

**STATE OF MAINE
DEPARTMENT OF MARINE RESOURCES
AQUACULTURE DIVISION**

IN RE: BAILEY COFFIN STANDARD AQUACULTURE LEASE APPLICATION)))))	PRE-FILED DIRECT TESTIMONY OF JOSEPH DEALTERIS, Ph.D.
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I, Joseph DeAlteris, Ph.D., after being duly sworn, states under oath as follows:

1. My name is Joseph DeAlteris. I hold a Doctor of Philosophy in Marine Science (Estuarine Processes) from the College of William and Mary, as well as a Master of Arts in Marine Science (Coastal Processes) from the College of William and Mary and a Bachelor of Arts in Natural Science (Marine Biology) from Rutgers University. I have more than 50 years of professional experience, including almost a decade as a commercial fishermen and shellfish aquaculturist; and three decades as a Professor of Fisheries and Aquaculture at the University of Rhode Island. I was awarded Professor Emeritus status on my retirement 10 years ago. I have published numerous papers on shellfish aquaculture, and have many former students that are now operating successful shellfish aquaculture farms and working as aquaculture extension agents at state institutions in New England. My professional experience and qualifications are further detailed in my abbreviated resume previously submitted to the Maine Department of Marine Resources (“MDMR”) with intervenors Concerned Citizens of Bustins Island and Flying Point’s (“CBIFP”) Expert Witness Designation, dated May 16, 2023.

2. I present this testimony on behalf of certain intervenor CCBIFP in support of their opposition to the Bailey Coffin standard aquaculture lease application submitted to MDMR for a lease site between Bustins Island and Sow and Pigs Island in Freeport, Maine.

3. In or about February 2022, I was retained by a group of concerned landowners in Freeport, Maine known as Protect the Passage to review the standard aquaculture lease application submitted to MDMR by Bailey Coffin for a lease of 6.83 acres of subtidal bottom between west of Sow and Pigs Island, in Casco Bay, Freeport, Cumberland County, Maine. Ms. Coffin's application was deemed complete by MDMR on May 17, 2021. I am familiar with this area on the west side of upper Casco Bay, just north of Bustins Island, and most recently visited this area during the summer of 2022.

4. In addition to reviewing the Bailey Coffin lease application, I have also reviewed the MDMR Site Review report prepared by Flora Drury, Marcy Nelson, and Cheyenne Adams dated January 22, 2022. The MDMR Site Review report is comprehensive and presents data collected during their site visits, but only draws some limited conclusions with regard to the MDMR's aquaculture leasing criteria. In my professional opinion, the MDMR report underestimates the impacts of the proposed lease especially on the eelgrass beds both within and adjacent to the proposed lease area. Additionally, the MDMR Site Review report does not fully address the impacts of the lease on other commercial fishing activities in the area and potential impacts of the lease on navigation.

5. I have also reviewed the MDMR criteria for determining the suitability of an aquaculture operation for a particular area (MDMR Regulations Chapter 2.37(A)), the eelgrass distribution maps available on the Maine DMR Historical Eelgrass viewer, the eelgrass survey report of Timothy Forrester, dated July 19, 2021, the recent Jan 2023 Maine Department of Environmental Protection ("MDEP") report entitled Casco Bay seagrass mapping prepared by Normandeau Associates (the "2023 MDEP Seagrass Report"), and the recent review of that

report by Timothy Forrester as part of his pre-filed testimony in this case submitted to MDMR in May of 2023.

6. My complete analysis of the Bailey Coffin aquaculture lease application, the results and conclusions of my review, and my professional opinions regarding the Bailey Coffin application based on the MDMR aquaculture leasing criteria are set forth in detail in my March 23, 2022 report entitled Critical Review and Some Recommendations Regarding the Standard Lease Application of Bailey Coffin for the Bottom and Suspended Culture of Shellfish on 6.83 Acres of Bottom West of Sow and Pigs Island in Casco Bay, Freeport, Cumberland County, Maine (the “DeAlteris Report”). A true and accurate copy of the DeAlteris Report has been submitted to MDMR as CCBIFP’s **Exhibit 3** and is expressly incorporated into my pre-filed testimony by reference.

7. The purpose of the DeAlteris Report was to provide additional interpretation of the MDMR data contained Site Review Report, Bailey Coffin’s lease application, and other data and information reviewed with respect to the MDMR aquaculture leasing criteria.

