

Figure 1. Vicinity map.¹

Location: Northeast of Basket Island, Casco Bay, Cumberland and Chebeague Island², Cumberland County, Maine

Purpose: Experimental lease for suspended culture of sugar kelp (*Saccharina latissima*), skinny kelp (*Saccharina angustissima*), winged kelp (*Alaria esculenta*) and dulse (*Palmaria palmata*)

Site Review: Geoff Shook, Katie von Hohenleiten, and James Becker³

Report Preparation: Katie von Hohenleiten, 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 The Maine Office of GIS.

² The application originally stated the proposal is located in Yarmouth. However, the proposal is located in Cumberland and Chebeague Island. DMR re-noticed the proposal with the updated, correct location. The comment period ended on 8/2/2025.

³ Dive support



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Application Overview

The applicant, Joe Parker, is requesting a 3.86⁴ acre experimental lease northeast of Basket Island in Casco Bay, within the Towns of Cumberland and Chebeague Island, for the suspended culture of marine algae. Mooring blocks, mooring chains, and required lease boundary markers are intended to remain on site year-round. All long lines, mooring buoys (except required boundary marker buoys), and depth control buoys will be removed from the site from May 31 – October 19.⁵

General Characteristics

On September 5, 2024, Department of Marine Resources (DMR) scientists assessed the proposed lease site. DMR scientists arrived on site at approximately 10:38 AM. Basket Island, in the vicinity of the proposal, has a rocky shoreline that leads to forested uplands.

Depth

DMR scientists began collecting depths at the proposed site at approximately 10:38 AM. Measured depths at corners of the proposed lease site ranged from 33.4 to 37.5 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 29.8 to 33.9 feet (Table 1).

Table 1. Predicted tidal heights in Falmouth foreshore, Maine.⁶

Date	Time	Height (ft)
2024/09/05	1:04 AM	9.5 H
2024/09/05	7:13 AM	0.5 L
2024/09/05	1:24 PM	9.3 H
2024/09/05	7:28 PM	0.7 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 mud with an overlay of sheet algal beds.

Table 2. 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

⁴ Applicant originally requested 4.0 acres. DMR calculations indicate the area is 3.86 acres.

⁵ Application page 17

⁶ <https://www.usharbors.com/harbor/maine/falmouth-foreshore-me/tides/?tide=2024-09#monthly-tide-chart>



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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 2,3ab).

Application Coordinates (WGS84) – 3.86 Acres

<u>Corner</u>	<u>Latitude</u>	<u>Longitude</u>	
NW	43.735525°	-70.159549°	then 1,030 feet at 84° True to
NE	43.735822°	-70.155672°	then 169 feet at 176° True to
SE	43.735359°	-70.155630°	then 1,024 feet at 265° True to
SW	43.735092°	-70.159486°	then 159 feet at 354° True to NW

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

Feature	Distance
NE corner to Cousins Island shoreline at MLW	~3,816' to the northeast
NE corner to red navigation buoy "16"	~3,702' to the southeast
SE corner to Lower Basket Ledge Daybeacon "15"	~1,836' to the southwest
SE corner to red navigation buoy "14"	~4,825' to the southeast
SW corner to Basket Island shoreline at MLW	~1,246' to the west
SW corner to red navigation buoy "2"	~2,692' to the southwest
SW corner to Lower Basket Ledge at MLW	~1,360' to the south
NW corner to Basket Island shoreline at MLW	~1,273' to the southwest
NW corner to Upper Basket Ledge Daybeacon	~1,705' to the north

