CAPE COD COMMERCIAL

FISHERMEN'S ALLIANCE

Small Boats. Big Ideas.

July 8, 2024

Stacey M. Jensen
Director, Oceans, Wetlands and Communities Division
Environmental Protection Agency
Washington, DC 20460

RE: EPA Docket ID Nos. EPA-HQ-OW-2023-0591

Dear Director Jensen,

The Cape Cod Commercial Fishermen's Alliance (CCCFA) provides the following comments on the U.S. Environmental Protection Agency's (EPA) public notice for tentative research permit determinations regarding the Woods Hole Oceanographic Institution (WHOI) Locking Ocean Carbon in the Northeast Shelf and Slope (LOC-NESS) Project, Docket ID Nos. EPA-HQ-OW-2023-0591 (Phase 1). The proposed research would aim to study a marine carbon dioxide removal (mCDR) technique known as ocean alkalinity enhancement in two locations: south of Martha's Vineyard off the coast of Massachusetts (Phase 1) and then in Wilkinson Basin in the Gulf of Maine (during Phase 2). The goal is to remove carbon from the atmosphere, and deploy alkalinity at sea, in such a way, that the project team can design and develop tools to assess environmental impacts of this strategy.

Cape Cod Commercial Fishermen's Alliance is a member-based nonprofit organization that works to build lasting solutions to protect our ecosystem and the future of our fisheries. Fishermen's Alliance represents 150 fishing businesses and more than 300 fishing families, making our organization the leading voice for commercial fishermen of Cape Cod. We represent a diverse group of commercial fishermen, seafood processors, and shoreside support businesses who depend on access to healthy fish stocks and the marine environment.

Overall, the Cape Cod Commercial Fishermen's Alliance has concerns and reservations about this research project based on our understanding of the important oceanographic processes that take place here in our region, and the significant recreational and commercial fisheries that play an important role in our coastal communities. Alterations to nutrient cycling, ocean circulation patterns, and overall ecosystem functioning could experience unforeseen consequences. Ocean alkalinity enhancement has the potential to impact marine ecosystems by shifting the marine chemistry of the water and altering pH levels therefore potentially disrupting marine organisms who are used to certain conditions. There are also equity and justice concerns to consider, as impacts on communities dependent on marine resources will be heightened.

We strongly encourage the EPA and WHOI to fully consider and analyze impacts from Phase 1 before permitting in Phase 2, given that Phase 2 is a 10x scaled up approach. We are greatly concerned about the long-term implications of a project like this, given no other projects have been done in this way off our coast to date. We encourage more in-depth large scale lab trials to be conducted in the same manner as what is being proposed offshore in Phase 1 before proceeding with at-sea trials.

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It is our understanding that WHOI plans to conduct highly monitored field trials of ship-based liquid alkalinity enhancement (20 tons) in phase 1 south of Marthas Vineyard and do a scaled approach of 10x with 200 tons in Wilkinson Basin (Phase 2). We appreciate the level of monitoring that will take place during this project such as CTD sampling, net tows, towed vehicle, gliders, drifters, satellite imagery, and shipboard underwater surface seawater sampling systems. We also support analyses of the Rhodamine dye concentration, temperature, salinity, pressure, oxygen, turbidity, alkalinity, dissolved inorganic carbon, pH, nutrients, phytoplankton and zooplankton, and particulate carbon (POC and PIC). We encourage the Principal Investigators of the project to deploy gliders in advance of the field trials to survey control conditions in the water prior to deployment of the dye and then during the experiment and following the experiment.

In terms of protected species, we encourage the project team to have an active contingency plan if marine mammals are present. While having a marine mammal observer onboard is a great start to identify any species present at the study site, it is important that the project cease and stop dispersing materials until the animals leave the study site to minimize any harmful or potential impacts to these protected species. Dye may persist in the environment for extended periods longer than anticipated by the research team, and this could accumulate in lower trophic organisms, and potentially magnify up the food chain.

While the alkaline solution must be dispersed at the ocean surface to remove carbon dioxide from the atmosphere, we have concerns about how the dye will disperse both horizontally and vertically within the water column, as well as how fast the dispersal occurs. We understand that for the success of this project, it requires a fully stratified water column that occurs during the summer months. However, this creates not only user conflicts with marine users and commercial fisheries, but can impact larval fish, schooling marine species, and phytoplankton blooms. We are concerned about destratification due to potential hurricane events or increased storms, that could cause the alkalinity to go below the mixed layer. There is a lot we do not know about long-term effects of a project like this, and uncertainty about how the marine ecosystem will respond to changes in alkalinity over time.

While the previous experiment (Sept 2023) showed the alkalinity stayed in the upper ocean and did not go below the mixed layer, we think it is important to consider any potential negative impacts if it does get mixed (due to storms, currents, ocean mixing processes etc). The PIs also do not anticipate the pH going above 9 (which is the critical water threshold set by the EPA that is safe for aquatic life), given they believe rapid mixing occurs in the wake of the ship, and they believe pH is expected to drop below 9 within ~1 minute. We are concerned whether a fish kill could occur when the pH is at 9, and how plankton communities may respond to exposure of the alkaline solution, and if this will enhance possible dinoflagellate blooms that thrive at a higher pH level.

In conclusion, ocean alkalinity enhancement raises significant concerns that require careful consideration and thorough research before implementation. It is essential to weigh potential environmental impacts to ensure sustainable and responsible management of marine resources and ecosystems. We encourage the EPA and WHOI to continue coordination with fisheries stakeholders throughout this process and if Phase 1 is to be approved, that the results from Phase 1 be made publicly available prior to the start or approval of Phase 2.

Thank you for the opportunity to provide written comments on these permits.

Sincerely,

Aubrey Church
Fisheries Policy Director
Cape Cod Commercial Fishermen's Alliance