

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

**Location:** North of Cow Island, Casco Bay, Long Island, Cumberland County, Maine

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

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Report Preparation: Geoffrey Shook, 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.



**Application Overview**

The applicant, Summit Point LLC, is requesting a 6.43-acre<sup>2</sup> standard lease north of Cow Island in Casco Bay, within the town of Long Island, for the suspended culture of marine algae. Seasonal gear and gear related to algae production is intended to be on site from November 1 – June 1. The required lease corner markers will remain in place year-round, as well as all mooring blocks, staples, and lines connecting the mooring blocks.<sup>3</sup>

**General Characteristics**

On June 5, 2024, Maine Department of Marine Resources (MDMR) scientists assessed the proposed lease site. MDMR scientists arrived on site at approximately 12:41 PM. The proposal is located approximately 337.3 feet to the northwest of Cow Island at mean low water (MLW). The shoreline of Cow Island was observed to be rocky with patches of gravel beaches leading to mixed forest uplands. The proposal is located directly adjacent to a mooring field and there is a pier with a dock on Cow Island located approximately 1,120.5 feet to the southwest (Figure 2).

**Depth**

On June 5, 2024, scientists began collecting depths at the proposed site at approximately 12:43 PM. The tide was ebbing with the next low tide predicted at 4:43 PM (Table 1). Depths were determined to be between 45.2-58.7 feet. Correcting for tidal variations derives depths at mean low water (MLW, 0.0 feet) to be between 37.6-51.1 feet.

**Table 1.** Predicted tidal heights in Casco Bay, Maine.<sup>4</sup>

Date	Time	Height (ft)
2024/06/05	4:37 AM	-0.9 L
2024/06/05	10:51 AM	9.5 H
2024/06/05	4:43 PM	0.3 L
2024/06/05	11:00 PM	11.1 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 lease site is primarily 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>2</sup> Applicant originally requested 6.4 acres. MDMR calculations indicate the area is 6.43 acres.

<sup>3</sup> Application pages 4, 5, 9

<sup>4</sup> <https://www.usharbors.com/harbor/maine/portland-harbor-me/tides/?tide=2024-06#monthly-tide-chart>



**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, 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) – 6.43 Acres**

<u>Corner</u>	<u>Latitude</u>	<u>Longitude</u>	
NW	43.695432°	-70.187889°	then 399.6 feet at 121° True to
NE	43.694858°	-70.186602°	then 701.96 feet at 214° True to
SE	43.693260°	-70.188083°	then 399.6 feet at 302° True to
SW	43.693834°	-70.189370°	then 701.96 feet at 34° True to NW

**Table 3.** Approximate distances from proposal corners to surrounding features (Figure 3).

Feature	Distance
NE corner to Cow Island closest point MLW	~585.0 feet to the southeast
SW corner to Great Diamond Island closest point MLW	~1,661.9 feet to the southwest
SW corner to red navigation buoy "2"	~1,439.1 feet to the southwest
NW corner to red navigation buoy "4"	~249.6 feet to the north
SE Corner to Cow Island closest point MLW	~337.3 feet to the southeast

