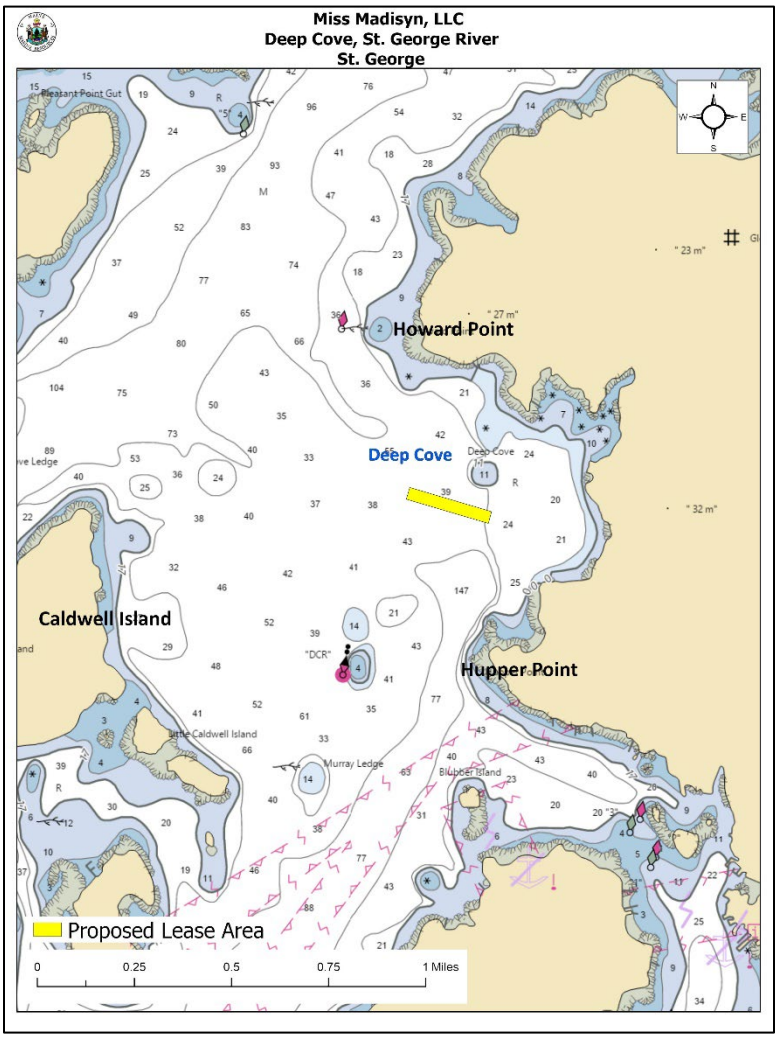

Figure 1. Vicinity map.[1]

Location: Deep Cove, St. George River, 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*), nori/laver (*Porphyra* spp.), *Gracilaria tikvahiae*, Irish moss (*Chondrus crispus*), and sea lettuce (*Ulva lactuca*).

Site Review: Geoffrey Shook and Chloe Kilborn
Report Preparation: Geoffrey Shook and Meryl Grady

[1] 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.
[2] Application lists shotgun kelp as *Agarum cribosum*, but current accepted name is *Agarum clathratum*.

Application Overview

The applicant, Miss Madisyn, LLC, is requesting a 4.43-acre[3] standard lease in Deep Cove, St. George River, within the town of St. George for the suspended culture of marine algae. The applicant intends to remove culture lines, crosslines, and depth control buoys from the site from June 16 until October 1. Moorings, mooring chains, and mooring lines will remain on site year-round, but mooring balls will be removed, and mooring lines and chains will be sunk to the bottom on site from June 16 until October 1. Required lease markers would remain on site year-round.[4] The applicant currently operates experimental lease STG DC3x within the boundaries of the proposed lease area (Figure 4).

