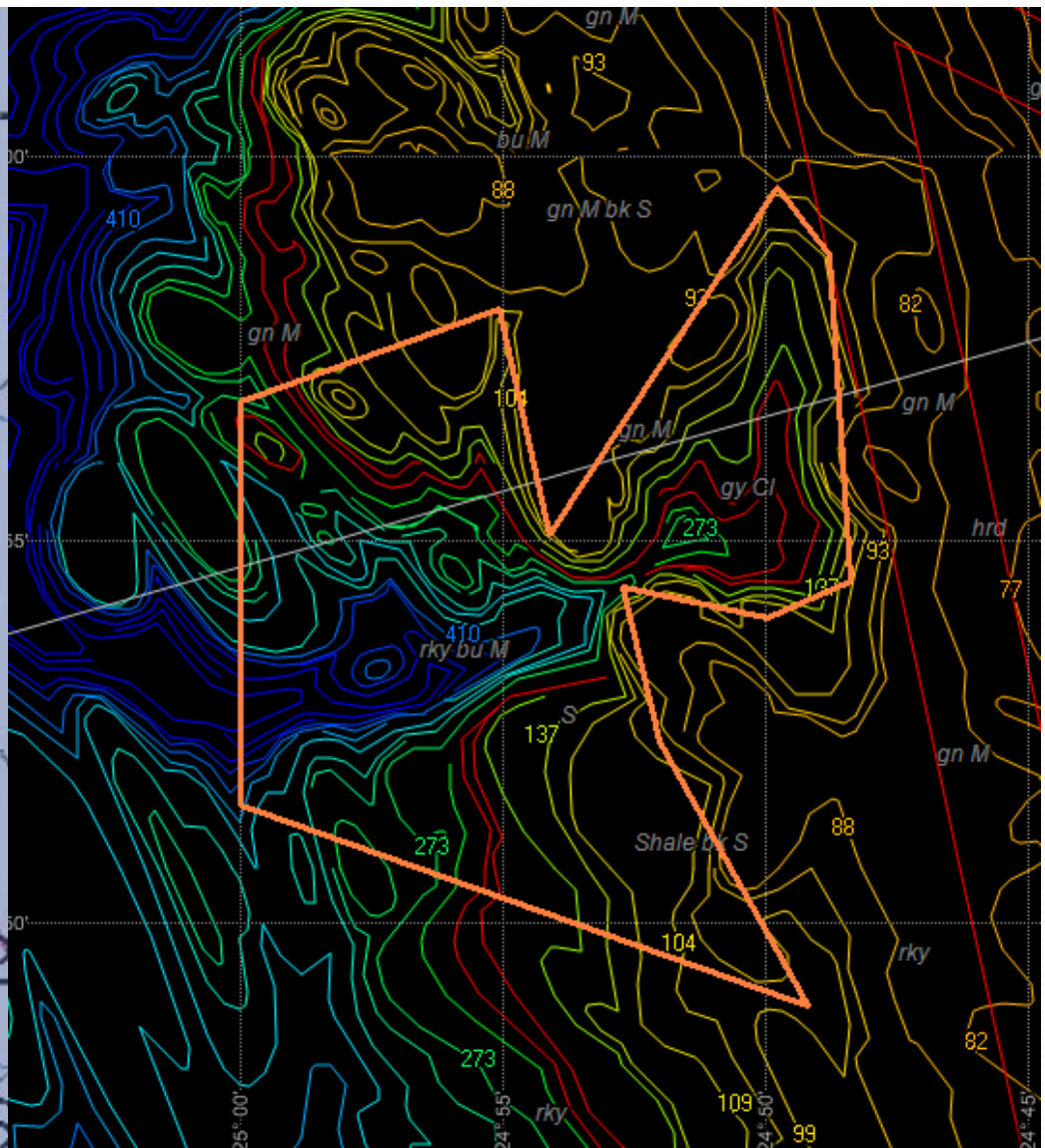
