June 27, 2022

Mr. Frank Helies
Southeast Regional Office
NOAA Fisheries
263 13th Avenue South
St. Petersburg, FL 33701

Re: Notice of Availability for Amendment 10 to the Fishery Management Plan for Coral, Coral Reefs, and Live Hard Bottom Habitat of the South Atlantic Region [NOAA-NMFS-2021-0126]

Dear Mr. Helies:

On behalf of The Pew Charitable Trusts, please accept these comments in opposition to Amendment 10, Preferred Alternative 2 to the Fishery Management Plan for Coral, Coral Reefs, and Live Hard Bottom Habitat of the South Atlantic Region. If approved by the Secretary of Commerce, this amendment would re-open a 22 mile^2 section of the Oculina Bank Habitat Area of Particular Concern (HAPC) to allow bottom trawling for rock shrimp. We oppose the destruction of this fragile, unique ecosystem and below outline the reasons Coral Amendment 10 goes against the best available science and should be disapproved. Nationally, this is not a time to move backward on conservation and rollback protections. Our nation's ecosystems are facing multiple stressors from climate change and other human pressures and must be protected to increase resilience and maintain biodiversity. Opening this area to destructive trawling practices would undercut the Biden-Harris Administration's conservation efforts and direction, including the *America the Beautiful* Initiative.

Background

Established in 1984 after significant areas had been damaged by bottom trawling, the Oculina Bank HAPC protects a fragile ecosystem of national and global significance which should remain safeguarded. The area is home to unique coral reefs made up of dense thickets of slow-growing ivory tree coral, *Oculina varicose*, which are found nowhere else in the world.[1] In 2014, the South Atlantic Fishery Management Council (Council) established the northern extension of the Oculina Bank HAPC in order to protect newly discovered coral mounds. The decision to protect this area was the result of an extensive public process that included scoping meetings, public hearings, as well as recommendations from the Scientific and Statistical Committee and relevant Advisory Panels. These corals support diverse communities of finfish and invertebrates, including species managed under the Council's Snapper Grouper Fishery Management Plan such

[1] https://www.fisheries.noaa.gov/southeast/oculina-habitat-area-particular-concern.

as gag grouper, snowy grouper, scamp grouper, Warsaw grouper, and speckled hind. These ecosystems may also be home to future medical discoveries like cancer treatments,[2] anti-inflammatory chemicals,[3] and numerous undiscovered species.[4] Scientists have likely only discovered a fraction of the potential value of deep-sea corals and much of the ocean bottom has yet to be explored. Recent expeditions aboard the NOAA *Okeanos Explorer* and R/V *Atlantis* have resulted in new discoveries often in unexpected areas, for example on the Blake Plateau.[5,6] NOAA has yet to fully study many areas in the South Atlantic, including the area within the Oculina Bank HAPC that would be opened by Coral Amendment 10. In fact, although the bathymetry is largely known and suggests the area would support deep-sea corals and other benthic life, likely recovering from historic trawling, this area remains largely unexplored from a biological perspective.

Unfortunately, during the September 2021 meeting the Council voted to reverse some of the existing protections for the Oculina Bank HAPC putting this fragile coral habitat at risk. Acting in response to Trump's Presidential Executive Order 13921 ("Seafood Competitiveness and Economic Growth"), the Council voted to roll back protections in order to increase fishing opportunities, even when presented with evidence that these rollbacks are likely to create long-term damage to the Oculina Bank ecosystem. We understand the desire to provide economic benefits to the commercial fishing community especially after the devastating year in 2020. However, according to data presented by Council staff during the public hearings, 2017 was the best year for the rock shrimp fishery since 2009.[7] This record year occurred 3 years after the closure of the northern extension to the Oculina HAPC, so we see no need to open the area and jeopardize this fragile habitat. This decision contrasts the actions taken by other Regional Fishery Management Councils to advance deep-sea coral protections and it also undercuts the Biden-Harris Administration's conservation efforts.

Best Available Science

Opening a portion of the Oculina Bank HAPC to allow shrimp trawling contradicts the best available science and should be disapproved for the following reasons:

1. **Coral Amendment 10 Preferred Alternative 2 contradicts the scientific recommendations of both the Council's Coral Advisory Panel and the Habitat Protection and Ecosystem-Based Management Advisory Panel to keep these protections in place**.[8] Regardless of what marine life exists in the area, allowing trawling would damage protected corals. The Coral Advisory Panel, which includes some of NOAA's own scientific experts, recommended that a protective buffer be kept in place to protect both the coral pinnacles and the low relief hard bottom that exist in this area. The Coral Advisory Panel advised that reopening any part of the Oculina Bank HAPC would put these corals at risk from damage by direct contact with bottom gear and sediment that