General Characteristics

On October 18, 2023, Maine Department of Marine Resources (MDMR) scientists assessed the proposed lease site. MDMR scientists arrived on site at approximately 10:02 AM. The proposal is located in subtidal waters in Deep Cove, St. George River approximately 1,718.4 feet to the south of Howard Point at mean low water (MLW). The shoreline of Deep Cove was observed to be rocky with rockweed coverage, forested uplands with residential lawns. There is not any land within 1,000 feet of the proposal and no moorings, docks, or piers were observed within 1,000 feet (Figure 2).

Depth

On October 18, 2023, MDMR scientists began collecting depths at the proposed site at approximately 10:05 AM. The tide was flooding with the next high tide predicted at 1:41 PM (Table 1). Depths were determined to be between 32.7-50.1 feet. Correcting for tidal variations derives depths at mean low water (MLW, 0.0 feet) to be between 28.7-46.1 feet.

Table 1. Predicted tidal heights in Port Clyde, Maine.[5]

Date	Time	Height (ft)
2023/10/18	1:37 AM	8.7 H
2023/10/18	7:36 AM	0.9 L
2023/10/18	1:41 PM	9.8 H
2023/10/18	8:10 PM	0.1 L

Bottom Characteristics

MDMR scientists observed the bottom characteristics in the vicinity 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 lease site is primarily composed of mud.

[3] Applicant originally requested 4.44 acres. MDMR calculations indicate the area is 4.43 acres.
[4] Application page 13
[5] https://www.usharbors.com/harbor/maine/port-clyde-me/tides/?tide=2023-10#monthly-tide-chart

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

Position and Distances to Shore

The geodesic 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, digital orthophotography provided by the Maine Office of GIS, and the application coordinates (Table 3, Figure 2).

Application Coordinates (WGS84) – 4.43 Acres

Corner	Latitude	Longitude	
NW	43.94268°	-69.27679°	then 1,160.5 feet at 106° True to
NE	43.94179°	-69.27256°	then 165.8 feet at 194° True to
SE	43.94135°	-69.27272°	then 1,163.0 feet at 287° True to
SW	43.94224°	-69.27696°	then 166.5 feet at 17° True to NW

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

Feature	Distance
SW corner to Caldwell Island closest point MLW	~4,170.6 feet to the west
SE corner to Hupper Point closest point MLW	~1,282.6 feet to the south
SW corner to “DCR” buoy	~2,528.5 feet to the southwest
NW corner to Howard Point closest point MLW	~1,718.4 feet to the north