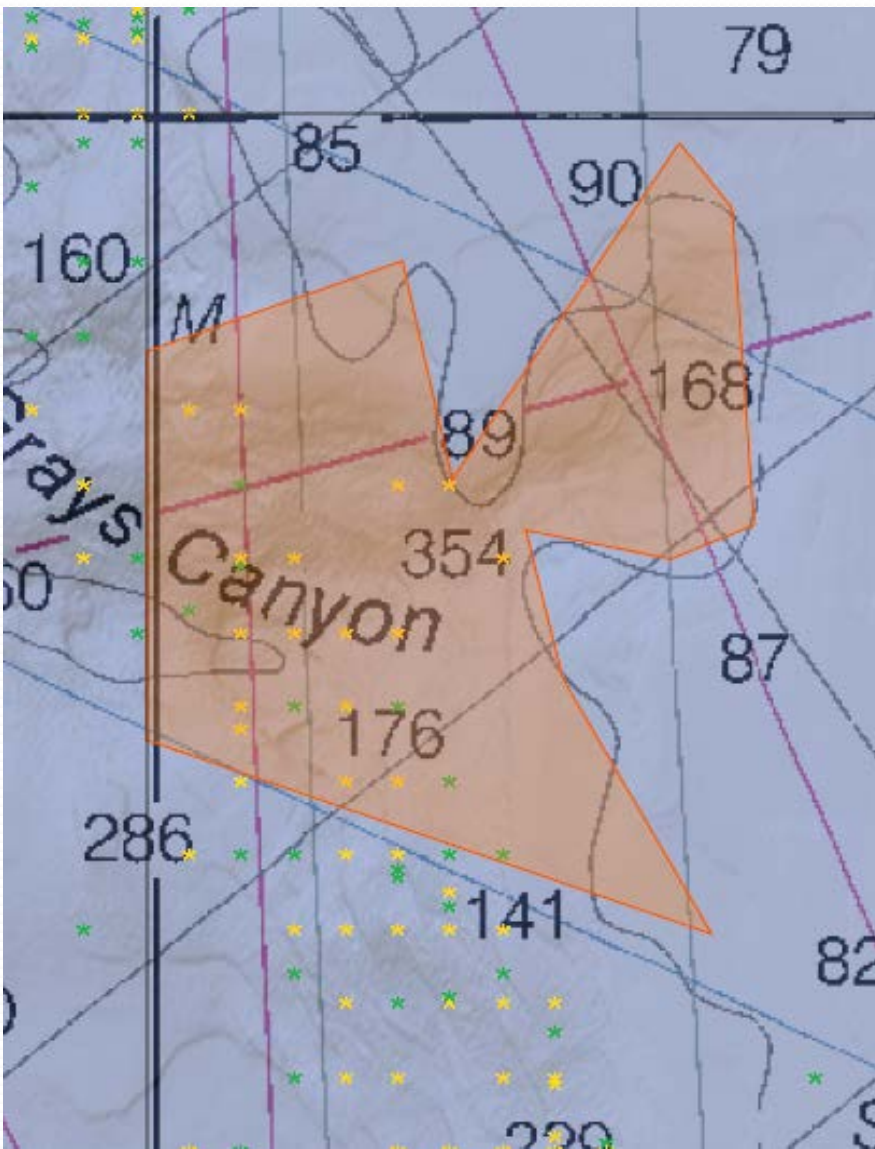




