



Devil's Apron Sea Farms (App 2) - East of Caldwell Island, St. George

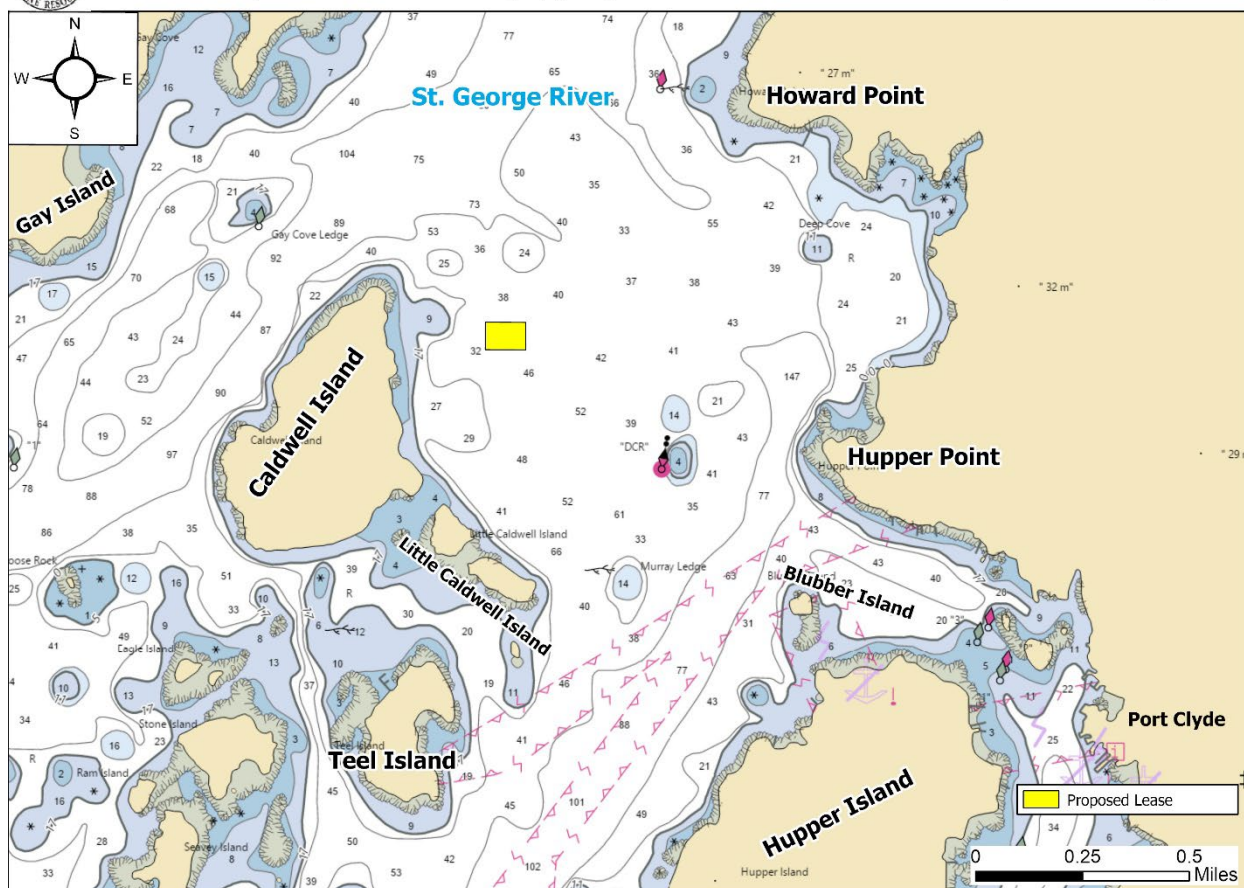


Figure 1. Vicinity map.<sup>1</sup>

**Location:** East of Caldwell Island, St. George River, St. George, Knox County, Maine

**Purpose:** Experimental lease for suspended culture of sugar kelp (*Saccharina latissima*) and skinny kelp (*Saccharina angustissima*)

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Report Preparation: Katie von Hohenleiten, Geoff Shook, and Meryl Grady

<sup>1</sup> Unless otherwise noted, all figures in this report were created in ArcGIS Pro version 2.9 using digitized NOAA Nautical Charts or geo-referenced aerial photographs provided by The Maine Office of GIS.

