

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

**Location:** West of Sewall’s Bridge, York River, York, York County, Maine

**Purpose:** Experimental lease for suspended culture of American/Eastern Oysters (*Crassostrea virginica*) and European Green Crabs (*Carcinus maenas*).

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<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, Southern Maine Sustainable Shellfish LLC, is requesting a 0.97-acre experimental lease in the York River, west of Sewall’s Bridge, for the suspended culture of American/eastern oysters (*Crassostrea virginica*) and European green crabs (*Carcinus maenas*). Pre-molt green crabs would be collected from the York River and Brave Boat Harbor in York, Maine. Gear is intended to be on site year-round.

**General Characteristics**

On October 13, 2022, Maine Department of Marine Resources (MDMR) scientists assessed the proposed lease site. MDMR scientists arrived on site at approximately 12:00 PM. The proposal is located approximately 123 feet, at mean high water (MHW)<sup>2</sup>, from the southern shore of the York River. The shoreline of the river in the area is marshland and muddy sand with rocky outcroppings. The southern shore is a mixture of forested and grass uplands with a residential neighborhood to the west. There is a golf course located along the northern shore with uplands that consist of patches of mixed forest with grass fairways and greens.

**Depth**

On October 13, 2022, MDMR scientists began collecting depths at the proposed site at approximately 12:00 PM. The tide was flooding with the next high tide predicted at 2:01 PM (Table 1). Depths were determined to be between 8.6-12 feet. Correcting for tidal variation derives depths at mean low water (MLW, 0.0 feet) to be from 1.1-4.5 feet. Deeper depths were observed near the channel in the northeast corner of the proposal and shallower depths were observed in the southern area of the proposal (Figure 2).

**Table 1.** Predicted tidal heights in York, Maine.<sup>3</sup>

| Date       | Time    | Height (ft) |
|------------|---------|-------------|
| 2022/10/13 | 1:54 AM | 8.9 H       |
| 2022/10/13 | 8:03 AM | 0.7 L       |
| 2022/10/13 | 2:01 PM | 9.5 H       |
| 2022/10/13 | 8:38 PM | 0.0 L       |

**Bottom Characteristics**

MDMR scientists observed the bottom characteristics of the proposed lease site via a drop camera transect. 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 shell rubble and muddy sand. Cobbles and small boulders were also observed.

<sup>2</sup> Navigational charts for this area do not show mean low water (MLW) contours so mean high water (MHW) is used as a reference instead.

<sup>3</sup> <https://www.usharbors.com/harbor/maine/york-harbor-me/tides/?tide=2022-10#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 | Muddy Sand                   |
| Biogenic Substrate | Shell Substrate                  | Shell Rubble                  | Clam Rubble<br>Oyster Rubble |

