

From: John Reed <jreed12@fau.edu>

Sent: Tuesday, August 24, 2021 2:33 PM

To: Mel Bell <BelIM@dnr.sc.gov>; Steve.Poland@ncdenr.gov; AnnaBarriosBeckwith@gmail.com; timgrinersafmc@gmail.com; conklinsafmc@gmail.com; KerryOMarhefka@gmail.com; christiansensafmc@gmail.com; swoodwardsafmc@gmail.com; Carolyn.Belcher@dnr.ga.gov; jessica.mccawley@myfwc.com; wcbsafmc@gmail.com; artsappsafmc@gmail.com; andy.strelcheck@noaa.gov; robert.r.copeland@uscg.mil; rbeal@asmfc.org; Warner-KramerDM@state.gov; thompsonlaurilee@gmail.com; tomrollersafmc@gmail.com; JudyHelmey@gmail.com; hullsseafood@aol.com; ga_capt@yahoo.com; nesslage@umces.edu; anne.deaton@ncdenr.gov; cynthia.cooksey@noaa.gov; jocelyn.karazsia@noaa.gov; sbrooke@fsu.edu; jvoss2@hboi.fau.edu; kimberly.puglise@noaa.gov; sealife@bellsouth.net; margot@globalfishingwatch.org; gilliam@nova.edu; hunter@terranova.net; Jamie.Monty@floridadep.gov; street124@aol.com; JEWARD@broward.org; fogartyn@uncw.edu; Stephanie.Schopmeyer@myfwc.com; rosss@uncw.edu; Samuel.rauch@NOAA.gov; janet.coit@noaa.gov

Subject: SAFMC meeting briefing material regarding Amendment 10

August 24, 2021

To: South Atlantic Fishery Management Council
NOAA Fisheries Southeast Regional Office

Re: Report- "Deep-sea coral and sponge observations in Oculina Bank Habitat Area of Particular Concern – northeastern boundary area"
Report provided by the NOAA Deep Sea Coral Research & Technology Program for the NOAA Fisheries Southeast Regional Office and South Atlantic Fishery Management Council

Please see this attachment which should be included in the SAFMC meeting briefing material regarding Amendment 10.

Sincerely,

John K. Reed
Research Professor
Harbor Branch Oceanographic Institute
Florida Atlantic University
5600 U.S. 1, North, Fort Pierce, Florida 34946
Phone- 772-579-8215
Email- jreed12@fau.edu

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August 24, 2021

To: South Atlantic Fishery Management Council
NOAA Fisheries Southeast Regional Office

Re: Report- "Deep-sea coral and sponge observations in Oculina Bank Habitat Area of Particular Concern – northeastern boundary area"
Report provided by the NOAA Deep Sea Coral Research & Technology Program for the NOAA Fisheries Southeast Regional Office and South Atlantic Fishery Management Council

This detailed report is based on the following:

Coral and sponge data included in this report reflect observations recorded to-date in the NOAA Deep Sea Coral Research & Technology Program's [Deep-Sea Coral Data Portal](#). Areas with no information are not necessarily devoid of these organisms, as the majority of the deep sea is yet to be explored.

This statement above is crucial: "areas with no information are not necessarily devoid of organisms."

The model predicting habitat suitability for *Oculina* coral (Fig. 4 of the report) is based in part on these data records in the NOAA Deep Sea Coral Portal. This model clearly shows suitable coral habitat well east of the current HAPC boundary which should preclude any decision to allow shrimp trawling access within the current HAPC boundaries. If anything, the current eastern HAPC boundary should be moved eastward. In addition, since the densest coral observations at the northern end of the OHAPC appear to be east of the predicted suitable sites, the eastern boundary of the model suitability should be moved eastward.

I question how these alternative eastern borders of the OHAPC were drawn. What data set was used for the shrimp trawling access area? Were the NOAA Regional Bathymetric charts or more recent multibeam maps used? Were NOAA Fisheries data used? Or is it based on where the shrimp trawlers had trawled previously or want to trawl. As I have said in previous letters and publications, the OHAPC contains various habitats, high relief mounds, low relief mounds and ledges, flat rock pavement, flat mud and rubble. All of these make up the *Oculina* ecosystem and should remain protected.

There are several data sets which do not appear in the NOAA Coral Data Portal. I participated in all the NOAA Fisheries surveys made in this region since their discovery in 2015. The data in the portal are only from the corals that I documented by CPCe Point Count and submitted to NOAA. This takes 50 points from each photograph used in the benthic ROV surveys, and identifies each dot. It is a rough estimate of percent coral cover.