<sup>2</sup> Dive support present on August 27, 2024



# Maine Department of Marine Resources Site Report

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## Application Overview

The applicant, Devil's Apron Sea Farms, is requesting a 3.90 - acre experimental lease east of Caldwell Island on the St. George River for the suspended culture of marine algae. The applicant intends to remove depth control buoys, weights, and long lines from June 1 through October 14. Mooring blocks, mooring lines, mooring balls, and required lease corner markers will remain on site year-round.<sup>3</sup>

## General Characteristics

On August 27, 2024 and September 4, 2024, Maine Department of Marine Resources (MDMR) scientists assessed the proposed lease site. MDMR scientists arrived on site at approximately 10:07 AM on both days. Caldwell Island consists of a rocky ledge coastline with sparse evergreen uplands. There was a seasonal cottage observed on the northern shore of Little Caldwell Island.

## Depth

MDMR scientists collected depths on August 27, 2024 during an ebbing tide at approximately 10:14 AM. Measured depths at corners of the proposed lease site ranged from 37.3 to 46.8 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 32.0 to 41.5 feet (Table 1).

**Table 1.** Predicted tidal heights in Port Clyde, Maine.<sup>4</sup>

Date	Time	Height (ft)
2024/08/27	1:38 AM	0.7 L
2024/08/27	7:50 AM	8.1 H
2024/08/27	1:52 PM	1.6 L
2024/08/27	8:05 PM	9.1 H

## Bottom Characteristics

MDMR 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 2). Sediment information was determined based on visual analysis of the video. The bottom of the proposed lease site is composed of mud.

**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

<sup>3</sup> Application pages 6,14,17

<sup>4</sup> <https://www.usharbors.com/harbor/maine/port-clyde-me/tides/?tide=2024-08#monthly-tide-chart>



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## **Position and Distances to Shore**

The measuring tool in ArcGIS Pro 2.9 was used to verify the distances and bearings between proposed lease corners. Distances to shore were determined using the measuring tool in ArcGIS Pro 2.9, a nautical chart provided by the National Oceanic and Atmospheric Administration (NOAA), and the application coordinates (Table 3, Figures 2 and 3).

### **Application Coordinates (WGS84) – 3.90 Acres**

<u>Corner</u>	<u>Latitude</u>	<u>Longitude</u>	
NW	43.940649°	-69.288506°	then 499 feet at 90° True to
NE	43.940649°	-69.286609°	then 340 feet at 180° True to
SE	43.939716°	-69.286609°	then 499 feet at 270° True to
SW	43.939716°	-69.288506°	then 340 feet at 360° True to NW

**Table 3.** Approximate distances from proposal to surrounding features (Figures 2 and 3).

Feature	Distance
NE corner to red nun navigational buoy "4"	~3,329' to the northeast
NE corner to Howard Point shoreline at MLW	~3,609' to the northeast
NE corner to Hupper Point shoreline at MLW	~3,754' to the southeast
SE corner to Howard Point shoreline at MLW	~3,848' to the northeast
SE corner to Hupper Point shoreline at MLW	~3,623' to the southeast
SE corner to navigational hazard marker buoy "DCR"	~2,221' to the southeast
SW corner to Caldwell Island shoreline at MLW	~1,120' to the west
SW corner to Little Caldwell Island shoreline at MLW	~1,966' to the southwest
NW corner to Caldwell Island shoreline at MLW	~1,164' to the northwest
NW corner to Gay Island at MLW	~4,125' to the northwest



