

Figure 1. Vicinity map.¹

Location: North end of the Morse River, Spirit Pond, Phippsburg, Sagadahoc County, Maine

Purpose: Standard lease for bottom and suspended culture of American/eastern oyster (*Crassostrea virginica*) and northern quahogs (*Mercenaria mercenaria*).

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¹ Unless otherwise noted, all figures in this report were created in ArcGIS Pro version 3.3 using digitized NOAA Nautical Charts or georeferenced aerial photographs provided by The Maine Office of GIS.



Application Overview

The applicant, Clam Hunter Seafood, Inc., is requesting a 2.52-acre, 20-year, standard lease at the north end of the Morse River in Spirit Pond for bottom and suspended culture of shellfish. The applicant intends for the site to be active year-round. Floating bags would be removed from the site and bottom bags and cages would be sunk to the seafloor in the winter.² The applicant currently operates limited purpose aquaculture (LPA) sites CWAT117, CWAT317, TWAT222 and experimental lease site MOR SPx within the boundaries of the proposal. All three LPAs and experimental lease MOR SPx would be relinquished if the proposal is granted.³

General Characteristics

On July 17, 2025, Department of Marine Resources (DMR) scientists visited the proposed lease site. DMR scientists arrived on site at approximately 11:37 AM. The proposal is located in subtidal waters in Spirit Pond approximately 16 feet south of the shoreline at mean low water (MLW) (Figure 1). The area in the vicinity of the proposal was observed to consist of muddy shoreline leading to marsh grass with rocky outcroppings and primarily deciduous forest uplands.

Depth

On July 17, 2025, DMR scientists began collecting depths at the proposed site at approximately 12:37 PM. The tide in Popham Beach was flooding with the next high tide predicted at 5:00 PM (Table 1). Due to the remains of a historical dam at the west end of the pond (Image 1), water movement is restricted within the pond causing tidal delays. During the site visit, local low tide within Spirit Pond was observed at approximately 12:45 PM, over two hours after the predicted low at Popham Beach (Table 1). DMR scientists observed a small sandbar in Spirit Pond uncover as the tide approached local low and then begin to recover with water once the tide began flooding. Depth measurements were collected around the locally observed low tide. Depths were determined to be between 0.7-1.0 feet. Correcting for tidal variations derives depths at mean low water (MLW, 0.0 feet) to be between 0.7-1.0 feet (Table 2). Depths at mean high water (MHW) are estimated to be between approximately 6.0⁴-9.3 feet. Water current was flowing in a southerly direction, draining out of the pond, for the majority of the site visit.

Table 1. Predicted tidal heights in Popham Beach, Maine.⁵

Date	Time	Height (ft)
2025/07/17	4:27 AM	10.8 H
2025/07/17	10:36 AM	0.0 L
2025/07/17	5:00 PM	10.3 H
2025/07/17	11:13 PM	0.2 L

² Application page 8, 38-B

³ Application page 11

⁴ Application page 11

⁵ <https://tides.net/maine/957/2025/07/>



Table 2. Collected and derived depths at corners of the proposed lease area.

Corner	Measured Depth (ft)	MLW Depth (ft)
1	0.7	0.7
2	0.7	0.7
3	0.8	0.8
4	1.0	1.0

Bottom Characteristics

DMR scientists observed the bottom characteristics of the proposed lease site via an underwater camera. Bottom characteristics were categorized using the Coastal and Marine Ecological Classification Standard (CMECS), a national standard for describing features of the marine environment (Table 3). Sediment information was determined based on visual analysis of the video. The bottom of the proposed lease site is primarily composed of mud with areas of shell rubble.

Table 3. Bottom characteristics of the proposed site.

Substrate Origin	Substrate Class	Substrate Subclass	Substrate Group
Geologic Substrate	Unconsolidated Mineral Substrate	Fine Unconsolidated Substrate	Mud
Biogenic Substrate	Shell Substrate	Shell Rubble	Not classified

Position and Distances to Shore

The geodesic 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 4, Figure 2,3).

Application Coordinates (WGS84) – 2.52 Acres

<u>Corner</u>	<u>Latitude</u>	<u>Longitude</u>					
1	43.749609°	-69.807839°	then	145	feet at	139°	True to
2	43.749310°	-69.807479°	then	756	feet at	239°	True to
3	43.748231°	-69.809923°	then	150	feet at	321°	True to
4	43.748556°	-69.810273°	then	749	feet at	059°	True to 1



Table 4. Approximate distances from proposal corners to surrounding features (Figure 2,3).