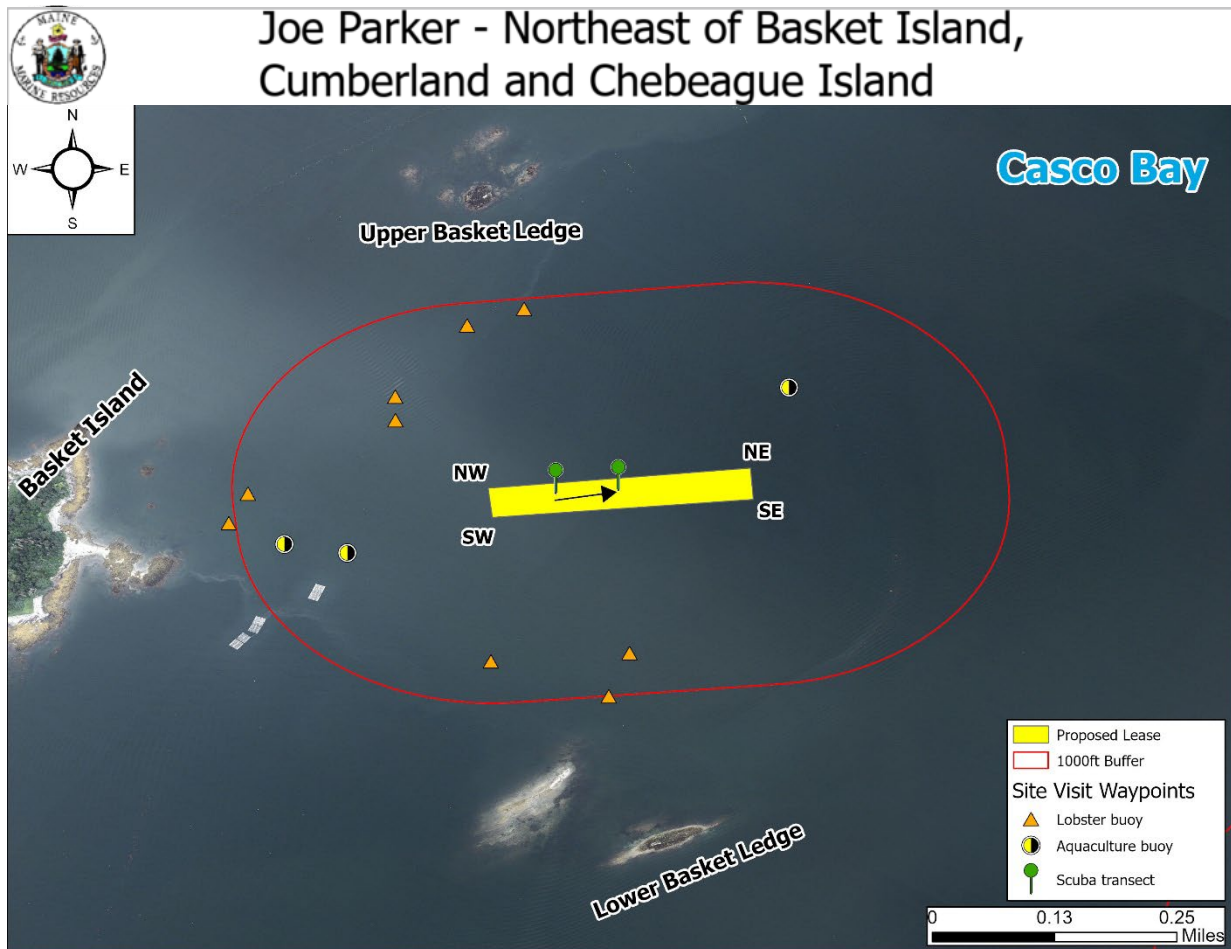


Figure 2. Proposed lease area with site visit observations.

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

The land nearest to the proposal is Basket Island approximately 1,246 feet to the west at MLW. Basket Island is an uninhabited nature preserve that allows public access for day use only. During the site visit, DMR did not observe any houses, docks, or vessel moorings in the vicinity of the proposal (Figure 2). The nearest dock observed on aerial imagery⁷ is approximately 4,292 feet to the northeast on Cousins Island.

A Municipal Questionnaire was received by DMR from the Town of Cumberland. In the questionnaire, the Harbormaster stated there are no docks or permitted moorings nearby or within the boundaries of the proposal.

⁷ Maine Orthoimagery Coastal Casco Bay 2022



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(2) Navigation

The proposal is located approximately 1,246 feet east of Basket Island at MLW. The proposal is also located between Lower Basket Ledge, marked by daybeacon "15" which is approximately 1,836 feet southwest of the proposal; and Upper Basket Ledge daybeacon which is approximately 1,705 feet north of the proposal. There are two marked navigational channels that split in the vicinity of Basket Island and Upper and Lower Basket Ledges. There is a deep-water channel to the west of Basket Island, marked by red navigational buoy "2" which is approximately 2,692 feet southwest of the proposal. The western edge of the navigational channel east of Basket Island is marked by Lower Basket Ledge daybeacon "15" (Figures 3a and 3b).

Though the proposal sits outside of charted navigational channels, water in the vicinity of the proposal is deep which could allow for a variety of vessel types (Figure 3b). During DMR's site visit, scientists observed three powerboats and three sailboats operating in the vicinity of the proposal.