However, deep-water coral reefs such as *Lophelia* coral and *Oculina* coral reefs have relatively lower density of macrobiota than typical shallow water reefs. For these reasons, typical point count analysis is not the only statistic to use on deep-water reefs. In addition to the point count, for each of our annual ROV surveys, I used the ROV video to document the coral and sponge communities. This is much more accurate as each coral observed is included. In addition to the standing live corals, I documented the number of standing dead corals. Standing *Oculina* coral colonies, whether living or dead, provide important habitat for the *Oculina* coral community, which consists of hundreds of species of invertebrates and juvenile fish which live among the coral branches (George et al. 2007; Reed 2002; Reed et al. 1982; Reed and Mikkelsen 1987). These data are included in the NOAA Coral Portal, so critical information is missing in this report.

The following are excerpts from the NOAA Fisheries surveys analyzed by me (benthic invertebrates) and Stacey Harter (NOAA Fisheries):

Harter, Stacey, John Reed, Stephanie Farrington, Felicia Drummond, and Andy David. 2019. South Atlantic MPAs and *Oculina* HAPC: Characterization of benthic habitat and biota. NOAA Ship Pisces Cruise 18-02. NOAA CIOERT Cruise Report, 318 pp. Harbor Branch Oceanographic Technical Report Number 188. <http://www.cioert.org/wp-content/uploads/2020/03/2018-NOAA-Ship-Pisces-SE-USA-MPA-Cruise-Final-Report.pdf>.

Table 9 presents these data as total counts for each dive. Only two dives were within the northern OHAPC (ROV 18-13, 18-14). The maps indicate the presence of the taxa during each 5-minute segment of the video (Figure 9). A total of 61 colonies of live *Oculina varicosa* coral were counted (Table 9; Figs. 10, 11). The dominant macrobiota were sponges (1604), black corals (832), soft corals (547), and gorgonians (148). A total of 610 standing dead *Oculina* coral colonies were also counted.

Table 9. Counts of major benthic macrobiota (Cnidaria and Porifera) and fishing gear from video analysis of ROV dives on *Oculina* HAPC reef sites during the NOAA Ship *Pisces* cruise 18-02, May 12-24, 2018.

Phylum/Group/scientific name	18-13	18-14	18-15	18-16	Grand Total
Demospongiae	408	171	549	476	1604
<i>Chondrilla</i> sp.	224	7	277	401	909
Demospongiae- unid. sp.	184	164	272	75	695
Cnidaria	671	814	386	259	2130
Alcyonacea - gorgonian	79	65	3	1	148
Alcyonacea- gorgonian	4	63	3	1	71
<i>Callipodium rubens</i>	50	1			51
<i>Diodogorgia</i> sp.	2				2
<i>Telesto</i> sp.	13				13
<i>Titanideum frauenfeldti</i>	10	1			11
Alcyonacea - Alcyoniina	231	218	88	10	547
<i>Nidalia occidentalis</i>	231	218	88	10	547
Antipatharia	90	430	201	111	832
Antipatharia unid. sp.		1	4		5
<i>Antipathes atlantica</i>		22	39	7	68
<i>Tanacetipathes</i> sp.	2	115	8	71	196
<i>Stichopathes luetkenti</i>	88	292	150	33	563
Coral- Scleractinia	44	7	21	14	86
<i>Oculina varicosa</i>	33	5	20	3	61
Scleractinia- unid cup	11	2	1	11	25
Pennatulacea			2		2
<i>Virgularia presbytes</i>			2		2
Corallimorpharia	12	1	5		18
Cerianthidae	25	6	24	12	67
Zoantharia	30	28	20	3	81
Hydrozoa	160	59	22	108	349
Human debris- fish line/gear	5	1			6
Dead standing <i>Oculina</i> (habitat)	162	102	131	215	610
Grand Total	1248	1093	1069	952	4362

