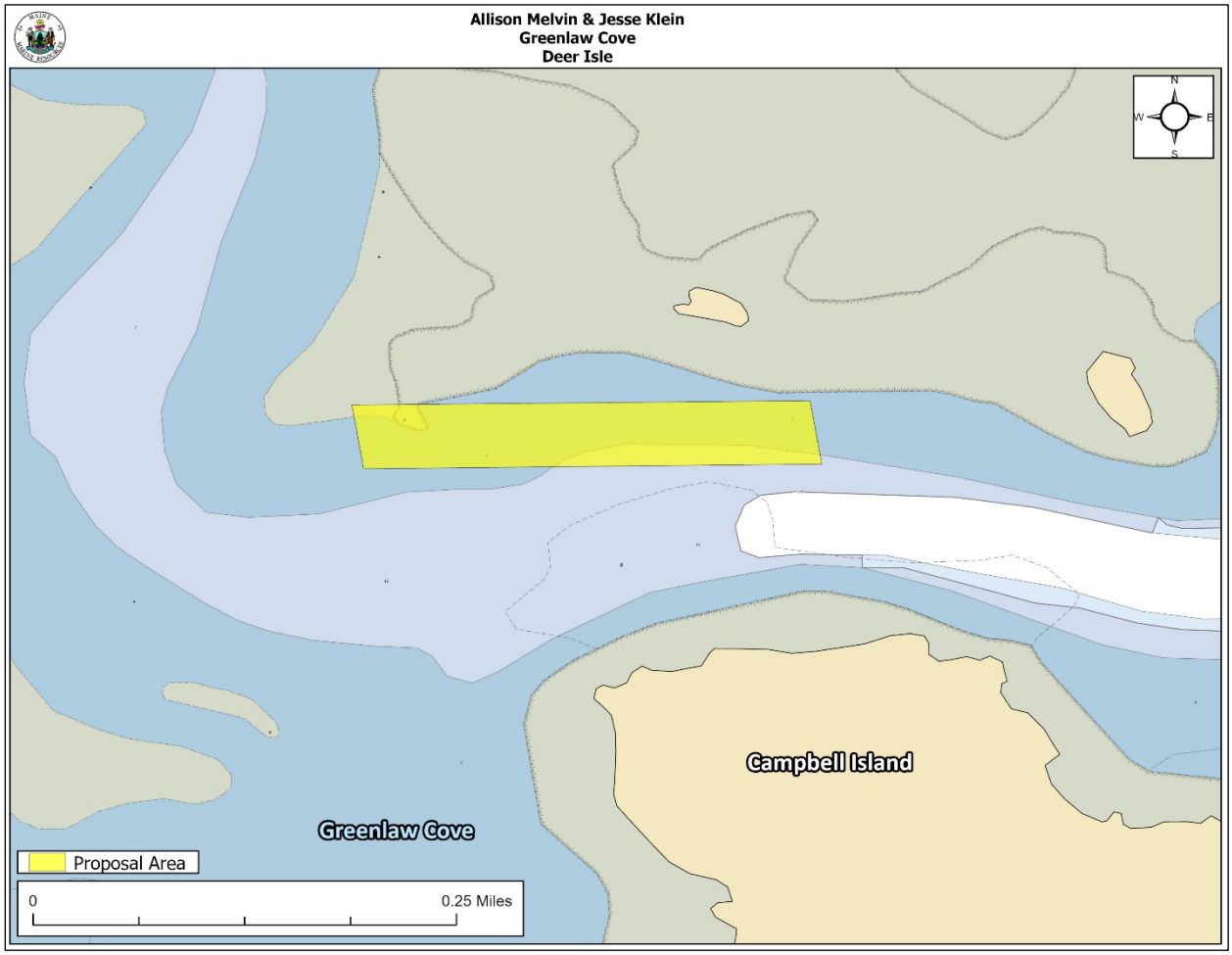

Figure 1. Vicinity map.[1]

Location: Greenlaw Cove, Deer Isle, Hancock County, Maine

Purpose: Standard lease for suspended culture of American/eastern oyster (*Crassostrea virginica*).

Site Review: Geoffrey Shook and Katie Von Hohenleiten
Report Preparation: Geoffrey Shook and Meryl Grady

[1] Unless otherwise noted, all figures in this report were created in ArcGIS Pro version 3.3 using digitized NOAA Nautical Charts or geo-referenced aerial photographs provided by Esri (Firefly).