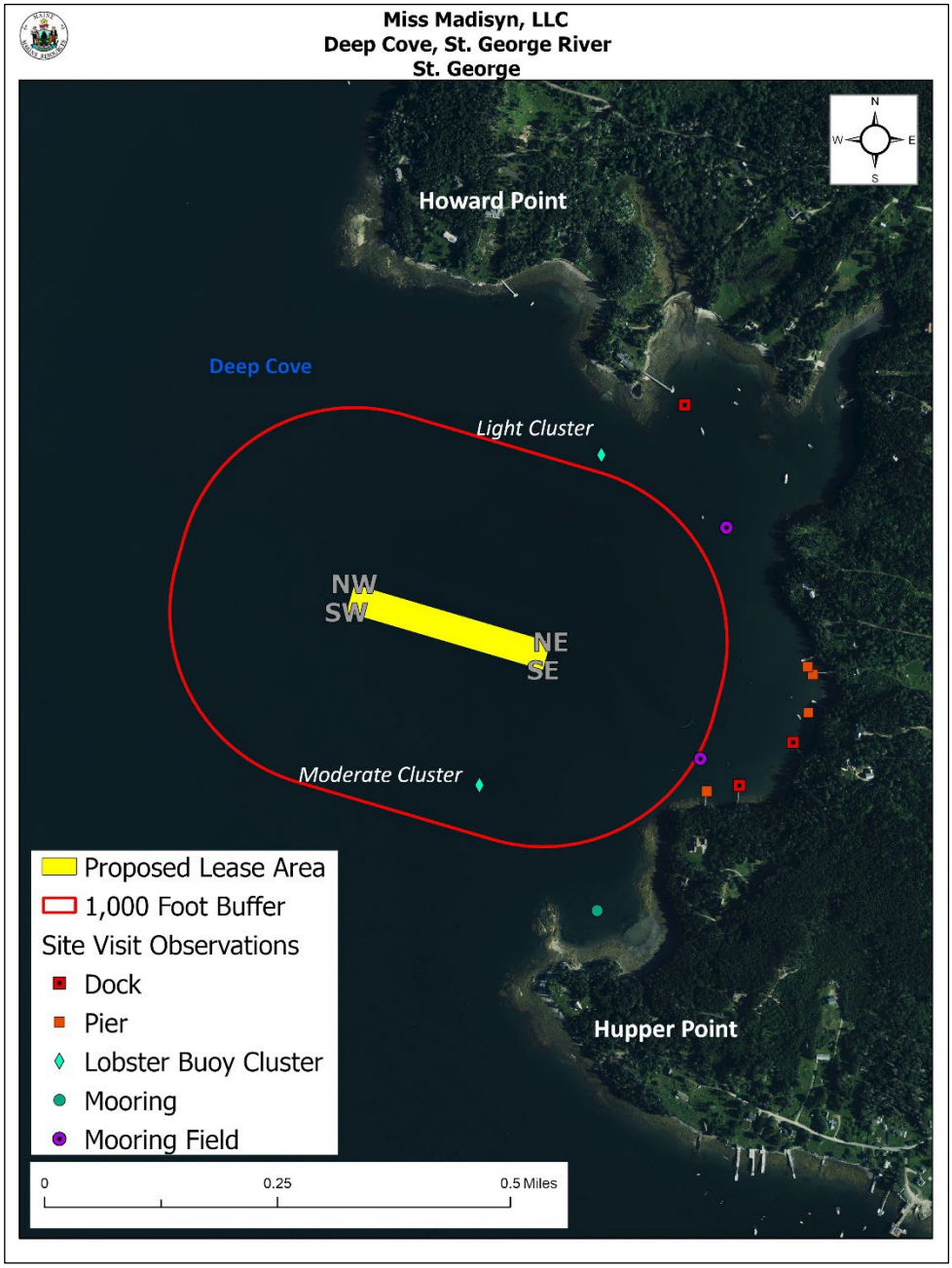

Figure 2. Proposed lease area with site visit observations.

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

(1) Riparian Ingress and Egress

During MDMR's site assessment, scientists did not observe any moorings, piers, or docks within 1,000 feet of the proposal. There were two mooring areas observed in Deep Cove. One mooring area contained eight moorings and was located approximately 1,022.8 feet to the southeast and the other contained 12 moorings and was located approximately 1,189.1 feet to the northeast of the proposal. There were six piers or docks observed in the eastern end of Deep Cove over 1,150 feet to the east of the proposed lease area, as well as a pier with a dock located approximately 1,542.4 feet to the north.

In a completed Harbormaster Questionnaire received by MDMR on June 7, 2023, it was indicated that the proposal would not impact riparian ingress and egress.

(2) Navigation

The proposal is located in subtidal waters in Deep Cove, which is located near the mouth of the St. George River, approximately 1,718.4 feet to the south of Howard Point at MLW. The proposal is located approximately 1,129.6 feet to the east of the primary navigational channel in the area and there is approximately 4,170.6 feet of navigable water between the proposed lease area and Caldwell Island at the entrance to the St. George River. An additional marked navigation channel located to the west of Caldwell Island also provides access to and from the St. George River (Figure 3). During MDMR's site assessment, scientists observed a lobster boat and a large recreational powerboat navigating to the west of the proposal.

The Harbormaster Questionnaire indicated that the proposal would not unreasonably interfere with navigation.