Feature	Distance
Corner 1 to Spirit Pond northern shore at MLW	~180' to northwest
Corner 1 to Spirit Pond eastern shore at MLW	~690' to the northeast
Corner 2 to Spirit Pond eastern shore at MLW	~701' to the northeast
Corner 2 to Spirit Pond southern shore at MLW	~655' to the southeast
Corner 3 to Spirit Pond southern shore at MLW	~887' to the southeast
Corner 3 to unnamed island at MLW	~245' to the west-southwest
Corner 4 to unnamed island at MLW	~255' to the southwest
Corner 4 to Spirit Pond northern shore at MLW	~165' to the northwest

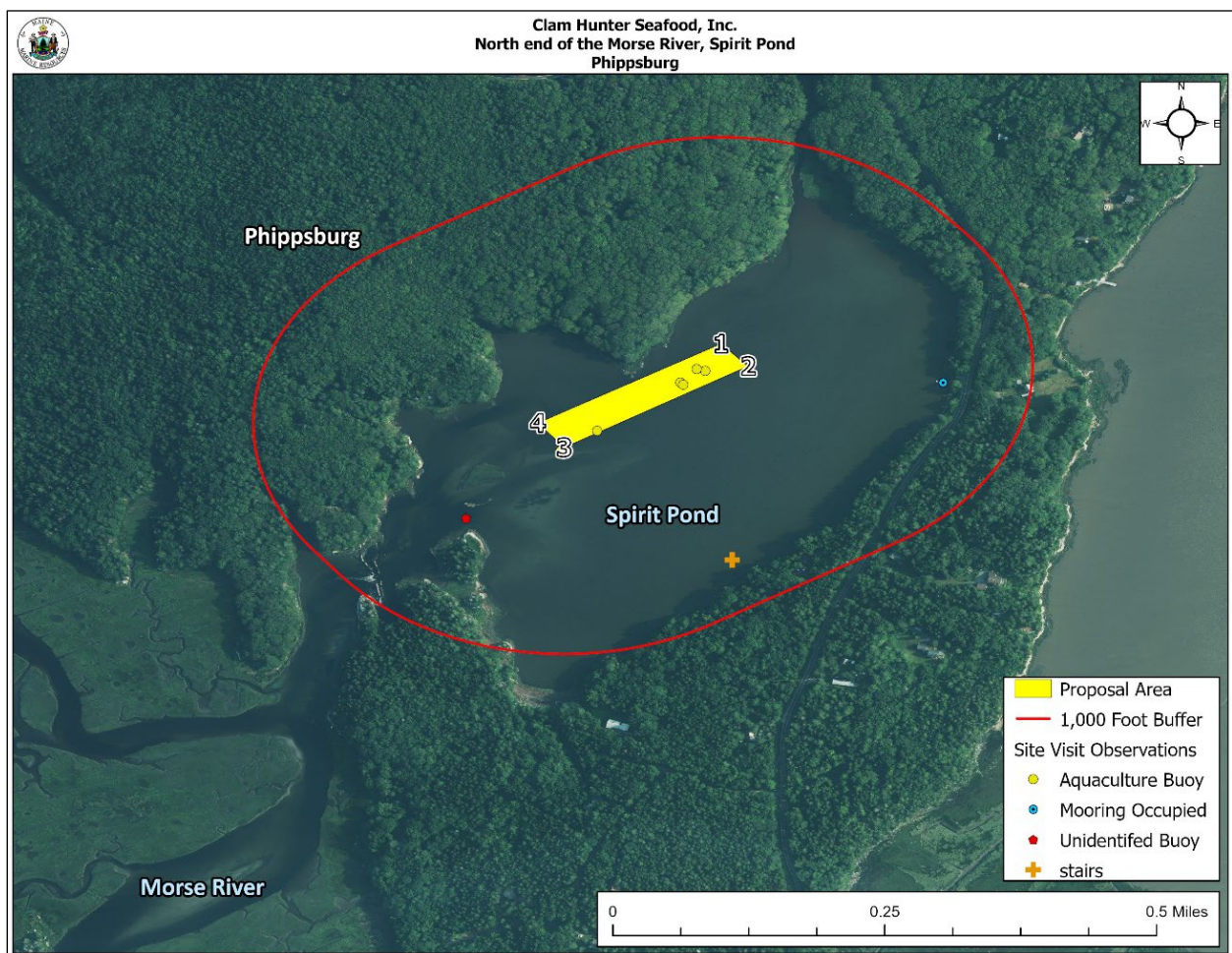


Figure 2. Proposed lease area with site visit observations.