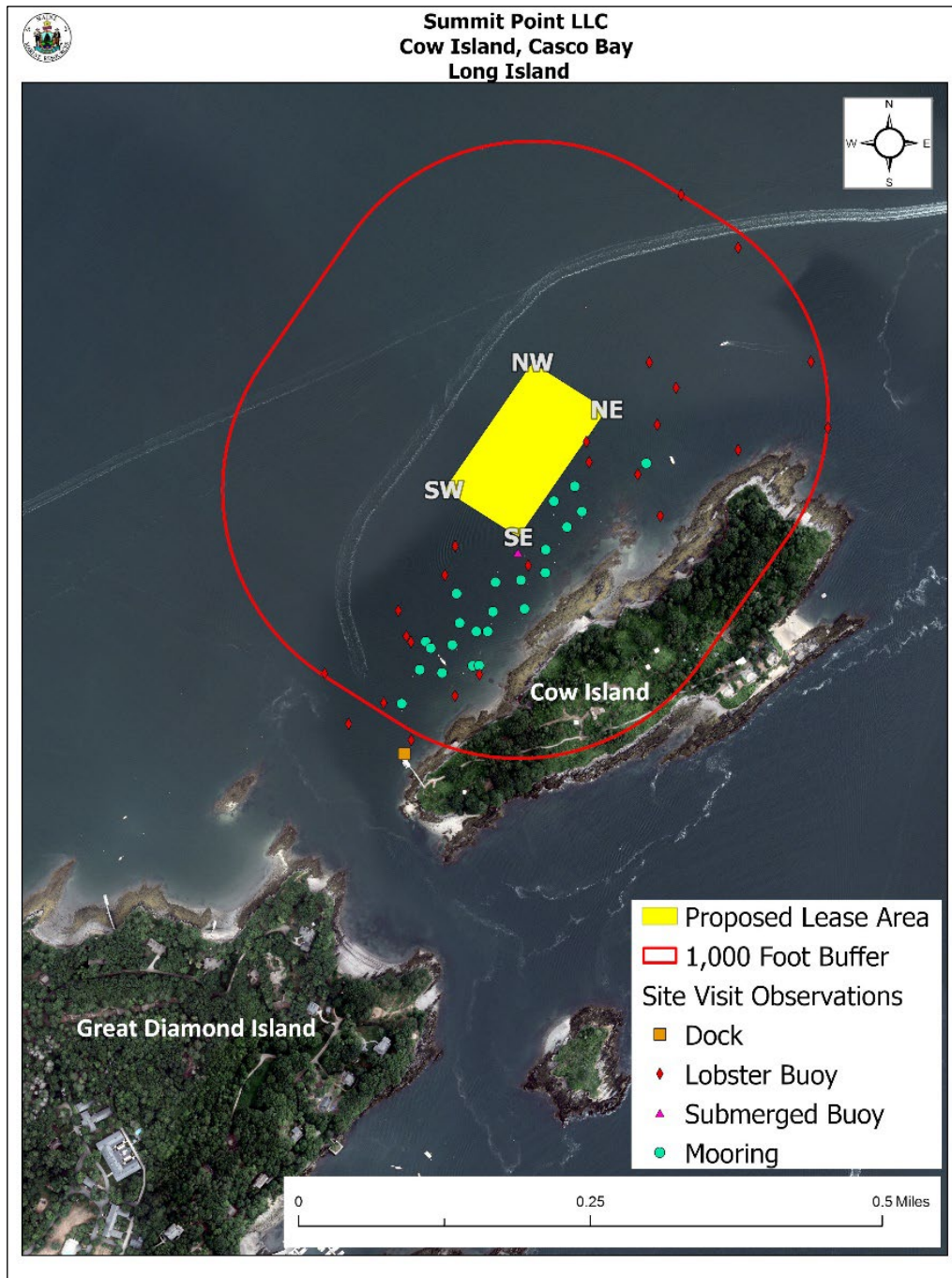


Figure 2. Proposed lease area with site visit observations.

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



**(1) Riparian Ingress and Egress**

The proposed lease area is located directly adjacent to a mooring field that contains approximately 23 moorings. The mooring observed nearest to the proposal was located approximately 39.1 feet to the southeast. At the time of the site visit, three moorings were occupied by recreational powerboats and one by an approximate 25-foot sailboat. All other moorings were observed to be vacant. There is a pier and dock approximately 1,120.5 feet to the southeast of the proposal that provides private access to Cow Island. There are no other piers or docks on the island (Figure 2).

