



Keith Miller - Southeast of Elwell Island, Rackliff Bay, St. George

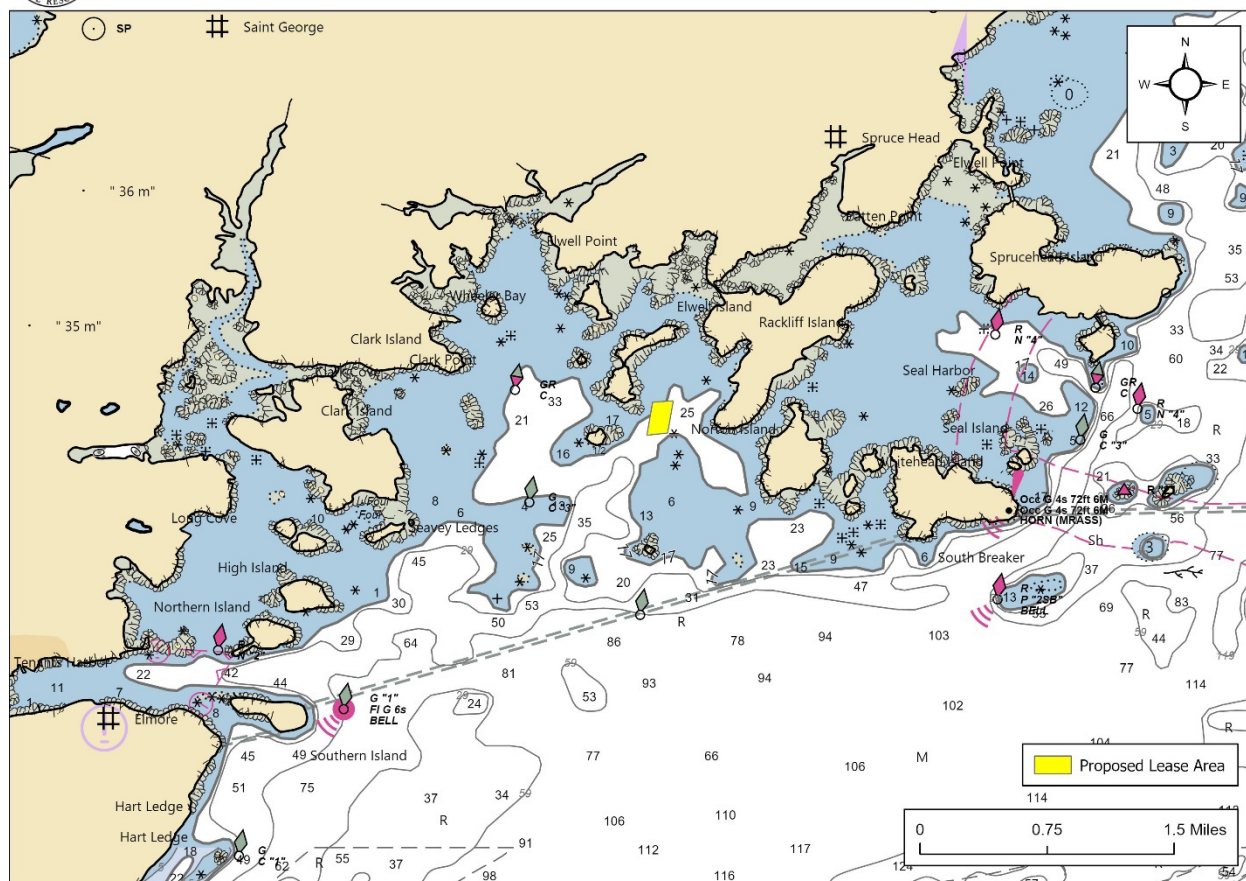


Figure 1. Vicinity map.¹

Location: Southeast of Elwell Island, Rackliff 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*)², dulse (*Palmaria palmata*), Irish moss (*Chondrus crispus*), and sea lettuce (*Ulva lactuca*).

Site Review: Geoffrey Shook, Katie VonHohenleiten, and James Becker³
Report Preparation: Meryl Grady and Amanda Ellis

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.

² Application lists the scientific name for shotgun kelp as *Agarum cribosum*. The current accepted scientific name is *Agarum clathratum*.

³ Dive support



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Application Overview

The applicant, Keith Miller, is requesting a 10.67⁴ acre standard lease southeast of Elwell Island in Rackliff Bay in the Town of St. George for the suspended culture of marine algae. Mooring blocks, mooring lines and chains, and required lease boundary markers are intended to remain on site year-round. All long lines and depth control buoys will be removed from the site from July 1 – September 30. On page 8, the applicant states mooring buoys will be present seasonally from October 1 – June 30. On pages 32 and 34, the drawings indicate mooring buoys will be left on site year-round.⁵

General Characteristics

On August 8, 2024, Department of Marine Resources (DMR) scientists assessed the proposed lease site. DMR scientists arrived on site at approximately 11:39 AM. Elwell Island, northwest of the proposal, has a granite ledge and cobble beach shoreline that faces the proposed lease. The shoreline leads to forested uplands. There is one residential structure on the southwestern end of the island. Eagle Island, southwest of the proposal, has similar characteristics to Elwell Island with one residential structure on the northwestern side of the island. Rackliff Island, connected to the mainland by a causeway, consists of a rocky, boulder shoreline with many houses and scattered docks.

