Keith and Ryan Miller (App 1) - West of Norton Island, St. George

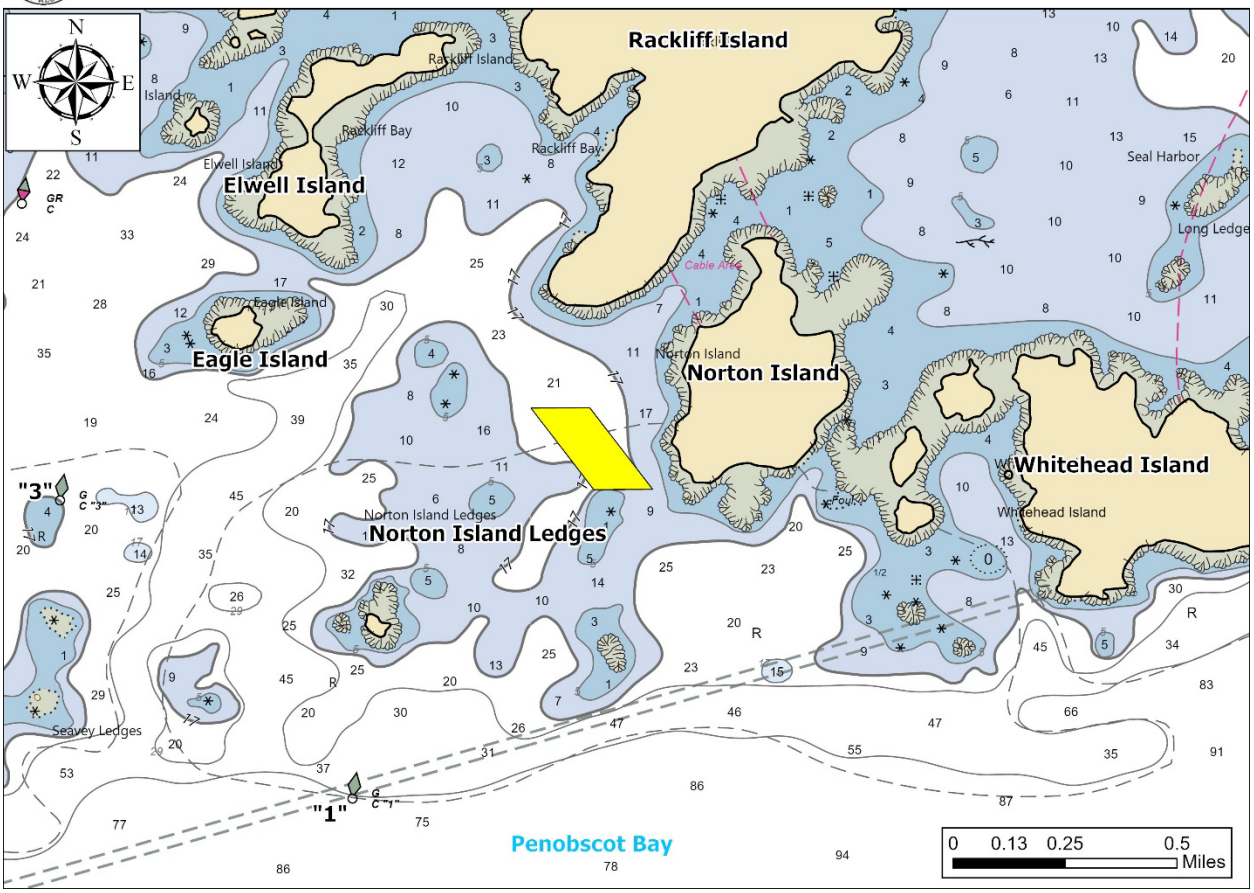

Figure 1. Vicinity map.[1]

Location: West of Norton Island, Penobscot Bay, St. George, Knox County, Maine

Purpose: Standard lease for suspended culture of sugar kelp (*Saccharina latissima*), skinny kelp (*Saccharina angustissima*), winged kelp (*Alaria esculenta*), horsetail/fingered kelp (*Laminaria digitata*), shotgun kelp (*Agarum clathratum*), Irish moss (*Chondrus crispus*), dulse (*Palmaria palmata*), laver (*Prophyra spp.*), *Gracilaria tikvahiae,* and sea lettuce (*Ulva lactuca*).

Site Review: Meryl Grady, Geoff Shook, and Katie von Hohenleiten
Report Preparation: Katie von Hohenleiten, Geoff 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 The Maine Office of GIS.