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

During the site visit, DMR scientists observed the roofs of two riparian properties from the proposal area. The shoreline of the properties was located along the southern shore of Spirit Pond approximately 875 feet south of the proposal. A set of stairs to the shore, and two kayaks stored on shore nearby, were observed along the southern shore of the pond approximately 875 feet south of the proposal, in the vicinity of the observed riparian properties. A mooring with a small dinghy approximately 10 feet in length was observed near the shore approximately 690 feet east of the proposal (Figure 2).

A Harbormaster Questionnaire was sent to the Town of Phippsburg. DMR did not receive a response.

(2) Navigation

Spirit Pond is located at the northern extent of the Morse River. The proposal is located in subtidal waters approximately 16 feet south of the Spirit Pond shoreline at MLW. There is approximately 655 feet of water between the proposal and the southern shoreline of the pond at MLW (Figure 3). A partially intact, historical dam at the western end of the pond restricts access to Spirit Pond from the Morse River (Image 1). In addition, shallow water depths within the pond may restrict the types of vessels that can effectively operate within the pond. A publicly accessible, carry-in boat launch on the eastern shore of Spirit Pond, approximately 750 feet east of the proposal, provides access to the pond for small boats.

During the site visit, DMR scientists observed two kayaks stored on shore and one approximate 10-foot dinghy on a mooring in the pond. No active boating was observed.