Depth

DMR scientists began collecting depths at the proposed site at approximately 11:42 AM. Measured depths at corners of the proposed lease site ranged from 19.8 to 37.2 feet. Correcting for tidal variation derives water depths at the corners of the proposal at mean low water (MLW, 0.0 feet) to be from 14.0 to 31.4 feet (Table 1).

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

Date	Time	Height (ft)
2024/08/08	1:56 AM	9.6 H
2024/08/08	8:10 AM	0.5 L
2024/08/08	2:24 PM	9.2 H
2024/08/08	8:24 PM	1.1 L

Bottom Characteristics

DMR scientists observed the bottom characteristics of the proposed lease site via SCUBA. Bottom characteristics were categorized using the Coastal and Marine Ecological Classification Standard (CMECS), a national standard for describing features of the marine environment (Table 2). Sediment information was determined based on visual analysis of the video. The bottom of the proposed lease site is composed of muddy sand with shell rubble.

⁴ Applicant originally requested 11.0 acres. DMR calculations indicate the area is 10.67 acres.

⁵ Application pages 8, 9, 12, 32, 34

⁶ <https://www.usharbors.com/harbor/maine/tenants-harbor-me/tides/?tide=2024-08#monthly-tide-chart>



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Table 2. Bottom characteristics of the proposed site.

Substrate Origin	Substrate Class	Substrate Subclass	Substrate Group
Geologic Substrate	Unconsolidated Mineral Substrate	Fine Unconsolidated Substrate	Muddy Sand
Biogenic Substrate	Shell Substrate	Shell Rubble	N/A

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 3, Figures 2,3).

Application Coordinates (WGS84) – 10.67 Acres

<u>Corner</u>	<u>Latitude</u>	<u>Longitude</u>	
NW	43.987950°	-69.154683°	then 467 feet at 84° True to
NE	43.988066°	-69.152916°	then 1,010 feet at 187° True to
SE	43.985316°	-69.153400°	then 470 feet at 263° True to
SW	43.985133°	-69.155166°	then 1,035 feet at 007° True to NW

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

Feature	Distance
NW corner to Elwell Island at MLW	~280' to the northwest
SW corner to Elwell Island at MLW	~705' to the northwest
NW corner to Eagle Island at MLW	~1,045' to the southwest
SW corner to Eagle Island at MLW	~550' to the west
SW corner to Norton Island Ledges	~830' to the southeast
NE corner to Norton Island Ledges	~1,540' to the south
SE corner to Norton Island Ledges	~600' to the southeast
NE corner to Rackliff Island at MLW	~1,080' to the southeast
SE corner to Rackliff Island at MLW	~1,020' to the northeast
NE corner to Norton Island at MLW	~2,300' to the southeast
SE corner to Norton Island at MLW	~2,035' to the east