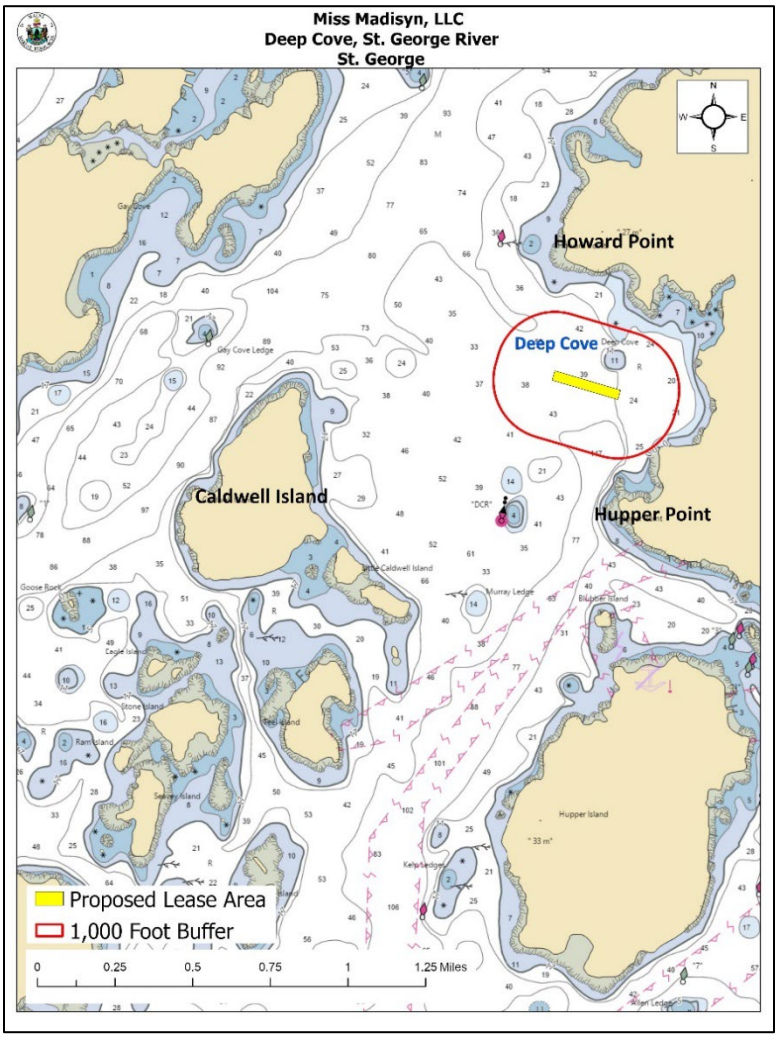

Figure 3. Charted navigational channels in the vicinity of the proposed lease area.

(3) Fishing and Other Uses

During MDMR's site assessment, scientists observed a light cluster of lobster buoys approximately 1,098.6 feet to the north of the proposal as well as a moderate cluster of lobster buoys located approximately 726.8 feet to the south (Figure 2). No recreational fishing was observed during the site assessment.

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

(4) Other Aquaculture Uses

There are three aquaculture leases (STG DC2x, STG DC3x, STG DC1x) and four limited purpose aquaculture (LPA) sites (JCOT117, JCOT219, JCOT319, JCOT419) within 1,000 feet of the proposal. STG DC2x is an experimental lease held by Albatross Fisheries that has a pending standard lease application that was deemed complete by MDMR on March 17, 2023. Experimental lease STG DC3x is held by the applicant of this proposal, Miss Madisyn LLC. The current proposal would replace the existing experimental lease, if granted. STG DC1x is held by John Cotton. STG DC1x submitted a draft standard lease application and held a scoping session on June 5, 2023. No final application has been received by MDMR at the time this report was published (Figure 4).