Application Overview

The applicants, Allison Melvin and Jesse Klein, are requesting a 4.67[2]-acre, 20-year, standard lease in Greenlaw Cove in Deer Isle for the suspended culture of American/eastern oyster (*Crassostrea virginica*). The applicants intend for the site to be active year-round. Oyster cages and bags are intended to be on the surface and tended from April 1- November 30. All gear, other than marker buoys, is intended to be submerged to the seafloor from December 1- March 31. The applicants currently operate Limited Purpose Aquaculture (LPA) sites JKLE322, JKLE422, JKLE522, and JKLE622 within the proposal boundaries (Figure 4). If the proposal is granted, the LPAs would be relinquished.[3]

General Characteristics

On August 19, 2025, Department of Marine Resources (DMR) scientists visited the proposed lease site. DMR scientists arrived on site at approximately 2:00 PM. The proposal is located in subtidal waters in Greenlaw Cove approximately 395 feet north of Campbell Island at mean low water (MLW) (Figure 1). Campbell Island was observed to have a rocky coastline leading to primarily coniferous uplands. Directly to the north of the proposal is an intertidal sand and gravel bar that connects with a small, unnamed island containing some small shrubs approximately 25 feet to the north at MLW.

Depth

On August 19, 2025, DMR scientists began collecting depths at the proposed site at approximately 2:02 PM. It was immediately after low tide with the most recent low tide occurring at 2:01 PM (Table 1). Depths were determined to be between 2.0-11.3 feet at the proposal corners. Correcting for tidal variations derives depths at MLW (0.0 feet) to be approximately 0.9-10.2 feet at the proposal corners. Approximate depths at mean high water (MHW, 9.9 feet[4]) are between 10.8-20.1 feet at the proposal corners (Table 2). Water current was flowing to the west at the time of the site visit. At the time of the site visit, there was an intertidal rock exposed within the proposal area in the northwest portion of the proposal (Image 1, Figure 2). Nautical charts indicate that approximately 0.19 acres of the northwest quadrant of the proposal is intertidal (Figure 1). However, observations and depths collected by DMR scientists indicate that the proposal is subtidal at MLW other than the one indicated intertidal rock.

Table 1. Predicted tidal heights in Oceanville, Deer Isle, Maine.[5]

Date	Time	Height (ft)
2025/08/19	01:51 AM	0.1 L
2025/08/19	08:07 AM	9.1 H
2025/08/19	02:01 PM	1.1 L
2025/08/19	08:24 PM	10.8 H

[2] Applicant originally requested 4.74 acres. DMR calculations indicate the area is 4.67 acres.
[3] Application page 23
[4] MHW in Oceanville, Deer Isle, ME is 9.9 feet, NOAA Tide Station 8414249
[5] https://tidesandcurrents.noaa.gov/noaatidepredictions.html?id=8414249

Table 2. Collected and derived depths at corners of the proposed lease area.

Corner	Measured Depth (ft)	MLW Depth (ft)	MHW Depth (ft)
NW	2.0	0.9	10.8
NE	2.2	1.1	11.0
SE	11.3	10.2	20.1
SW	5.2	4.1	14.0

Image 1. Intertidal rock visible in northwest quadrant.

Bottom Characteristics

DMR scientists observed the bottom characteristics of the proposed lease site via a remotely operated vehicle (ROV). Bottom characteristics were categorized using the Coastal and Marine Ecological Classification Standard (CMECS), a national standard for describing features of the marine environment (Table 3). Sediment information was determined based on visual analysis of the video. The bottom of the proposed lease site is primarily composed of mud with areas of sheet algal bed.

Table 3. Bottom characteristics of the proposed site.

Substrate Origin	Substrate Class	Substrate Subclass	Substrate Group
Geologic Substrate	Unconsolidated Mineral Substrate	Fine Unconsolidated Substrate	Mud
Benthic/Attached Biota	Aquatic Vegetation Bed	Benthic Macroalgae	Sheet Algal Bed

Position and Distances to Shore

The geodesic measuring tool in ArcGIS Pro 3.3 was used to verify the distances and bearings between proposed lease corners. Distances to shore were determined using the measuring tool in ArcGIS Pro 3.3, a nautical chart provided by the National Oceanic and Atmospheric Administration (NOAA), and the application coordinates (Table 4, Figure 2,3).

Application Coordinates (WGS84) – 4.67 Acres

Corner	Latitude	Longitude					
NW	44.227668°	-68.617367°	then	1,025	feet at	90°	True to
NE	44.227704°	-68.613457°	then	199	feet at	172°	True to
SE	44.227163°	-68.613356°	then	1,025	feet at	269°	True to
SW	44.227123°	-68.617267°	then	200	feet at	352°	True to NW

Table 4. Approximate distances from proposal corners to surrounding features (Figure 2,3).