(Biogenics- too deep, Grays - too steep)

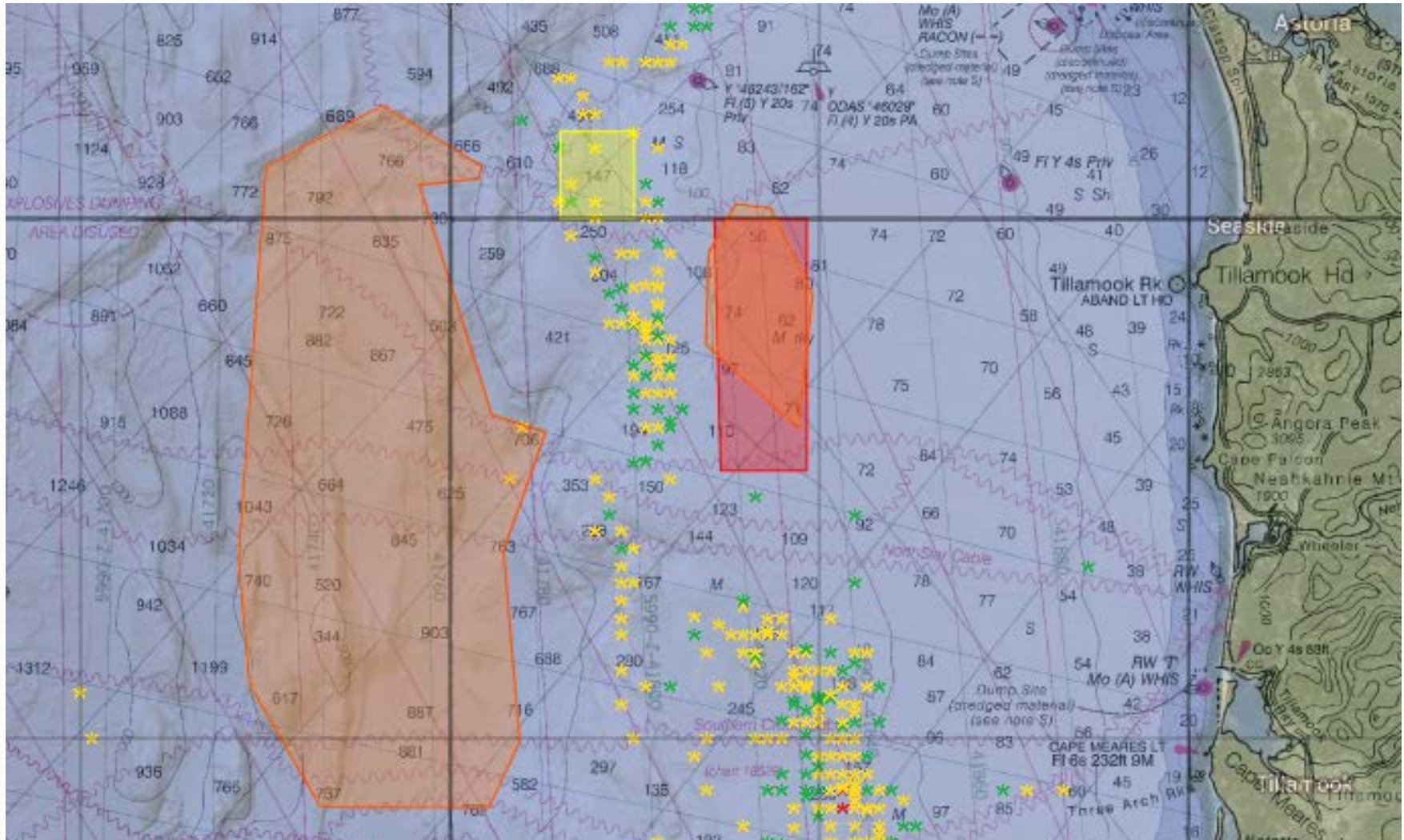


## Grays Canyon – too squirrely