**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).

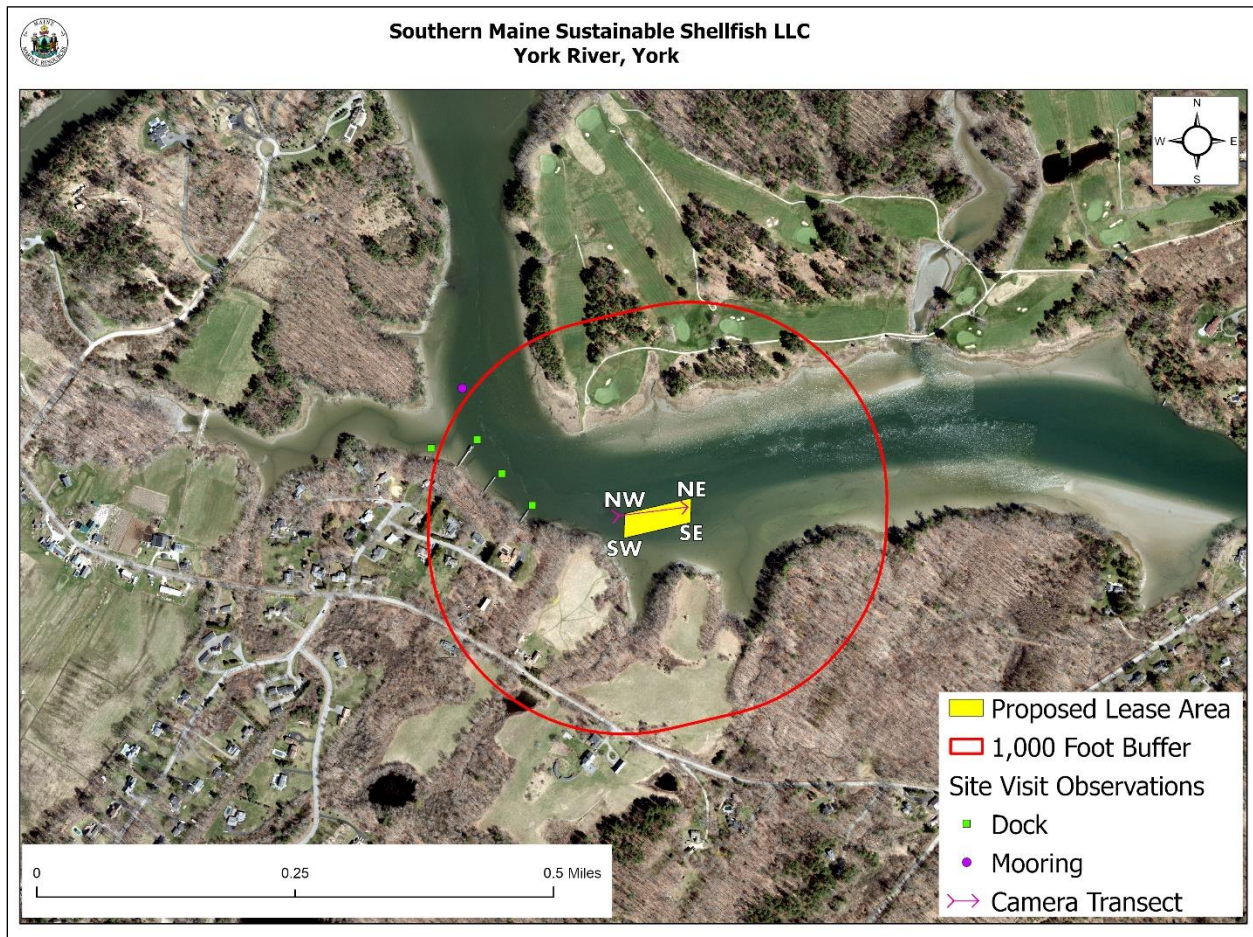
**Application Coordinates (WGS84) – 0.97 Acres**

| <u>Corner</u> | <u>Latitude</u> | <u>Longitude</u> |                                  |
|---------------|-----------------|------------------|----------------------------------|
| NW            | 43.135621°      | -70.673679°      | then 350.1 feet at 75° True to   |
| NE            | 43.135858°      | -70.672408°      | then 125.0 feet at 180° True to  |
| SE            | 43.135515°      | -70.672408°      | then 350.1 feet at 255° True to  |
| SW            | 43.135278°      | -70.673679°      | then 125.0 feet at 0° True to NW |

**Table 3.** Approximate distances from proposal corners to surrounding features (Figure 3).<sup>4</sup>

| Feature   | Distance                     |
|---|------------------------------|
| SW corner to southern shoreline closest point MHW       | ~123.2 feet to the southwest |
| NE corner to northern shoreline closest point MHW       | ~570.8 feet to the north     |
| NE corner to visible shoal on aerial imagery (Figure 2) | ~260.0 feet to the north     |
| NE corner to Sewall’s Bridge                            | ~3,130.7 feet to the east    |
| NW corner to observed ledge (Figure 2)                  | ~90.1 feet to the northwest  |

<sup>4</sup> Navigational charts for this area do not show mean low water (MLW) contours so mean high water (MHW) is used as a reference instead.