8. Based on my review of the Bailey Coffin application, the MDMR Site Review report, the MDMR eelgrass maps for the 1990s and 2000s, the eelgrass survey report by Mr. Forrester, and my professional experience as an educator, researcher, and outreach specialist at the University of Rhode Island for 30 years, I offer several professional opinions regarding the Bailey Coffin Application based on the MDMR aquaculture leasing criteria, including but not limited to the recommendation that the Bailey Coffin aquaculture lease application be denied.

I. Interference with Existing Support System – Eelgrass.

9. Based on the 2022 MDMR Site Review report and the 2021 Forrester Eelgrass Survey, eelgrass was observed within the proposed lease area. This is contrary to the statements

made in Bailey Coffin's 2021 application. Specifically, eelgrass beds were observed near the southeast corner and the southern and western portions of the proposed lease area. Exposed eelgrass rhizomes with occasional blades were also observed in the southern half and center of the proposed lease area. Although the majority of the areas within the proposed lease area where eelgrass blades and rhizomes were observed is proposed to be free of gear, the three southern-most proposed lines of bottom cages and the eastern-most proposed line of cages would overlap with areas where MDMR staff observed exposed rhizomes. *See also* Exhibit 3 at 5-8.

10. The historical presences of eelgrass in and around the proposed lease area is well-documented. Historical Eelgrass Coverage maps maintained by MDMR show an abundance of eelgrass in and around the proposed lease area in the 1990s and 2000s and shows the gains in density and extent of eelgrass in the same period. *See also* Exhibit 3 at 6-8. It also must be noted that the results of the 2023 MDEP remote sensing survey (based on data collected in 2022) in the 2023 MDEP Seagrass Report did not identify eelgrass in the proposed lease area, however as this survey was based on analysis and interpretations of aerial photography similar to the historical surveys in the 1990s and 2000s. Because the 2022 MDEP survey and the 2023 MDEP Seagrass Report did not include on-site, in-situ observations within the proposed lease area, this survey is not deemed as accurate as the observations reported in the 2022 MDMR site review or the 2021 Tim Forrester report. Analyses of remote sensing data must always be accompanied by ground truthing when addressing small scale issues, and the MDEP survey did not include onsite observations within the proposed lease area.

11. Eelgrass is considered an essential fish habitat by National Oceanic and Atmospheric Administration National Marine Fisheries Service ("NOAA Fisheries"), because of its high habitat value to juvenile fish. Given the significance and diversity of the functions and

services it provides, seagrass has been determined to be one of Earth's most valuable ecosystems. *See also* Exhibit 3 at 4.

12. Submerged aquatic vegetation ("SAV"), like eelgrass, has been in decline in Maine in the last two decades for a number of reasons, mostly related to the invasive green crab, habitat degradation, and disease. In many states the general protocol regarding shellfish farming and SAV is to avoid, minimize and mitigate. In New England, the U.S. Army Corps of Engineers ("USA CoE") has established guidance for its review of projects that may impact SAV. That guidance established a policy with regard to eelgrass restoration. The guidance notes that the long-term sustainability of conditions suitable for SAV is key to successful eelgrass mitigation and restoration. The USA CoE recommends that creation of a 100-meter buffer around existing beds to minimize impacts from any activities to provide the opportunity for existing eelgrass beds to expand naturally. Eelgrass restoration is best accomplished where eelgrass has been documented to exist previously (historical presence) and where there are nearby eelgrass beds that can provide seed. *See also* Exhibit 3 at 4.

13. Shellfish culture activities, like those proposed by Bailey Coffin in her aquaculture leas application, are considered to negatively impact healthy eelgrass beds. In particular, on-bottom aquaculture competes for space with eelgrass and will destroy eelgrass beds. Off-bottom aquaculture reduces the availability of light to eelgrass beds, and again reduces the viability of the eelgrass. *See also* Exhibit 3 at 5.

14. As noted by MDMR in its Site Review report, some of the harvest techniques Bailey Coffin proposes to conduct throughout the lease, including rake, drag, and clam hoe harvest, would also pose a threat to the existing eelgrass beds and associated rhizome system via physical disturbance and sedimentation. These activities should be prevented throughout the

lease area to ensure that existing eelgrass would not be damaged, and further eelgrass reestablishment throughout the proposed area would not be hampered. *See also* Exhibit 3 at 8-9.