The Harbormaster indicated in the Municipal Questionnaire that there is recreational navigation in the vicinity of the proposal that consists of sailboats and motorized boats that could range from approximately 10 feet up to 50 feet traveling in all directions. The Harbormaster also stated there is no commercial navigation or storm anchorages in the vicinity of the proposal.



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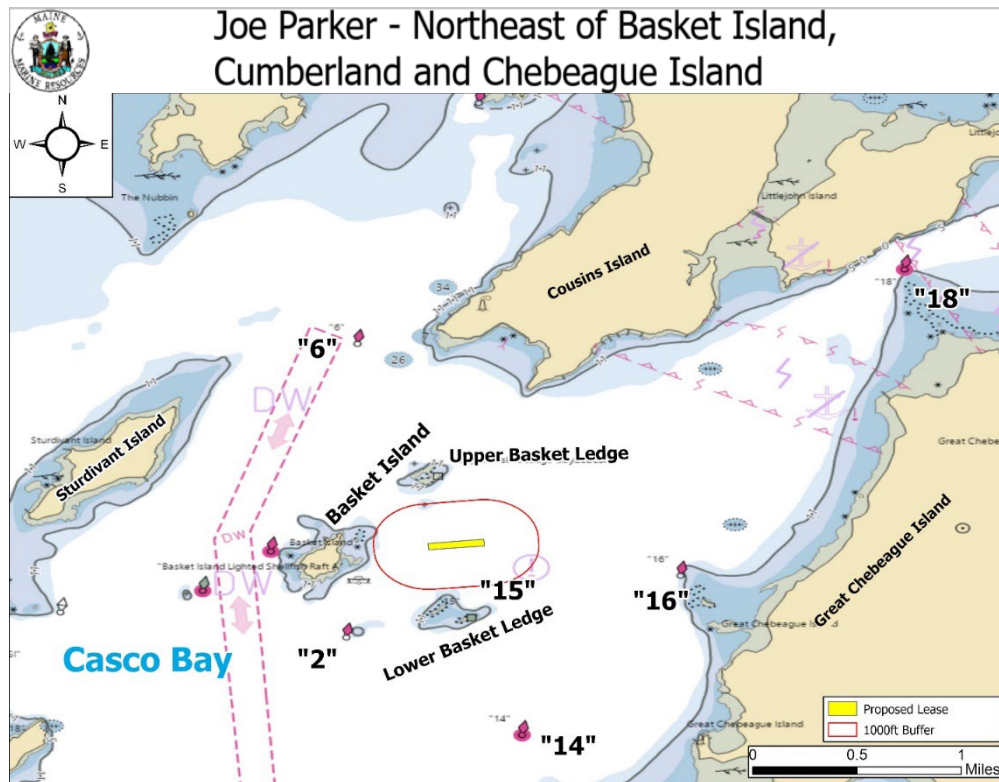


Figure 3a. Navigational channels in the vicinity of the proposed lease area.