[2] Tseng YJ, SK Wang, CY Duh. 2013. Secosteroids and Norcembranoids from the soft coral *Sinularia nanolobata*. Mar. Drugs 11:3288-3296.
[3] Kijjoa A, and P Sawangwong. 2004. Drugs and cosmetics from the sea. Mar. Drugs 2(2): 73-82.
[4] https://www.livescience.com/deep-ocean-floor-teeming-with-unknown-life
[5] https://oceanexplorer.noaa.gov/okeanos/explorations/ex1806/logs/summary/summary.html.
[6] https://oceanexplorer.noaa.gov/explorations/18deepsearch/logs/summary/summary.html.
[7] https://safmc.net/wp-content/uploads/2022/05/Coral-10-Public-Hearing-Presentation_May_2021.pdf.
[8] https://safmc.net/wp-content/uploads/2022/05/HabEco_A1a_Coral_Amendment10_-Decision-Doc_Aug_21.pdf.

is stirred up when bottom gear interacts with the bottom. Studies show that silt and clay particles can be carried a significant distance from the source of disturbance. The currents in the Oculina Bank HAPC are strong and unpredictable making it almost certain that some of these fragile corals will be destroyed.[9]

2. **Bottom trawling and other interactions with the bottom put the corals at risk due sedimentation.** Opening this valuable and fragile area to trawling, regardless of what life may exist there on the bottom, will cause significant harm to the protected corals in the adjacent areas of the HAPC. Within the Oculina Bank HAPC there are a mix of sediment types. While the sediment closest to the coral reefs is dominated by coral rubble and sand, the percentage of smaller sediment types, such as silt, clay, and mud increases as you move further from the coral areas.[10] Some areas east of the *Oculina* mounds are estimated to be 29% mud.[11] This is a significant concern because interaction of the fishing gear with the bottom can result in these smaller particles being suspended in the water column creating sediment plumes. Studies have shown trawling to be the primary source of suspended sediment over the outer shelf where storm-related bottom stresses are weak.[12] Research has also shown that trawling can increase turbidity in the water column by a factor of three for up to 5 days.[13] This can have detrimental effects on deep-sea corals because these sediments can clog the coral's feeding mechanism or even bury the reef communities causing stress and mortality.[14] Turbidity and sedimentation also reduce recruitment, survival, and settlement of coral larvae. Increased sedimentation can lead to the burial of coral polyps, tissue necrosis, and increased bacterial levels in coral mucus.[15]

   To avoid these negative impacts, the Council included a protective buffer within the boundaries of the 2014 northern extension of the Oculina Bank HAPC to reduce the negative impacts of sedimentation. This long, narrow 22 mile^2 stretch of protected bottom is the area that Council is proposing to open to bottom trawling via Coral Amendment 10, despite the Coral Advisory Panel's recommendation that the buffer be maintained between known coral mounds and shrimping areas to limit the negative impacts of bottom trawling. Data shows that suspended particles can impact corals over 700 meters from the disturbance site, and in severe cases, water quality can be impacted up to 20 kilometers

[9] Hoskin C. M., J. K. Reed, and D. H. Mook. 1987. Sediments from a living shelf-edge coral reef and adjacent area off central eastern Florida. Symposium on South Florida Geology Miami Geological Society, Memoir 3. 17pp.
[10] Scanlon K.M., Briere P, Koenig C. 1999. *Oculina* Bank: sidescan sonar and sediment data from a deep-water coral reef habitat off east-central Florida. U.S. Geol Surv Open File Rep 99-10, CD ROM
[11] Hoskin C. M., J. K. Reed, and D. H. Mook. 1987. Sediments from a living shelf-edge coral reef and adjacent area off central eastern Florida. Symposium on South Florida Geology Miami Geological Society, Memoir 3. 17pp.
[12] Churchill, J.H. 1989. The effect of commercial trawling on sediment resuspension and transport over the Middle Atlantic Bight continental shelf. Continental Shelf Research 9: 841-864.
[13] Palanques, A., Guillen, J., and P. Puig. 2001. Impact of bottom trawling on water turbidity and muddy sediment of an unfished continental shelf. Limnol. Oceanogr. 46(5): 1100-1110.
[14] Brooke S., M. Holmes, C.M. Young. 2009. Sediment tolerance of two different morphotypes of deep-sea coral *pertusa* from the Gulf of Mexico. Mar. Ecol. Prog. Ser. 390:137–144.
[15] Erftemeijer, P.L.A, B. Riegl, B.W. Hoeksema, and P.A. Todd. 2012. Environmental impacts of dredging on other sediment disturbance on corals: A review. Marine Pollution Bulletin 64: 1737-1765.

away.[16,17] This coupled with the fact the bottom currents in the area are variable with strong east-west, north, and south components[6] resulted in some members of the Coral AP suggesting that the buffer area should be increased, not decreased, to protect the corals in the Oculina Bank HAPC.