15. The Bailey Coffin lease application also indicates that she intends to use onsite power washing to remove biofouling from her aquaculture gear. The practice of onsite cleaning the shellfish aquaculture gear results in the release of biofouling organisms into the water column and onto the seabed, which further exacerbates the degradation of the existing eelgrass beds. This practice results in the loading of the water column with suspended materials that reduces light penetration and thus negatively impacts eelgrass. The materials released by onsite cleaning of shellfish gear eventually settles onto seabed, reducing oxygen and burying eelgrass vegetation. Best management practices for shellfish aqua culturists state that onsite cleaning of aquaculture gear should be avoided. *See also* Exhibit 3 at 9.

16. As set forth in detail in the DeAlteris Report, given extent of eelgrass observed in the southern and western portions of the proposed lease area and the historical presence of eelgrass throughout the proposed lease area in the recent past, I recommend that the Bailey Coffin aquaculture lease application be denied. *See also* Exhibit 3 at 9.

17. It is not sufficient to simply reduce the size of the lease to protect the existing eelgrass because the proposed lease overlaps areas that have had a historical presence of eelgrass, and the proposed lease would preclude the natural restoration of eelgrass to the area. *See also* Exhibit 3 at 10.

18. Furthermore, given the proposed use of power washing, and the potential for biofouling removed by onsite power washing to negatively impact existing eelgrass habitat, I believe that the 25-foot setback between eelgrass and aquaculture activity recommended by

MDMR in its Site Report to be inadequate to prevent unreasonable interference with existing eelgrass beds. *See also* Exhibit 3 at 9.

II. Interference with other commercial and recreational fishing.

19. The MDMR Site Review report notes that during site visits in 2021, the survey team observed live Northern quahogs and European oysters within the proposed lease area in the approximate location of the raft /float proposed by Bailey Coffin in her application to MDMR. The MDMR report also notes the presence of lobster buoys within the proposed lease area. The Eelgrass Survey by Timothy Forrester also noted presence of striped bass fining at the surface in the shallow areas of the proposed lease site. These natural populations of wild shellfish, lobsters and finfish will become unavailable to commercial and recreational harvesters and fishermen, if the proposed lease is approved. *See also* Exhibit 3 at 9-10. Accordingly, for this, and other reasons discussed herein, I recommend that the Bailey Coffin aquaculture lease application be denied.

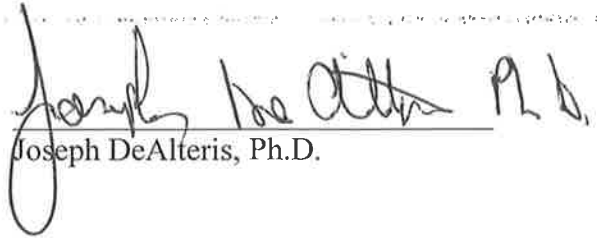
III. Interference with Riparian Ingress and Egress and Navigation.

20. The MDMR Site Review provides a clear description of the issues of concern with respect to the impact of the proposed lease on ingress/egress of riparian owners and navigation. In particular the proposed lease with bottom gear in the shallow, northern portion of the proposed lease will interfere with riparian access to Sow and Pigs Island. Additionally, the commercial ferry that operates out of the northwestern tip of Bustins Island regularly crosses the proposed lease, and at lower stages of the tide, the proposed lease would interfere with the navigation of the ferry. Accordingly, for this, and other reason discussed herein, I recommend that the Bailey Coffin aquaculture lease application be denied.

21. In conclusion, it is my professional opinion that the Bailey Coffin lease application should not be granted as proposed due to the presence of eelgrass within the proposed lease area. It is not sufficient to simply reduce the size of the lease to protect the existing eelgrass because the proposed lease overlaps areas that have had an historical presence of eelgrass, and the proposed lease would preclude the natural restoration of eelgrass to the area. Additionally, the proposed lease will interfere with riparian access and navigation, as well as preclude access of commercial and recreational fishermen to existing, documented natural populations of shellfish, lobsters and finfish on the proposed lease area.

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Dated: May 16, 2023



Joseph DeAlteris, Ph.D.

COMMONWEALTH OF VIRGINIA
COUNTY OF Accomack, ss.

Personally appeared before me this 16 day of May, 2023, the above-named Joseph DeAlteris, Ph.D. and made oath as to the truth of the foregoing pre-filed testimony.

Before me,



Notary Public / Attorney at law
My commission expires: 8-31-23

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