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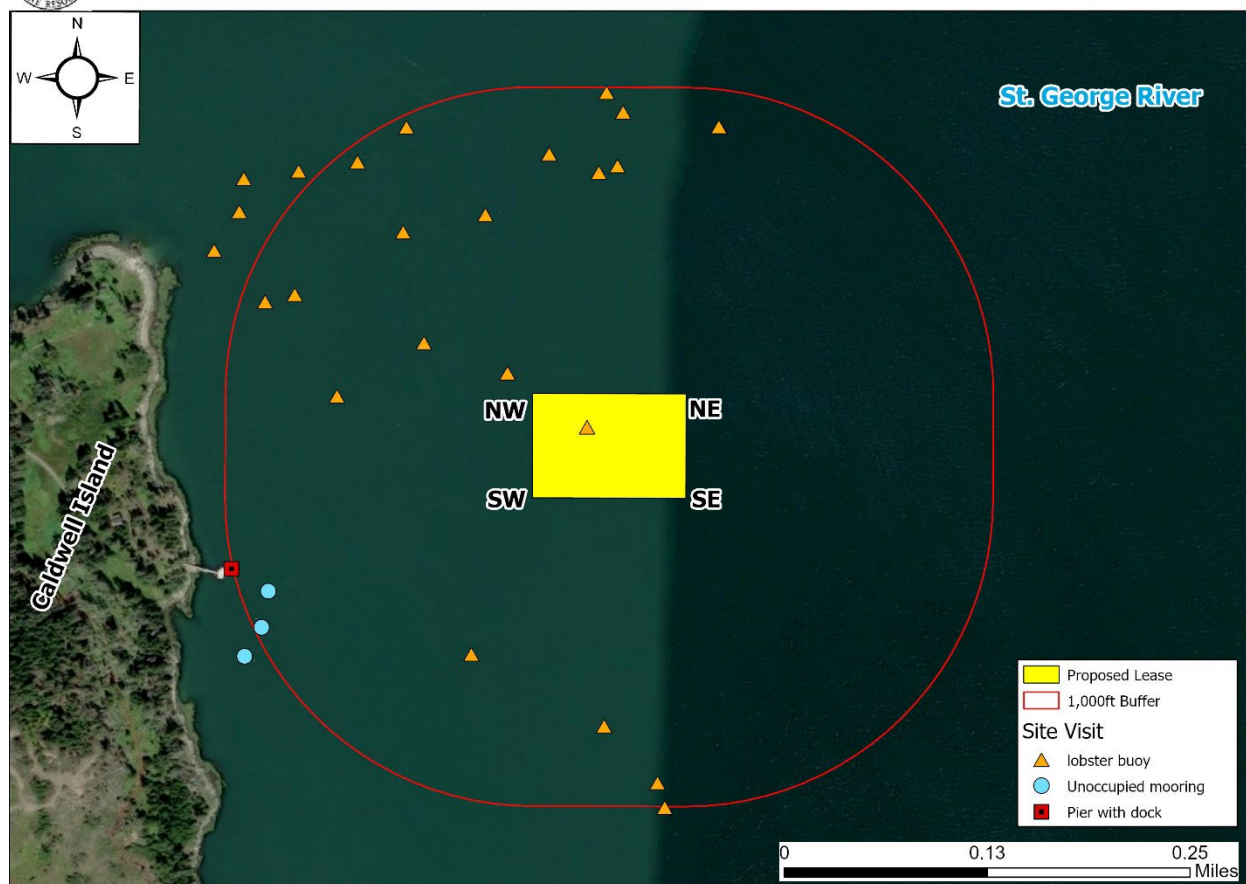


Figure 2. Proposed lease area with site visit observations.