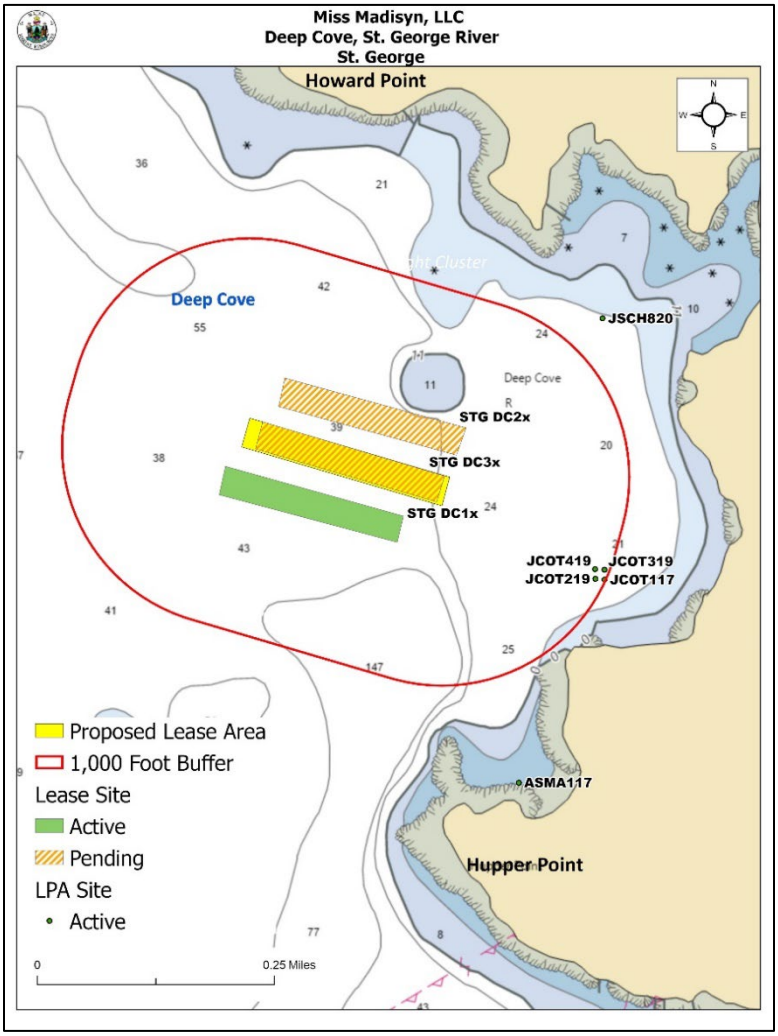

Figure 4. Aquaculture leases and LPA licenses in the vicinity of the proposed lease area.

(5) Existing System Support

Epibenthic Flora and Fauna

MDMR scientists utilized an ROV to assess the epibenthic ecology of the proposed lease. The relative abundance of epibenthic flora and fauna observed is described below in Table 4.

Table 4. Species observed on underwater video footage.

Species Observed	Abundance
Sand shrimp (*Crangon septemspinosa*)	Occasional
Winter flounder (*Pseudopleuronectes americanus*)	Rare

Eelgrass (*Zostera marina*)

Recent records of seagrass collected by the Maine Department of Environmental Protection (MDEP) in 2023[6] indicate that there is not mapped eelgrass within 1,000 feet of the proposal. The nearest mapped eelgrass is approximately 1,393.8 feet to the south (Figure 5). MDMR scientists did not observe any eelgrass during the site assessment or on underwater video footage.