Image 1. Dam at the western side of Spirit Pond.⁶

⁶ Photo credit: <https://phippsburglandtrust.org/>

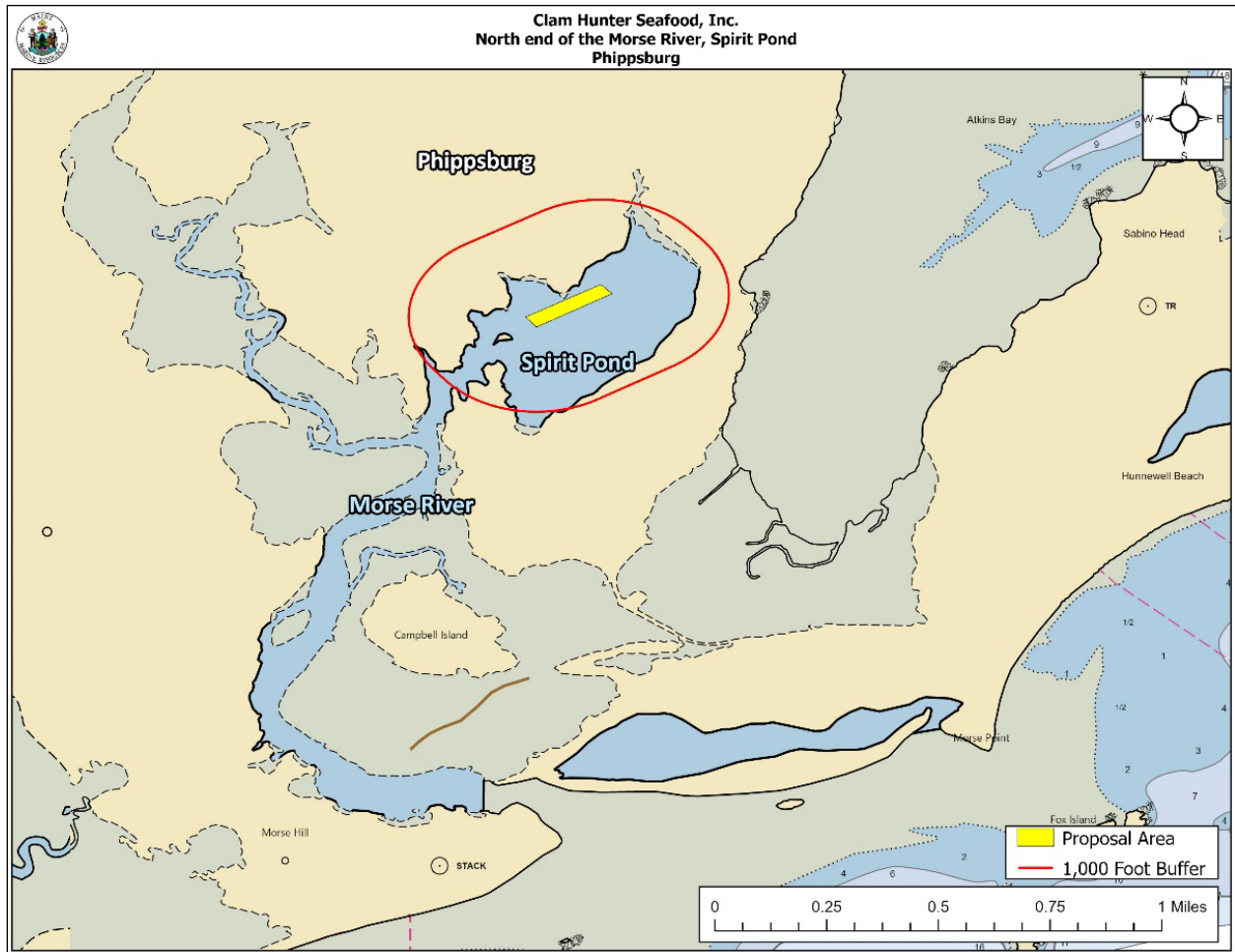


Figure 3. Navigational channels in the vicinity of the proposed lease area.

(3) Fishing and Other Uses

During DMR’s site visit, scientists observed two unidentified fishing traps exposed on nearby mudflats approximately 250 feet southwest of corner “3” that appeared to have moderate biofouling, as well as an unidentified buoy (Image 2) near the dam at the western end of the pond approximately 485 feet to the west-southwest of the proposal (Figure 2). The applicant indicated they may deploy green crab traps for predator control within the boundaries of the proposed lease site.⁷ DMR scientists did not observe any crab traps within the boundaries of the proposal at the time of the site visit.

Approximately 800 feet to the east of the proposal, along the eastern shore of Spirit Pond, is a parking area and trailhead for the McDonald Sanctuary. The sanctuary includes a carry-in, small

⁷ Application page 8



**Department of Marine Resources
Site Report**

Clam Hunter Seafood, Inc. (App 1)
North end of the Morse River, Spirit Pond
Phippsburg

boat access point at the parking lot and a trail that runs along the eastern shore of Spirit Pond. The McDonald Sanctuary trail connects with Spirit Pond Preserve, which is part of Popham Beach State Park.⁸



Image 2. Unidentified buoy observed during DMR’s site visit (Figure 2).

(4) Other Aquaculture Uses

There is one experimental aquaculture lease and three LPAs within the boundaries of the proposed lease site. MOR SPx is a 0.52-acre experimental lease located at the western side of the proposal.⁹ MOR SPx is operated by the applicant of this standard lease proposal and would be relinquished if the proposal is granted. The three LPAs within the boundaries of the proposal are as follows: TWAT222, CWAT117, and CWAT317. They are all operated by the applicant and would be relinquished if the proposal is granted (Figure 4).¹⁰

At the time of the site visit, DMR scientists observed seven buoys related to aquaculture within the vicinity of the proposal (Figure 2).