Feature	Distance
NW corner to charted Deer Isle shoreline at MLW	~840’ to west
SW corner to charted Deer Isle shoreline at MLW	~830’ to the west
SW corner to Campbell Island at MLW	~755’ to the southeast
SE corner to Campbell Island at MLW	~395’ to the south
SE corner to unnamed island at MLW	~485’ to the east-northeast
NE corner to unnamed island at MLW	~470’ to the east

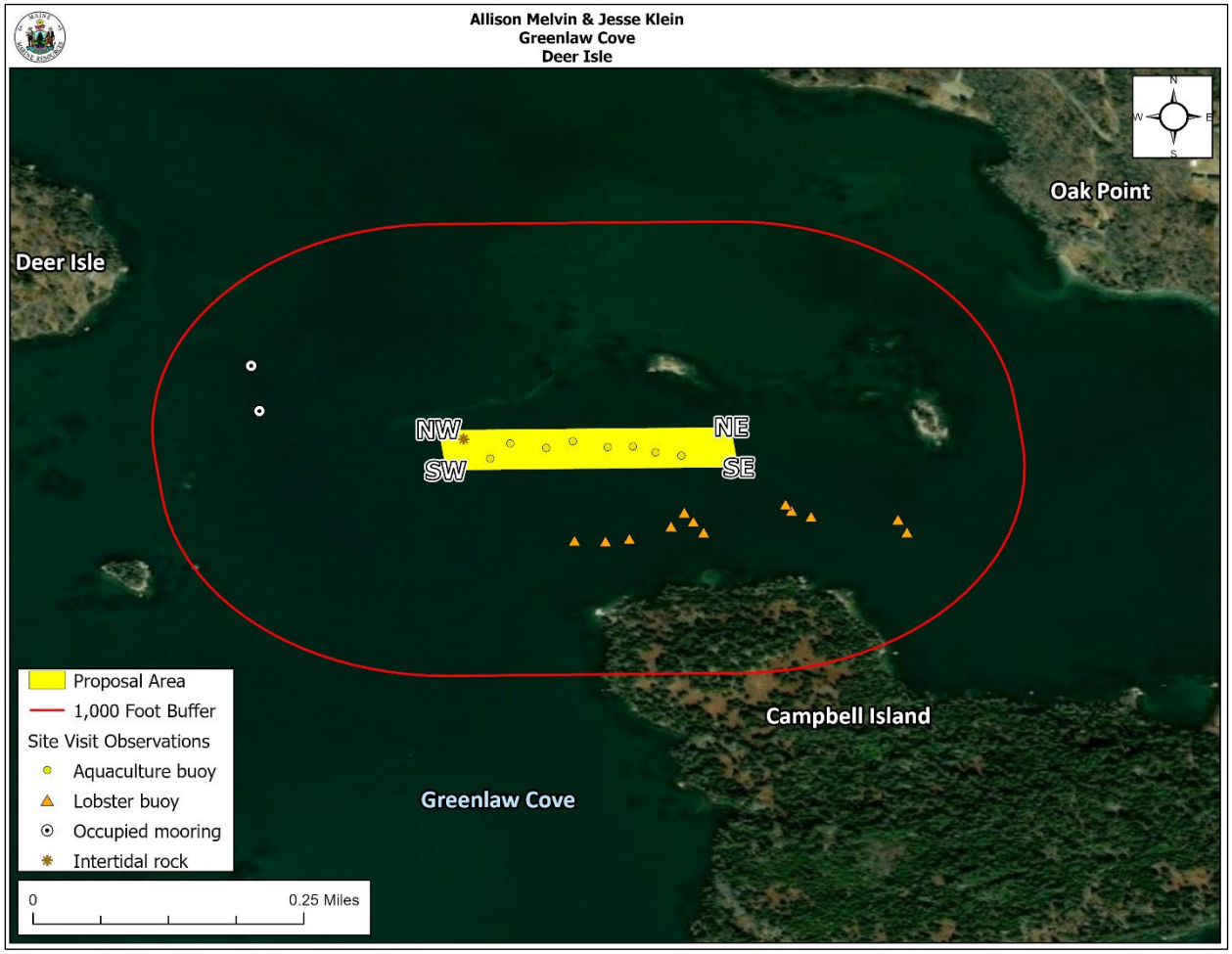

Figure 2. Proposed lease area with site visit observations.

Pursuant to statute and regulation, aquaculture leases are evaluated in consideration of applicable decision criteria. The Site Report documents DMR's observations of the area and other information, in consideration of those criteria, as noted below:

(1) Riparian Ingress and Egress

During the site visit, DMR scientists did not observe any residential properties, piers, or docks within the vicinity of the proposal. Two moorings were observed approximately 632 feet and 724 feet to the northwest of the proposal (Figure 2). At the time of the site visit, one mooring was occupied with an approximate 20-foot powerboat and the other was occupied with an approximate 15-foot sailboat.

A Harbormaster Questionnaire was received by DMR on November 28, 2023. The Harbormaster Questionnaire stated there are no permitted moorings within the boundaries of the proposal and riparian owners should not be affected.

(2) Navigation

The proposal is located along the northern shore of Greenlaw Cove. There is approximately 395 feet of navigable water between the southern boundary of the proposal and Campbell Island to the south. The proposal is situated in shallow water, with a deeper water channel to the south. The center of the deeper water channel is approximately 150 feet south of the proposal (Figure 3).