Application Overview

The applicants, Keith Miller and Ryan Miller, are requesting a 11.05[2] acre standard lease west of Norton Island in Penobscot Bay, St. George for the suspended culture of marine algae. The applicants currently operate experimental lease PEN NIx within a portion of the footprint of this standard lease proposal (Figure 4). The applicants are proposing an expansion from 3.85[3] acres to 11.05 acres. The proposal will be used seasonally to culture marine algae, but the applicants are proposing to leave mooring blocks, mooring chains and lines, and mooring buoys, as well as state required lease boundary markers, on the site year-round.[4]

General Characteristics

On May 15, 2025, Department of Marine Resources (DMR) scientists assessed the proposed lease site. DMR scientists arrived on site at approximately 10:20 AM. The proposal is situated approximately 200 feet west of Norton Island at mean low water (MLW). Norton Island has a rocky ledge coastline leading to forested, coniferous uplands. Rackliff Island, which is approximately 1,056 feet north of the proposal at MLW, has numerous residential homes with no piers observed.

Depth

On May 15, 2025, DMR scientists began collecting depths at the proposed site at approximately 10:20 AM. The tide was rising with next high tide predicted to occur at 1:45 PM (Table 1). Depths were collected at corners of the proposal and determined to be between 25.5 and 26.2 feet. Correcting for tidal variations derives water depths to be approximately 21.6 to 22.3 feet at MLW (0.0 feet). Approximate depths at mean high water (MHW, 9.8 feet[5]) at corners of the proposal are 31.4 to 32.1 feet (Table 2). Water current was determined to be flowing in a northerly direction at the time of the site visit.

Table 1. Predicted tidal heights in Tenants Harbor, Maine.[6]

Date	Time	Height (ft)
2025/05/15	1:02 AM	9.8 H
2025/05/15	7:28 AM	0.3 L
2025/05/15	1:45 PM	8.5 H
2025/05/15	7:28 PM	1.7 L

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

Corner	Measured Depth (ft)	MLW Depth (ft)	MHW Depth (ft)
NW	26.2	22.3	32.1
NE	25.8	21.9	31.7
SE	25.5	21.6	31.4
SW	25.7	21.8	31.6

[2] Applicant originally requested 11.1 acres. DMR calculations indicate the area is 11.05 acres.
[3] Experimental lease PEN NIx decision history page 1
[4] Application pages 7-8
[5] MHW in Rockland is 9.8 feet, NOAA Tide Station 8415490
[6] https://tidesandcurrents.noaa.gov/stationhome.html?id=8415809

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 gravel and shell rubble.

Table 3. Bottom characteristics of the proposed site.

Substrate Origin	Substrate Class	Substrate Subclass	Substrate Group
Geologic Substrate	Unconsolidated Mineral Substrate	Coarse Unconsolidated Substrate	Gravel Mixes
Biogenic Substrate	Shell Substrate	Shell Rubble	Not Classified

Position and Distances to Shore

The 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, Figures 2,3).

Application Coordinates (WGS84) – 11.05 Acres

Corner	Latitude	Longitude	
NW	43.98240°	-69.14998°	then 500 feet at 088° True to
NE	43.98241°	-69.14808°	then 1,098 feet at 151° True to
SE	43.97978°	-69.14605°	then 500 feet at 268° True to
SW	43.97977°	-69.14795°	then 1,098 feet at 331° True to NW

Table 4. Approximate distances from proposal corners to surrounding features (Figures 2&3).

Feature	Distance
NW Corner to Elwell Island shoreline at MLW	~2,276 feet to the northwest
NW Corner to Eagle Island shoreline at MLW	~2,175 feet to the northwest
NE Corner to Rackcliff Island shoreline at MLW	~1,056 feet to the north
NE Corner to Norton Island shoreline at MLW	~720 feet to the east
SE Corner to Norton Island shoreline at MLW	~200 feet to the east
SW Corner to green navigational can "1"	~4,168 feet to the southwest
SW Corner to small unnamed island shoreline at MLW	~2,055 feet to the southwest
SW Corner to closest rock charted marking Norton Island Ledges	~299 feet to the southeast

