

Collaborative EFH-RCA Package

Start with a Shared Vision

- A robust fishing industry with improved profitability.
- Stable regulations and minimal controversy.
- Intact groundfish fishing communities.
- Healthy population levels and age structures.
- Resilient ocean ecosystems, with minimal substrate disturbance or damage to sensitive organisms.

Translate Into Priority Areas for EFH

- Areas with sensitive habitat (rocks, biogenic habitat)
- Areas that create value/opportunity for industry

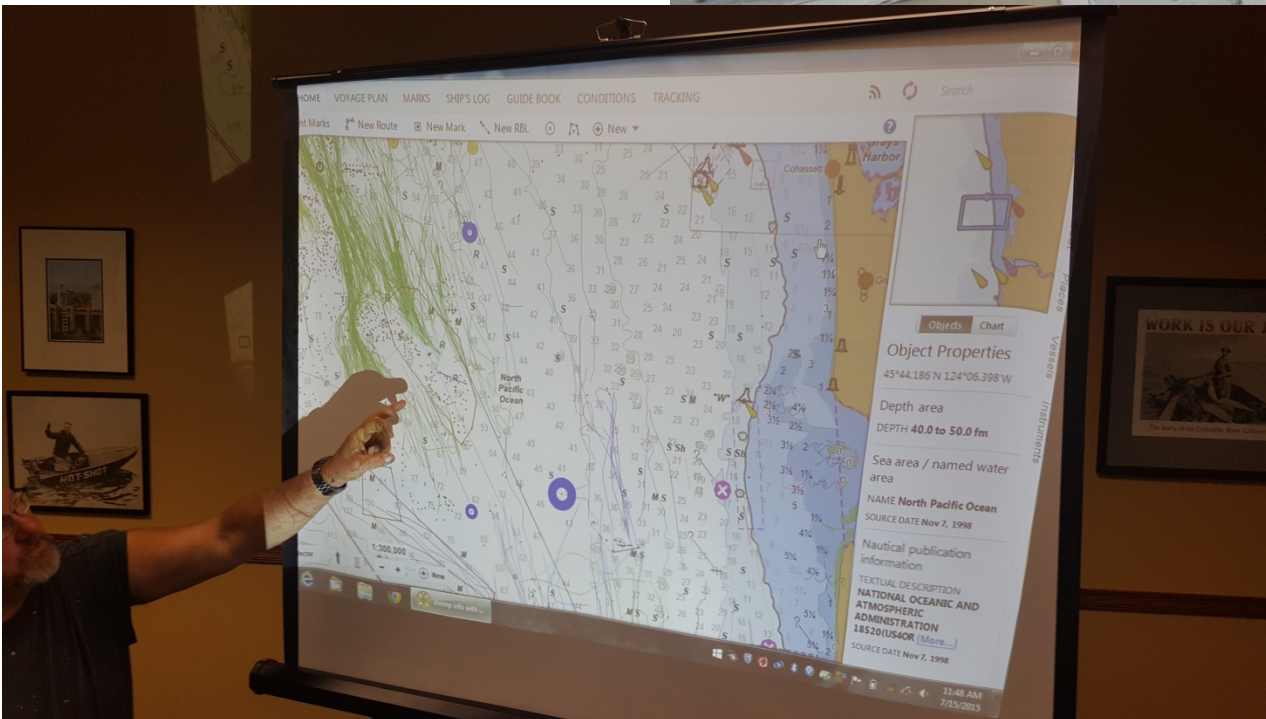
NOTE: Value vs. Acreage

Port Meeting Process

- 30+ port meetings coastwide
- Met with 50+ industry members
(out of an active bottom trawl fleet of ~70 boats)
- Additional individual and small group outreach
- Engaged with 6+ NGO groups
- Synthesized information
- Gauged consensus level

Port Meetings

“Best available knowledge”

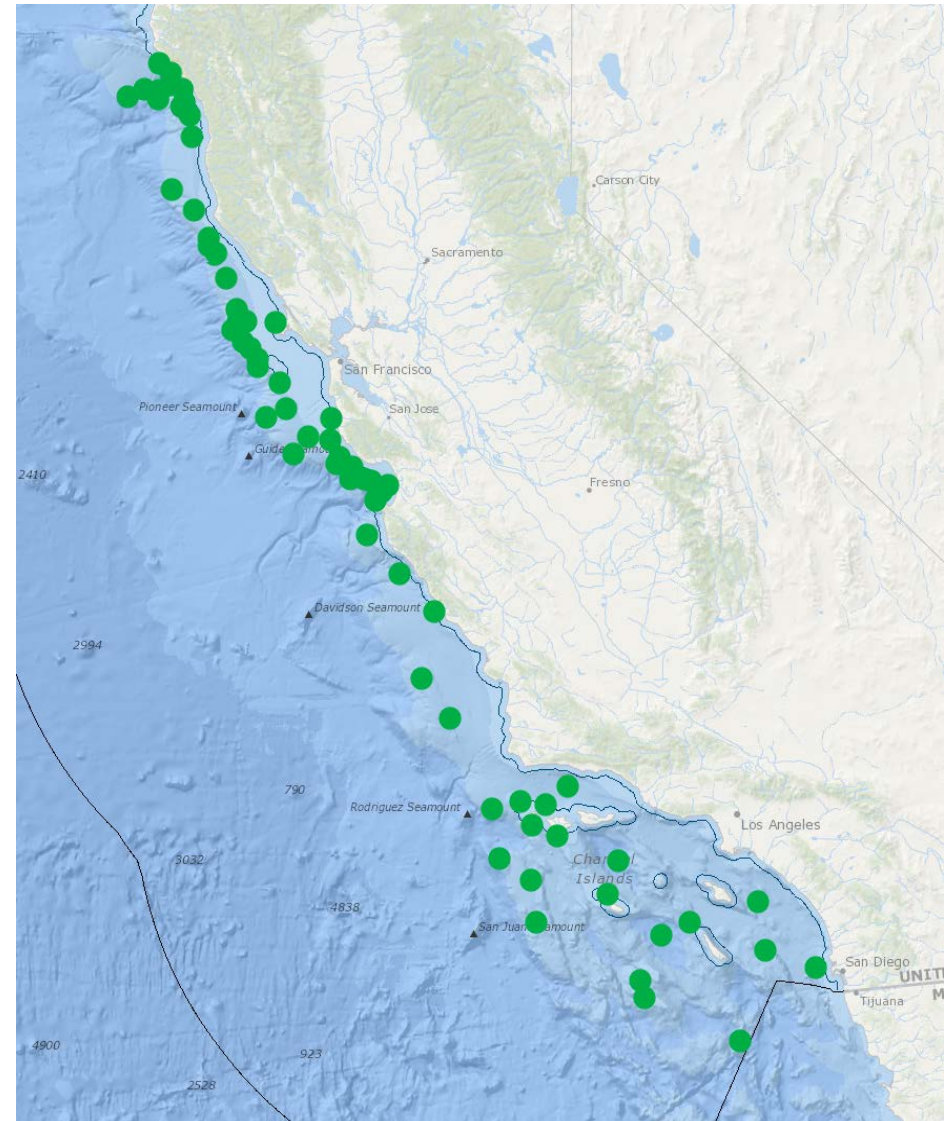
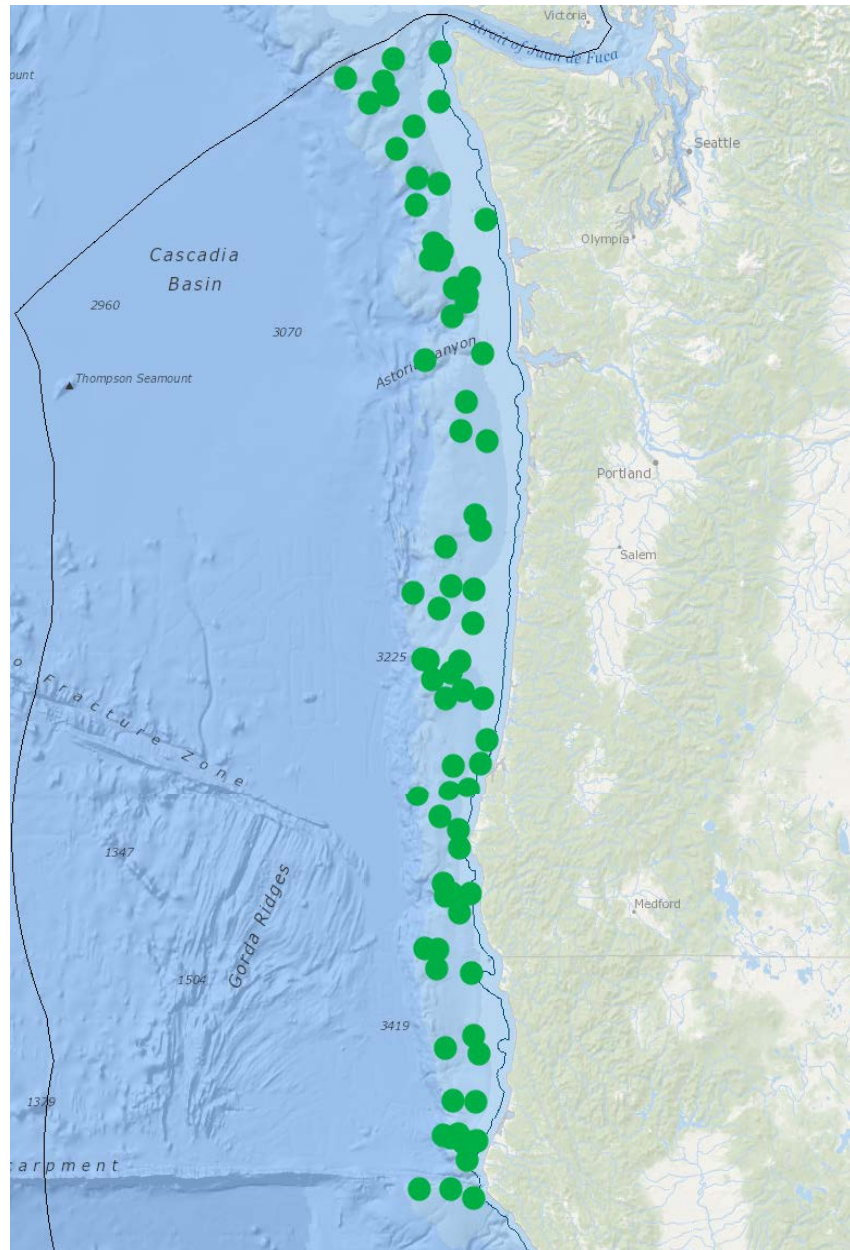


Port Meetings

“Best available knowledge”



Areas Discussed



Final Results

ftp://ftp.pcouncil.org/pub/EFH_Archives/EFH_Proposals_2013/Collaborative%20Proposal%20/Collaborative%20Package%20Final%20Nov%202016.pdf

Final Collaborative Package of Changes to Groundfish Essential Fish Habitat Conservation Areas and the Trawl Rockfish Conservation Area