During the site visit, DMR scientists did not observe any vessels navigating in Greenlaw Cove or within the vicinity of the proposal, other than the applicants tending their LPAs.

The Harbormaster Questionnaire indicated the proposal would have no anticipated impact on navigation in the area. Additionally, the area in the vicinity of the proposal is not a traditional storm anchorage location.

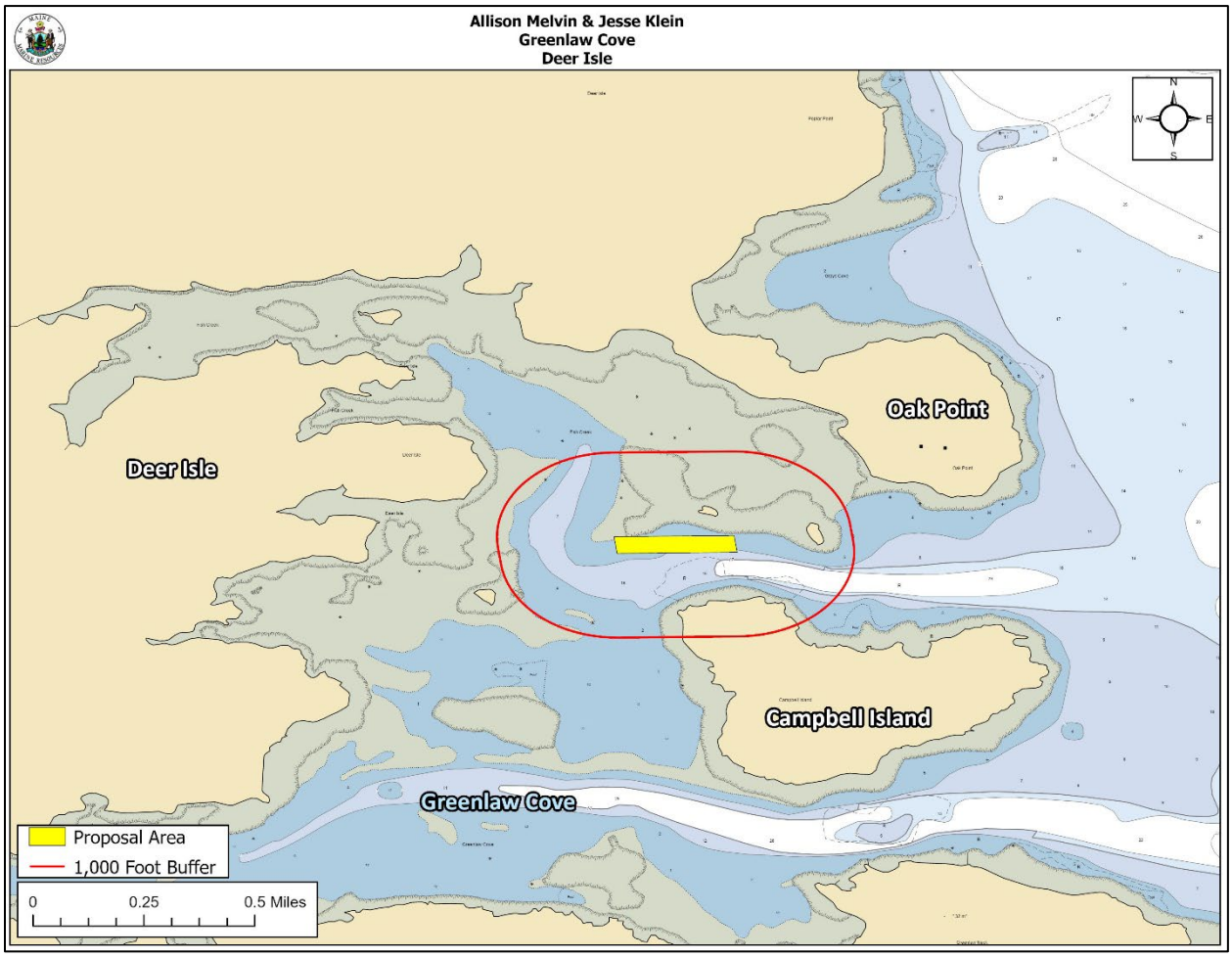

Figure 3. Navigational channels in the vicinity of the proposed lease area.

(3) Fishing and Other Uses

During DMR's site visit, scientists observed 12 lobster buoys within the vicinity of the proposal. The closest buoy was located approximately 213 feet to the south (Figure 2). No other commercial or recreational fishing activity was observed.

The Harbormaster Questionnaire indicated the area in the vicinity of the proposal is not used for commercial fishing, and not aware of recreational use in the area.

(4) Other Aquaculture Uses

There are four LPAs located within the proposal boundaries. JKLE322, JKLE422, JKLE522, and JKLE622 are operated by the applicant and would be relinquished if the proposal is granted. There are no active or pending leases within 1,000 feet of the proposal (Figure 4).