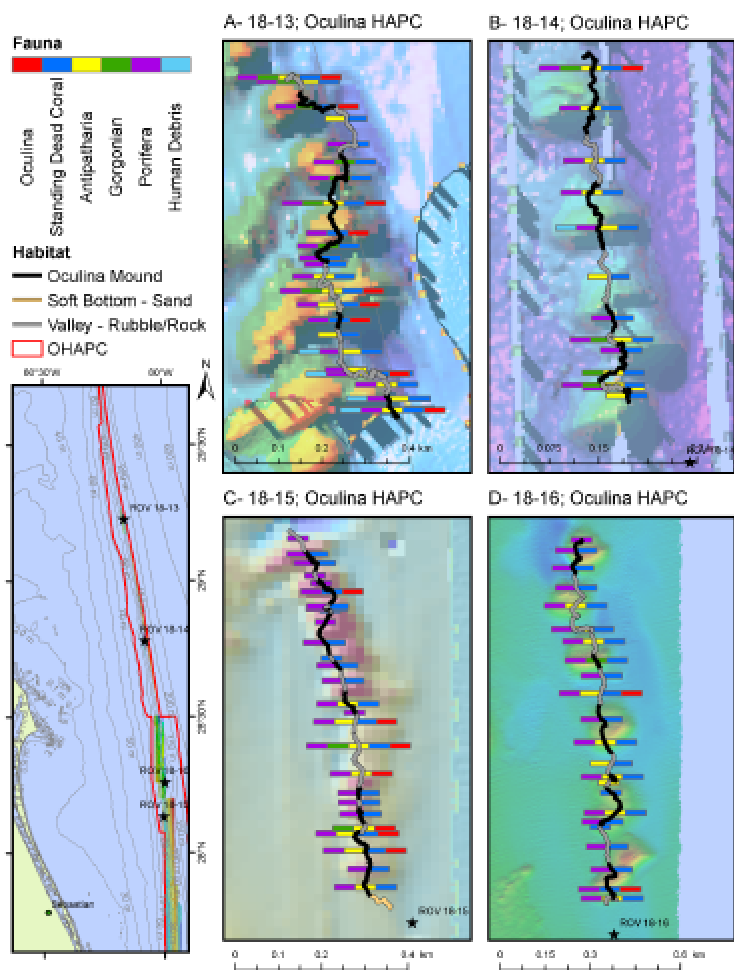


Figure 9. Presence of corals (*Scleractinia*, gorgonian octocorals, *Antipatharia*), sponges, and fishing gear based on video analysis of ROV video in 5-minute increments on *Oculina* HAPC reef sites during the NOAA Ship *Pisces* cruise 18-02, May 12-24, 2018.

Harter, Stacey, John Reed, Stephanie Farrington, and Andy David. 2019. South Atlantic MPAs and *Oculina* HAPC: Characterization of Benthic Habitat and Biota. NOAA Ship *Pisces* Cruise 19-02. NOAA CIOERT Cruise Report, 388 pp. Harbor Branch Oceanographic Technical Report Number 193. <http://www.cioert.org/wp-content/uploads/2020/01/2019-Harter-South-Atlantic-MPAs-and-Oculina-HAPC-Characterization-Cruise-19-02.pdf>

Table 9 presents these data as total counts for each dive. A plot of these data indicates the presence of the taxa by category during the dive (Figure 9). A total of 41 colonies of live *Oculina varicosa* coral were counted (Table 9; Fig. 10). The dominant macrobiota were demosponges (206), Echinoderms (192), mostly sea urchins (186) and *Antipatharians* (91). A total of 56 standing dead *Oculina* coral colonies were also counted.

Table 9. Counts of major benthic macrobiota and fishing gear from video analysis of ROV dive 19-32 on *Oculina* HAPC reef site during the NOAA Ship *Pisces* cruise 19-02, June 7-20, 2019.

Phylum/Group/scientific name	No.
Porifera	206
Demospongiae	206
<i>Chondrilla</i> sp.	92
Demospongiae	113
<i>Poecilosclerida</i>	1
Cnidaria	283
Alcyonacea - Alcyoniina	10
<i>Nidalia occidentalis</i>	10
Alcyonacea - gorgonian	16
Anthozoa - Non Coral	90
<i>Cerianthidae</i>	85
<i>Corallimorpharia</i>	5
Antipatharia	91
<i>Antipathes atlantica</i>	4
<i>Stichopathes luetkeni</i>	81
<i>Tanacetipathes tanacetum</i>	6
Coral- Scleractinia	52
<i>Cladocora</i> sp.	11
<i>Oculina varicosa</i>	41
Hydrozoa	24
Chordata	3
Ascidiacea	3
Arthropoda	7
Decapoda	7
Echinodermata	192
Asteroidea	6
<i>Echinoidea</i>	186
Human debris	1
Human debris- fish line/gear	1
Habitat	56
dead standing <i>Oculina</i> (habitat)	56
Grand Total	748