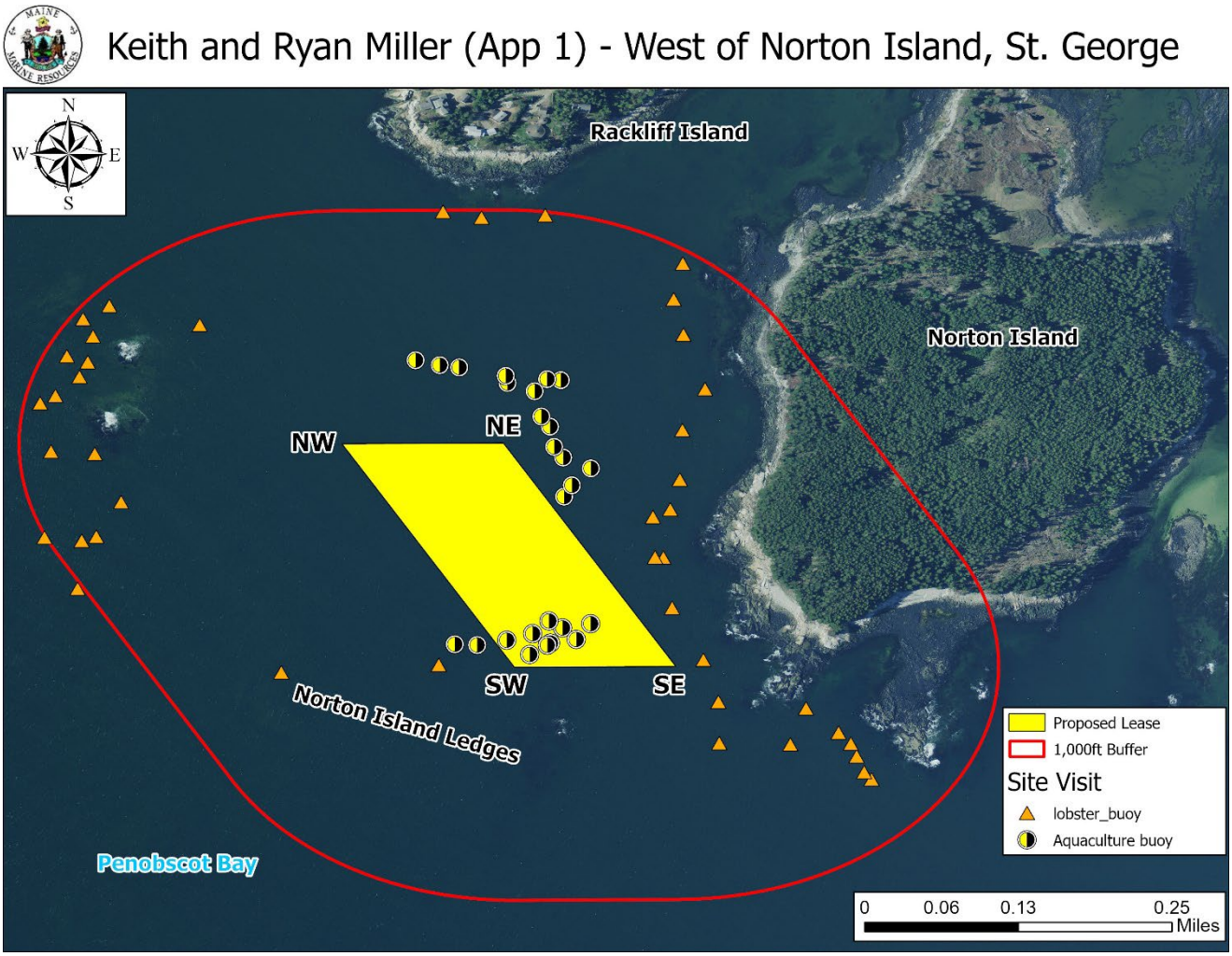

Figure 2. Proposed lease area with site visit observations.

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 observed approximately ten residential properties on Rackliff Island visible from the proposal. The shoreline of Rackliff Island is approximately 1,056 feet north of the proposal at MLW. No piers, docks, or moorings were observed associated with those properties during the site visit. Aerial imagery[7] indicates there is one pier with a dock approximately 2,050 feet north of the proposal on Rackliff Island. DMR did not observe any houses, docks, or moorings along the Norton Island shoreline during the site visit (Figure 2).

[7] Regional\orthoRegional2018

A Harbormaster Questionnaire was sent to the Town of St. George. DMR did not receive a response.

(2) Navigation

The proposal is located between Norton Island, which is approximately 200 feet east of the proposal at MLW, and Norton Island Ledges, which are approximately 299 feet south-southeast of the proposal. Due to the proximity of Norton Island Ledges and Norton Island, the area in the vicinity of the proposal would not be considered a primary navigational channel. The nearest navigational channel is marked by a small unnamed island, approximately 2,055 feet southwest of the proposal, and green navigational can "1" (Figure 3).