3. **Direct impacts from bottom trawling gear can destroy corals and reverse any recovery that has been made since the closure**. Rock shrimp trawling has caused extensive and well-documented damage to the Oculina Banks and was the primary reason the current protections were put in place.[18] The currents off the coast of eastern Florida are strong and variable making it nearly impossible to guarantee that fishing gear won't come in direct contact with corals. Although fishermen may try to avoid these areas, there have been numerous instances of gear interactions with corals in the Oculina Bank HAPC.[19] Re-opening this area to shrimp trawling would put the corals at risk yet again.

4. **Coral recovery is a slow process and re-opening the area to allow shrimp trawling would reverse any progress to date.** Recent mapping work by NOAA's *Nancy Foster* indicates the presence of low relief bottom in the proposed Shrimp Fishery Access Area. Low-relief hard bottom and coral rubble provide substrate for coral recruitment and growth. Nearly all of the coral recruits observed in the last 10 years in the Oculina Bank HAPC have been found growing on coral rubble. Recovery is a slow process though and results will not be immediate. Core sampling revealed some of the *Oculina* mounds are between 1,000 and 1,500 years old with a growth rate of approximately 1.6 cm/year.[20] Opening this area to trawling would reverse any recovery that has occurred since the area was protected in 2015.

5. **The Oculina Bank HAPC is Essential Fish Habitat.** The Council has identified this area, including both the coral pinnacles and low-relief hard bottom, as essential fish habitat for many species managed under the Snapper Grouper Fishery Management Plan. This includes gag grouper, snowy grouper, red porgy, and red snapper all of which are considered to be overfished and undergoing overfishing. It would be short-sighted and potentially destructive to remove important habitat protections while simultaneously trying to rebuild these stocks. The Oculina Bank also provides essential fish habitat for species such as scamp grouper, black sea bass, speckled hind, and Warsaw grouper.

6. **Climate change adds additional stress to these fragile ecosystems.** Our marine ecosystems are being impacted by a wide variety of changes due to climate change,

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[16] Miller, M. W., J. Karazsia, C. E. Groves, S. Griffin, T. Moore, P. Wilber, and K. Gregg. 2016. Detecting sedimentation impacts to coral reefs resulting from dredging the Port of Miami, Florida USA. PeerJ 4:e2711, https://doi.org/10.7717/peerj.2711.

[17] Fisher R., Stark C., Ridd P., Jones R. 2015. Spatial Patterns in Water Quality Changes during Dredging in Tropical Environments. PLoS ONE 10(12): e0143309. https://doi.org/10.1371/journal.pone.0143309.

[18] Reed, J.K., C.C. Koenig, A.N. Shepard. 2007. Impacts to bottom trawling on a deep-water Oculina coral ecosystem off Florida. Bulletin of Marine Science. 81(3): 481-496.

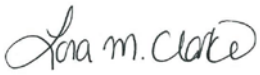
[19] SAFMC. 2021. Amendment 10 to the Fishery Management Plan for Coral, Coral Reefs, and Live Hard Bottom Habitat of the South Atlantic Region. Chapter 4: Environmental Effects. https://safmc.net/amendments/coral-amendment-10/.

[20] Reed, J. K. 1981. In situ growth rates of the scleractinian coral *Oculina varicosa* occurring with zooxanthellae on 6-m reefs and without on 80-m banks. Proc 4th Int Coral Reef Symp, Manila 2, pp 201-206.

including in the deep-sea.[21] As the marine environment changes, management decisions will need to reflect these shifting conditions and the compounding effects of multiple stressors. While the impacts of these various stressors are not fully understood, habitat protections should seek to reduce these impacts.

Based on the scientific evidence and national interest in protecting these valuable and fragile areas at risk from the impact of climate change, we request that NOAA disapprove Coral Amendment 10, Preferred Alternative 2 and instead approve Preferred Alternative 1 (No Action) to keep existing protections in place. We appreciate the Biden-Harris Administration's and NOAA's commitment to habitat protection and restoration, and the historic protections put in place previously by the Council and Agency. We look forward to continuing to work together to advance ecosystem-based fisheries management in the South Atlantic region.

Sincerely,



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[21] Isaac Brito-Morales, David S. Schoeman, Jorge García Molinos, Michael T. Burrows, Carissa J. Klein, Nur Arafeh-Dalmau, Kristin Kaschner, Cristina Garilao, Kathleen Kesner-Reyes, Anthony J. Richardson. Climate velocity reveals increasing exposure of deep-ocean biodiversity to future warming. *Nature Climate Change*, 2020; DOI: 10.1038/s41558-020-0773-5