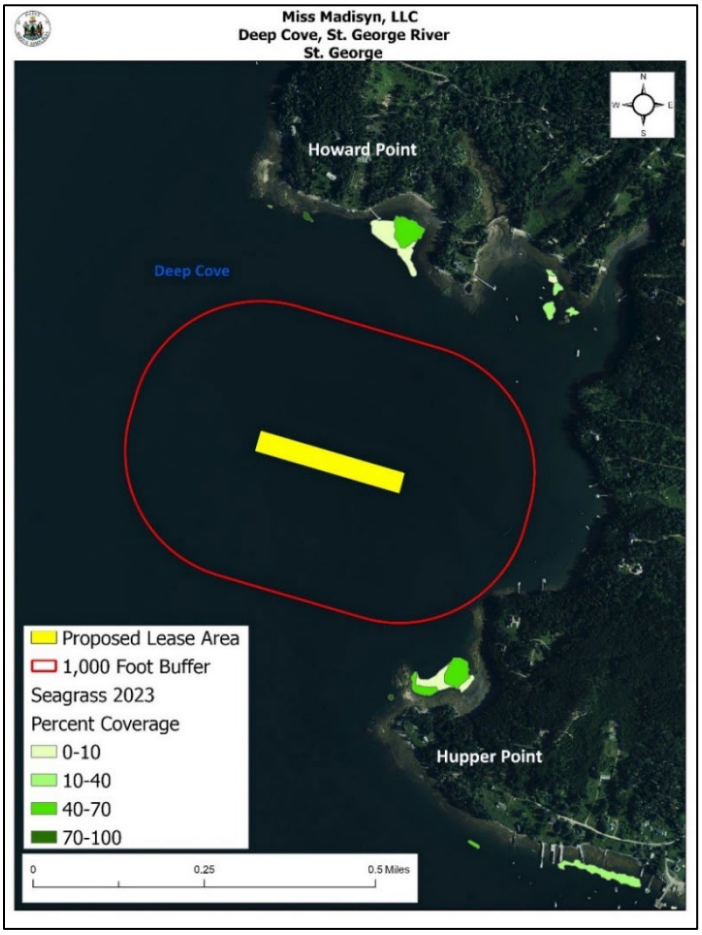

Figure 5. Mapped eelgrass in the vicinity of the proposed lease area.

[6] 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.

Wildlife

According to Geographic Information System (GIS) data maintained by the Maine Department of Inland Fisheries and Wildlife (MDIFW) and available through the Maine Office of GIS (MEGIS), the proposed lease is not within 1,000 feet of Tidal Waterfowl and Wading Bird Habitat (TWWH). The nearest TWWH habitat is located approximately 1,411.8 feet to the northeast. The nearest bald eagle (*Haliaeetus leucocephalus*) nest is mapped approximately 4,804 feet to the southwest of the proposal (Figure 6).

On June 28, 2023, a Wildlife Biologist with MDIFW responded by email to a "Request for Agency Review and Comment", stating that minimal impacts are anticipated.

During MDMR's site assessment, scientists observed a loon (*Gavia immer*), herring gulls (*Larus argentatus*), double-crested cormorants (*Nannopterum* auritum), and a harbor seal (*Phoca vitulina*) in the vicinity of the proposal.