During the site visit, DMR observed one powerboat transiting to the west side of Elwell Island and one lobster boat that transited through the proposal.

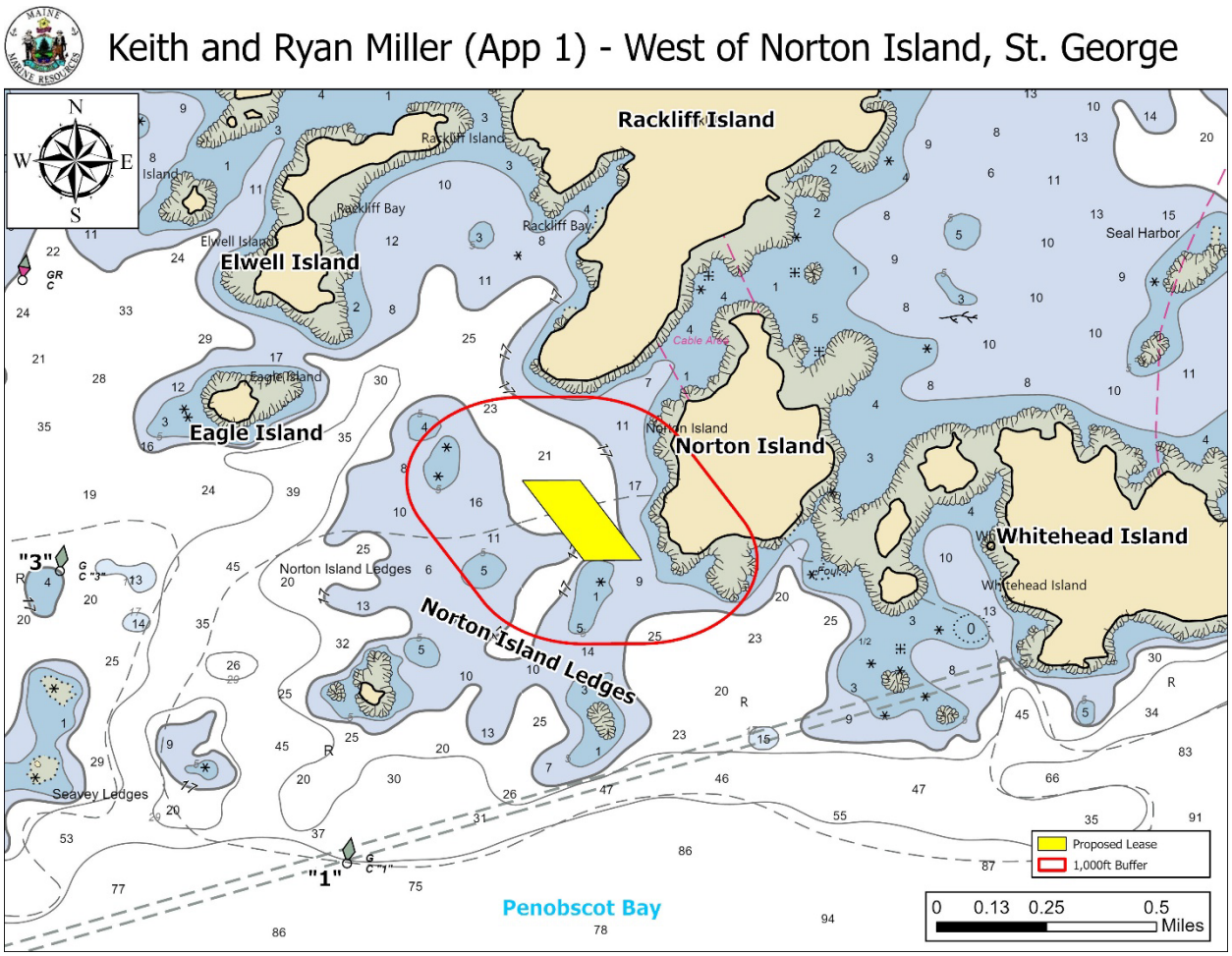

Figure 3. Navigational channels in the vicinity of the proposed lease area.

(3) Fishing and Other Uses

During DMR's site visit, no commercial or recreational fishing activity was observed within the boundaries of the proposed lease. There were approximately 43 lobster buoys observed in the vicinity of the proposal. The closest lobster buoy was approximately 91 feet east of the proposal. The remainder of the lobster buoys were primarily distributed along the shoreline of Norton Island and around Norton Island Ledges (Figure 2).