for bottom contact





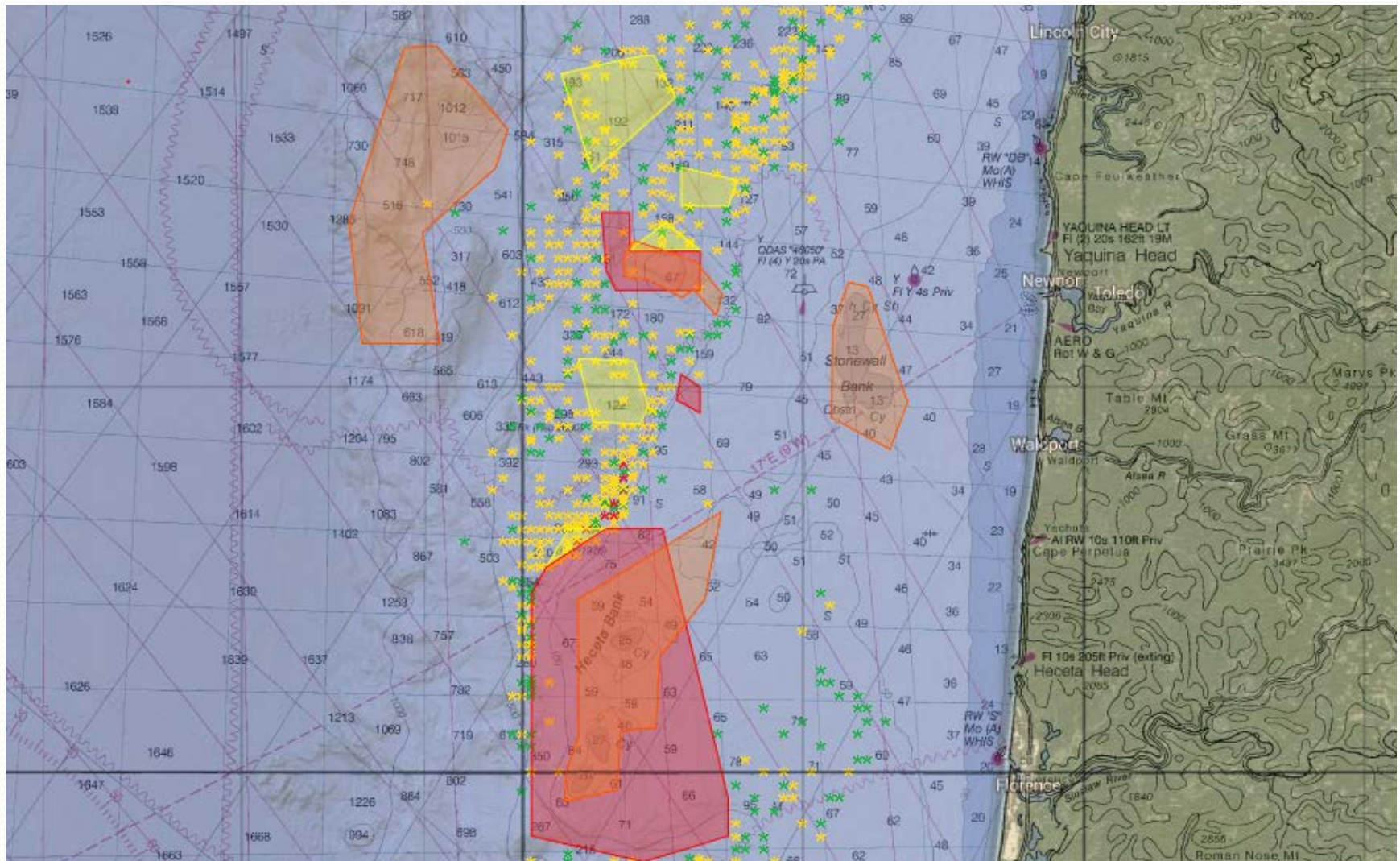
(Canyon – too deep, Shalepile – closed by WMC)