November 2016

Seth Atkinson
Tom Libby
Sherms Jud
Brad Pettinger
Kate Kauer

Table of Contents

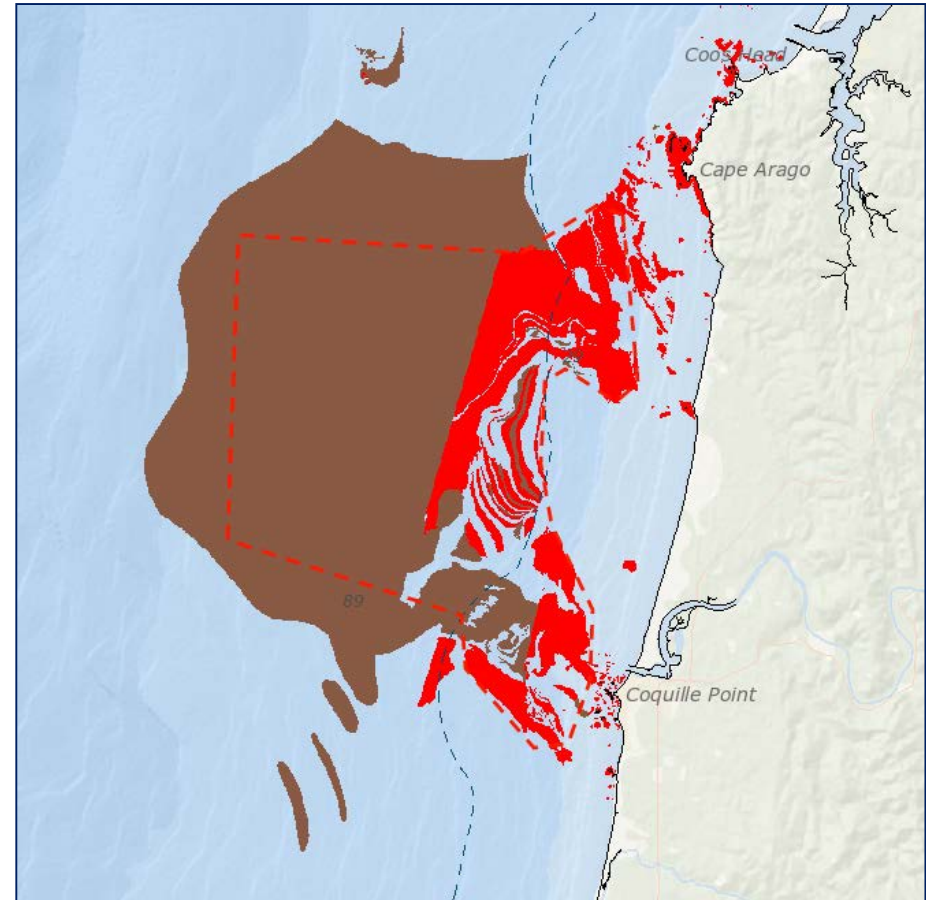
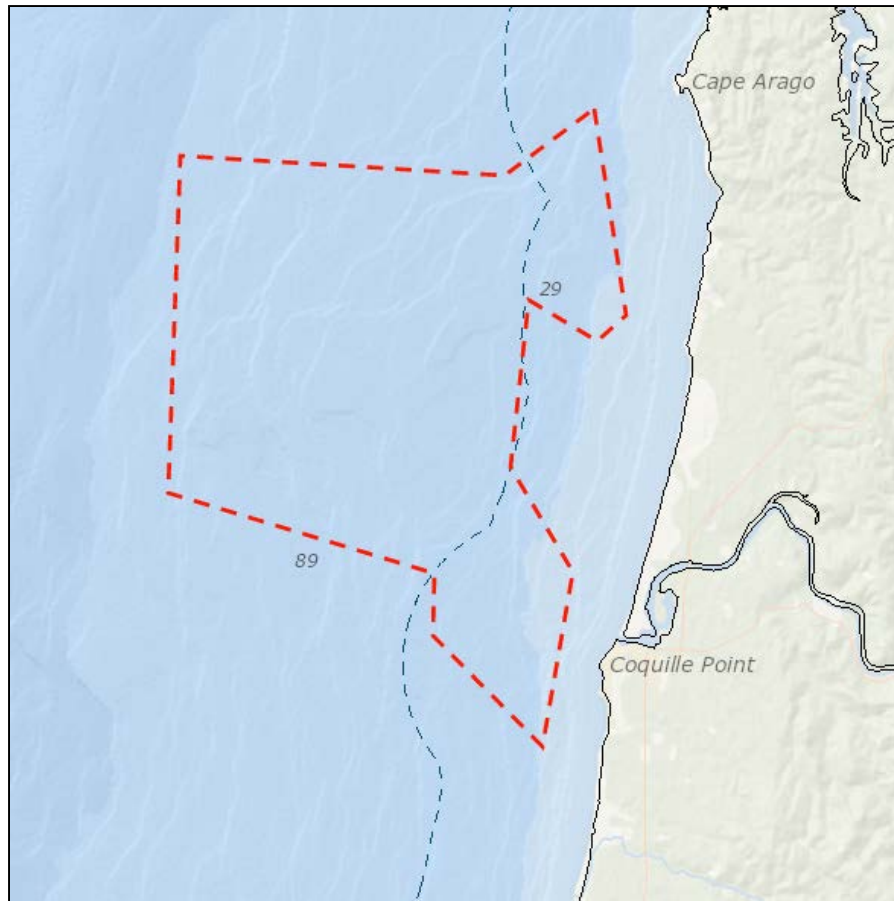
Introduction.....	1
North of 49°10'.....	2
Nitinat Canyon.....	6
Olympic 2 Northeastern Modification.....	6
Olympic 2 Western Modification.....	8
Olympic 2 Southeastern Modification.....	10
Biogenic 1 Eastern Modification.....	11
Biogenic 1 Southern Modification.....	12
Biogenic 2 Northern Modification.....	12
Biogenic 2 Eastern Modification.....	13
Orca Canyon Northern Modification.....	14
Orca Canyon Eastern Modification.....	16
Orca Canyon Western Modification.....	17
Orca Canyon Southern Modification.....	18
Willapa Shelf.....	19
Willapa Deep.....	20
Astoria Deep.....	21
Arago Reef.....	22
Banden High Spot Northern Modification.....	24
Banden High Spot Southern Modification.....	27
Rogue River Reef.....	30
Brush Patch.....	32
Saint George Reef.....	33

MUNMS West of Piedras Blancas SMCA.....	71
Big Sur Coast Modification.....	71
Trawl RCA 40°10' to 37°07'.....	72
Trawl RCA 37°07' to 34°27'.....	73

Gobbler's Knob.....	38
Cordell Bank Modification 1.....	39
Cordell Bank Modification 2.....	60
Cordell Bank Modification 3.....	62
Point Reyes Reef.....	62
Rittenburg Bank.....	63
Farallon Islands Modification.....	64
Farallon Escarpment.....	65
Pescadero Reef.....	66
Pigeon Point Reef.....	67
San Francisco Bay.....	68

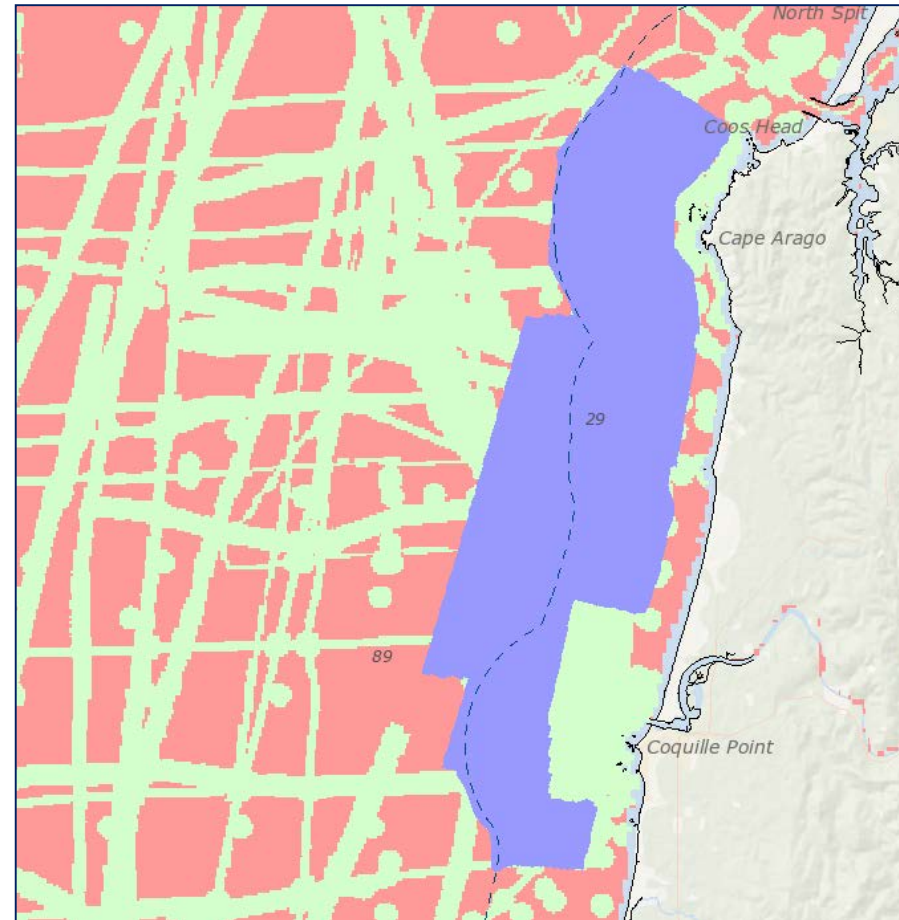
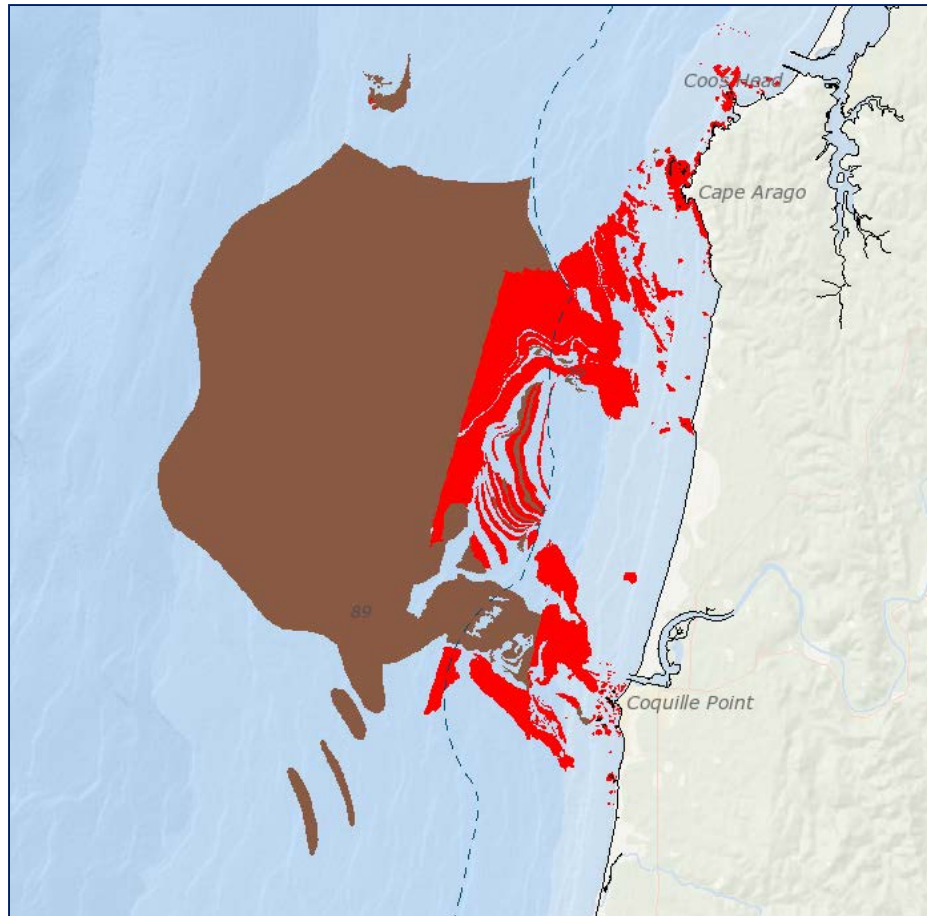
Reading Rock Reef.....	34
Trinidad Canyon.....	35
Mad River Rough Patch.....	36
Eel River Canyon Modification 1.....	37
Eel River Canyon Modification 2.....	39
Eel River Canyon Modification 3.....	39
Eel River Canyon Modification 4.....	40
Blount Reef Modification.....	41
.....	43
.....	43
.....	43
.....	43
.....	44
.....	43
.....	46
.....	47
.....	49
.....	54
.....	54
.....	55
.....	56
.....	56
.....	56
.....	57