At the time of the site visit, DMR scientists observed eight buoys related to aquaculture within the vicinity of the proposal (Figure 2).

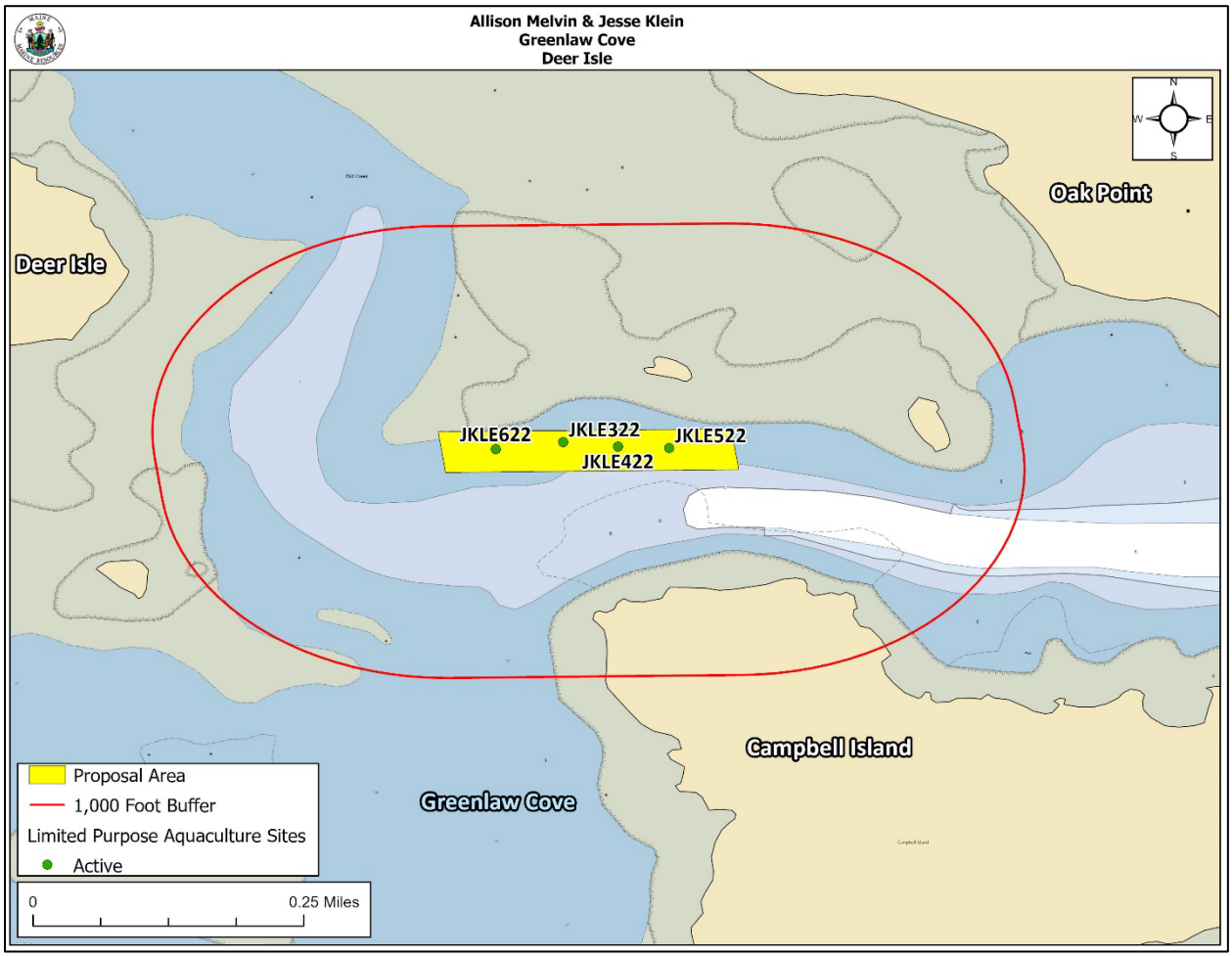

Figure 4. Aquaculture leases and LPA licenses in the vicinity of the proposed lease area.

(5) Existing System Support

Epibenthic Flora and Fauna

DMR scientists utilized an ROV to assess the epibenthic ecology of the proposed lease. The relative abundance of epibenthic flora and fauna observed in the video footage is described below in Table 5.

Table 5. Species observed on underwater video footage.

Species Observed	Abundance
Common periwinkle (*Littorina littorea*)	Common
Acadian hermit crab (*Pagurus* sp.)	Common
American oyster (*Crassostrea virginica*)	Occasional

Eelgrass (*Zostera marina*)

Records of seagrass collected by the Department of Environmental Protection (DEP) in 2024[6] indicate the nearest mapped eelgrass is approximately 855 feet east of the proposal (Figure 5).

During DMR's site visit and on underwater video footage, scientists did not observe any eelgrass within the boundaries or in the vicinity of the proposal.