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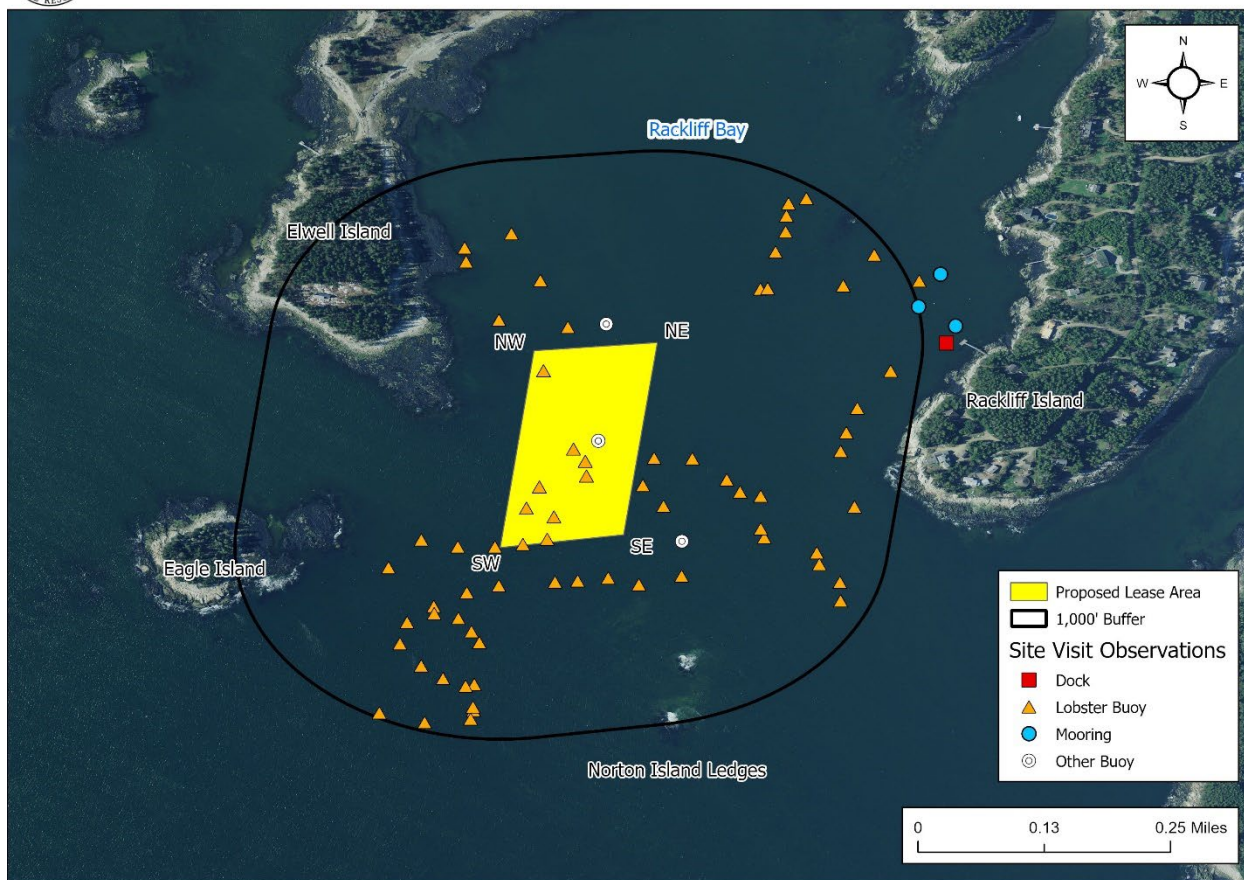


Figure 2. Proposed lease area with site visit observations.

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

DMR observed one dock and three moorings near Rackliff Island. The three moorings were approximately 1,000, 1,125, and 1,127 feet northeast of the proposal. The observed dock was approximately 1,130 feet northeast of the proposal. Aerial imagery⁷ indicates another dock approximately 1,800 feet northeast of the proposal on Rackliff Island. DMR observed one residential structure on the southern end of Elwell Island approximately 830 feet northwest of the proposal. No dock was observed on the eastern and southern shorelines of Elwell Island by DMR scientists. Aerial imagery indicates there is a dock on the northwestern side of Elwell Island approximately 1,400 feet from the proposal. DMR also observed one structure on Eagle Island approximately 1,200 feet west of the proposal. No dock was observed on Eagle Island (Figure 2).

⁷ Regional\orthoRegional2018



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A Harbormaster Questionnaire was received by DMR from the local Harbormaster on August 7, 2023. The Harbormaster stated there are no permitted moorings within the boundary of the proposal and that the proposal should not affect riparian ingress and egress.

(2) Navigation

The proposal is located approximately 280 feet southeast of Elwell Island at MLW, approximately 550 feet east of Eagle Island at MLW, and approximately 1,020 feet west of Rackliff Island at MLW.

Navigation in and out of Rackliff Bay is impacted by Norton Island Ledges approximately 600 feet south of the proposal at MLW. There are two deeper water channels that lead in and out of Rackliff Bay on both sides of Norton Island Ledges. There is approximately 100 feet of water between the SE corner of the proposal and the contour line surrounding Norton Island Ledges that indicates shallower water (Figure 3).

During DMR's site visit, one recreational powerboat transited northerly through the proposal boundaries. The majority of boating traffic observed, which consisted of vessels of varying size, transited southwest of the site.

The Harbormaster indicated in the Harbormaster Questionnaire that the proposal would not impact navigation within the area. The Harbormaster also provided feedback requesting for all buoys to be removed except required lease boundary markers.