(4) Other Aquaculture Uses

The applicants currently operate experimental lease PEN NIx within the boundaries of this proposal. This standard lease proposal is intended to replace PEN NIx. There are no other aquaculture leases or limited purpose aquaculture (LPA) sites within 1,000 feet of the proposal. Experimental lease PEN RBx is held by Keith Miller and is approximately 1,740 feet northwest of this proposal. There is an application under review by DMR to convert PEN RBx into a standard lease approximately 1,395 feet northwest of this proposal. Experimental lease PEN SLx is held by Mark Miller and is approximately 2,400 feet west of this proposal. There is an application under review by DMR to convert PEN SLx into a standard lease approximately 2,140 feet west of this proposal. There is an experimental lease application submitted by Brian Tarbox that is under review by DMR approximately 2,300 feet southwest of this proposal (Figure 4).

All aquaculture buoys observed during the site visit were associated with PEN NIx (Figure 2). During the site visit, DMR scientists observed an active marine algae harvest underway on lease site PEN NIx.

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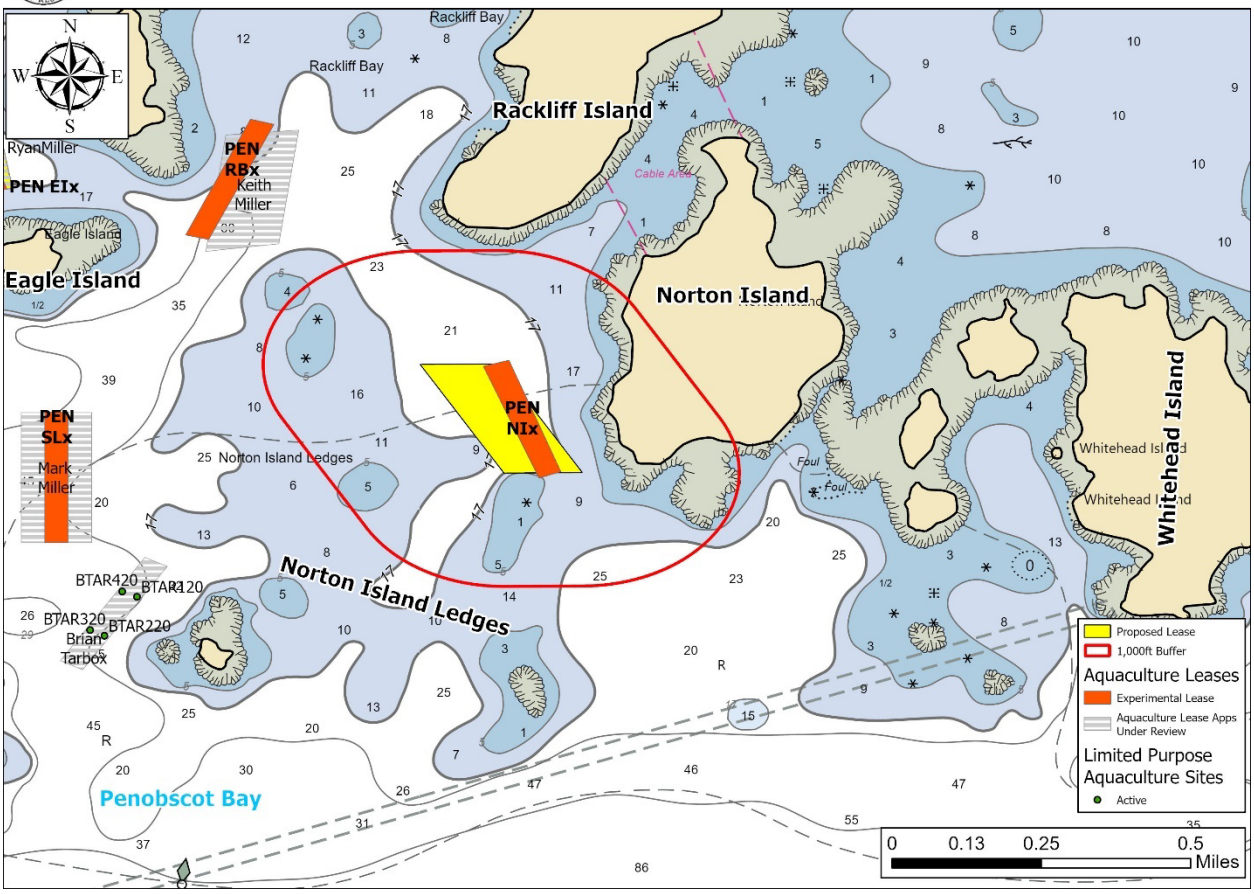

Figure 4. Aquaculture leases and LPA licenses in the vicinity of the proposed lease area.