Arago Reef

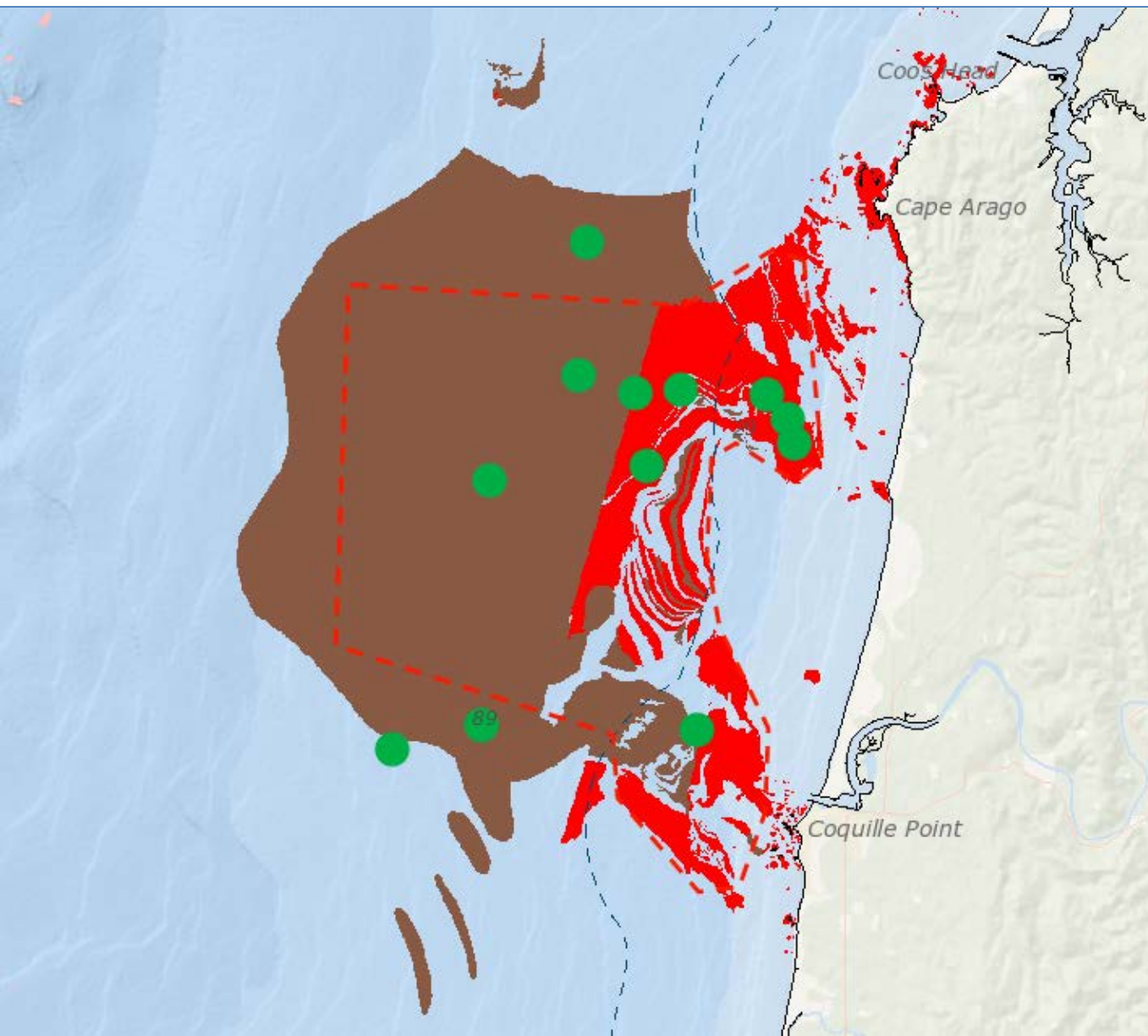


Relied on fishermen's input for seaward half, substrate data for shoreward half.

Substrate Data Confidence Levels

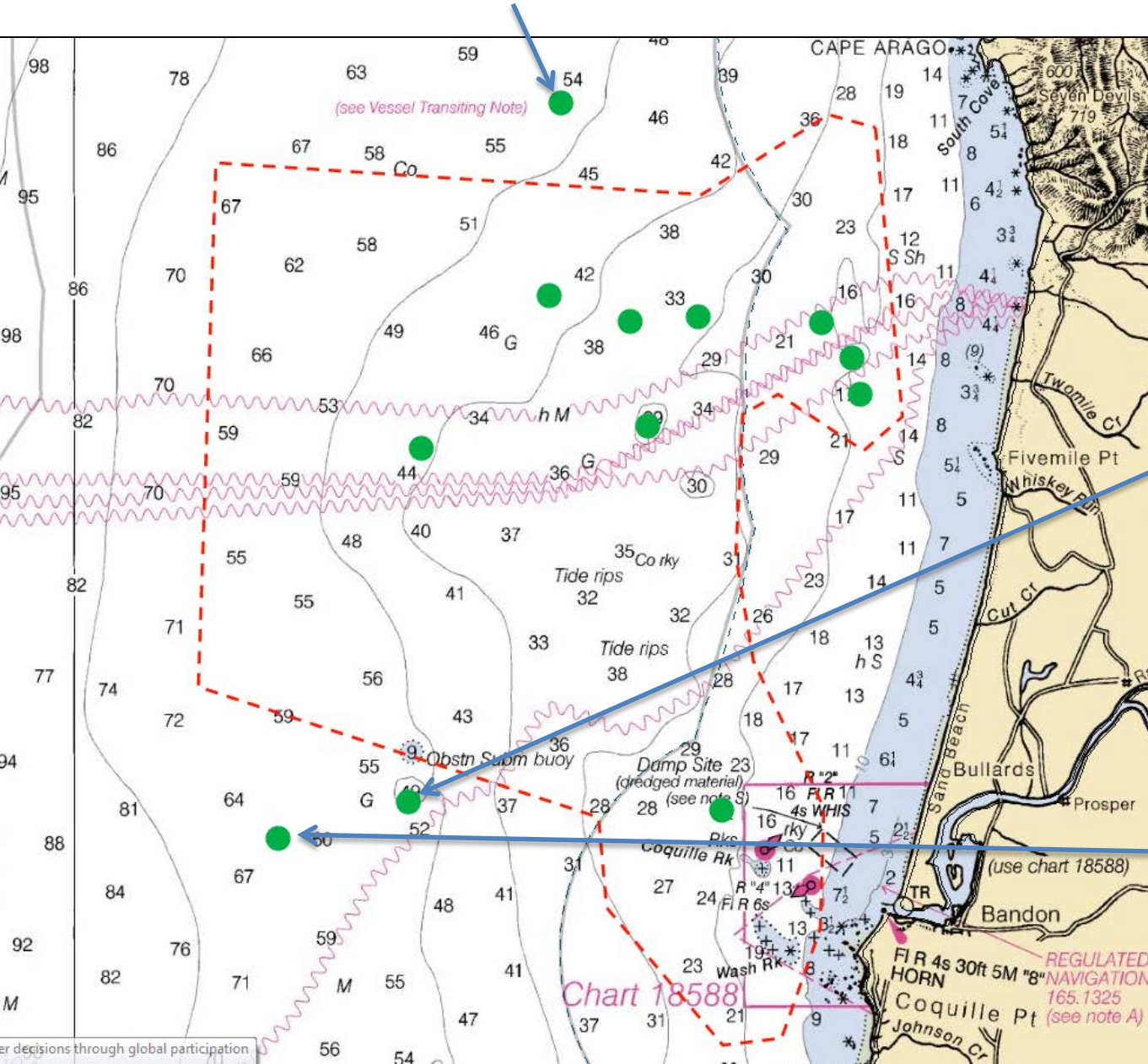


ROV Dives In 2011



43.29483° N lat. 124.52400° W long. All soft sediment and low relief; no corals, a few sponges; one fish.

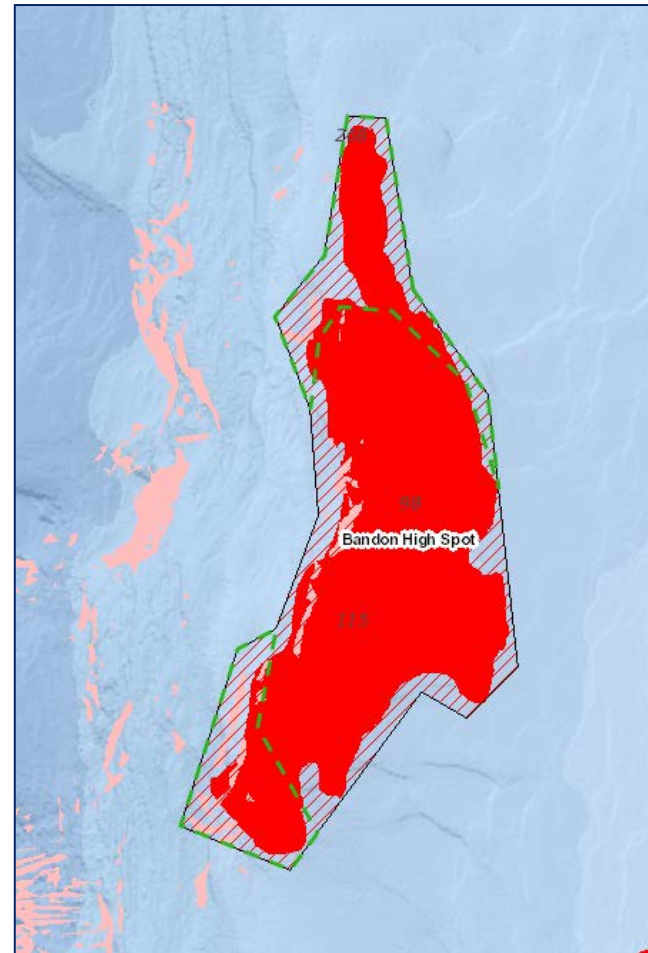
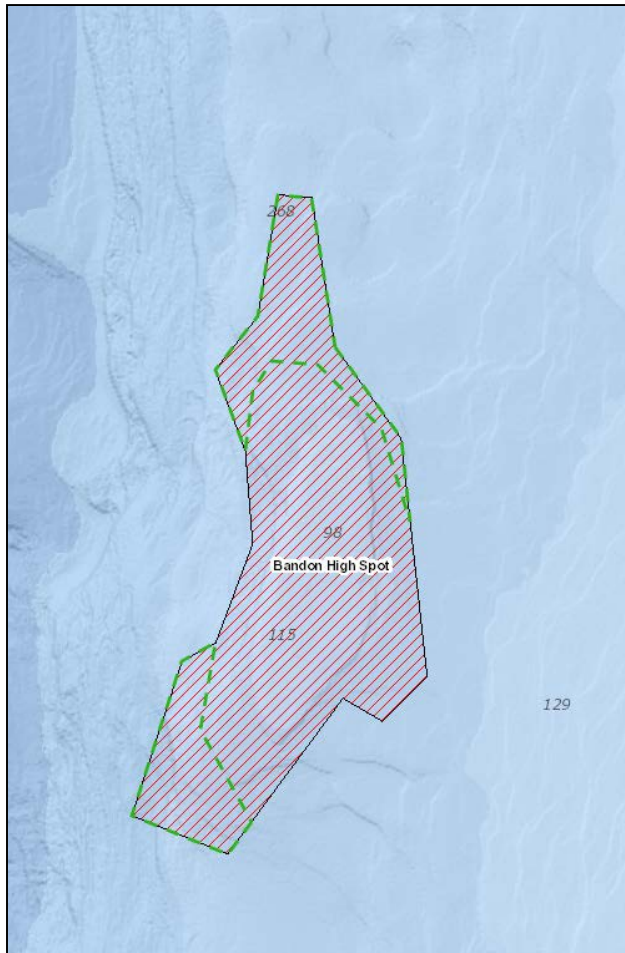
ROV Dives In 2011