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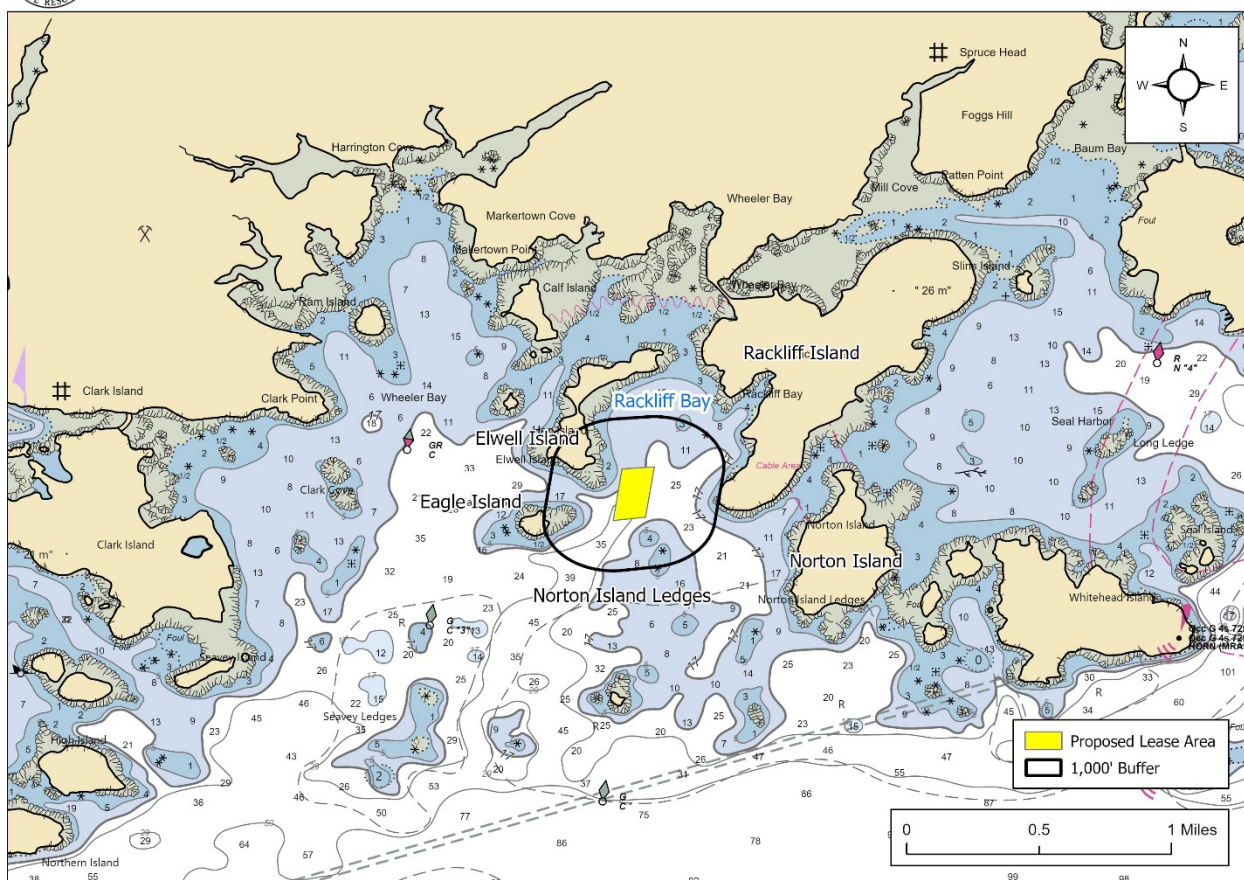


Figure 3. Navigational channels in the vicinity of the proposed lease area.

(3) Fishing and Other Uses

During the site visit, DMR observed 71 lobster buoys in the general vicinity of the proposal; nine of which were within the boundaries of the proposal (Figure 2). DMR scientists observed two lobster boats actively tending to lobster traps southwest of the proposal.

DMR also observed three buoys in the vicinity of the proposal with unknown purposes. One buoy was within the proposal boundaries, one was approximately 115 feet north of the proposal, and the third was 220 feet southeast of the proposal. The observed buoys are labeled as “Other Buoy” in Figure 2.

The Harbormaster indicated in the Harbormaster Questionnaire that there is seasonally dependent commercial and recreational fishing within the area of the proposal.



(4) Other Aquaculture Uses

There is one aquaculture lease within the boundaries of this proposal. PEN RBx is an experimental lease operated by the applicant of this standard lease proposal, Keith Miller. This standard lease proposal is intended to replace PEN RBx, if granted. There are no licensed Limited Purpose Aquaculture (LPA) sites, and there are no other pending lease applications under review by DMR within 1,000 feet of the proposal. Experimental lease PEN Elx is approximately 1,325 feet west of the proposed lease site (Figure 4). An application is pending to convert PEN Elx to a standard lease.