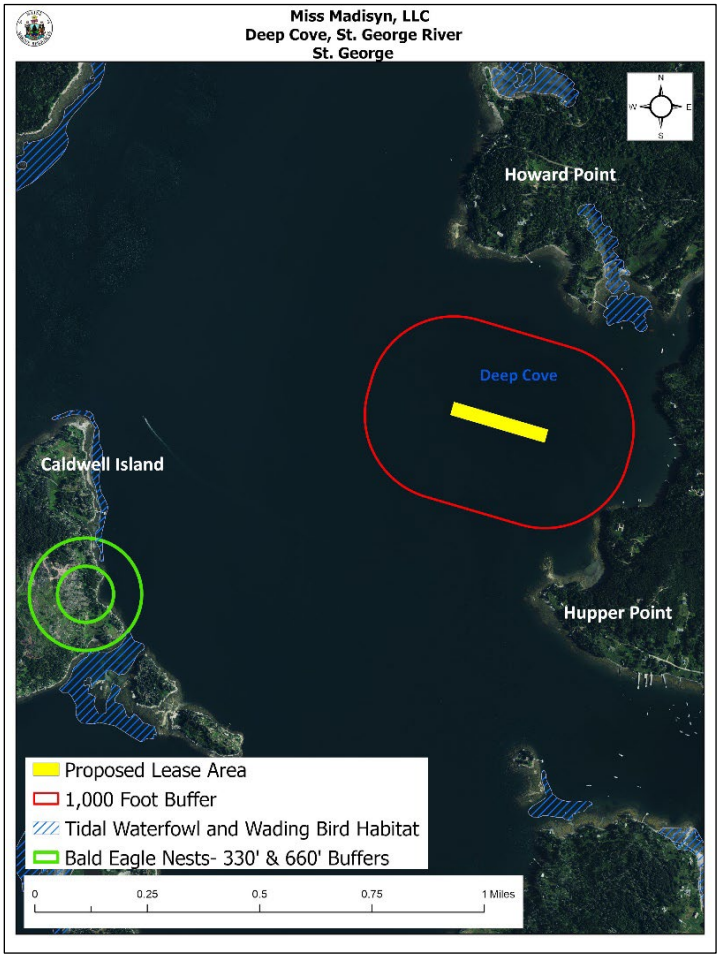

Figure 6. Mapped TWWH and bald eagle nests in the vicinity of the proposed lease area. [7]

[7] Data obtained from USFWS "Bald_Eagle_Nests_-_Maine_2023" and MDIFW maintained SDE Feature Class "GISVIEW.MEIFW.Twwh"

(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).

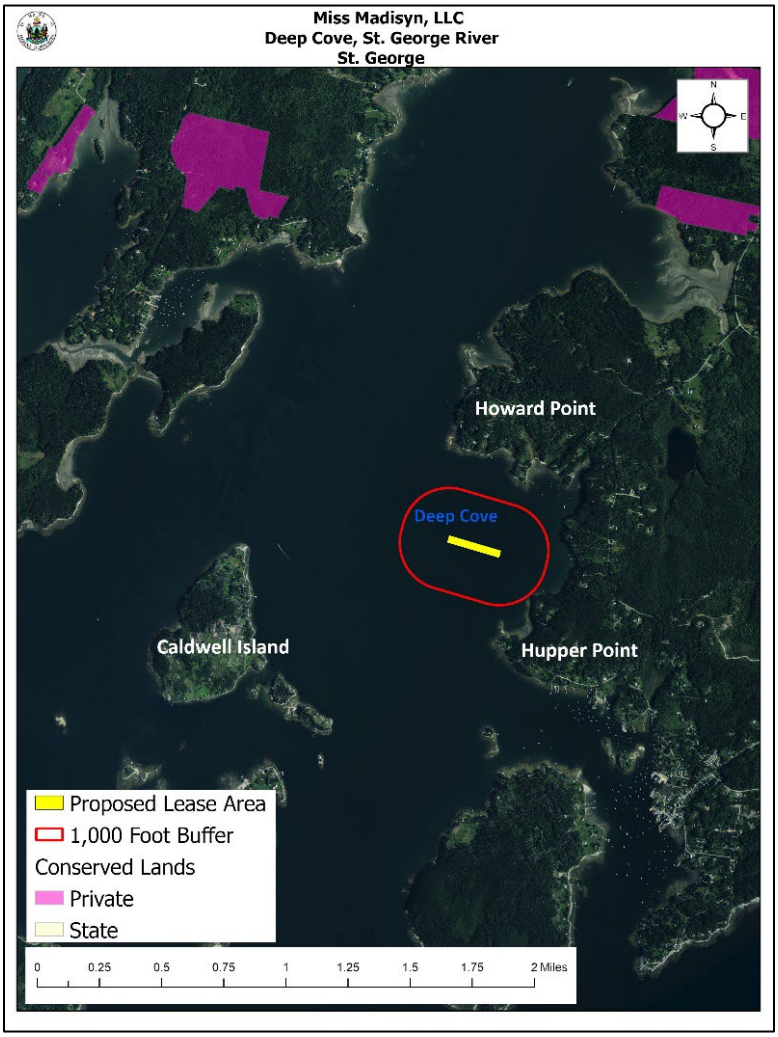

Figure 7. Conserved lands within the vicinity of the proposed lease area.

(7) Water Quality

The proposed lease is located within an area that is currently classified as Open/Approved for the harvest of shellfish by the MDMR Bureau of Public Health and Aquaculture.