Cow Island is privately owned by *Rippleeffect*, a non-profit organization that provides youth and adult outdoor education and adventure programs. The island is used as an eco-campus for many of the company's programs. The company permits public use and camping along the northwestern shore.<sup>5</sup>

**(2) Navigation**

The proposal is located in subtidal waters approximately 337.3 feet to the northwest of Cow Island at MLW and directly adjacent to a mooring field (Figure 2). The proposed lease area is outside of a marked navigation channel by approximately 24.3 feet to the southeast (Figure 3).

During MDMR's site assessment, scientists observed two ferries transiting from southwest to northeast, through the northwest corner of the proposal area, south of red navigation buoy "4". Scientists also observed one sailboat and three powerboats transiting from the south and into the mooring field, as well as eight powerboats and seven sailboats transiting in the channel to the east of the site (Figure 3).

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<sup>5</sup> <https://www.rippleeffectmaine.org/about>

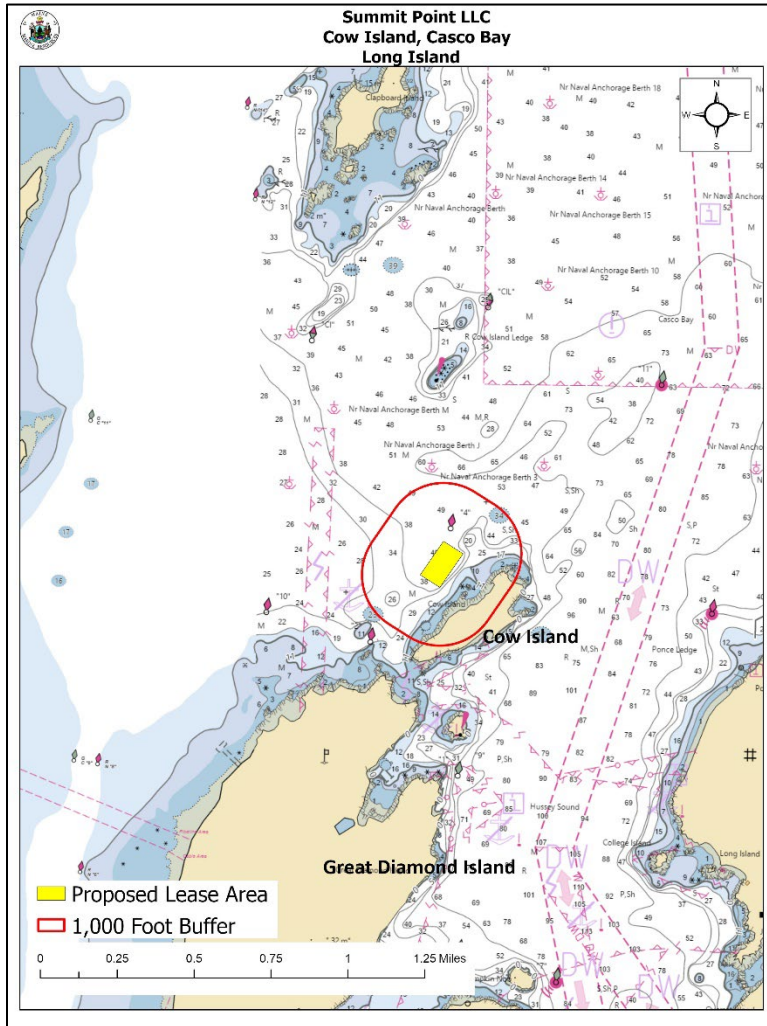


Figure 3. Charted navigational channels in the vicinity of the proposed lease area.

### (3) Fishing and Other Uses

During MDMR's site assessment, scientists observed light lobstering activity in the vicinity of the proposal. The lobster buoy closest to the proposal was located approximately 6.1 feet to the east of the proposal with an additional 23 lobster buoys located to the south, east, and north of the proposal (Figure 2).