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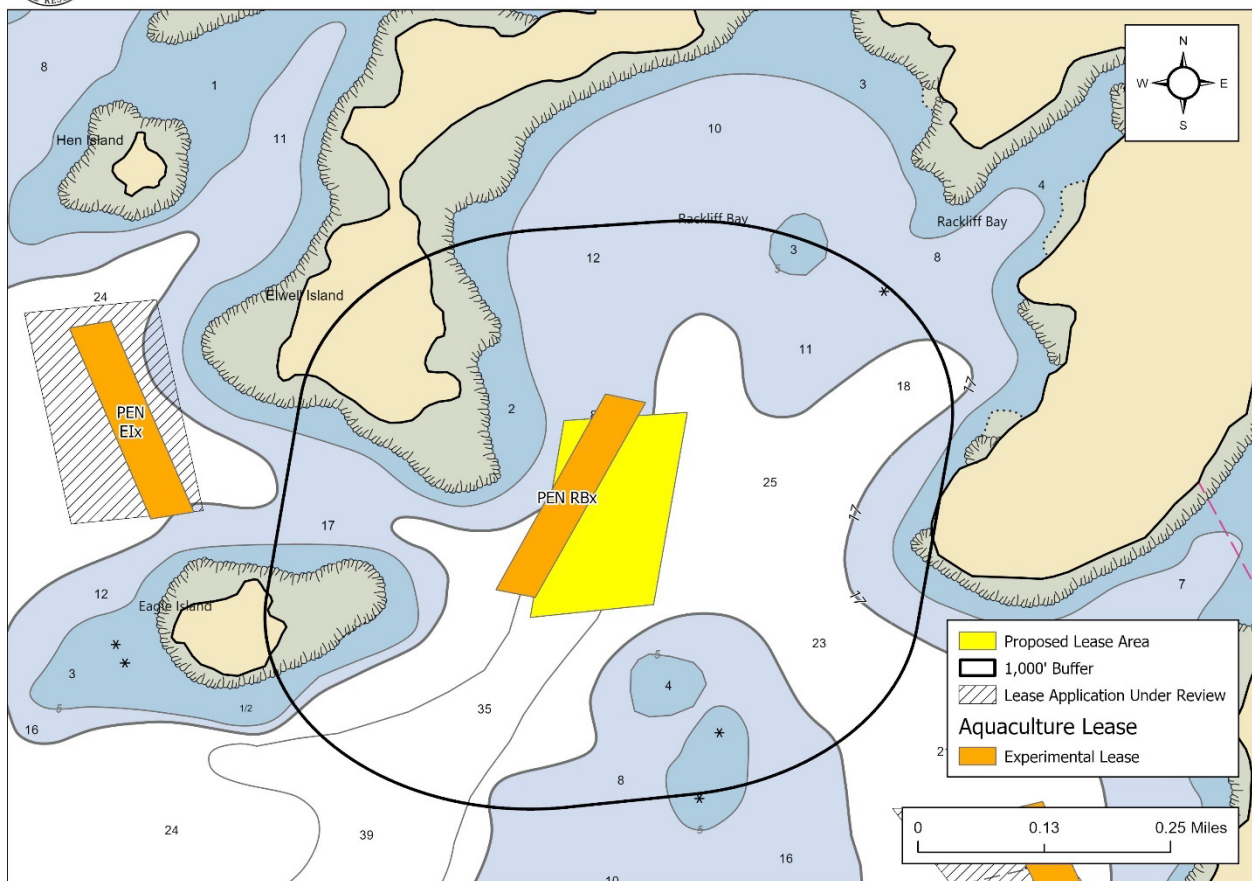


Figure 4. Aquaculture leases, LPA licenses, and applications under review by DMR in the vicinity of the proposed lease area.



(5) Existing System Support

Epibenthic Flora and Fauna

On August 8, 2024, DMR scientists utilized SCUBA 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 4.

Table 4. Species observed on underwater video footage.

Species Observed	Abundance
American Lobster (<i>Homarus americanus</i>)	Common
Sugar Kelp (<i>Saccharina latissima</i>)	Common
Shotgun Kelp (<i>Agarum clathratum</i>)	Common
Blue Mussel (<i>Mytilus edulis</i>)	Occasional
Crab (<i>Cancer</i> sp.)	Occasional
Irish Moss (<i>Chondrus crispus</i>)	Occasional
Frilled anemone (<i>Metridium senile</i>)	Rare
Northern Sea Robin (<i>Prionotus carolinus</i>)	Rare

Eelgrass (*Zostera marina*)

Records of seagrass collected by the Department of Environmental Protection (DEP) in 2024⁸ indicates the nearest mapped eelgrass is approximately 320 feet northwest of the proposal (Figure 5). No eelgrass was observed on underwater video footage within the proposal boundaries during DMR's site visit.

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.