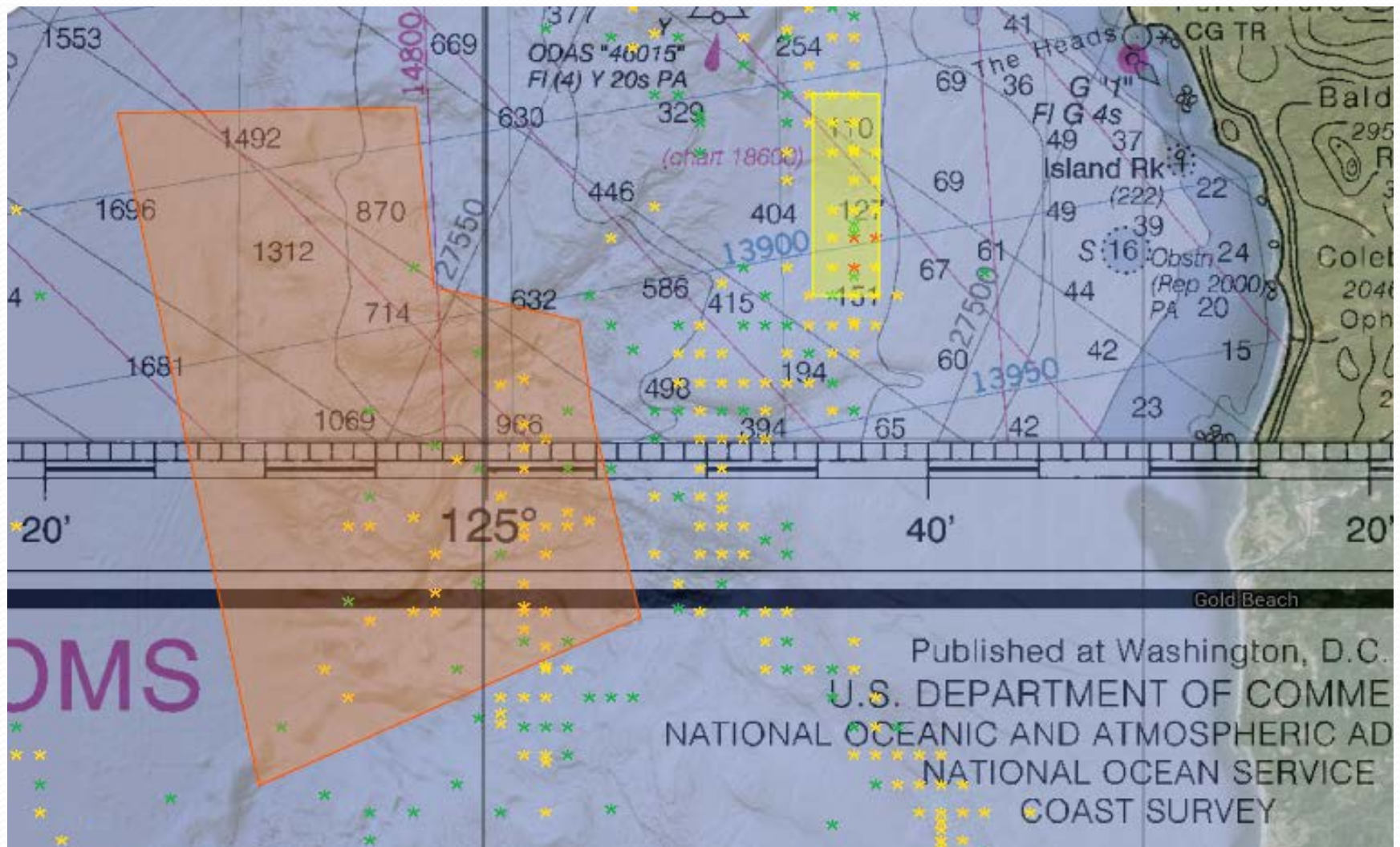
# Siletz/Nelson/Stonewall/Heceta

(Siletz – too deep, Nelson & Heceta – closed by WMC)