(5) Existing System Support

Epibenthic Flora and Fauna

On May 15, 2025, 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 using underwater video footage.

Species Observed	Abundance
Sugar Kelp (*Saccharina latissima*)	Abundant
Rock weed (*Ascophyllum nodosum*)	Common
Dasysiphonia japonica	Common
Irish moss (*Chondrus crispus*)	Common
Shotgun kelp (*Agarum clathratum*)	Occasional
Fig sponge (*Suberites ficus*)	Rare

Eelgrass (*Zostera marina*)

Records of seagrass collected by the Department of Environmental Protection (DEP) in 2024 indicates mapped eelgrass presence in the vicinity of the proposal (Figure 5).[8] The closest patch of eelgrass is approximately 263 feet east of the proposal, situated by the southwest shoreline of Norton Island. No eelgrass was observed within the proposal boundaries during DMR's site visit.

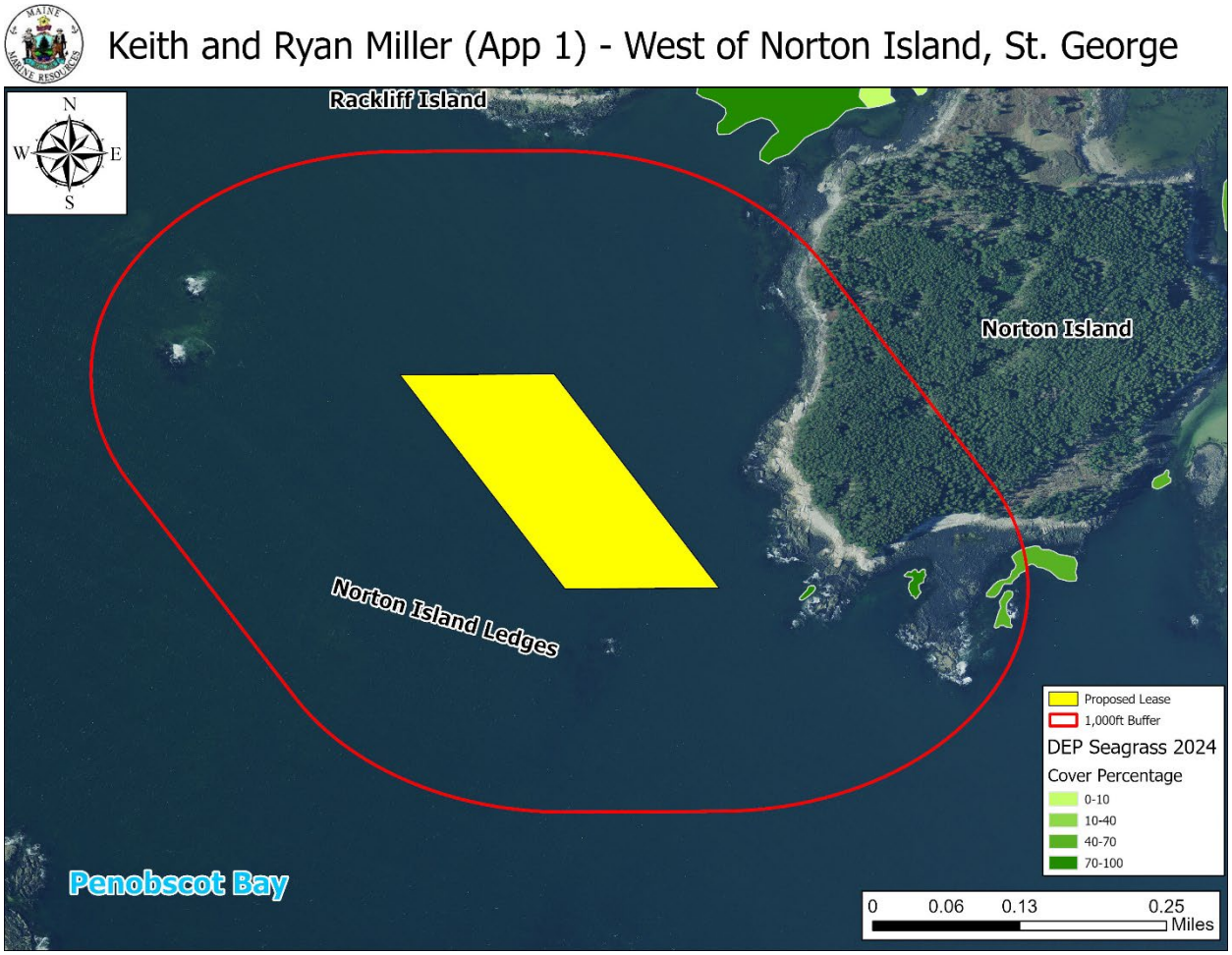

Figure 5. Mapped eelgrass (*Z. marina*) in the vicinity of the proposed lease area.