[6]Data obtained from The Maine Office of GIS "GISVIEW.MEDEP.Seagrass2024". Widgeon grass was observed only in tidally restricted water bodies on North Haven and in the upper reaches of the Bagaduce River. Eelgrass was the dominant vascular species in all other locations. This is the most current record of mapped eelgrass within the vicinity of the proposal.

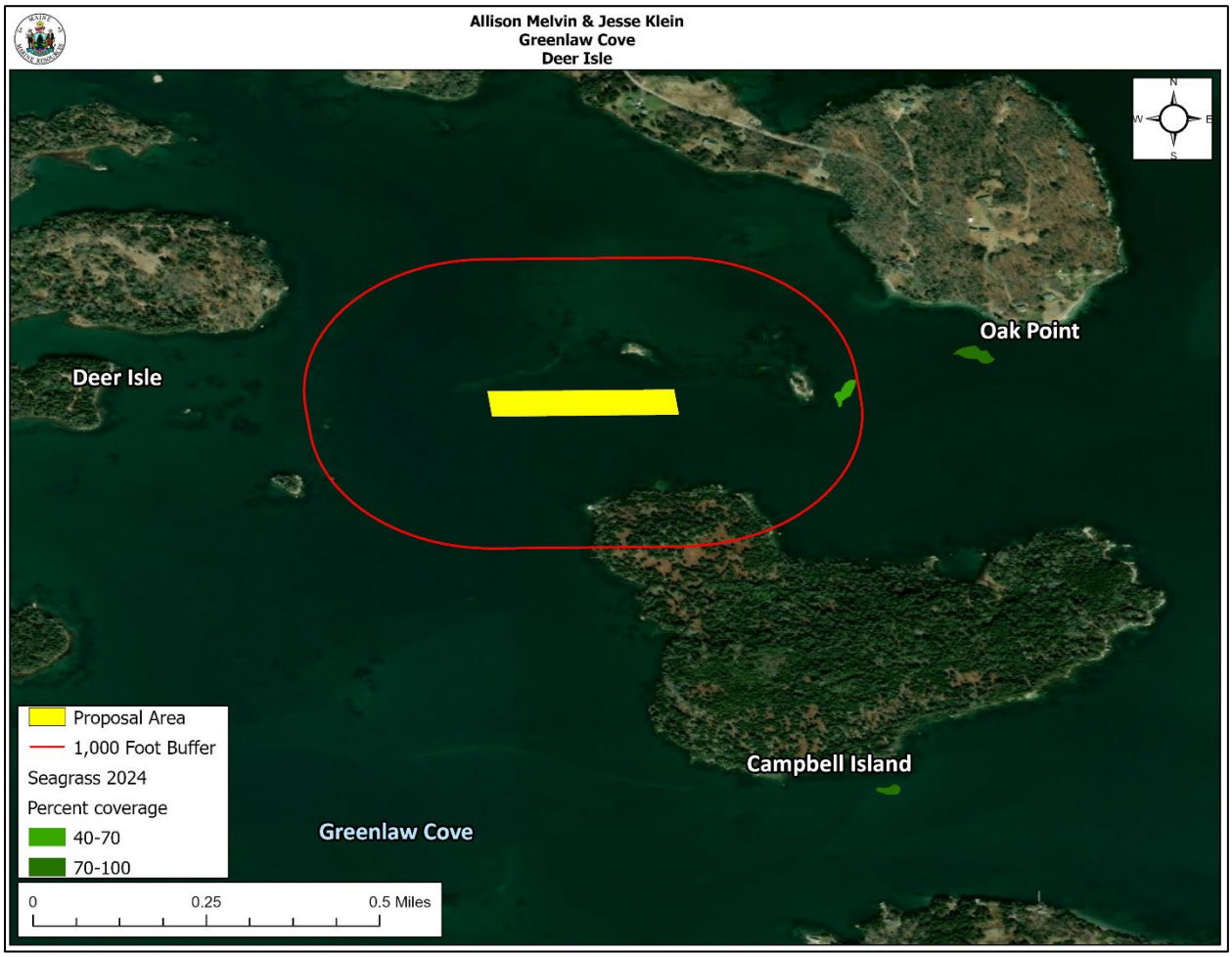

Figure 5. Mapped eelgrass (*Z. marina*) in the vicinity of the proposed lease area.

Wildlife

During the site visit, DMR scientists observed common tern (*Sterna hirundo*), double-crested cormorant (*Nannopterum auritum*), great cormorant (*Phalacrocorax carbo*), and herring gull (*Larus argentatus*) in the general vicinity of the proposal.

The Department of Inland Fisheries and Wildlife (IFW) has jurisdiction over inland fisheries and wildlife resources of the State. IFW also has the authority to conserve wildlife populations and their ecosystems through applicable state laws and rules. DMR provides IFW with notice and the opportunity to comment on all complete lease applications. In addition, the Site Report also includes IFW designated and mapped habitat types that are within 1,000 feet of the lease proposal, if applicable.