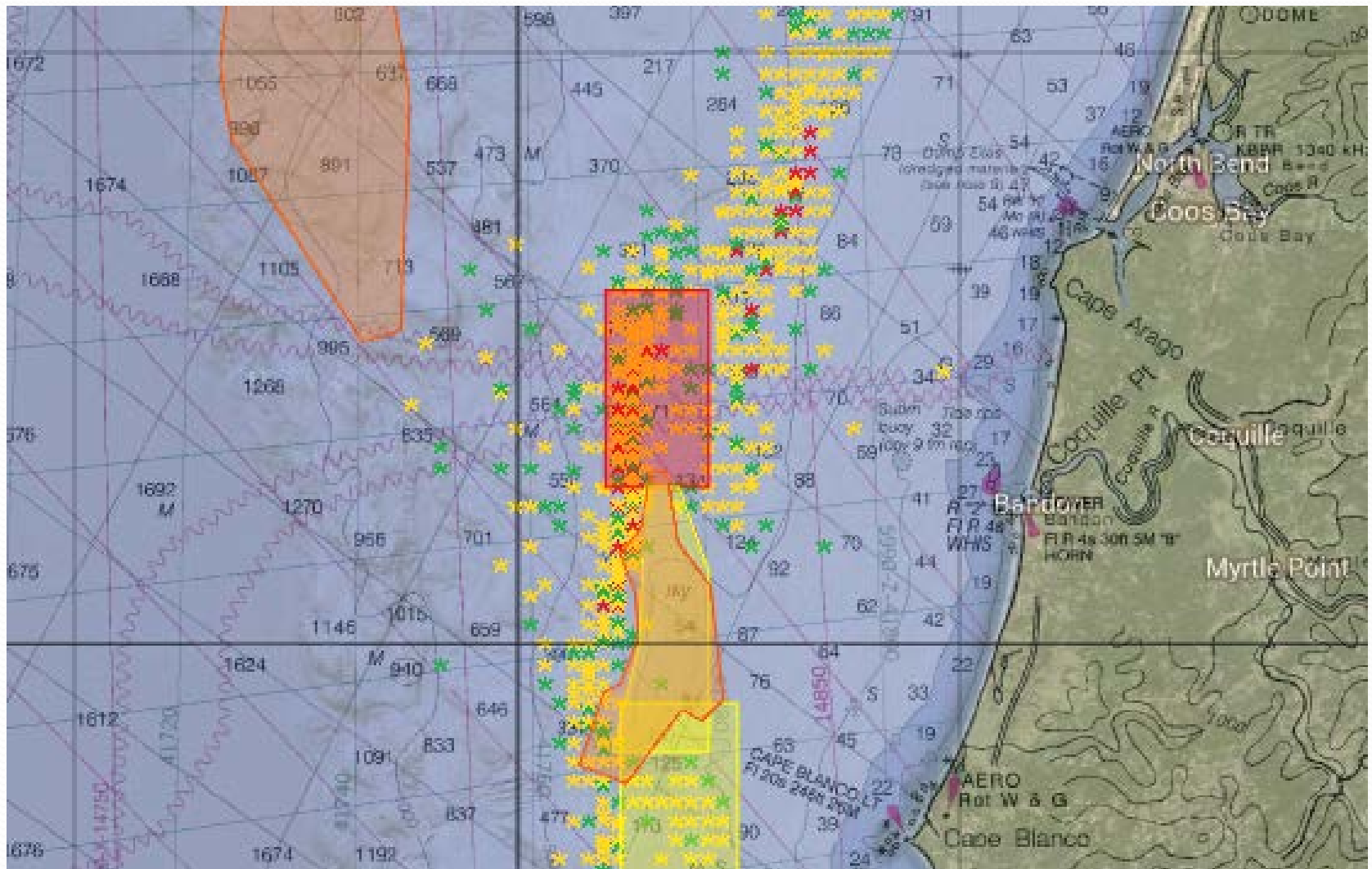


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