**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 observed three piers within 1,000 feet of the proposal. All observed piers were to the west of the proposal along a sharp bend in the river with the closest one located approximately 474 feet to the west (Figure 2). Two of the piers had catwalks and floating docks attached to them with a small powerboat tied to each dock. The pier to the west also had 15-20+ lobster traps and associated gear stored on it as well as a small inflatable boat tied to the dock (Image 1). The pier in the middle had a catwalk in a retracted position and did not have a dock attached (Image 2). A set of stairs leading to the shoreline was observed in between the two piers closest to the proposal. A mooring, with a small powerboat



on it, and an additional dock, with a small powerboat on it, were observed to the northwest of the proposal approximately 1,047.4 feet and 1,043.9 feet away, respectively.



**Image 1.** Pier with lobster gear stored on it.



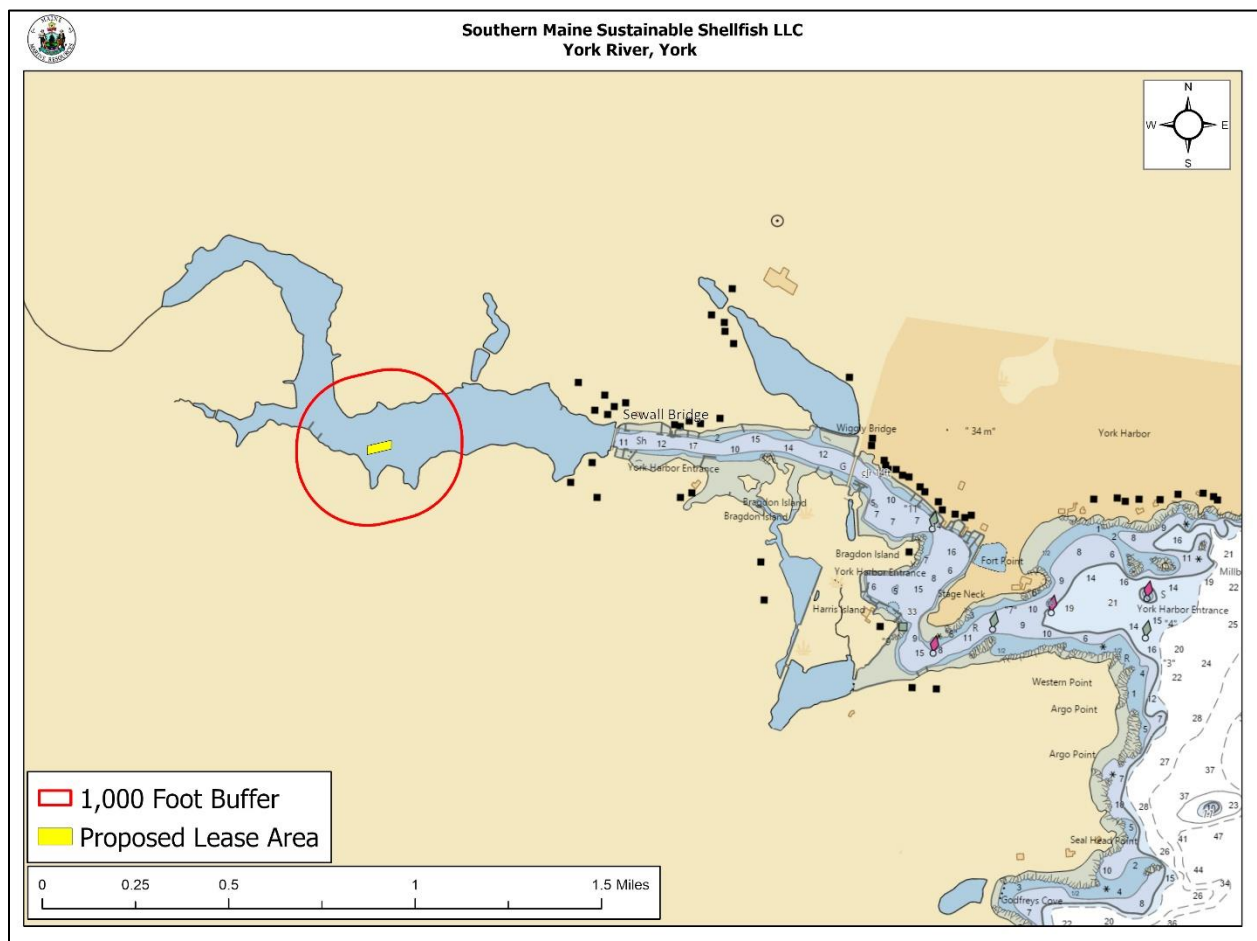
**Image 2.** Pier with retracted catwalk.