43.14583° N lat.
124.56882° W long.
Mostly soft sediment
and low relief; some
corals and sponges;
two fish.

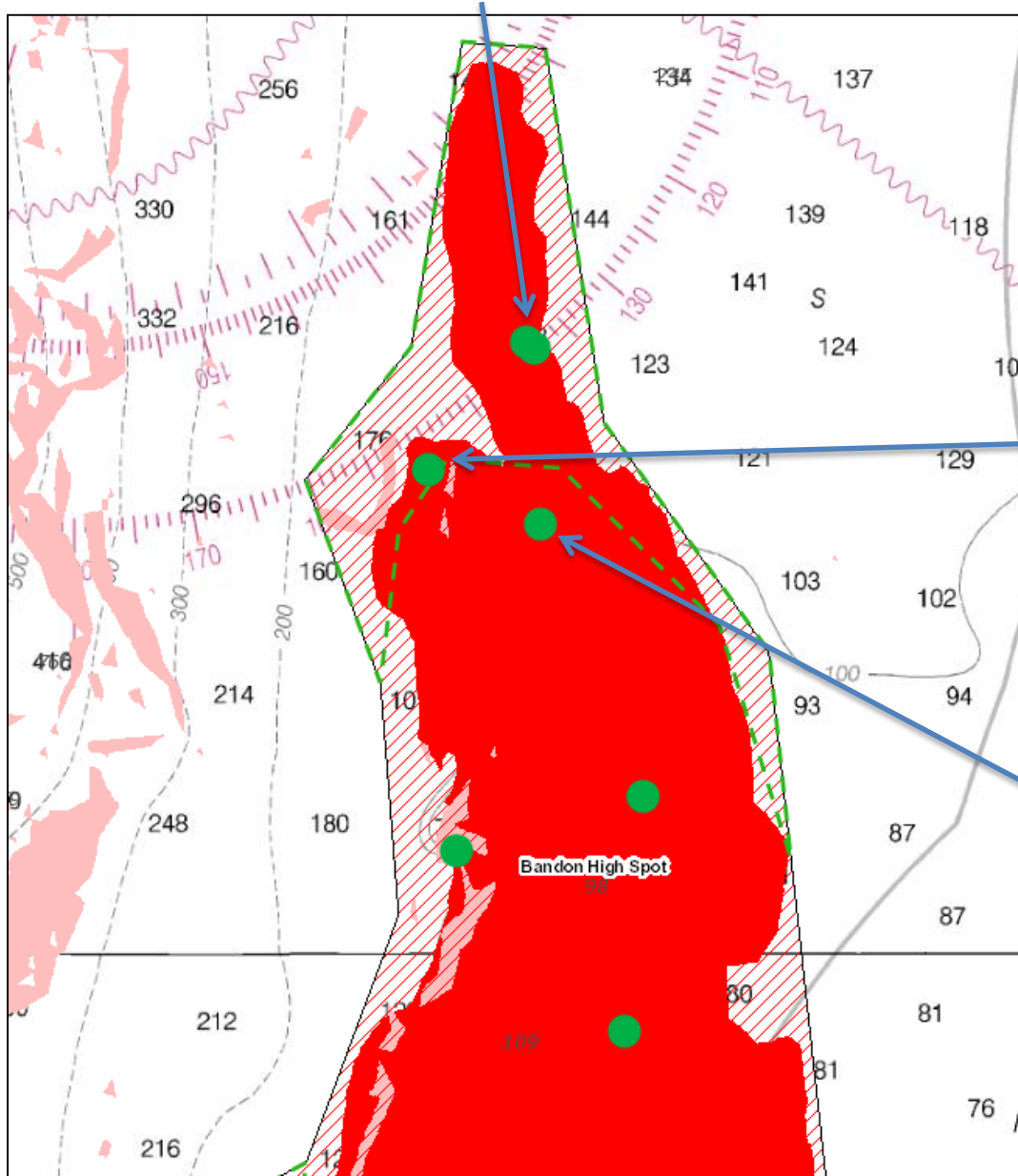
43.13808° N lat.
124.60670° W long.
All soft sediment and
low relief; no corals,
no sponges; no fish.

Bandon High Spot



43.098769° N. lat. 124.834706° W long. and
43.097907° N. lat. 124.832857° W long. Soft
sediment bottom. Sea pens and sea urchins.