⁸ <https://phippsburglandtrust.org/visit-the-land/>

⁹ MOR SPx Final Decision page 1

¹⁰ Application page 11

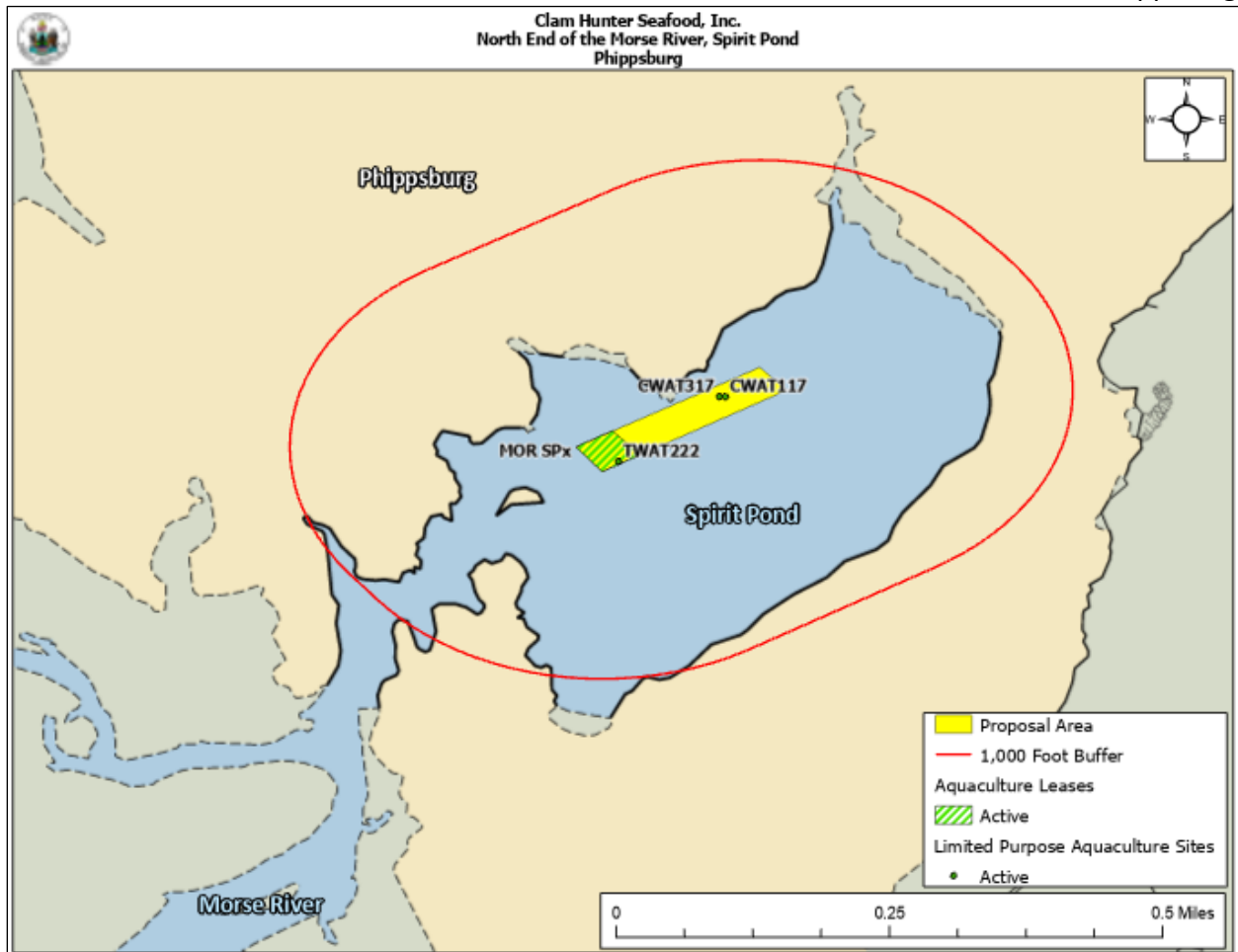


Figure 4. Aquaculture leases and LPA licenses in the vicinity of the proposed lease area.

(5) Existing System Support

Epibenthic Flora and Fauna

DMR scientists utilized an underwater camera 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 5.

Table 5. Species observed on underwater video footage.

Species Observed	Abundance
American/eastern oyster (<i>Crassostrea virginica</i>)	Abundant
European oyster (<i>Ostrea edulis</i>)	Abundant
Green crab (<i>Carcinus maenas</i>)	Common
Sea lettuce (<i>Ulva lactuca</i>)	Common
Hermit crab (<i>Pagurus</i> sp.)	Occasional
Red algae (<i>Dasysiphonia japonica</i>)	Occasional



Species Observed	Abundance
Shotgun kelp (<i>Agarum clathratum</i>)	Occasional
Rockweed (<i>Ascophyllum nodosum</i>)	Rare
Blue mussel (<i>Mytilus edulis</i>)	Rare
Chain tunicate (<i>Botrylloides violaceus</i>)	Rare

Eelgrass (*Zostera marina*)

Records of seagrass collected by the Department of Environmental Protection (DEP) in 2023¹¹ indicate there is no eelgrass mapped within 1,000 feet of the proposal. The nearest mapped eelgrass is approximately 8,441 feet northeast of the proposal (Figure 5).

During DMR’s site visit, scientists did not observe any eelgrass in the vicinity of the proposal.