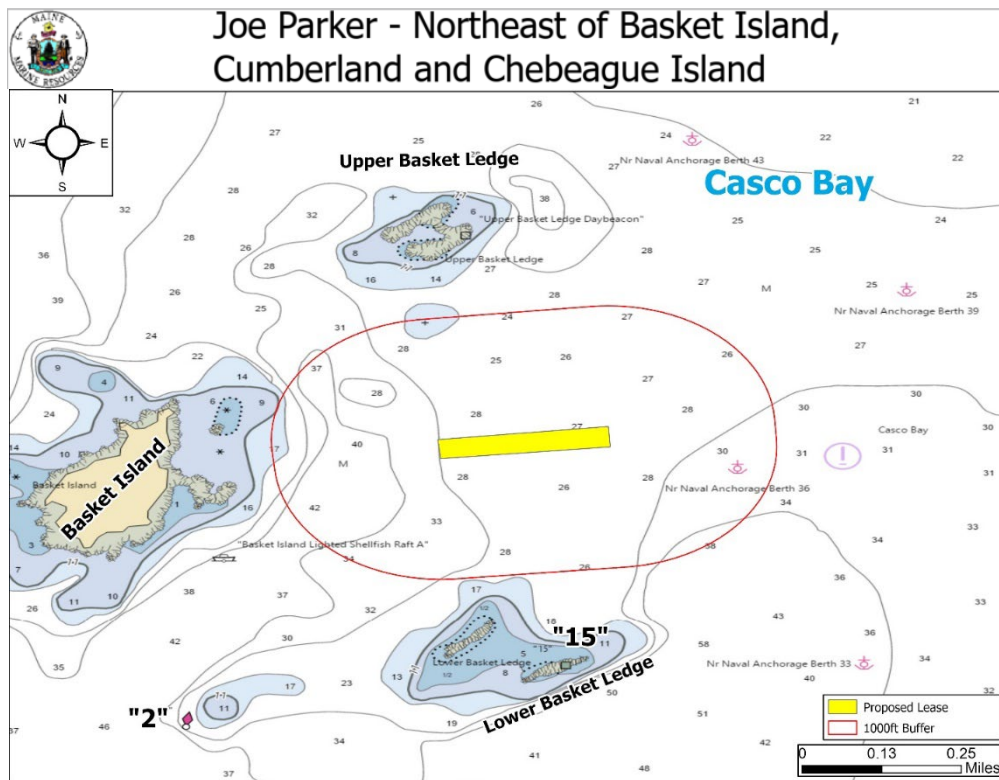


Figure 3b. Navigational channels in the vicinity of the proposed lease area.



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(3) Fishing and Other Uses

During the site visit, DMR observed nine lobster buoys in the vicinity of the proposal. The closest buoy was located approximately 518 feet northwest of the proposal (Figure 2).

The Harbormaster indicated in the Municipal Questionnaire that there is commercial and recreational fishing in the vicinity of the proposal. Commercial lobster fishing occurs year-round in this area. Commercial and recreational striped bass (*Morone saxatilis*) fishing occurs during the summer. The Harbormaster also indicated there is minimal kayaking that occurs within the vicinity of the proposal.

(4) Other Aquaculture Uses

There are two experimental leases and one standard lease in the vicinity of the proposal. Experimental lease CAS LB2x, approximately 279 feet south of the proposal, and experimental lease CAS LBx, approximately 916 feet south of the proposal, are both held by Summit Point LLC. Standard lease CAS BASK2 is held by Wild Ocean Aquaculture LLC and is approximately 682 feet southwest of the proposal. There are no other aquaculture leases or limited purpose aquaculture (LPA) sites within 1,000 feet of the proposal. Experimental lease CAS UBLx is approximately 1,545 feet north of the proposal and is held by Stewart Hunt. There is an application pending to convert CAS UBLx to a standard lease. LPAs NHEN118 and NHEN218 are licensed to Nathaniel Henninger and are approximately 1,913 and 1,867 feet northeast of the proposal, respectively (Figure 4).

During the site visit, DMR observed three aquaculture buoys in the vicinity of the proposal. There were two aquaculture buoys approximately 598 and 824 feet southwest of the proposal. One buoy was labeled "Bask25" and the other "Sea Farm". The third aquaculture buoy was approximately 459 feet northeast of the proposal and was yellow in color (Figure 2).⁸

⁸ These findings were passed along to the DMR Aquaculture Inspections program for appropriate follow up.