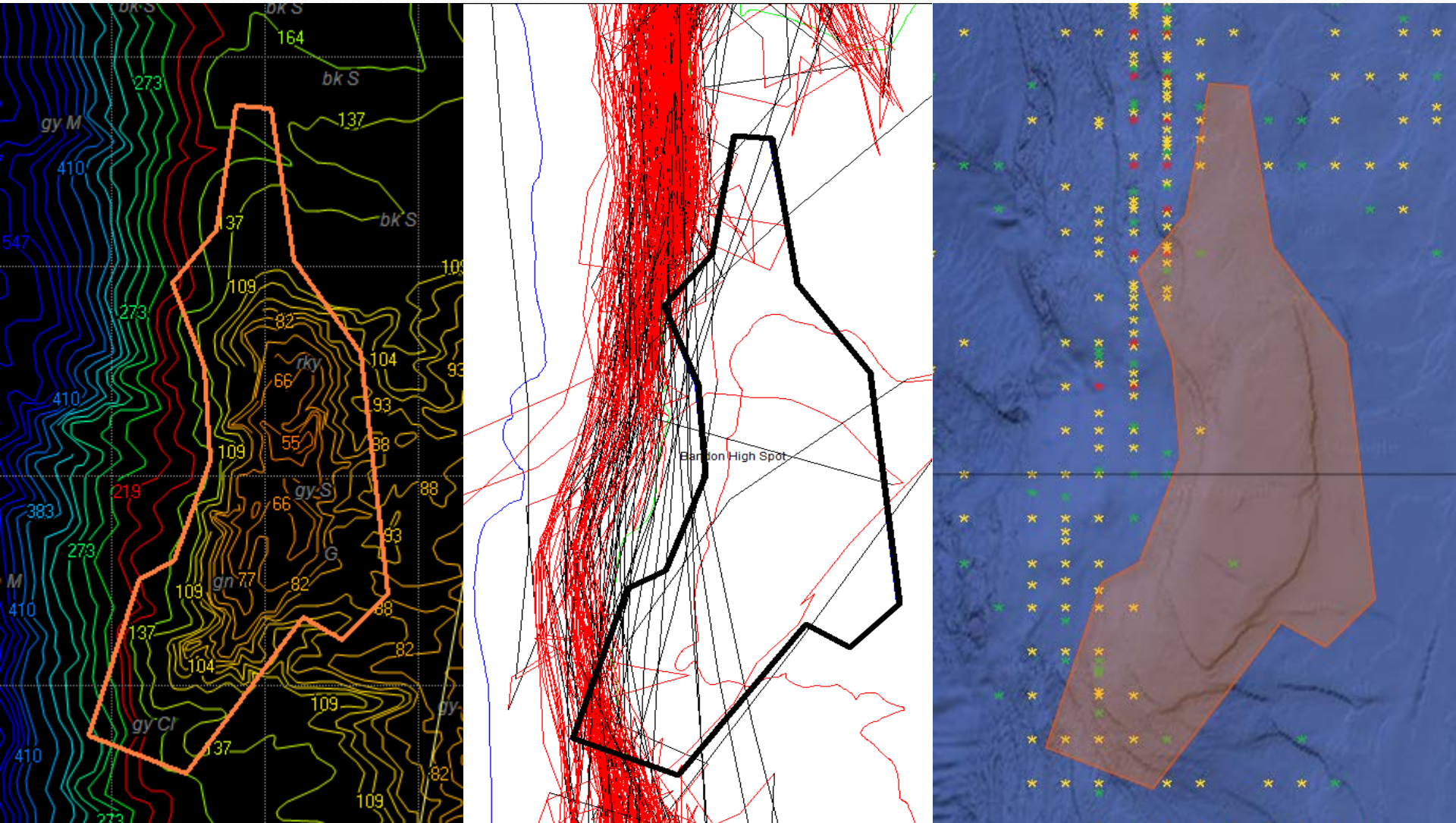
# Deepwater Coos Bay/Bandon High Spot

(Coos Bay – too deep, BHS – co-op cautionary)