**(2) Navigation**

The proposal is located approximately 123.2 feet from the southern shoreline of the York River at MHW. Available navigational charts for the York River do not show depth soundings or the mean low water line upriver of Sewall’s Bridge (Figure 3) but utilizing aerial imagery indicates that there is approximately 260 feet of navigable water to the north of the proposal (Figure 2). There is a small area of submerged intertidal ledge approximately 90.1 feet to the northwest of the proposal near the southern edge of the navigable waterway in the area.

During MDMR’s site assessment, scientists observed two canoes operating near the shoreline inside of the proposal area. Scientists also observed a mooring field upriver to the north that had approximately 16 moorings. Several were occupied by small powerboats. Scientists also observed numerous docks and powerboats further upriver. Bridges over the York River, both upriver and downriver of the proposed lease area, may affect the types of vessels that navigate in the area as the height of the bridges limit vessel transit.



**Figure 3.** Charted navigational channels in the vicinity of the proposed lease area.<sup>5</sup>

<sup>5</sup> Navigation charts for this area do not show depth contours west of Sewall’s Bridge

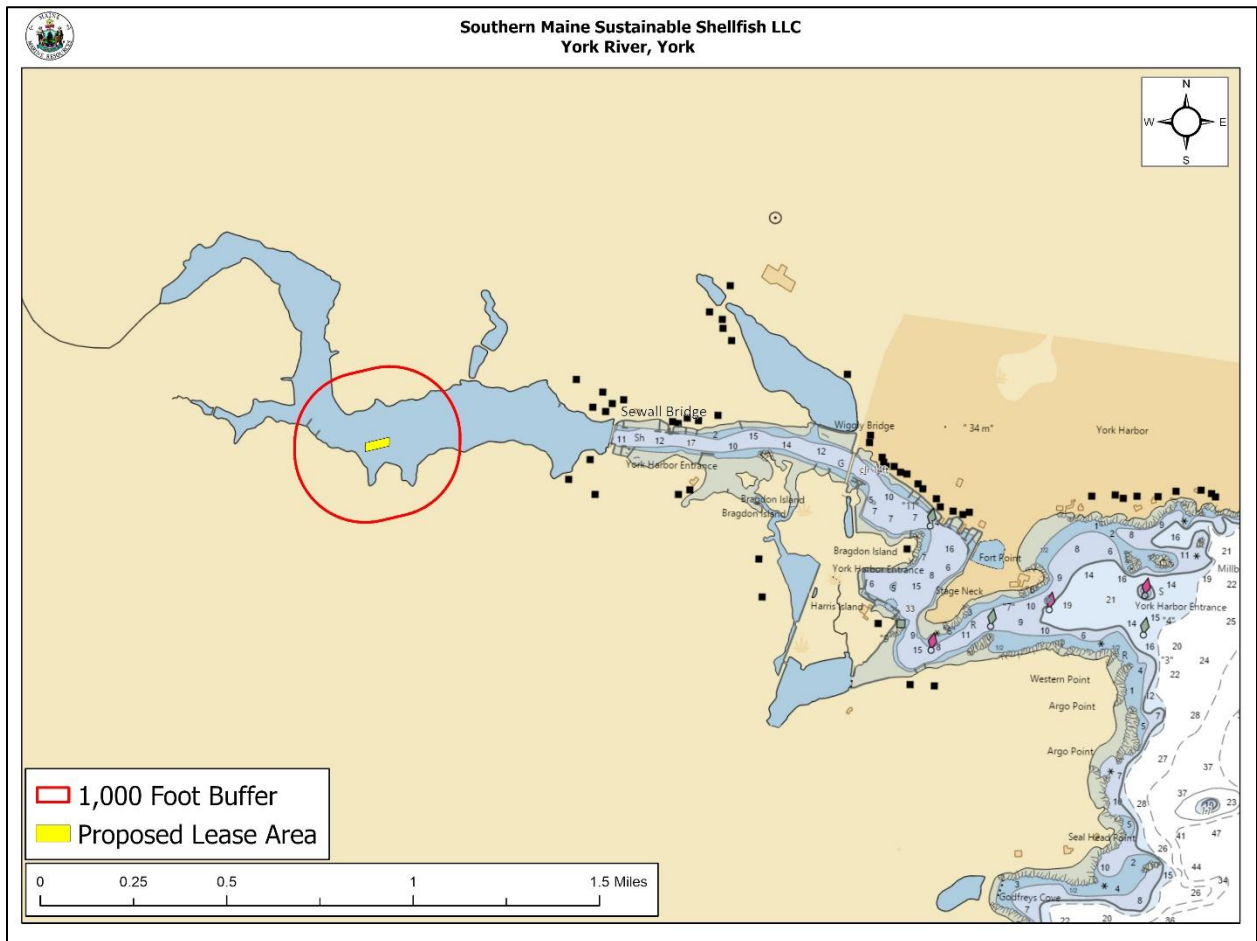


**(3) Fishing and Other Uses**

During MDMR’s site assessment, scientists did not observe any lobster fishing occurring within 1,000 feet of the lease. Scientists observed a pier approximately 850 feet to the northwest that had 15-20+ lobster traps and associated gear stored on it. Additionally, there is a golf course along the northern shore of the river in the vicinity of the proposal and there are fairways and greens within 1,000 feet of the proposal (Figure 2).

**(4) Other Aquaculture Uses**

There are no active aquaculture leases or Limited Purpose Aquaculture (LPA) licenses within 1,000 feet of the proposal (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 conducted a transect using a drop camera to assess the epibenthic ecology of the proposed lease. The relative abundance of epibenthic flora and fauna observed in the video transects is described below in Table 4.