Cow Island is privately owned, but the northwestern shore of the island is open to the public and landing on the beach along the northwestern shore of the island, as well as camping at designated sites, is allowed. Other parts of the island are used as an eco-campus for educational programs.<sup>6</sup>

<sup>6</sup> <https://www.rippleeffectmaine.org/about>



**(4) Other Aquaculture Uses**

There are no active aquaculture leases or LPAs within 1,000 feet of the proposal (Figure 4).

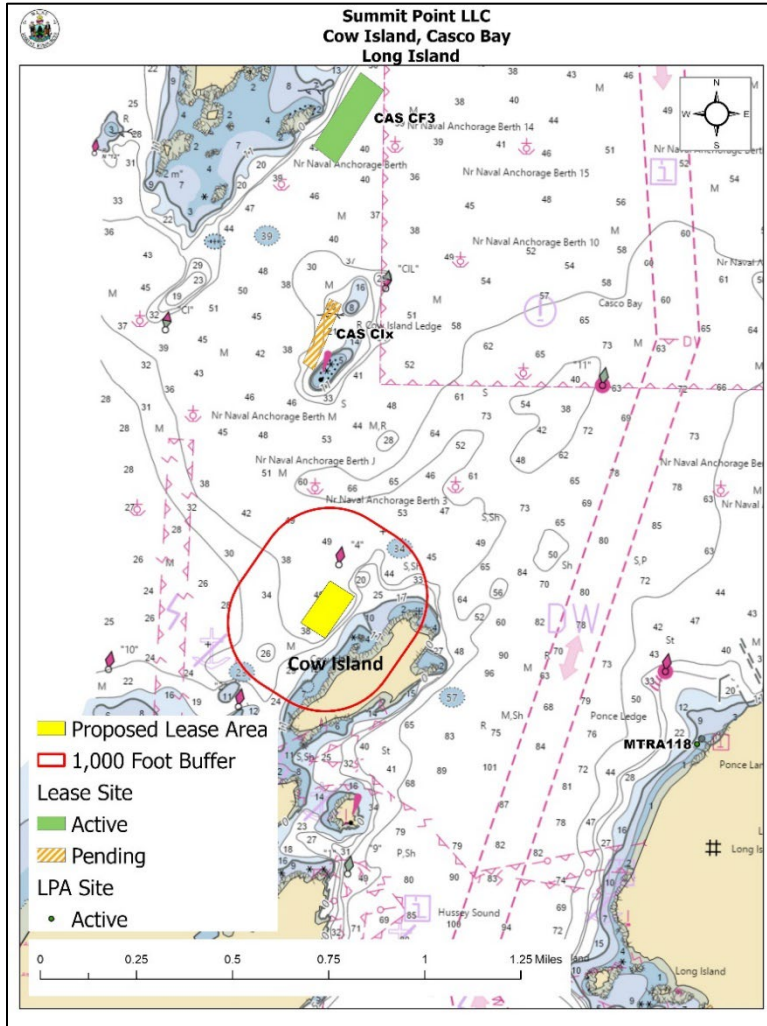


Figure 4. Aquaculture LPA licenses in the vicinity of the proposed lease area.

**(5) Existing System Support**

**Epibenthic Flora and Fauna**

MDMR scientists observed the bottom characteristics in the vicinity of the proposed lease site via a remotely operated vehicle (ROV). The relative abundance of epibenthic flora and fauna observed in the video is described below in Table 4.

Table 4. Species observed on underwater video footage.