According to Geographic Information System (GIS) data maintained by IFW and available through the Maine Office of GIS (MEGIS), there is one mapped habitat type within 1,000 feet of the lease proposal. The proposal is located entirely within tidal waterfowl and wading bird habitat (TWWH) (Figure 6).

Though bald eagles are no longer listed on Maine's Endangered and Threatened Species List, the United States Fish and Wildlife Service (USFWS) may also have jurisdiction over the management and conservation of the species based on applicable law and rule. Data collected by USFWS in 2023 by aerial nest survey shows there is no mapped bald eagle nesting site within the vicinity of the proposal. The nearest bald eagle nest is mapped approximately 2,392 feet to the south of the proposal (Figure 6).

IFW was provided with the opportunity to comment on this proposal. On January 1, 2024, a Resource Biologist with IFW responded by email to a "Request for Agency Review and Comment" stating that aquaculture farms can become foraging hotspots for sea ducks. If total exclusion nets are used, then IFW recommends a maximum mesh size of six inches with at least 3mm twine to exclude eiders (*Somateria mollissima*), and a maximum mesh size of four inches with at least 3mm twine to exclude scoters (*Melanitta* spp.). IFW also recommends that barges and boats should not ground out on reefs, aquatic beds, and mud flats. Float size and project footprint should be the minimum size necessary to minimize impacts on waterfowl and wading bird populations [7]

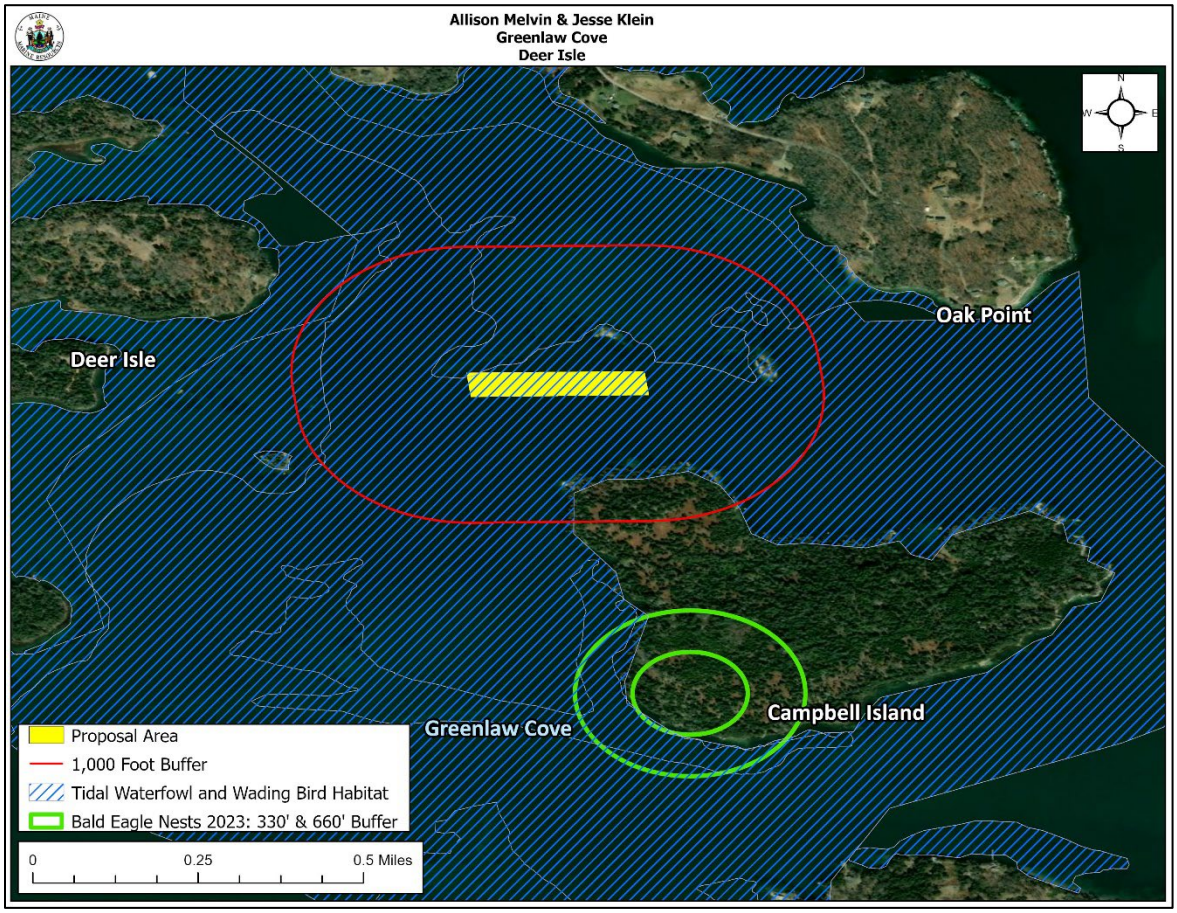

Figure 6. Mapped habitats in the vicinity of the proposed lease area. [8]

[7] Email correspondence between IFW and DMR

[8] Data obtained from USFWS "Bald_Eagle_Nests_-_Maine_2023" and IFW "EHRTERN", "EHPLVTRN", "GISVIEW.MEIFW.Twwh", "ShorebirdAreas", and "SNI".