**Table 4.** Species observed using underwater camera footage.

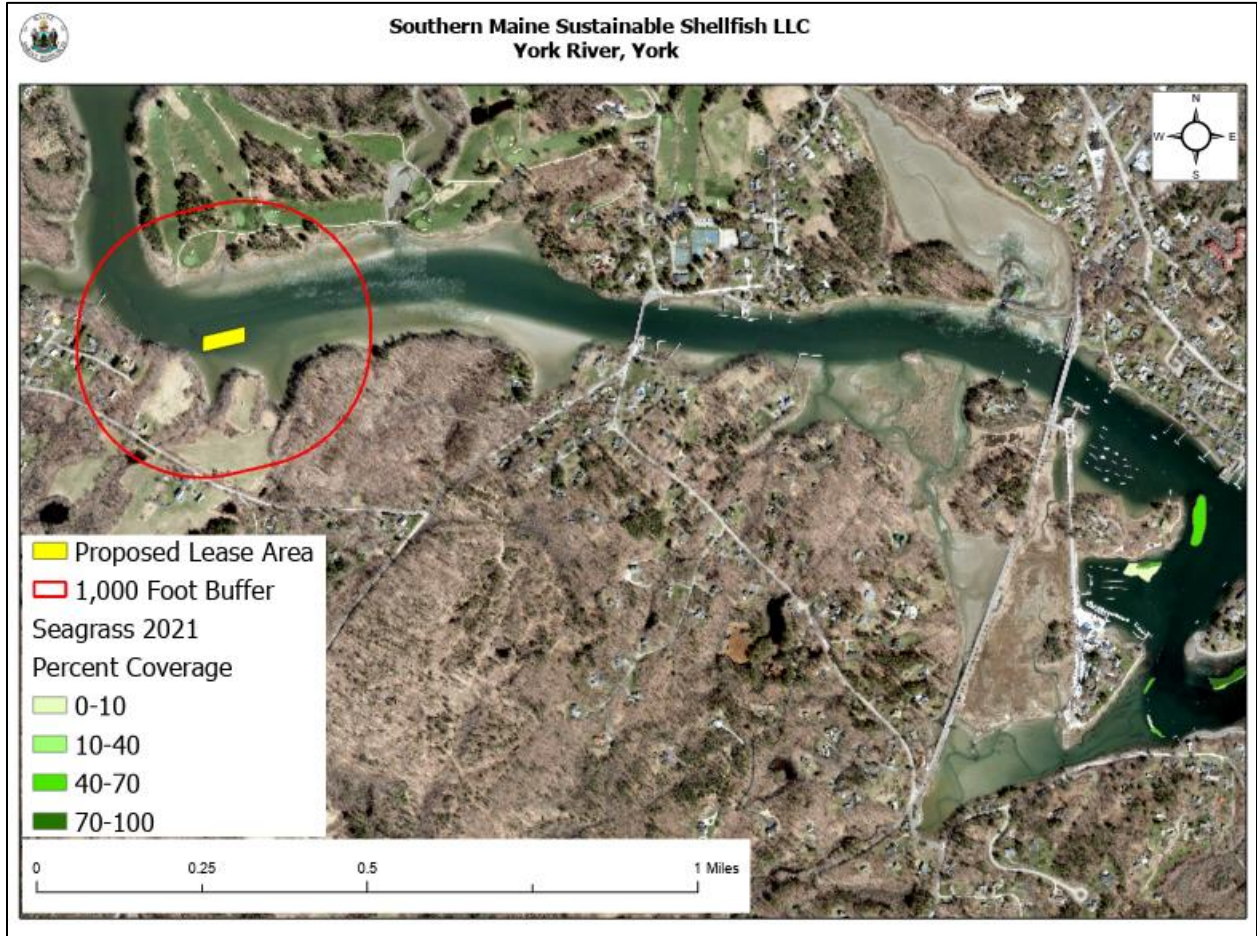
| Species Observed   | Abundance  |
|--|------------|
| Hermit Crab ( <i>Paguroidea</i> spp.)                        | Occasional |
| Rockweed ( <i>Ascophyllum nodosum</i> )                      | Occasional |
| Sea Lettuce ( <i>Ulva lactuca</i> )                          | Occasional |
| Filamentous red algae, possibly <i>Dasysiphonia japonica</i> | Rare       |
| European oyster ( <i>Ostrea edulis</i> )                     | Common     |
| Green crab ( <i>Carcinus maenas</i> )                        | Common     |
| Tunicates ( <i>Didemnum</i> spp.)                            | Common     |





**Eelgrass (*Zostera marina*)**

Historical records of seagrass collected in 2021<sup>6</sup> indicate that there is no mapped eelgrass within 1,000 feet of the proposal. The nearest mapped eelgrass is approximately 1.7 miles downriver to the east of the proposal. During MDMR’s site assessment, scientists did not observe any eelgrass.



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

**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 within 1,000 feet of mapped Tidal Waterfowl and Wading Bird Habitat (TWWH). The southeastern and southwestern corners of the proposal are located within mapped TWWH habitat (Figure 6). The nearest mapped bald eagle (*Haliaeetus leucocephalus*) nest is located approximately 1.2 miles to the west of the proposal.

<sup>6</sup> Data obtained from The Maine Office of GIS “GISVIEW.MEDEP.Eelgrass2021”. Widgeon grass was observed only in the Spinney Creek backwater off the Piscataqua 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.



On April 22, 2022, a Wildlife Biologist with MDIFW responded by email to a “Request for Agency Review and Comment”, stating that the proposal is within TWWH and is also adjacent to shorebird feeding areas. The MDIFW scientist indicated that staff had discussed options with the applicant to minimize impact. The applicant agreed to shorten spacing between cages along the western stretch of the lease, so that gear would be in deeper water and further from TWWH. MDIFW scientists also recommended minimizing activity in the intertidal zone between July 15<sup>th</sup>-September 15<sup>th</sup>. MDIFW noted that if their recommendations are followed, then minimal impacts would be anticipated.

During MDMR’s site assessment, scientists observed two Kingfishers (*Alcedinidae sp.*) in flight in the vicinity of the lease.