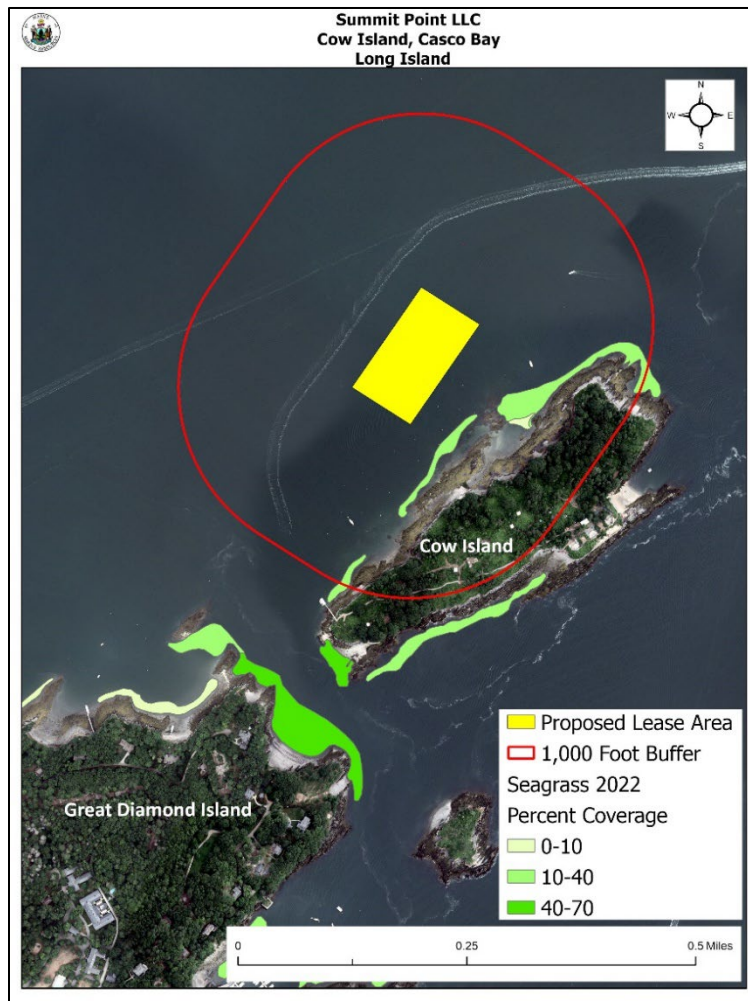
Species Observed	Abundance
Rockweed ( <i>Ascophyllum nodosum</i> )	Rare
Kelp ( <i>Saccharina latissima</i> )	Rare



Species Observed	Abundance
Hermit crab ( <i>Paguroidea spp.</i> )	Occasional
Rock crab ( <i>Cancer spp.</i> )	Occasional
Tunicates ( <i>Molgula spp.</i> )	Occasional
Sand shrimp ( <i>Crangon septemspinosa</i> )	Common

**Eelgrass (*Zostera marina*)**

Seagrass data collected in 2022<sup>7</sup> indicates that there is mapped eelgrass within 1,000 feet of the proposal. The nearest mapped eelgrass is a patch approximately 206.6 feet to the southeast of the proposal. During MDMR’s site assessment, scientists did not observe any eelgrass. No eelgrass was observed on underwater footage.



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

<sup>7</sup> 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.