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

**(1) Riparian Ingress and Egress**

Caldwell Island is approximately 1,120 feet west of the proposal at MLW. Caldwell Island has one residential building and a pier with an attached dock. The dock is approximately 1,025 feet southwest of the proposal. During the site visit, MDMR observed a 22-foot powerboat tied to the dock. MDMR observed three unoccupied moorings in the vicinity of the proposal. They were located approximately 910, 975, and 1,068 feet southwest of the proposal (Figure 2). During the site visit, MDMR observed a seasonal cottage on the northern shore of Little Caldwell Island, approximately 2,836 feet south of the proposal as determined by aerial imagery.<sup>5</sup>

<sup>5</sup> ArcGIS Map Service "World Imagery Firefly"





A Harbormaster Questionnaire was received by MDMR on April 4, 2024. The local Harbormaster did not indicate there would be an impact on riparian ingress and egress.

## (2) Navigation

The proposal is located approximately 1,120 feet east of Caldwell Island at MLW. The proposal is in the vicinity of the eastern channel entrance to the St. George River. When approaching from the north, the navigational channel splits and continues on both the eastern and western sides of Caldwell Island. On the eastern side of Caldwell Island, there is approximately 2,221 feet of navigable water between the proposal and isolated danger buoy "DCR" (Figure 3). During MDMR's site visit on August 27, 2024, a sailboat was observed under power north of Caldwell Island, and two lobster boats were transiting south of Little Caldwell Island.

In the Harbormaster Questionnaire, the Harbormaster did not indicate there would be an impact on navigation in the area.



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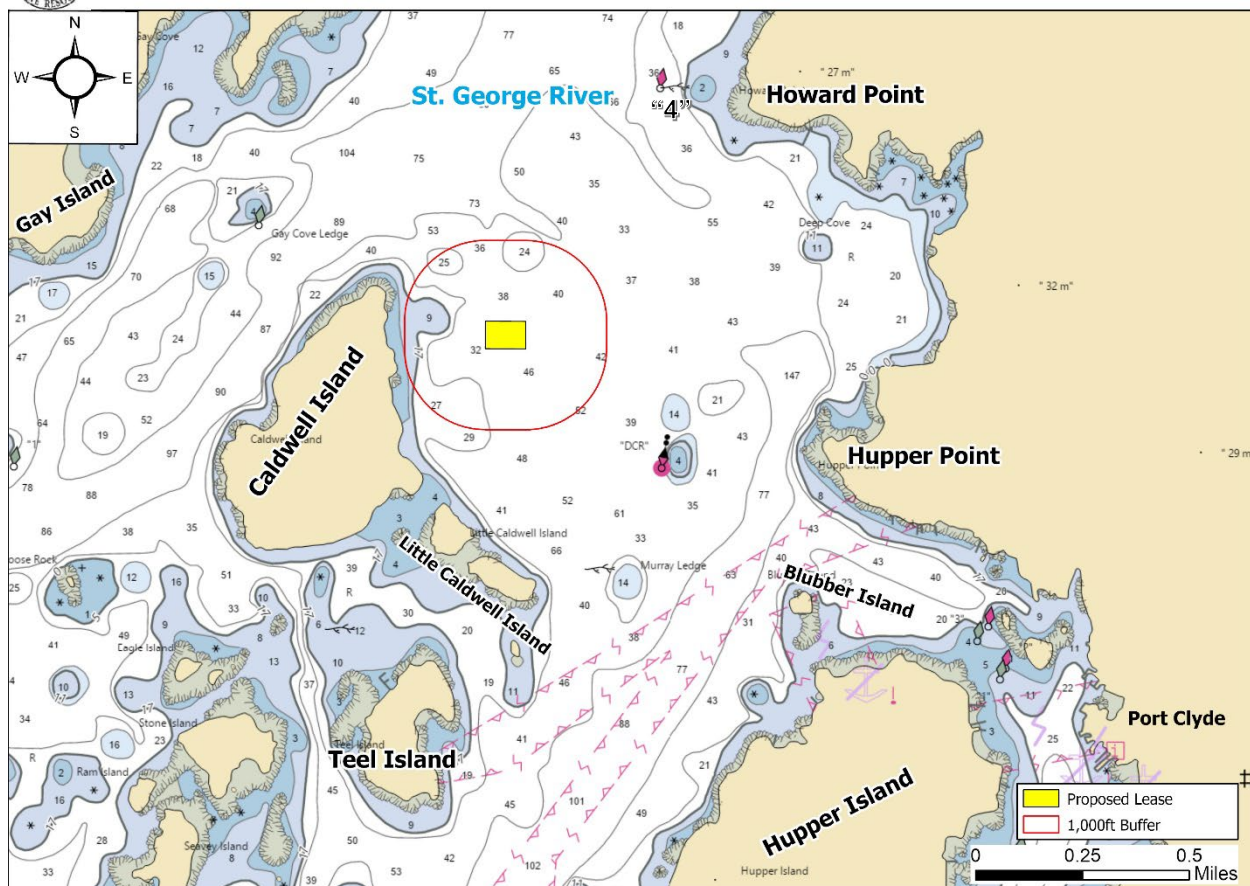