(6) Interference with Public Facilities

The proposed lease is not within 1,000 feet of any conserved lands, beach, park, or docking facility, owned by federal, state, or municipal governments.

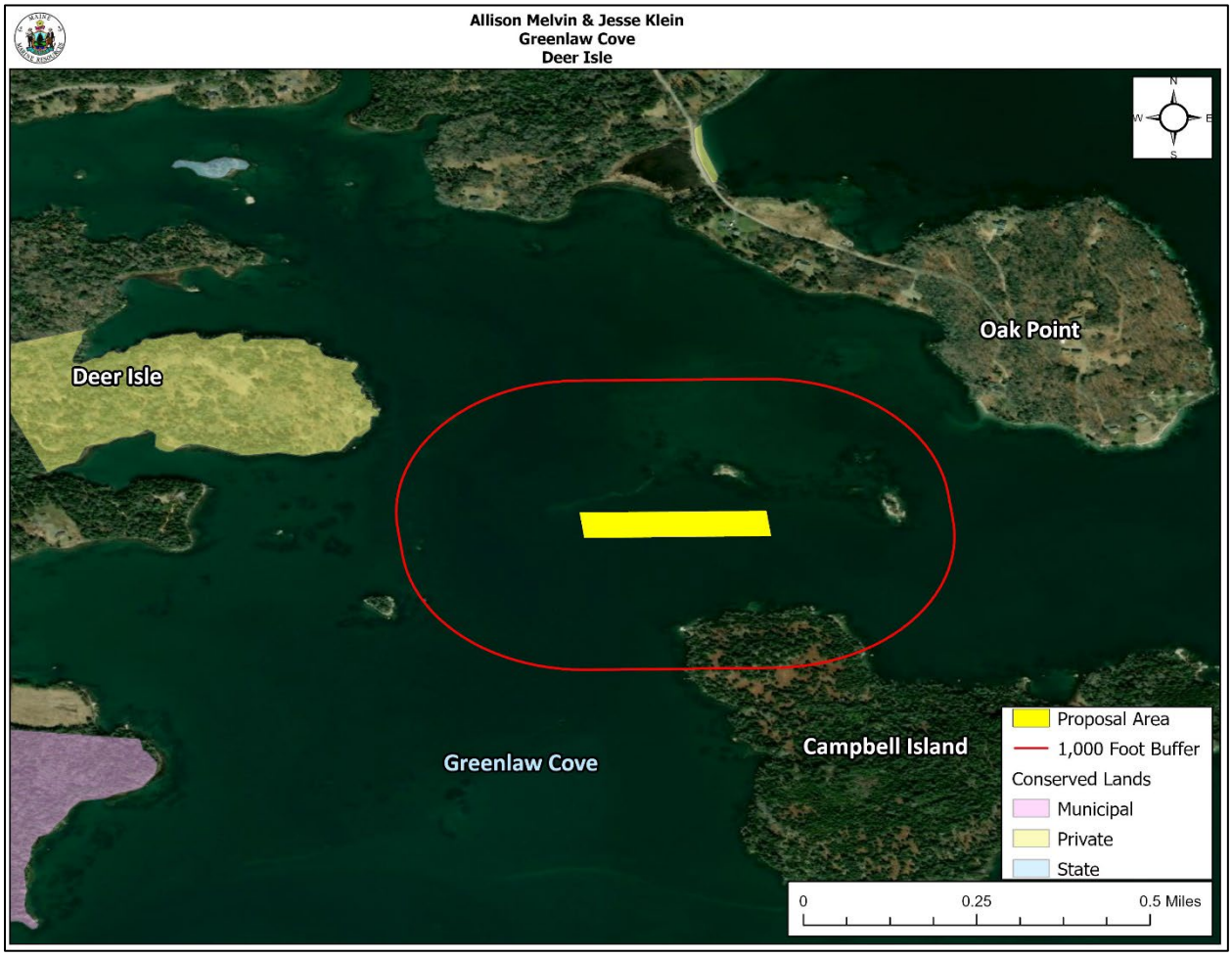

Figure 7. Public facilities near the proposed lease site.[9]

(7) Water Quality

The proposed lease is currently located within an area classified as Approved by the DMR Bureau of Public Health and Aquaculture.

[9] Data obtained from The Maine Office of GIS "GISVIEW.MECONSLANDS.Conserved_Lands"