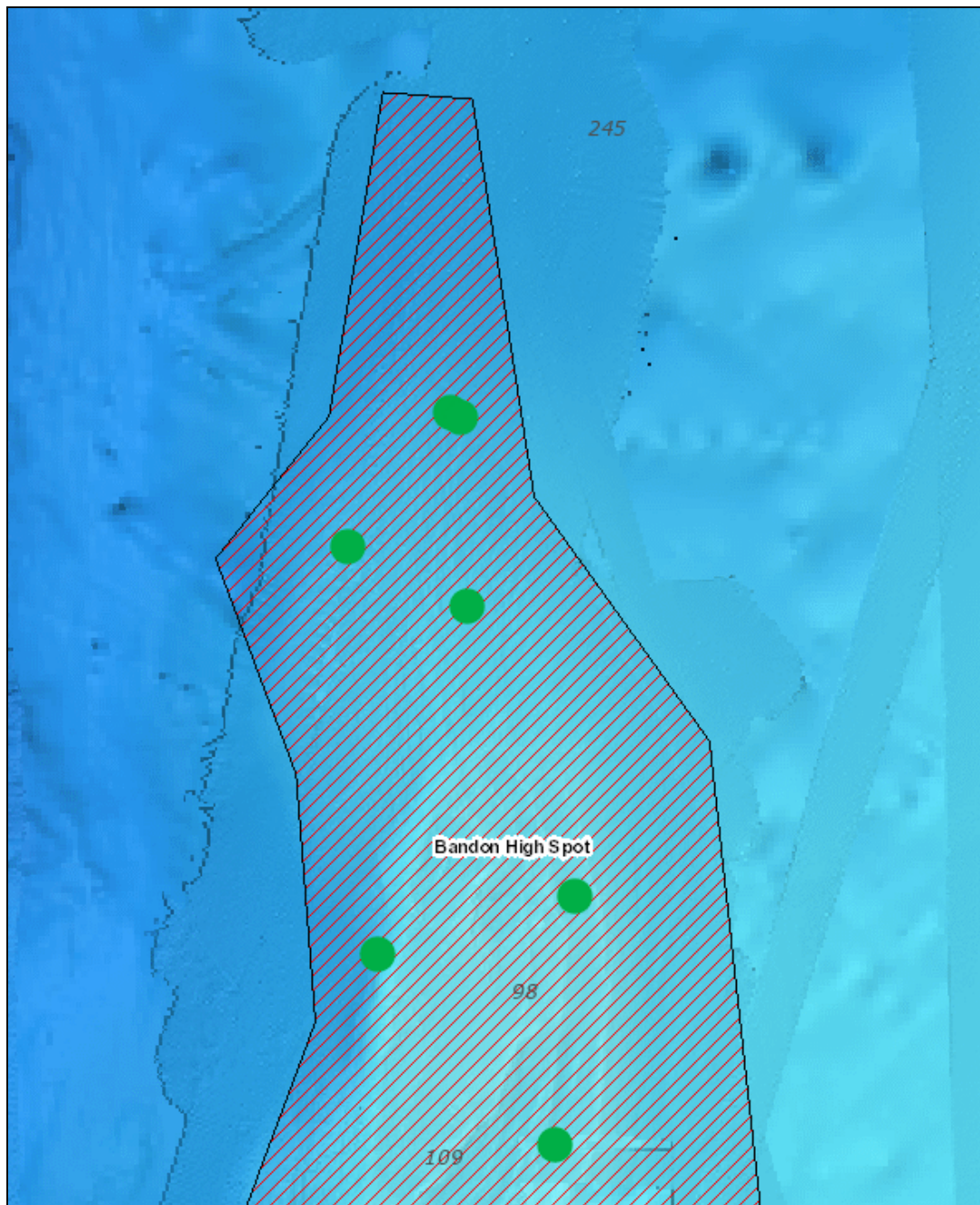
North Side: Research Dives



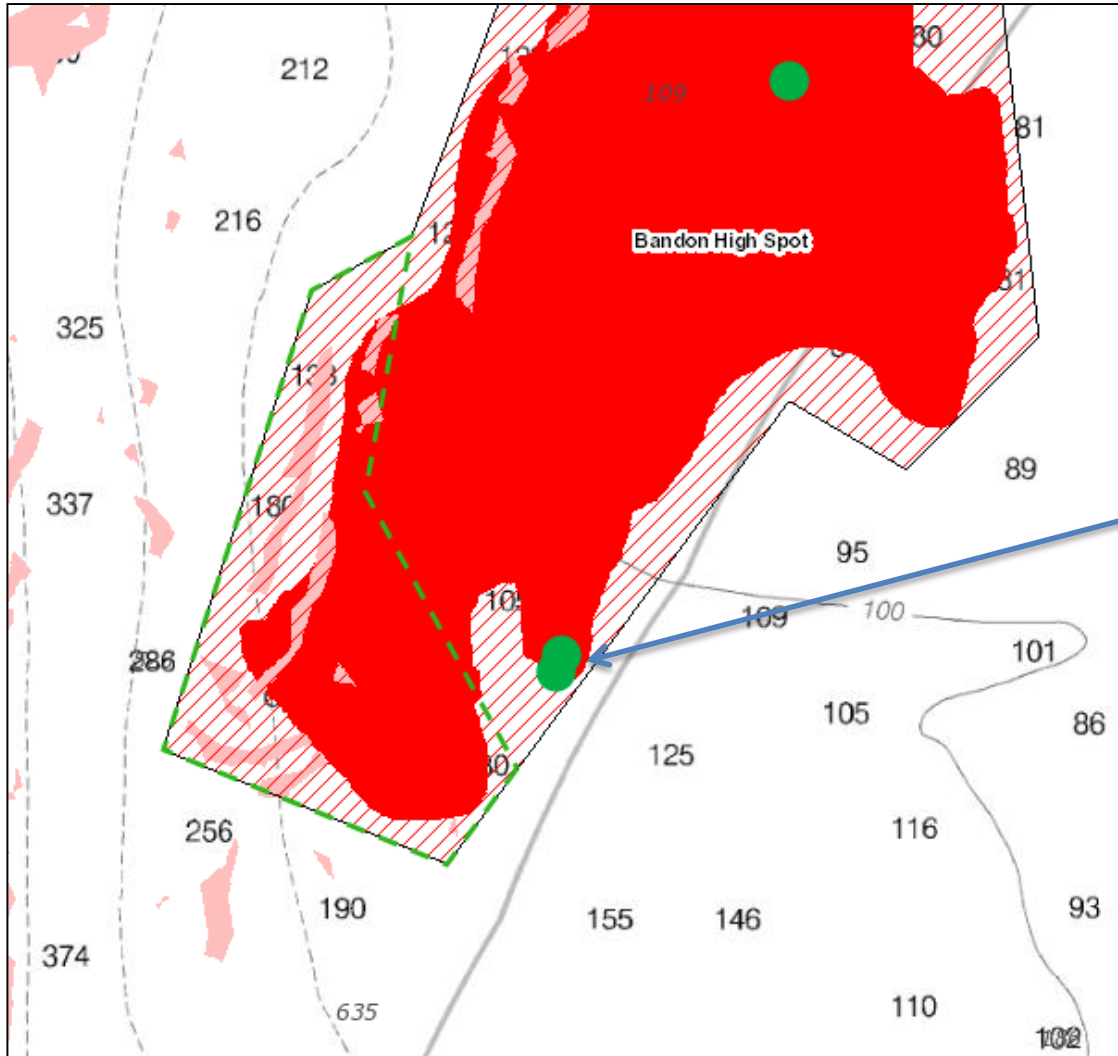
43.07847° N lat.
124.85647° W long.
Almost all soft sediment,
low relief. A few corals
and sponges, no fish.

43.069407° N. lat.
124.831088° W long.
Cobble and boulder
substrate. Some
sponges.

North Side: Bathymetry

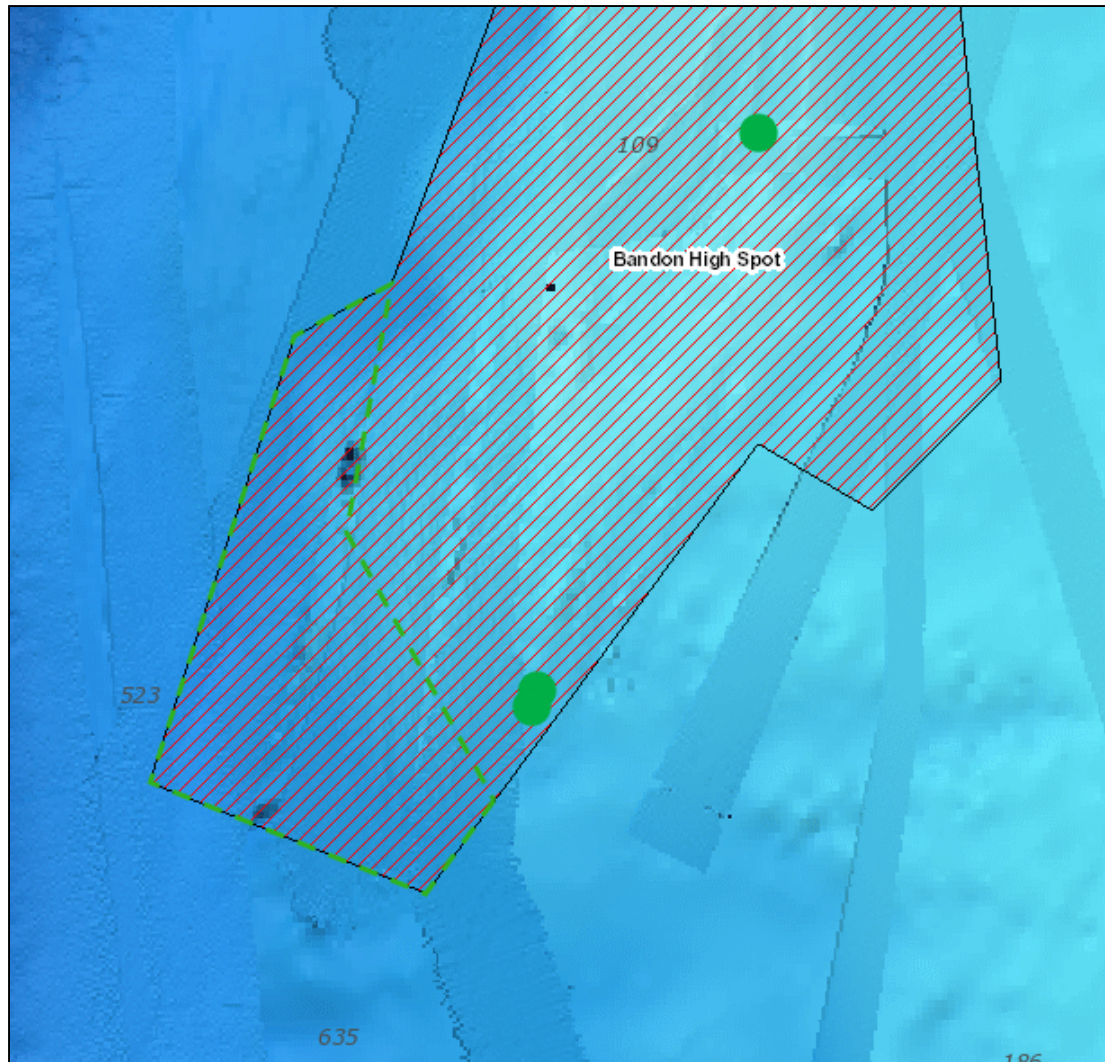


South Side: Research Dives

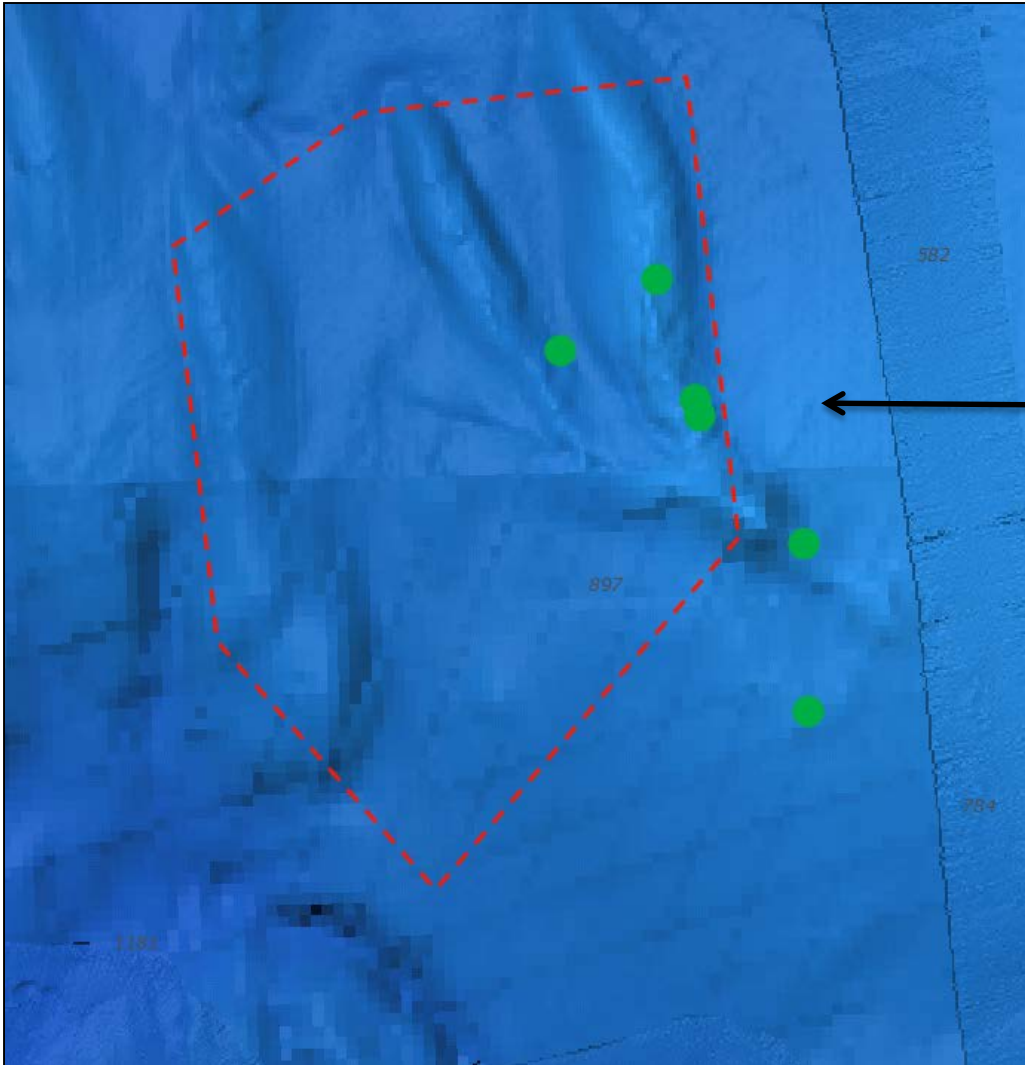


One Delta submersible dive, one more recent ROV dive. Both found high densities of gorgonian corals. Mud-covered bedrock substrate.