Figure 3. Navigational channels in the vicinity of the proposed lease area.



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### **(3) Fishing and Other Uses**

During the site visit on August 27, 2024, MDMR documented 24 lobster buoys in the vicinity of the proposal with one buoy located within the proposal boundaries (Figure 2). During the site visit, MDMR scientists observed two lobster vessels actively tending traps to the south of Little Caldwell Island.

A local Marine Patrol officer stated the area in the vicinity of the proposal is heavily used to harvest Menhaden (*Brevoortia tyrannus*) in the summer months as early as June. Lobster fishing occurs in the area throughout the year, including some winter fishing, with most lobster gear present from June through November.

### **(4) Other Aquaculture Uses**

There are no licensed aquaculture leases or limited purpose aquaculture (LPA) sites within 1,000 feet of the proposal. There are two applications under review by MDMR within 1,000 feet of the proposal. Miss Madisyn is an experimental application approximately 620 feet southwest of this proposal. The application was deemed complete prior to this proposal. Albatross Fisheries is an experimental application approximately 912 feet southwest of this proposal. The application was deemed complete prior to this proposal (Figure 4).



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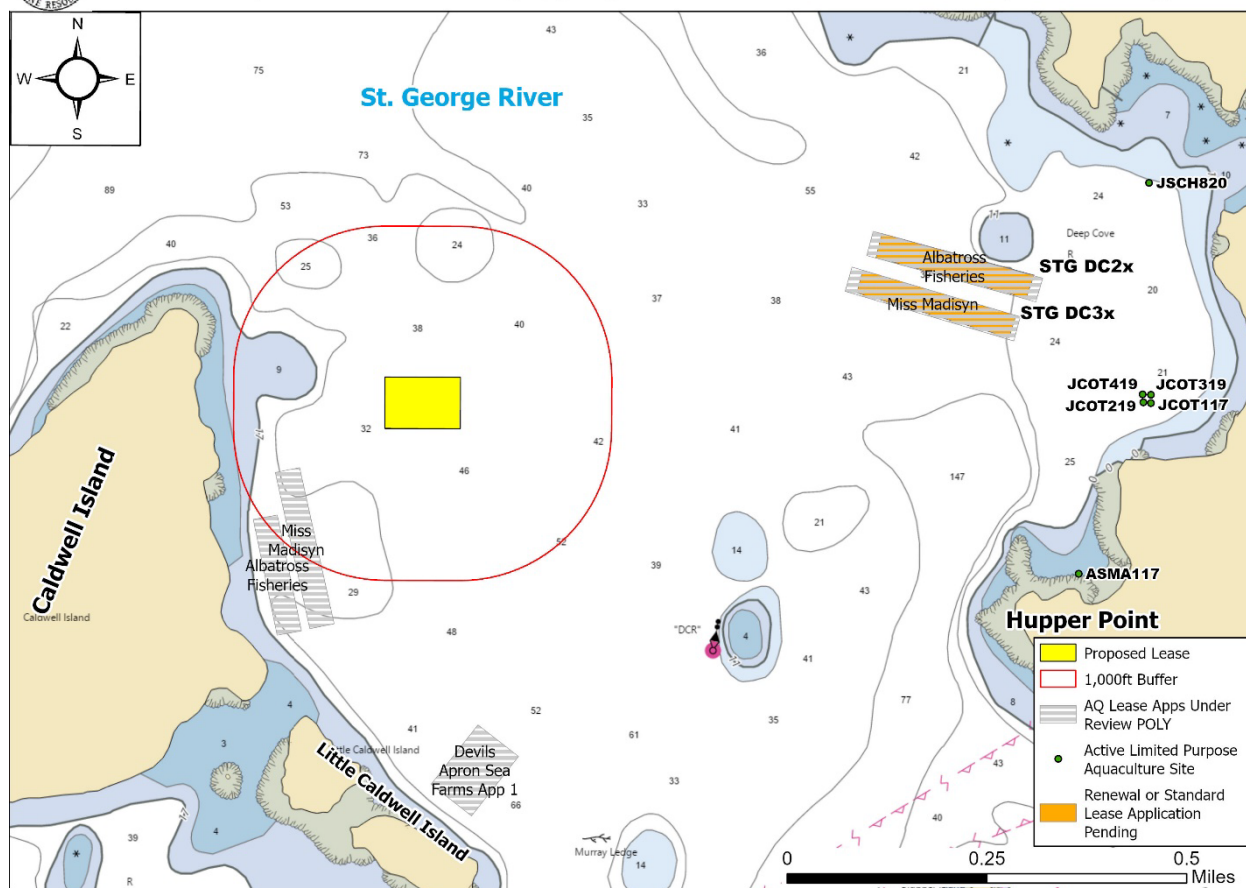