Wildlife

During DMR's site visit, scientists observed common eider (*Somateria mollissima*), lesser black backed gull (*Larus fuscus*), double-crested cormorant (*Nannopterum auritum*), common tern (*Sterna hirundo*), scoter (*Melanitta sp.*), harbor seal (*Phoca vitulina*), and long-tailed duck (*Clangula hyemalis*) in the general vicinity of the proposal.

[8] 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.

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 are no mapped habitat types within the vicinity of the proposal (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 in the vicinity of the proposal (Figure 6).

IFW was provided with the opportunity to comment on this proposal. On May 9, 2024, a Resource Biologist with IFW responded by email to a "Request for Agency Review and Comment" stating that minimal impacts to wildlife are anticipated for this project. [9]

[9] Email correspondence between IFW and DMR

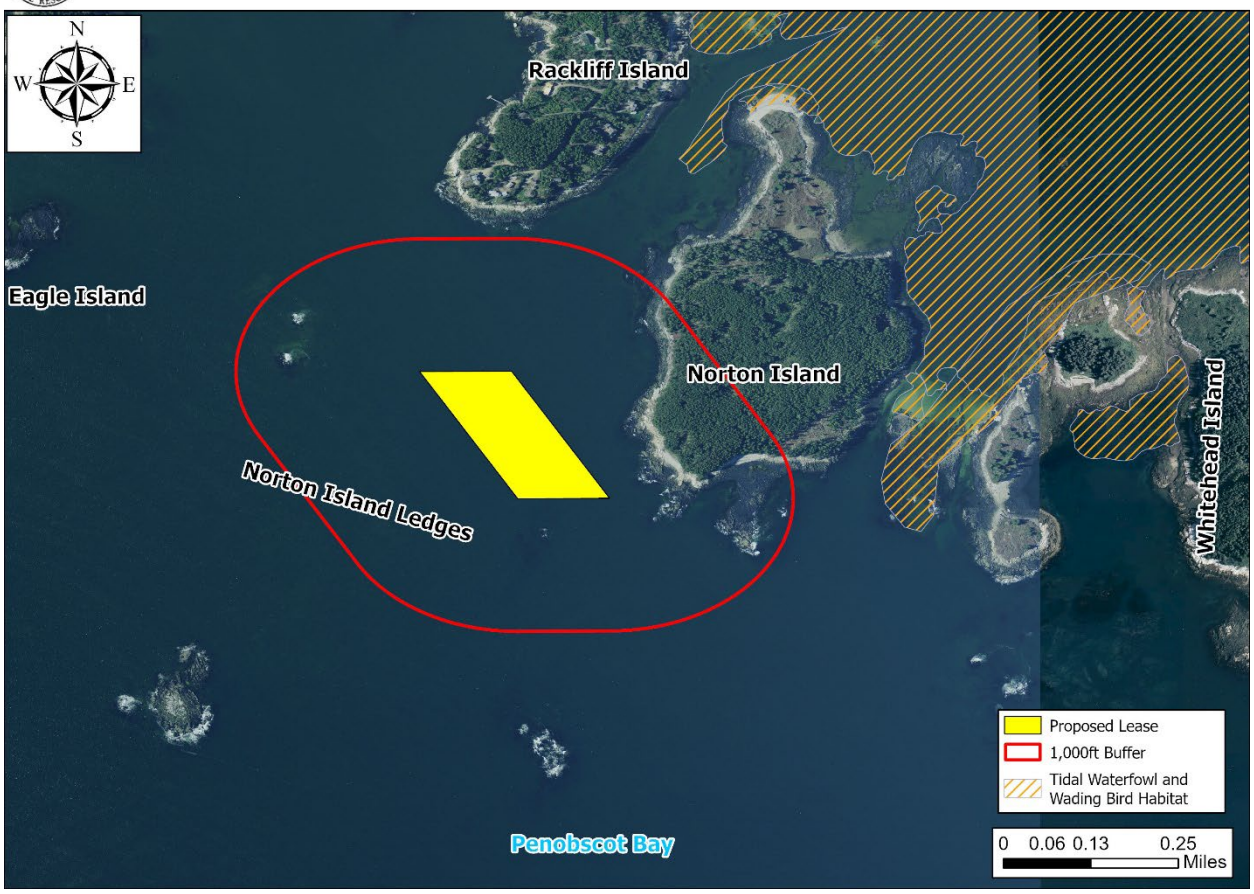

Figure 6. Mapped habitats in the vicinity of the proposed lease area. [10]

[10] 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 beach, park, docking facility, or conserved lands owned by federal, state, or municipal governments (Figure 7).