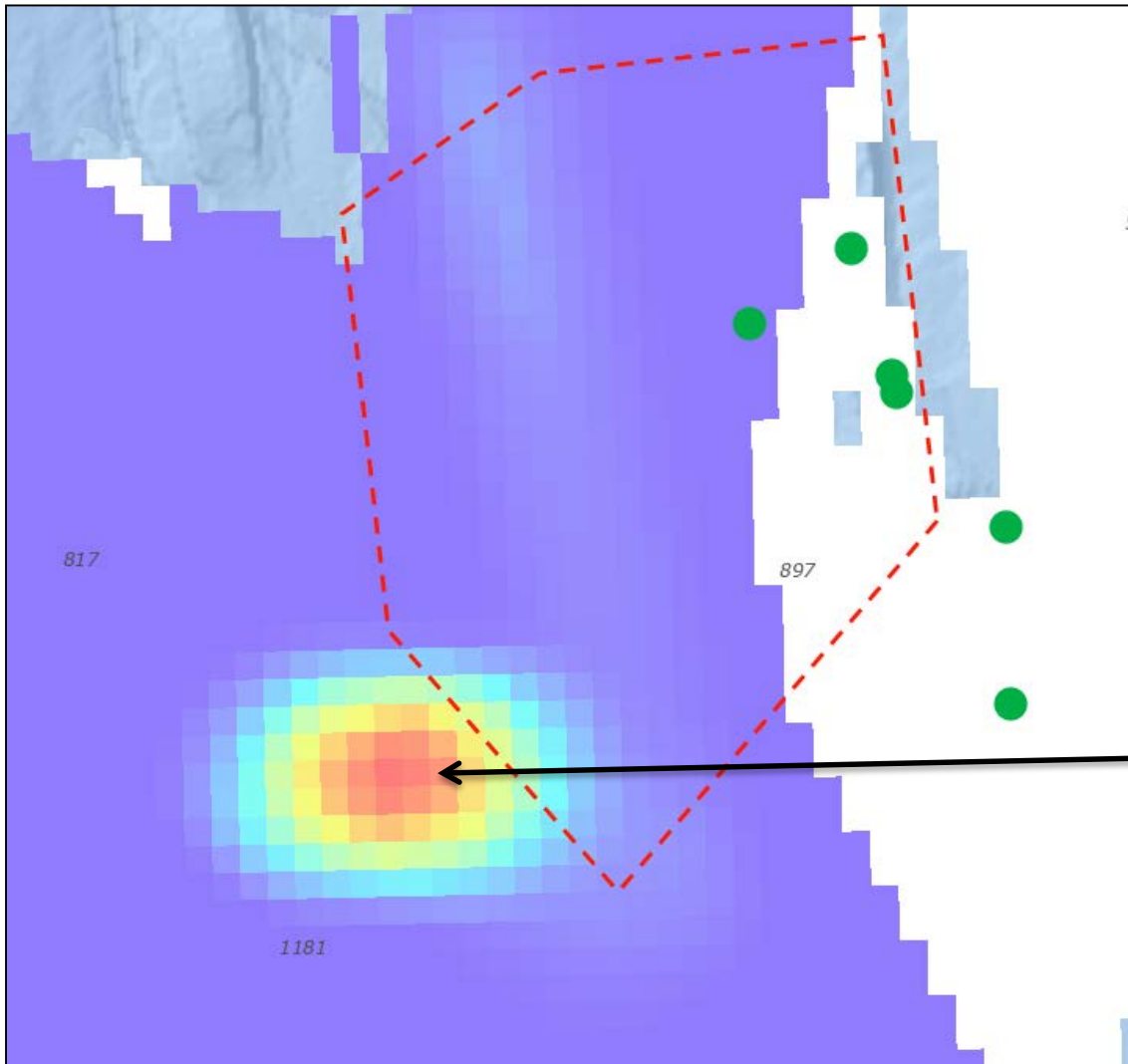
South Side: Bathymetry



Brush Patch

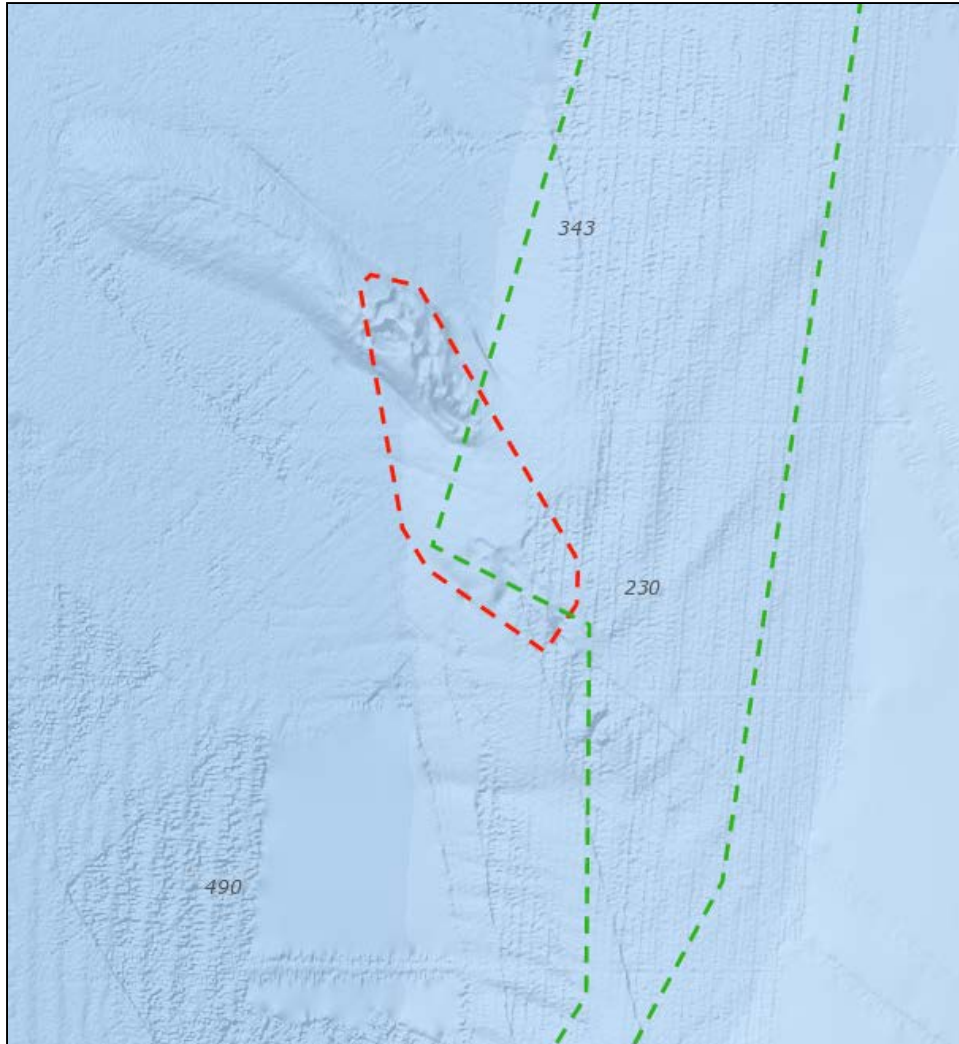


2014 NOAA research
cruise: AUV and towed
camera sled dives found
corals and hard/mixed
substrate.



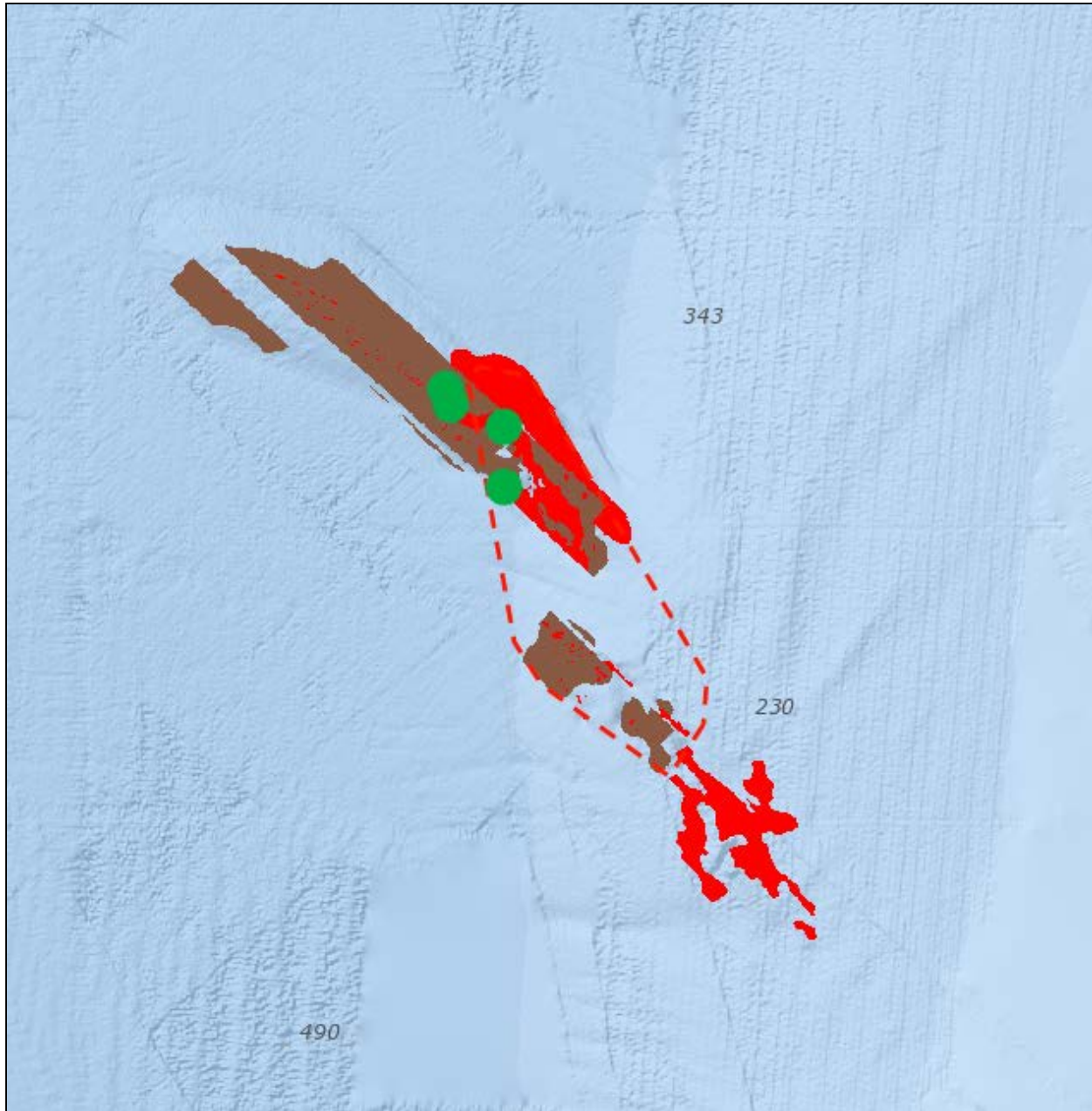
Coral Bycatch
Hotspot

Mad River Rough Patch



Known rough area located partially within the RCA.