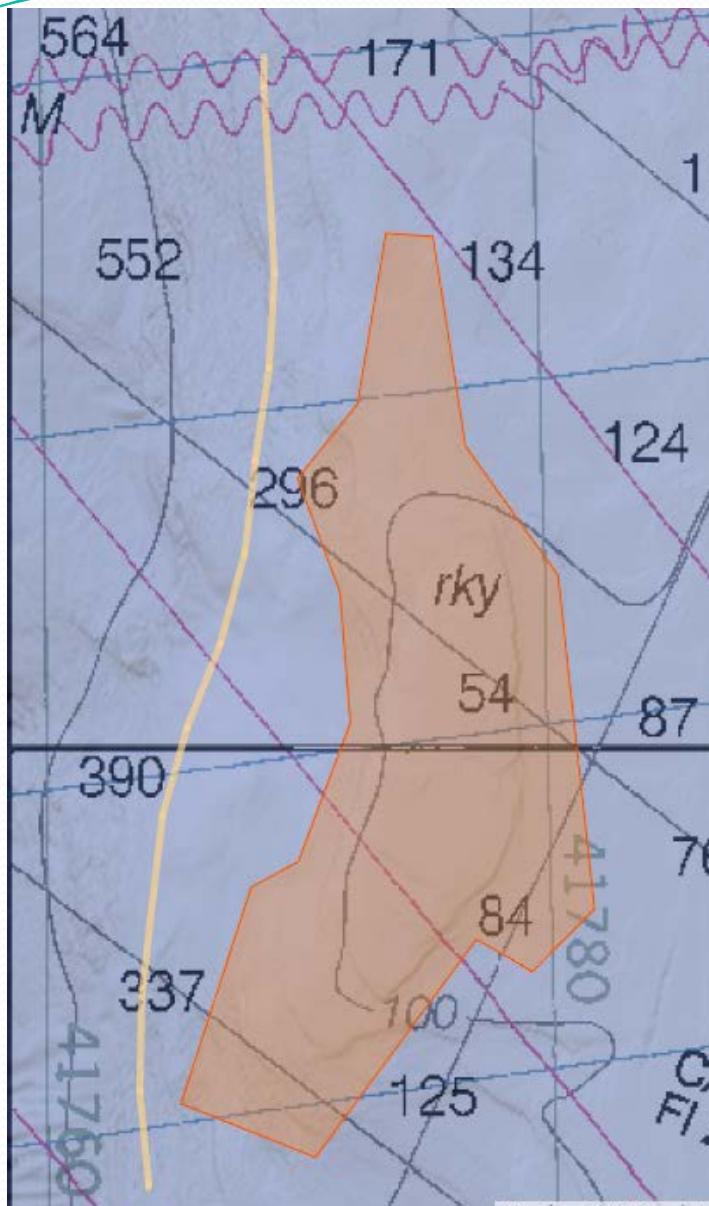
VMS track analysis shows on average <14% of length of tracks overlapped BHS EFH-CA



# The Extent of Bottom Contact in EFH-CA by Whiting Trawls

- There are relatively few tow locations within any of the EFH-CAs.
- There are significantly less after rationalization.
- A *de minimis* number of tows had more than 10 kgs of any benthic species.
- Only a few EFH-CAs have bathymetry that makes bottom contact with a whiting trawl plausible.
- Many of the EFH-CAs on the shelf have been closed by the co-ops.
- Maps of the EFH-CAs have been integrated into the bycatch advisory maps updated daily on the co-op website.





## SEA STORM HAUL 187 11/11/2014

OTC: 63.250 MT

Deploy: 11/10/2014 6:45:00 PM

Retrieve: 11/11/2014 2:05:00 AM

Fishing Depth: 270 FTM

Species	Catch
Sablefish	0.003 MT
Arrowtooth Flounder	0.008 MT
Arctic Flounder	0.010 MT
Shortspine Thornyhead	0.019 MT
Pacific Hake	62.910 MT
Basking Shark	0.035 MT
Chum Salmon	0
Chinook Salmon	0