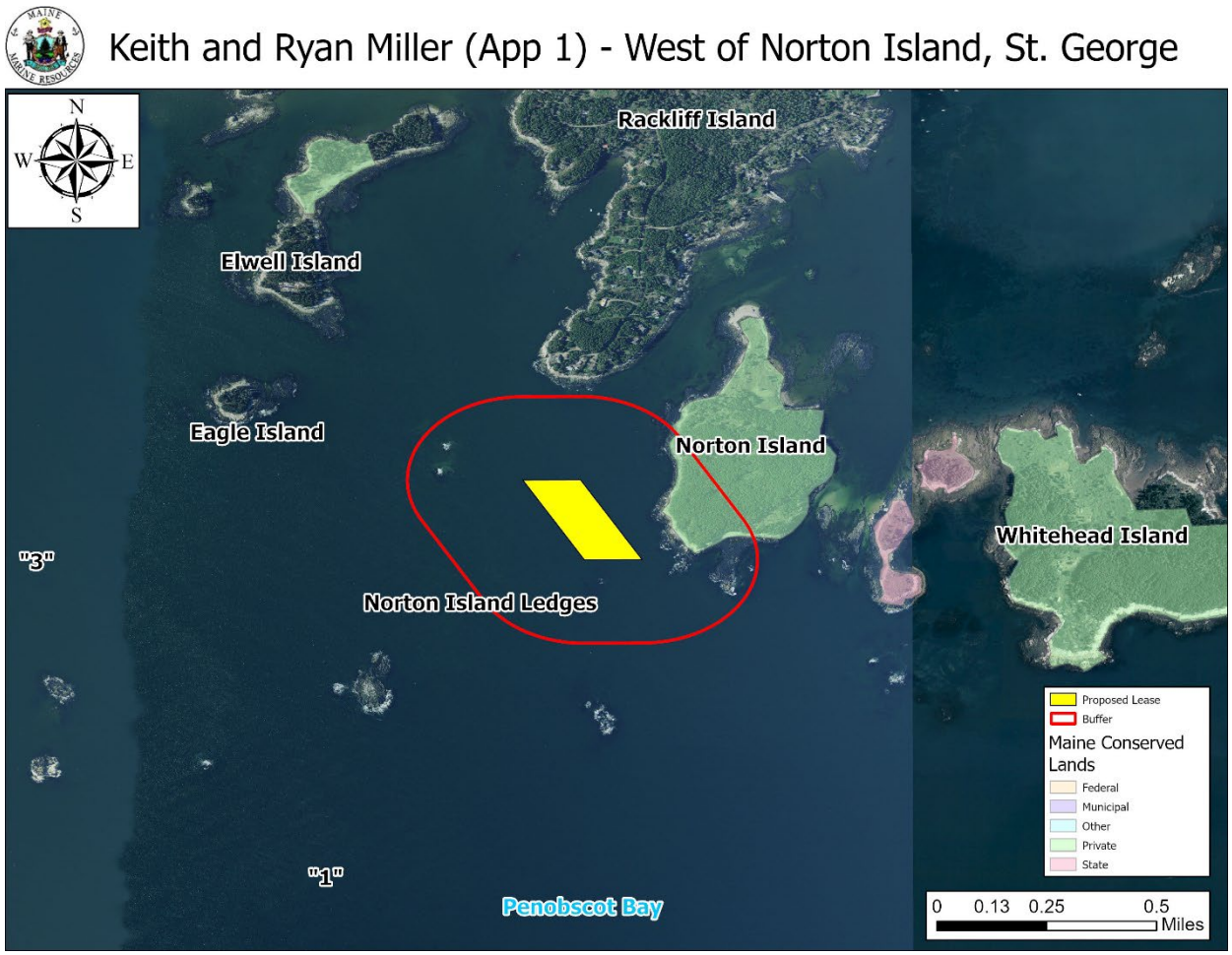

Figure 7. Public facilities near the proposed lease site.[11]

(7) Growing Area Classification

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

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