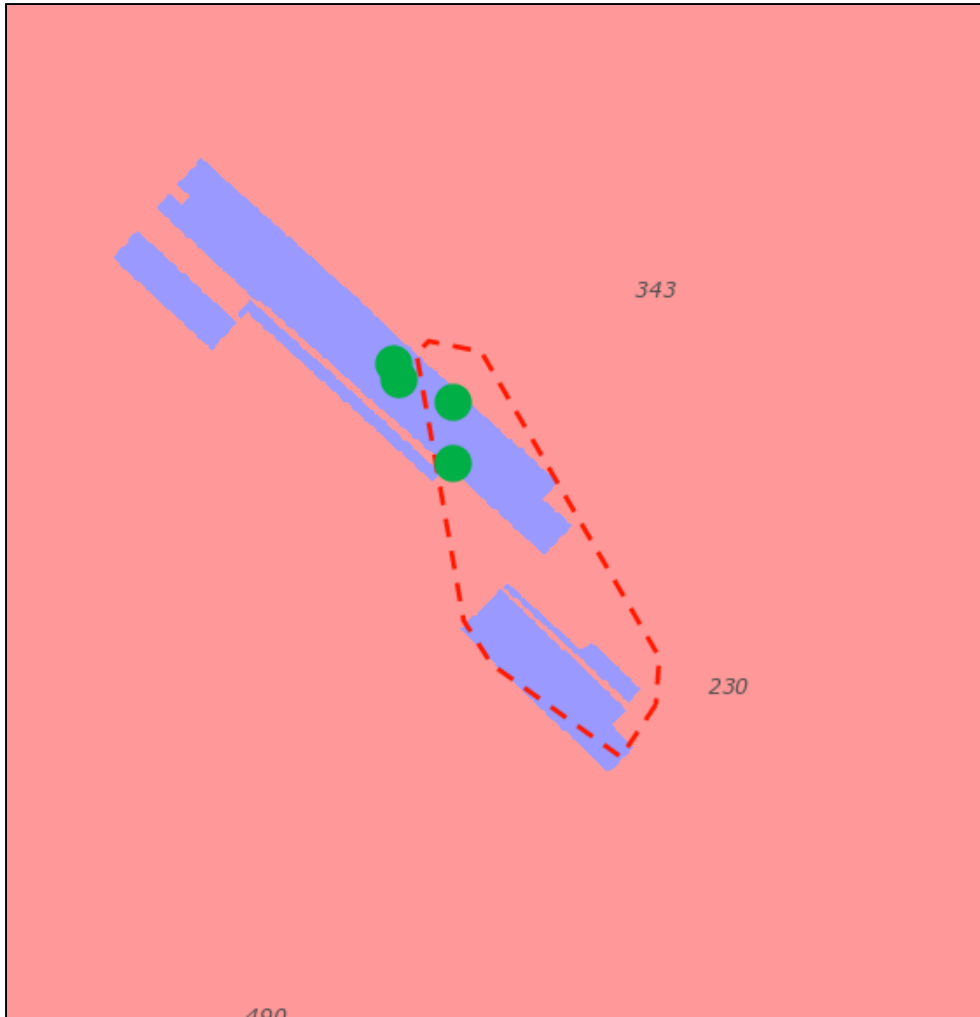
Worked from plotter data showing trawl hangs, drawing a fairly tight box around the area to maintain adjacent tows.



Hard and mixed
substrate.

MBARI research dives
(green dots) from
late 1990s, found sea
pens and mushroom
corals.

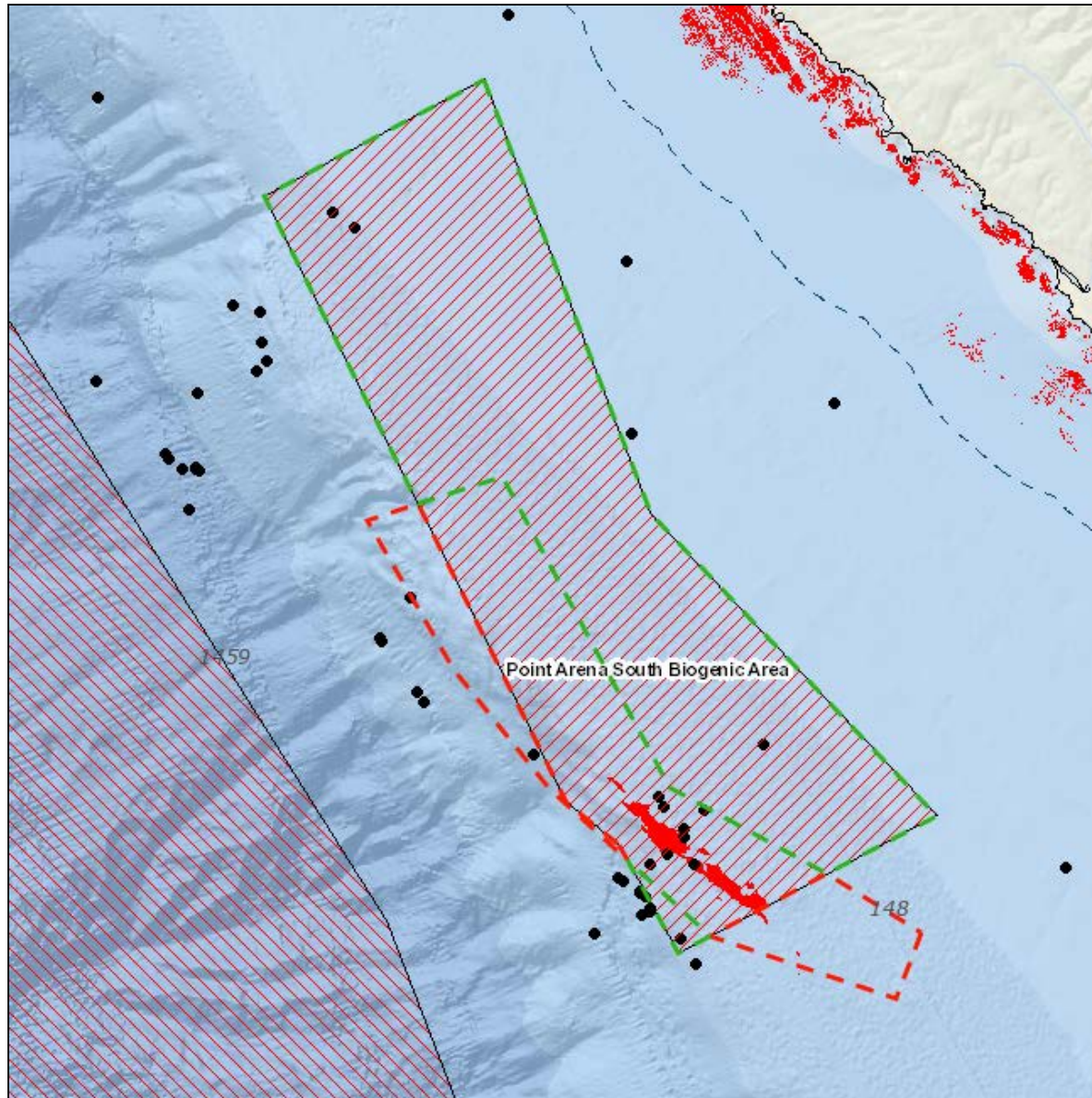
Substrate Confidence Level



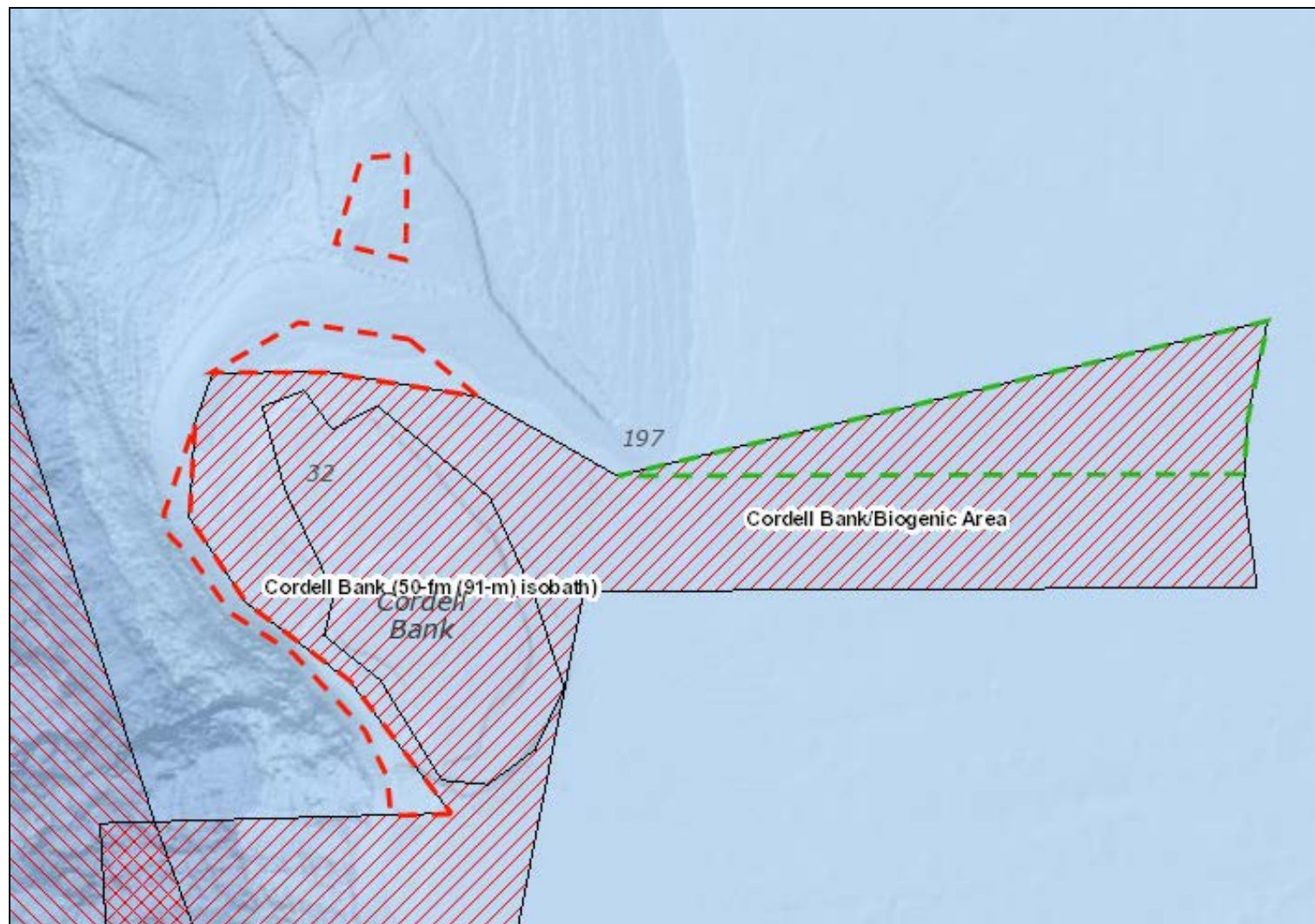
(pink = low confidence)

(blue = high confidence)