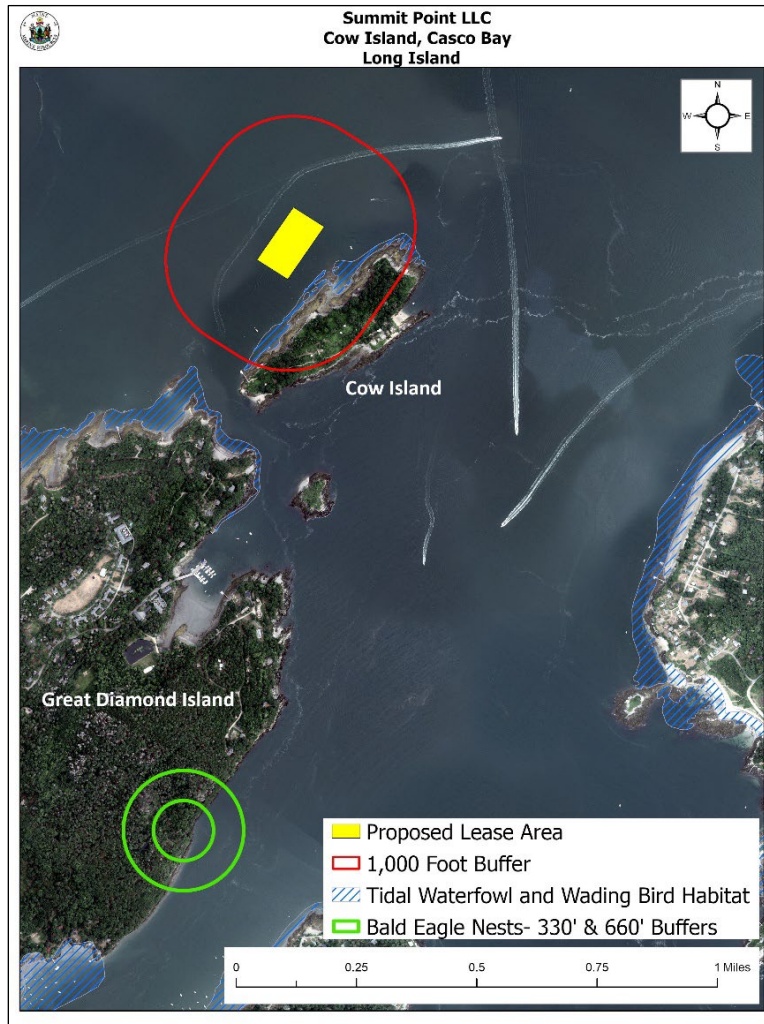




**Wildlife**

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), there is mapped Tidal Waterfowl and Wading Bird Habitat(TWWH) within 1,000 feet of the proposal. The nearest mapped TWWH is located approximately 220.1 feet to the southeast of the proposal. The nearest mapped bald eagle (*Haliaeetus leucocephalus*) nest is located approximately 1.2 miles to the south of the proposal (Figure 6). MDMR did not observe any bald eagles during the site visit.

During MDMR’s site assessment, scientists observed American black duck (*Anas rubripes*), herring gull (*Larus argentatus*), osprey (*Pandion haliaetus*), mallard (*Anas platyrhynchos*), and double-crested cormorant (*Nannopterum auritum*) in the vicinity of the proposal.



**Figure 6.** Mapped TWWH and nearest bald eagle nesting site.<sup>8</sup>

<sup>8</sup> 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).