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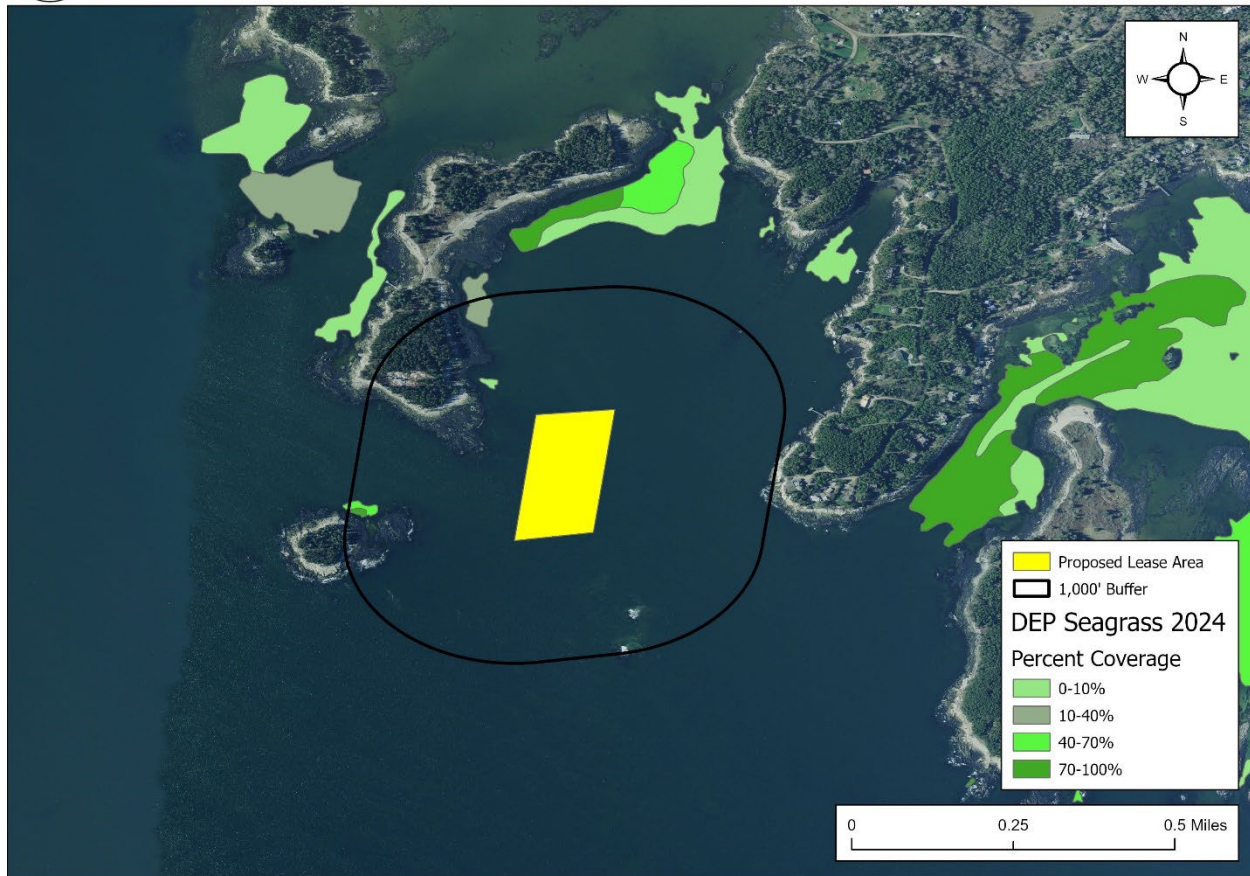


Figure 5. Mapped eelgrass (*Z. marina*) in the vicinity of the proposed lease area.

Wildlife

During DMR's site visit, scientists observed herring gull (*Larus argentatus*), osprey (*Pandion haliaetus*), great cormorant (*Phalacrocorax carbo*), harbor seal (*Phoca vitulina*), common loon (*Gavia immer*), and mallard (*Anas platyrhynchos*) 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 are no mapped habitat types within 1,000 feet of the lease proposal. The proposal is near Tidal Waterfowl and Wading Bird Habitat (TWWH), which is a type of



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Significant Wildlife Habitat designated and regulated by IFW.⁹ Based on data maintained by IFW, the nearest mapped TWWH is approximately 1,150 feet north 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 September 19, 2023, 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.¹⁰