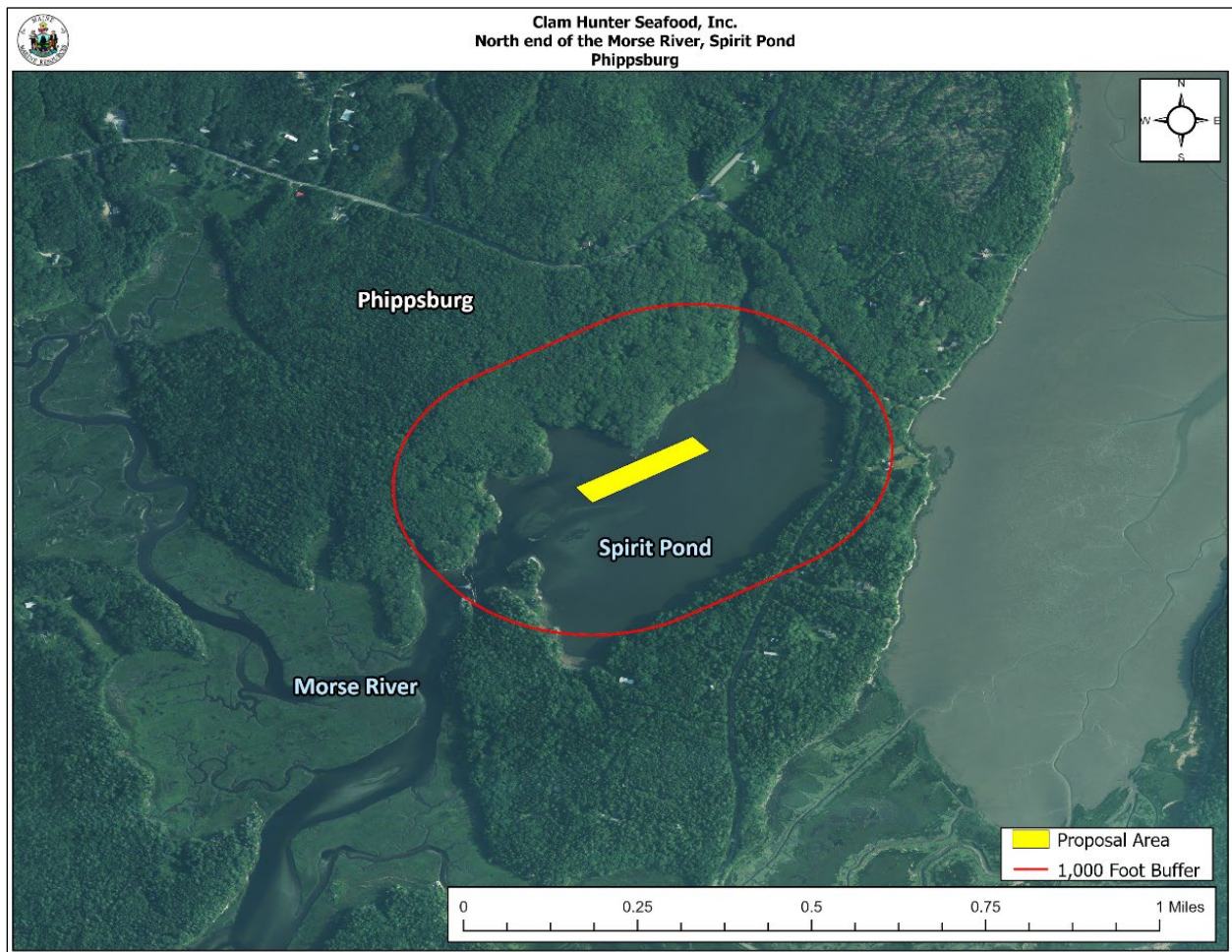


Figure 5. Mapped eelgrass (*Z. marina*) in the vicinity of the proposed lease area.

¹¹ 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.



Department of Marine Resources Site Report

Clam Hunter Seafood, Inc. (App 1)
North end of the Morse River, Spirit Pond
Phippsburg

Wildlife

During the site visit, DMR scientists observed common tern (*Sterna hirundo*), egret (*Ardeinae* sp.), bald eagle (*Haliaeetus leucocephalus*), willet (*Tringa semipalmata*), and lion's mane jellyfish (*Cyanea capillata*) 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 three mapped habitat types within 1,000 feet of the lease proposal. Based on data maintained by IFW, the proposal is located entirely within mapped Tidal Waterfowl and Wading Bird Habitat (TWWH), which is a type of Significant Wildlife Habitat designated and regulated by IFW. The proposal is also near Shorebird Area, which is another type of Significant Wildlife Habitat designated and regulated by IFW.¹² Based on data maintained by IFW, as measured from corner 3 of the proposal, it is approximately 650 feet to the 100-foot buffer surrounding the mapped Shorebird Area. The proposal is also located near mapped Piping Plover and Least Tern Essential Habitat, which is a type of Essential Habitat designated and regulated by IFW.¹³ Based on data maintained by IFW, as measured from corner 3 of the proposal, it is approximately 846 feet to the mapped habitat area (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 within the vicinity of the proposal (Figure 6).

IFW was provided with the opportunity to comment on this proposal. DMR did not receive any comments.