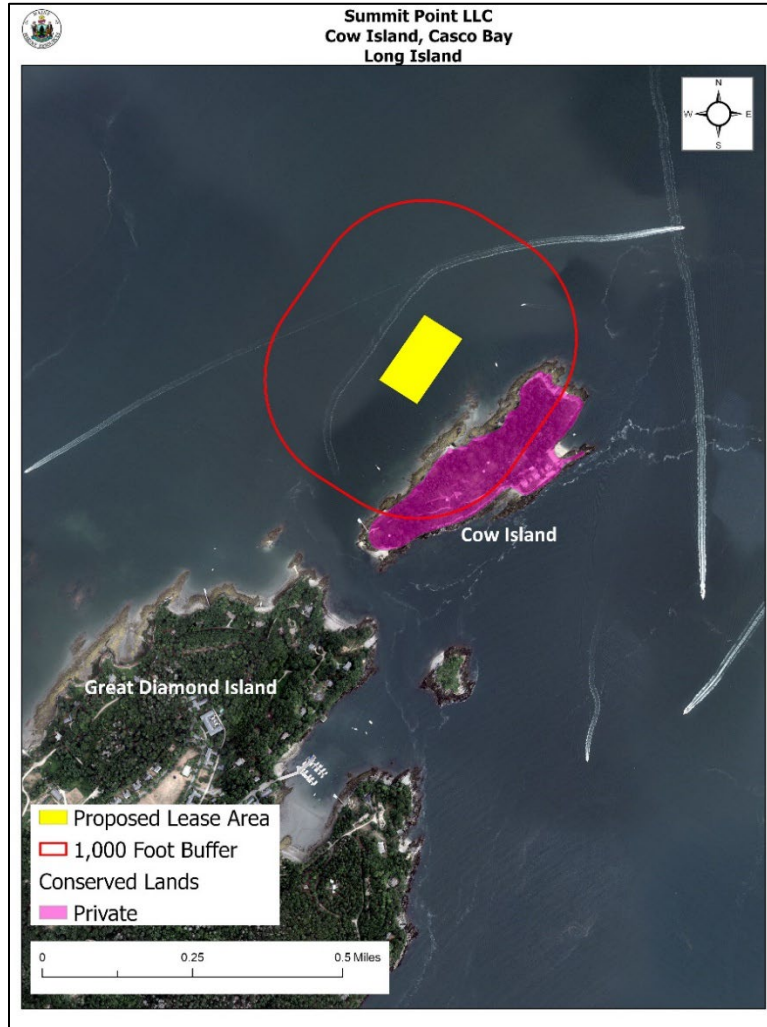
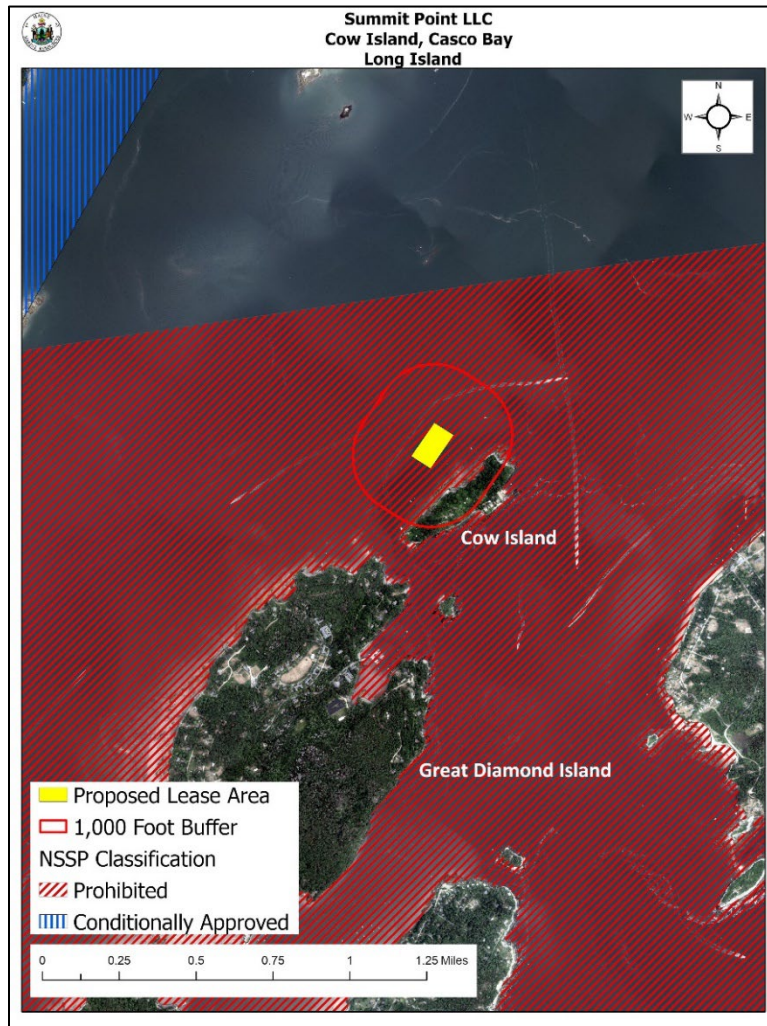


Figure 7. Conserved lands in the vicinity of the proposal.

**(7) Water Quality**

The proposed lease is located within an area that is currently classified as Closed/Prohibited to the harvest and culture of shellfish by the MDMR Bureau of Public Health and Aquaculture (Figure 8). This classification does not apply to the culture or harvest of marine algae.



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