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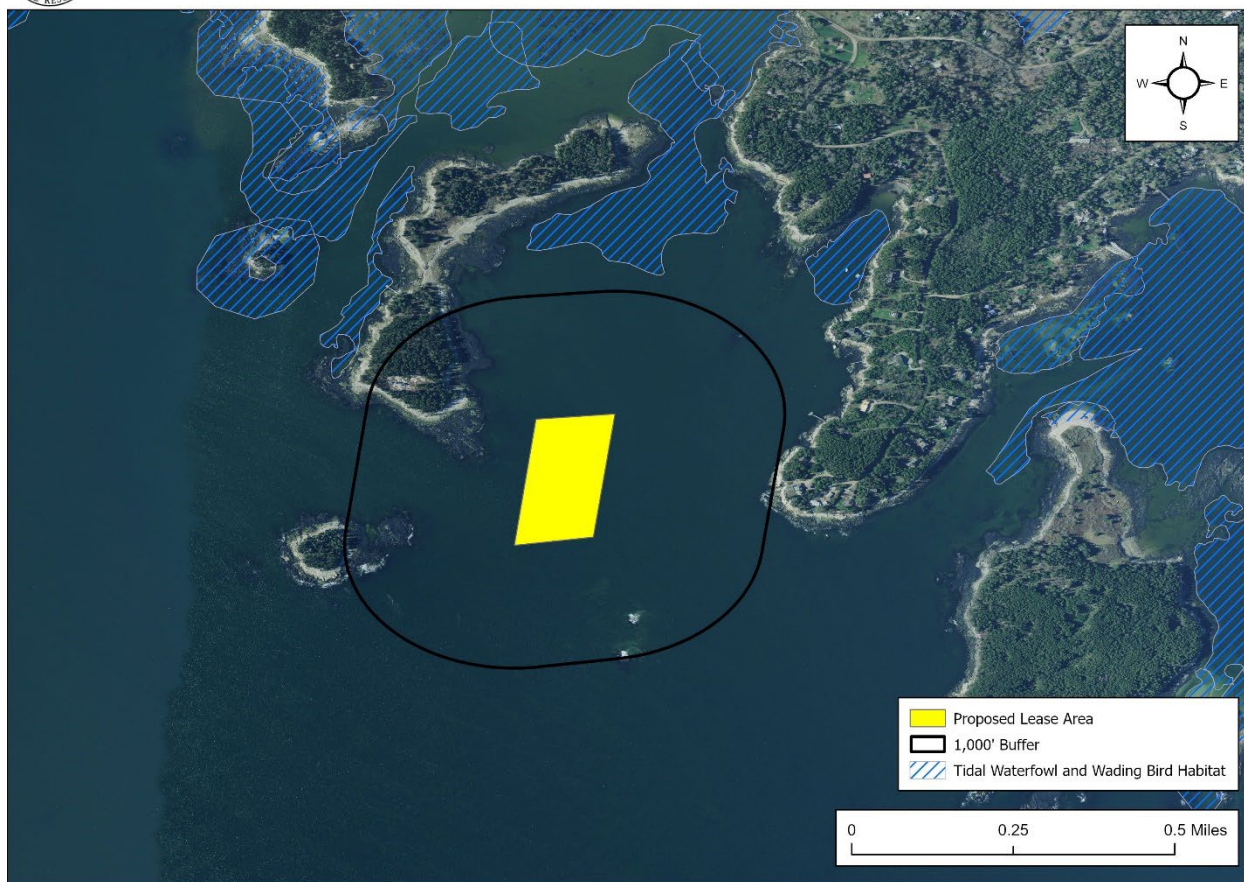


Figure 6. Mapped habitats in the vicinity of the proposed lease area.¹¹

⁹ <https://www.maine.gov/ifw/programs-resources/environmental-review/significant.html>

¹⁰ Email correspondence between IFW and DMR

¹¹ 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).



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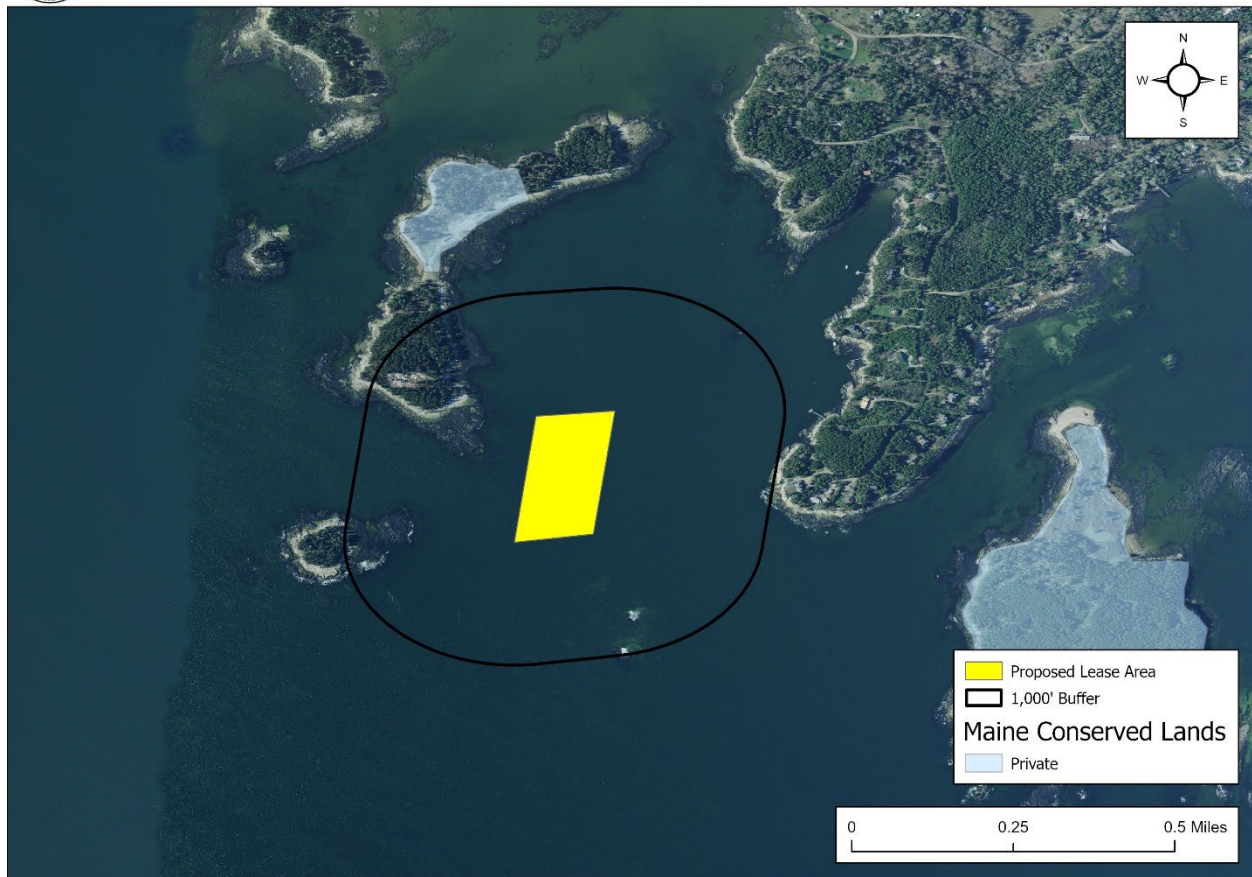