¹² <https://www.maine.gov/ifw/programs-resources/environmental-review/significant.html>

¹³ <https://www.maine.gov/ifw/fish-wildlife/wildlife/endangered-threatened-species/essential-wildlife-habitat/index.html>

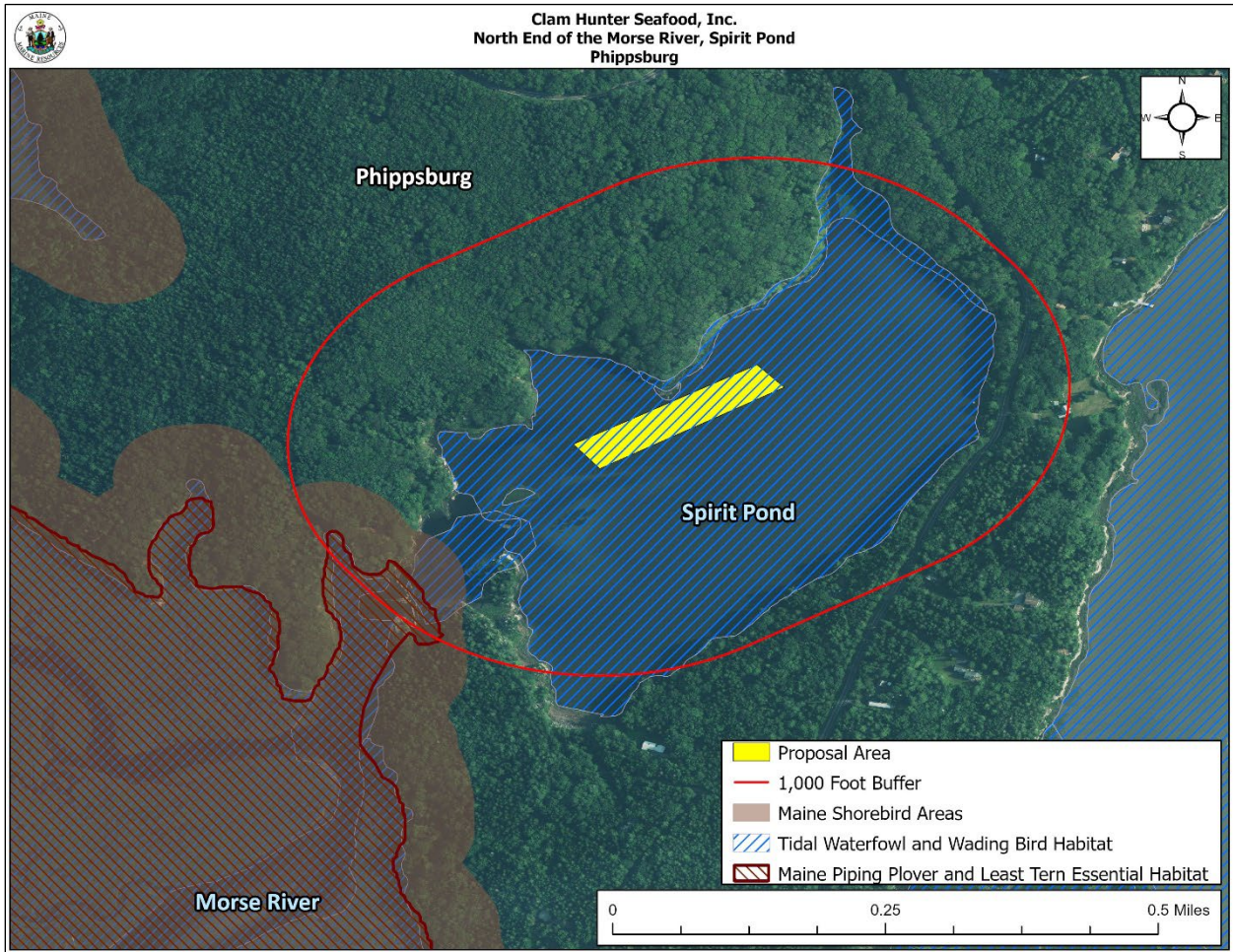


Figure 6. Mapped habitats in the vicinity of the proposed lease area. ¹⁴

¹⁴ Data obtained from USFWS "Bald_Eagle_Nests_-_Maine_2023" and IFW "EHRTERN", "EHPLVTRN", "GISVIEW.MEIFW.Twwh", "ShorebirdAreas", and "SNI".