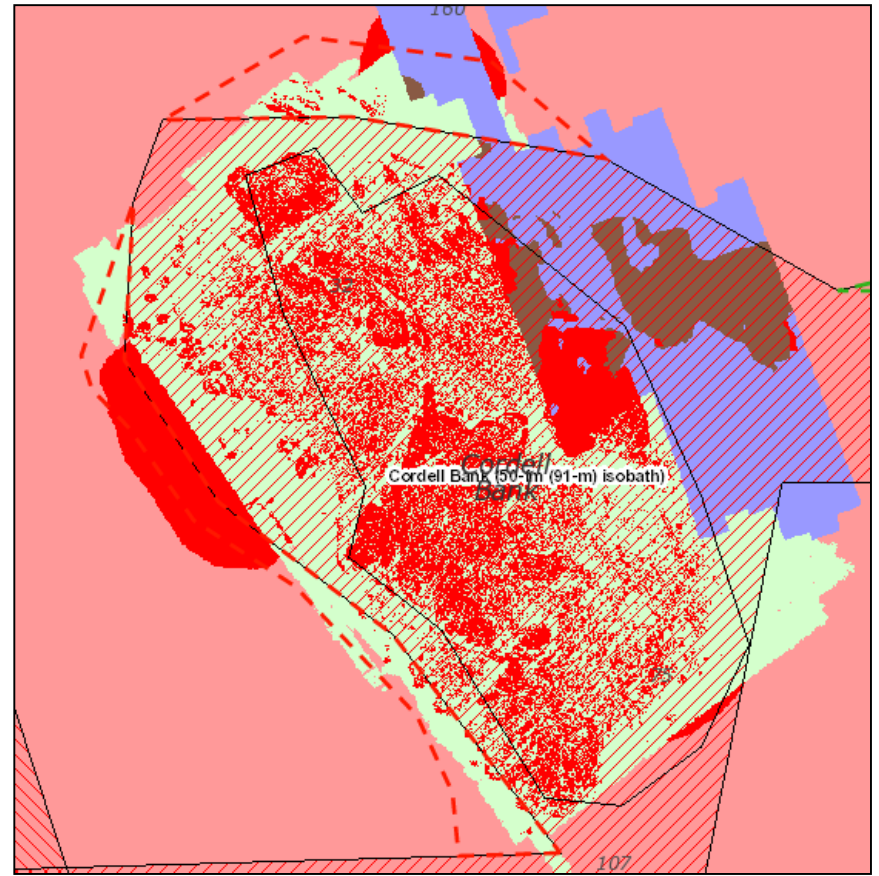
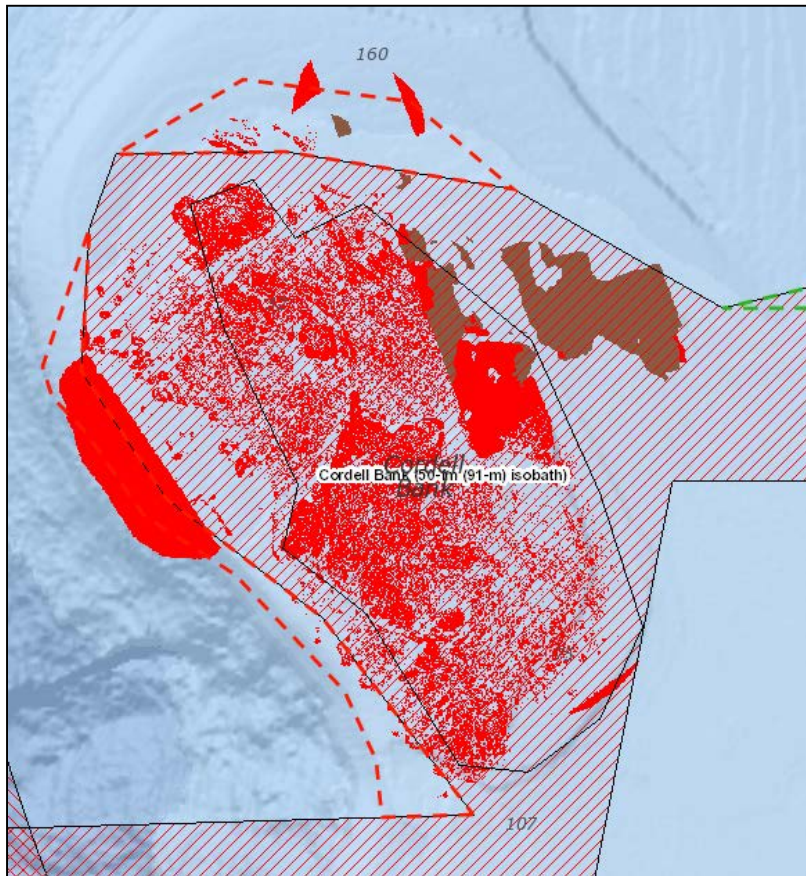
Point Arena South

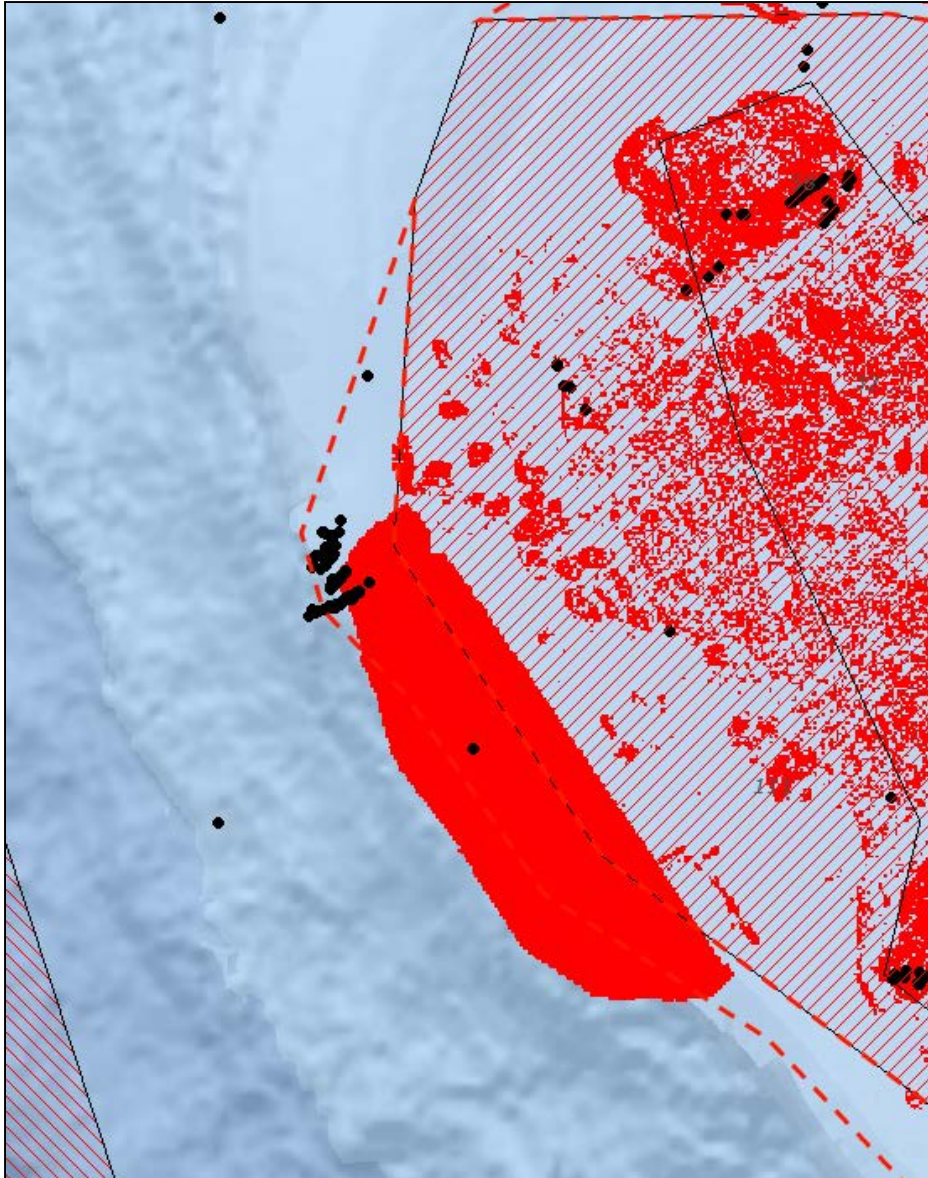


Cordell Bank



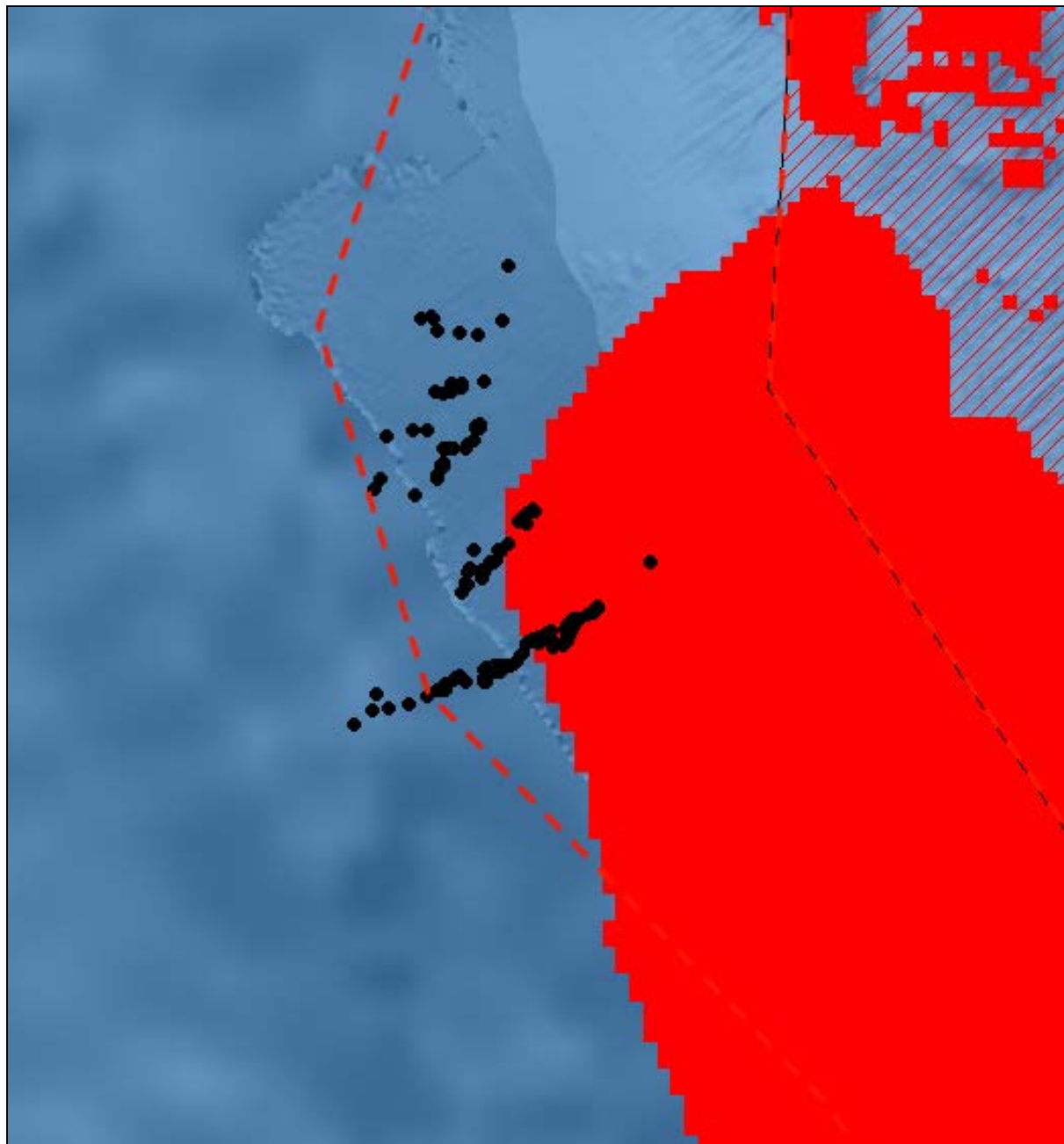
Substrate and Confidence Levels





Western Edge

Tried to encompass the research area while maintaining workable boundary for north-south trawls adjacent to the bank.



Close Up of Research Area

1 plumarella coral on boundary line

4 mushroom corals outside the line