Figure 7. Public facilities in the vicinity of the proposed lease area.¹²

¹² Data obtained from The Maine Office of GIS "GISVIEW.MECONSLANDS.Conserved_Lands"



(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) (Figure 8).



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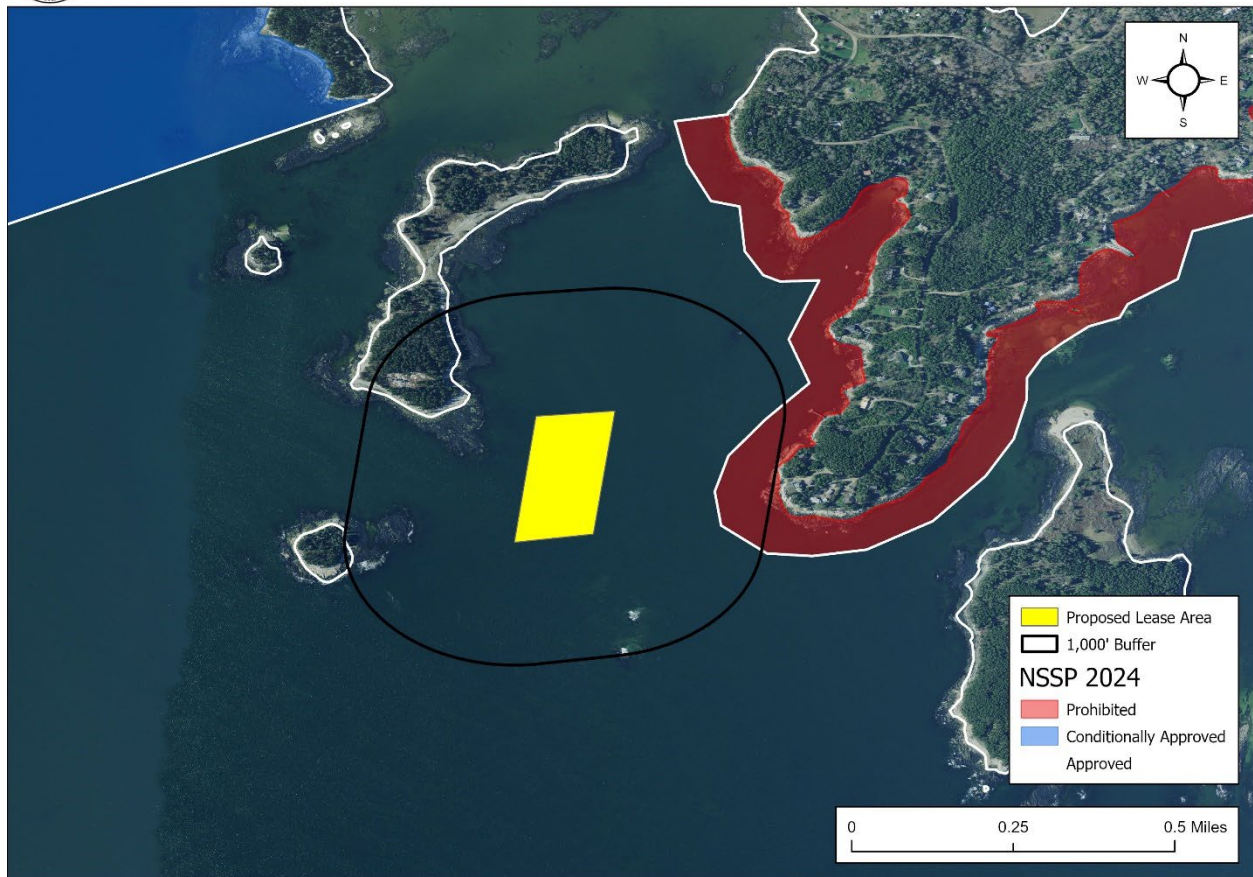


Figure 8. National Shellfish Sanitation Program (NSSP) classifications in the vicinity of the proposal.¹³

¹³ Data obtained from "MaineDMR Public Health – 2024 NSSP Classifications"