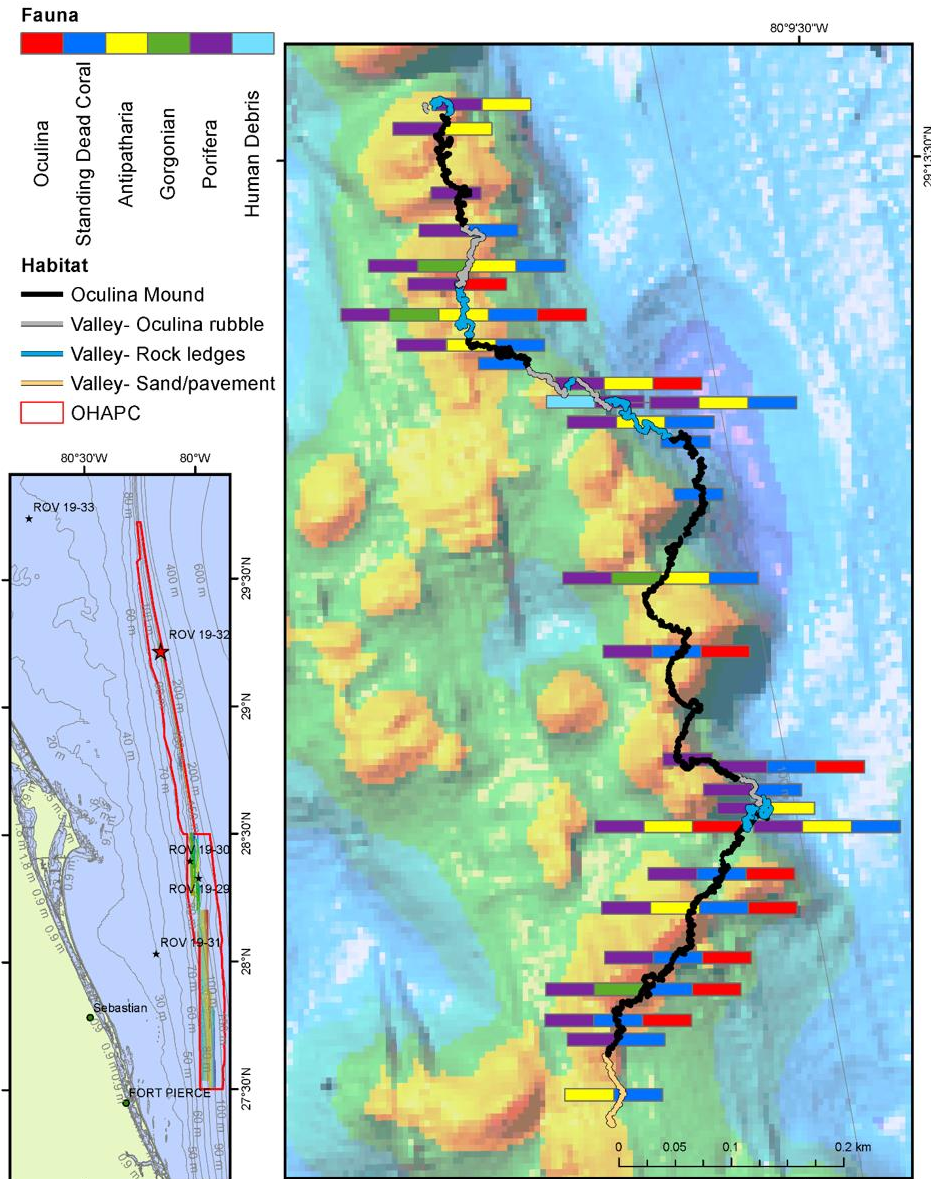


Figure 9. Presence of corals (Scleractinia, gorgonian octocorals, Antipatharia), sponges, and fishing gear based on video analysis of ROV video in 5-minute increments on *Oculina* HAPC reef sites during the NOAA Ship *Pisces* cruise 19-02, June 7-20, 2019.

So both reports (NOAA DSCRTP and NOAA Fisheries cruise reports) provide important and complimentary datasets describing the diversity and density of corals and fish. It is clear that the primary concern for the SAFMC should be protecting this incredible, rare resource and not opening any portion of it to destructive bottom trawls.

John K. Reed
 Research Professor
 Harbor Branch Oceanographic Institute
 Florida Atlantic University
 5600 U.S. 1, North, Fort Pierce, Florida 34946

Email- jreed12@fau.edu