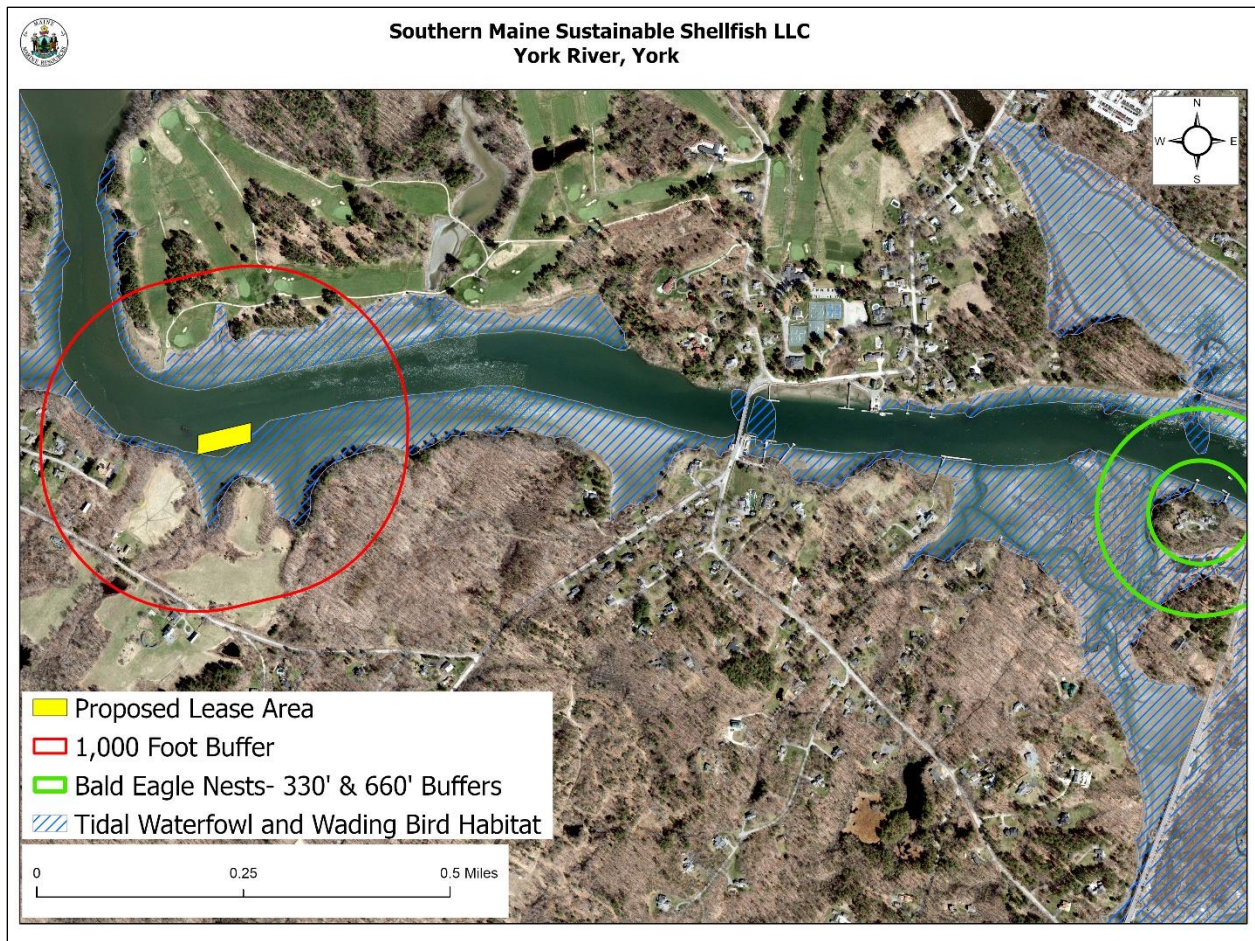


Figure 6. Mapped bald eagle nests and Tidal Waterfowl and Wading Bird Habitat.<sup>7</sup>

<sup>7</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 owned by federal, state, or municipal governments.

**(7) Water Quality**

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