(6) Interference with Public Facilities

The proposal is within 1,000 feet of state-owned conserved land (Figure 7). Spirit Pond Preserve is an area of land directly to the north of the proposal, that includes the northern shoreline of Spirit Pond. The land is owned by Maine Bureau of Parks and Lands and is designated as part of Popham Beach State Park.¹⁵ The nearest conserved land is located approximately 16 feet to the north of the proposal at MLW. The proposed lease is not within 1,000 feet of any other park, beach, or docking facility, owned by federal, state, or municipal governments.

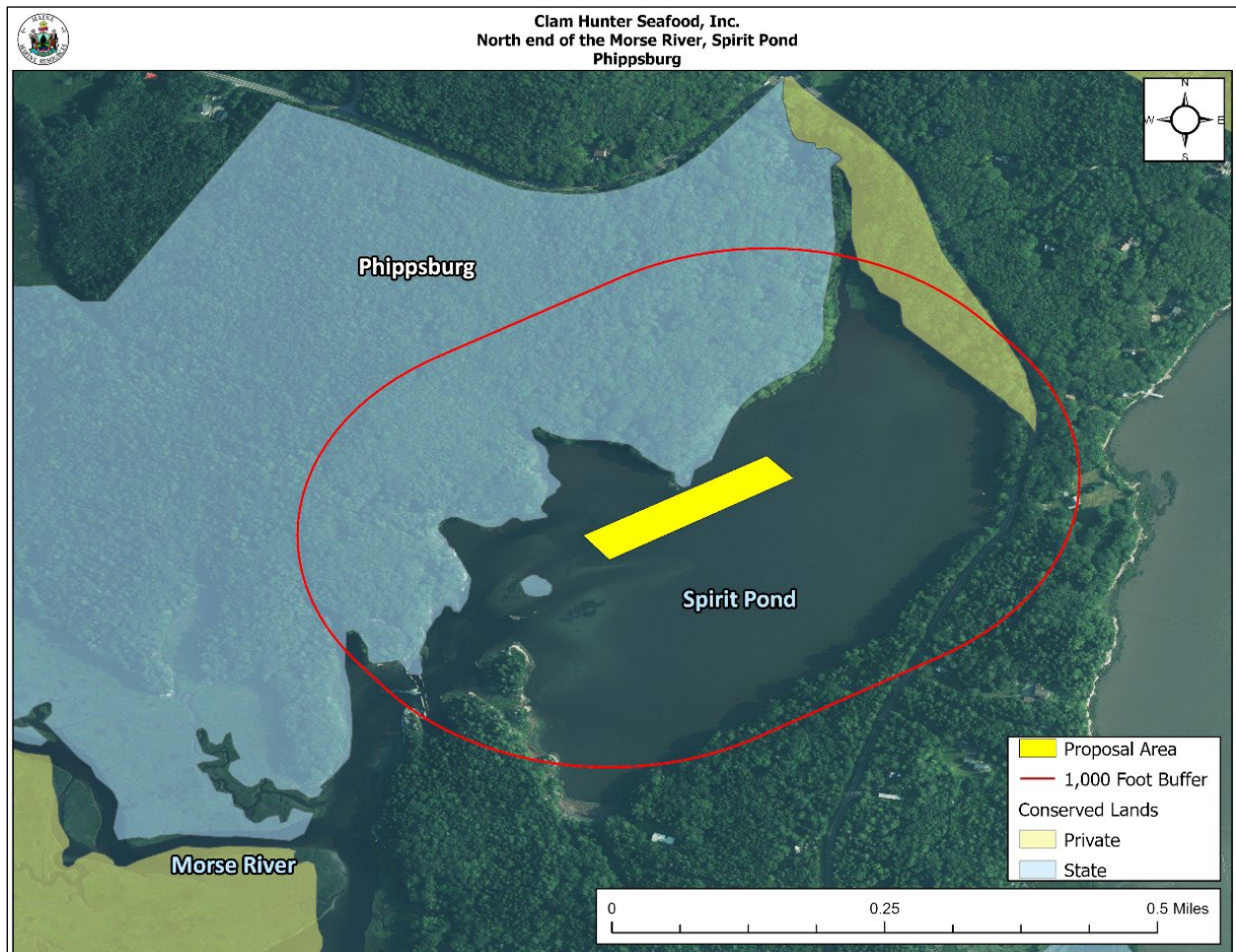


Figure 7. Public facilities near the proposed lease site.¹⁶

(7) Water Quality

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

¹⁵ Maine Conserved Lands

¹⁶ Data obtained from The Maine Office of GIS "GISVIEW.MECONSLANDS.Conserved_Lands"