Figure 4. Aquaculture leases and LPA licenses in the vicinity of the proposed lease area.

(5) Existing System Support

Epibenthic Flora and Fauna

On September 4, 2024, MDMR 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 4.

Table 4. Species observed on underwater video footage.

Species Observed	Abundance
Mysid shrimp ( <i>Mysid sp.</i> )	Abundant
Sand shrimp ( <i>Crangon septemspinosa</i> )	Occasional



### Eelgrass (*Zostera marina*)

Records of eelgrass collected by the Maine Department of Environmental Protection (MDEP) in 2023<sup>6</sup> indicate mapped eelgrass presence in the vicinity of the proposal. The nearest mapped eelgrass is approximately 980 feet southwest of the proposal (Figure 5). Eelgrass blades were observed drifting on the surface of the water in the vicinity of the proposal. No eelgrass was observed on underwater video footage within the proposal boundaries during MDMR's site visit on September 4, 2024.



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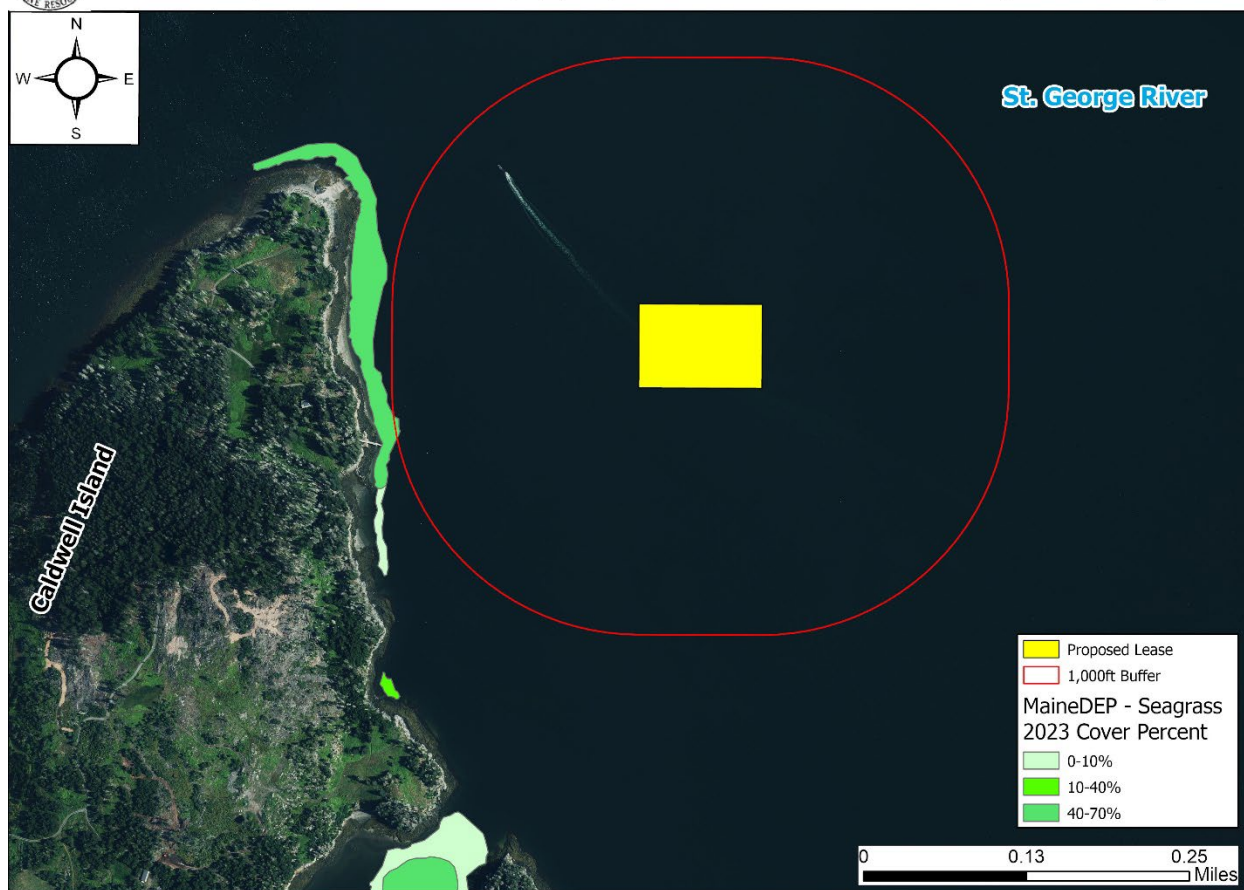


Figure 5. Mapped eelgrass (*Z. marina*) in the vicinity of the proposed lease area.

<sup>6</sup> Data obtained from The Maine Office of GIS "GISVIEW.MEDEP.Seagrass2023". Widgeon grass was observed only in a tributary to the Great Salt Bay, upstream of a culvert that likely restricts tidal flow. 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 MDMR's site visit, scientists observed osprey (*Pandion haliaetus*), bald eagles (*Haliaeetus leucocephalus*), common loon (*Gavia immer*), common tern (*Sterna hirundo*), and herring gulls (*Larus argentatus*) in the general vicinity of the proposal.

The Maine Department of Inland Fisheries and Wildlife (MDIFW) has jurisdiction over inland fisheries and wildlife resources of the state. MDIFW also has the authority to conserve wildlife populations and their ecosystems through applicable state laws and rules. MDMR provides MDIFW with notice and the opportunity to comment on all complete lease applications. In addition, the site report also includes MDIFW 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 MDIFW 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 near Tidal Waterfowl and Wading Bird Habitat (TWWH), which is a type of Significant Wildlife Habitat designated and regulated by MDIFW.<sup>7</sup> Based on data maintained by MDIFW, the nearest mapped TWWH is located approximately 990 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 the nearest mapped bald eagle nesting site to be approximately 1,735 feet southwest of the proposal (Figure 6).