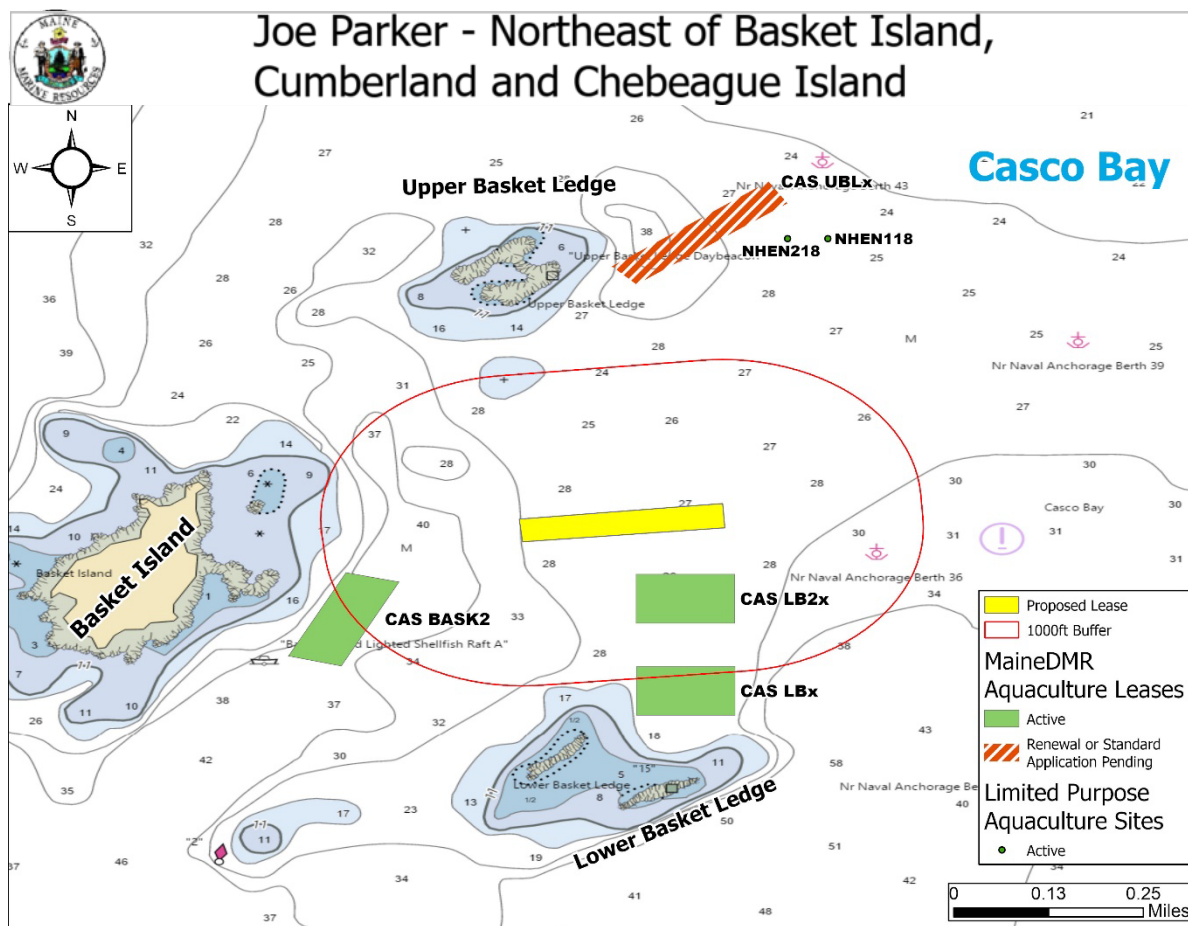


Figure 4. Aquaculture leases and LPA licenses in the vicinity of the proposed lease area.

(5) Existing System Support

Epibenthic Flora and Fauna

On September 5, 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
Green crab (<i>Carcinus maenas</i>)	Abundant
Mysid Shrimp (<i>mysis sp.</i>)	Common
Sand Shrimp (<i>Crangon septemspinosa</i>)	Occasional
American Lobster (<i>Homarus americanus</i>)	Occasional
Rock Crab (<i>Cancer irroratus</i>)	Occasional
Slipper Shell (<i>Crepidula fornicata</i>)	Rare
Green sea fingers (<i>Codium fragile</i>)	Rare



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Eelgrass (*Zostera marina*)

Records of seagrass collected by the Department of Environmental Protection (DEP) in 2022⁹ indicates no mapped eelgrass presence in the vicinity of the proposal. The nearest mapped eelgrass is approximately 1,202 feet west of the proposal (Figure 5). No eelgrass was observed on underwater video footage within the proposal boundaries. Eelgrass blades were observed floating (unattached) on the surface of the water during DMR's site visit.

The Harbormaster indicated in the Municipal Questionnaire that the municipality has not observed eelgrass in the vicinity of the proposal.



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

⁹ Data obtained from The Maine Office of GIS "GISVIEW.MEDEP.Seagrass2022". Widgeon grass was observed only in the New Meadows River area off Old Brunswick Road near shore. 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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Wildlife

During DMR's site visit, scientists observed herring gull (*Larus argentatus*), osprey (*Pandion haliaetus*), and an osprey nest 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 Significant Wildlife Habitat designated and regulated by IFW.¹⁰ Based on data maintained by IFW, the nearest mapped TWWH is approximately 1,157 feet west 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 July 30, 2025, the Environmental Review Program Supervisor with IFW responded by email to a "Request for Agency Review and Comment" stating that there are no mapped Significant Wildlife Habitats in the proposed lease area. Minimal impacts to wildlife are anticipated for this project.¹¹

¹⁰ <https://www.maine.gov/ifw/programs-resources/environmental-review/significant.html>

¹¹ Email correspondence between IFW and DMR



Figure 6. Mapped habitats in the vicinity of the proposed lease area.¹²

(6) Interference with Public Facilities

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

(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.

¹² Data obtained from USFWS "Bald_Eagle_Nests_-_Maine_2023" and IFW "EHRTERN", "EHPLVTRN", "GISVIEW.MEIFW.Twwh", "ShorebirdAreas", and "SNI".