MDIFW was provided with the opportunity to comment on this proposal. On April 10, 2024, a Resource Biologist with MDIFW responded by email to a "Request for Agency Review and Comment" stating that minimal impacts to wildlife are anticipated for this project.<sup>8</sup>

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<sup>7</sup> <https://www.maine.gov/ifw/programs-resources/environmental-review/significant.html>

<sup>8</sup> Email correspondence between MDIFW and MDMR



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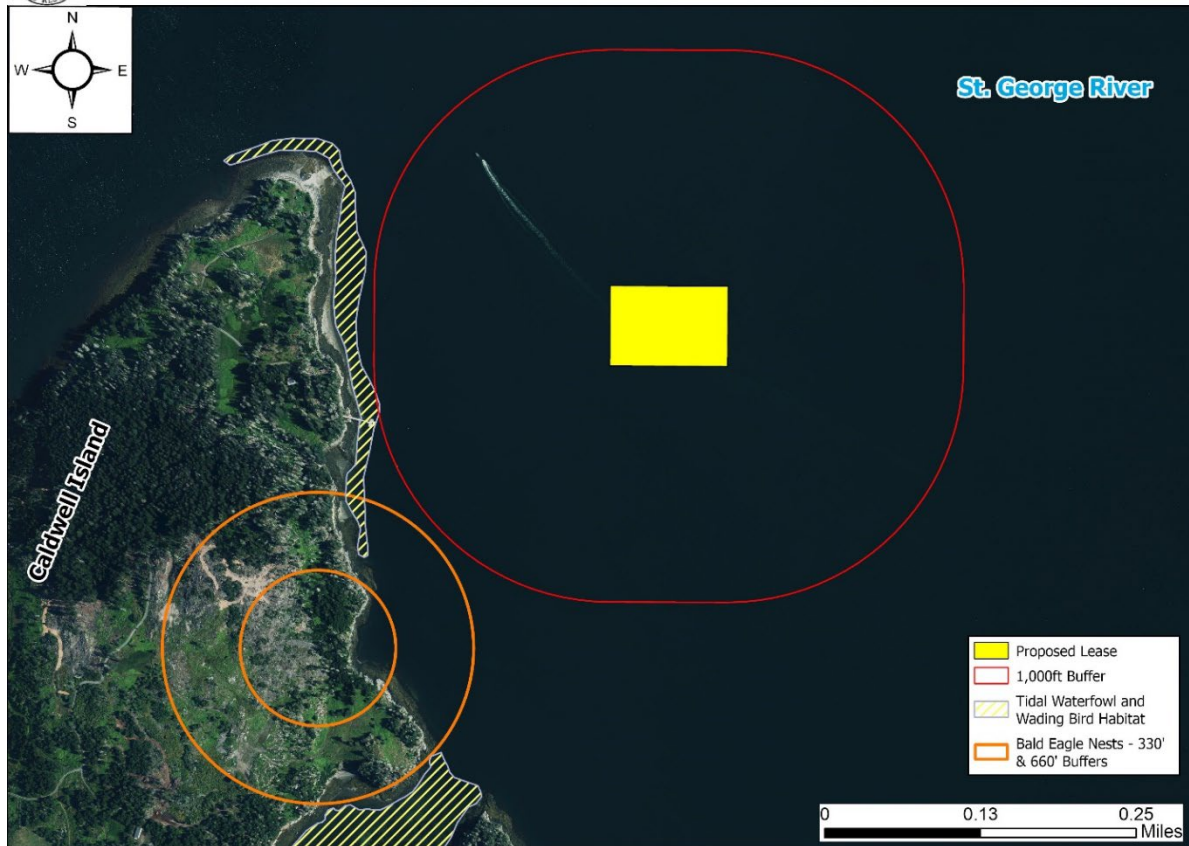


Figure 6. Mapped habitats in the vicinity of the proposed lease area.<sup>9</sup>

**(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) Water Quality**

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

<sup>9</sup> Data obtained from USFWS "Bald\_Eagle\_Nests\_-\_Maine\_2023" and MDIFW "EHRTERN", "EHPLVTRN", "GISVIEW.ME\FW.Twwh", "ShorebirdAreas", and "SNI".