



Stuart Ryan - Southwest of Williams Island, Freeport

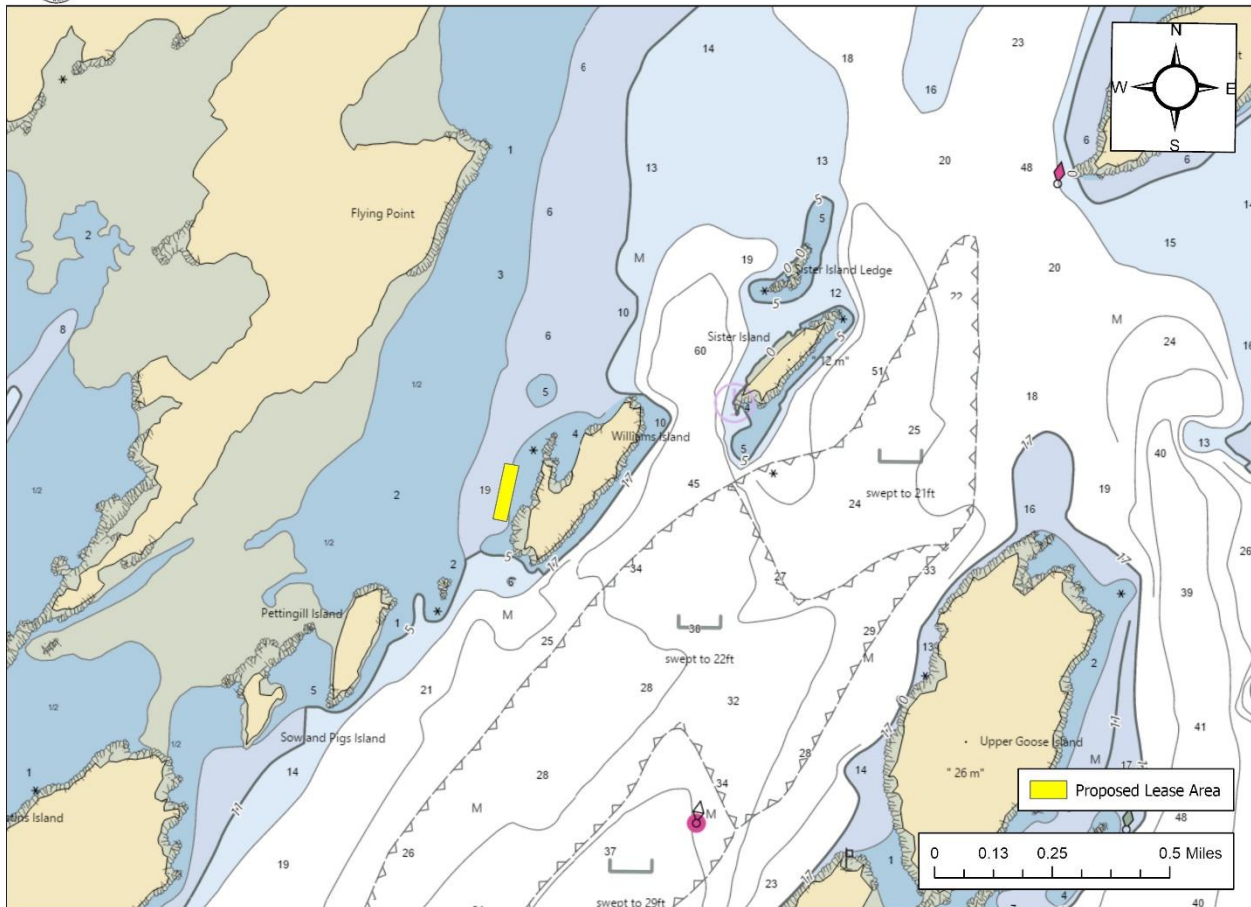


Figure 1. Vicinity map.¹

Location: Southwest of Williams Island, Casco Bay, Freeport, Cumberland County, Maine

Purpose: Experimental lease for suspended culture of American/Eastern Oyster (*Crassostrea virginica*), Sugar Kelp (*Saccharina latissima*), and Sea Scallop (*Placopecten magellanicus*)

Site Review: Cheyenne Adams and Geoffrey Shook

Report Preparation: Meryl Grady and Amanda Ellis

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.



Application Overview

The applicant, Stuart Ryan, is requesting a 2.35² acre experimental lease southwest of Williams Island in Casco Bay for the suspended culture of shellfish and marine algae.

General Characteristics

On September 9, 2022, Maine Department of Marine Resources (MDMR) scientists assessed the proposed lease site. MDMR scientists arrived on site at approximately 9:00 AM. Nearby Williams Island consists of intertidal ledge and rocky outcroppings leading to forested uplands. Williams Island is privately owned. The southern half of the island is protected from development by a conservation easement.³

Depth

On September 9, 2022, MDMR scientists began collecting depths at the proposed site at approximately 9:00 AM. Depths were collected at the proposal corners and determined to be between 12.8 and 20.1 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 4.6 to 11.9 feet (Table 1).

Table 1. Predicted tidal heights in Portland, Maine.⁴

Date	Time	Height (ft)
9/9/2022	4:34 AM	-0.75 L
9/9/2022	10:48 AM	9.74 H
9/9/2022	4:47 PM	-0.21 L
9/9/2022	11:04 PM	11.03 H

Bottom Characteristics

MDMR scientists observed the bottom characteristics of the proposed lease site via a drop-camera transect (Figure 2). 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 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

² Applicant originally requested 2.4 acres. DMR calculations indicate the area is 2.35 acres.

³ Application page 8

⁴ <https://tidesandcurrents.noaa.gov/neaatidepredictions.html?id=8418150>



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

Application Coordinates (WGS84) – 2.35 Acres

<u>Corner</u>	<u>Latitude</u>	<u>Longitude</u>	
NW	43.81345°	-70.05201°	then 163.0 feet at 100° True to
NE	43.81338°	-70.05140°	then 640.0 feet at 192° True to
SE	43.81166°	-70.05189°	then 158.4 feet at 282° True to
SW	43.81174°	-70.05248°	then 635.4 feet at 12° True to NW

Table 3. Approximate distances from proposed lease corners to surrounding features (Figure 2).

Feature	Distance
NW corner to nearest mooring	~445' to the northwest
NW corner to Flying Point shoreline at MLW	~1,630' to the west
NE corner to Williams Island shoreline at MLW	~230' to the east
NE corner to nearest dock	~640' to the northeast
SE corner to Williams Island shoreline at MLW	~50' to the east
SW corner to Pettingill Island shoreline at MLW	~1,430' to the southwest



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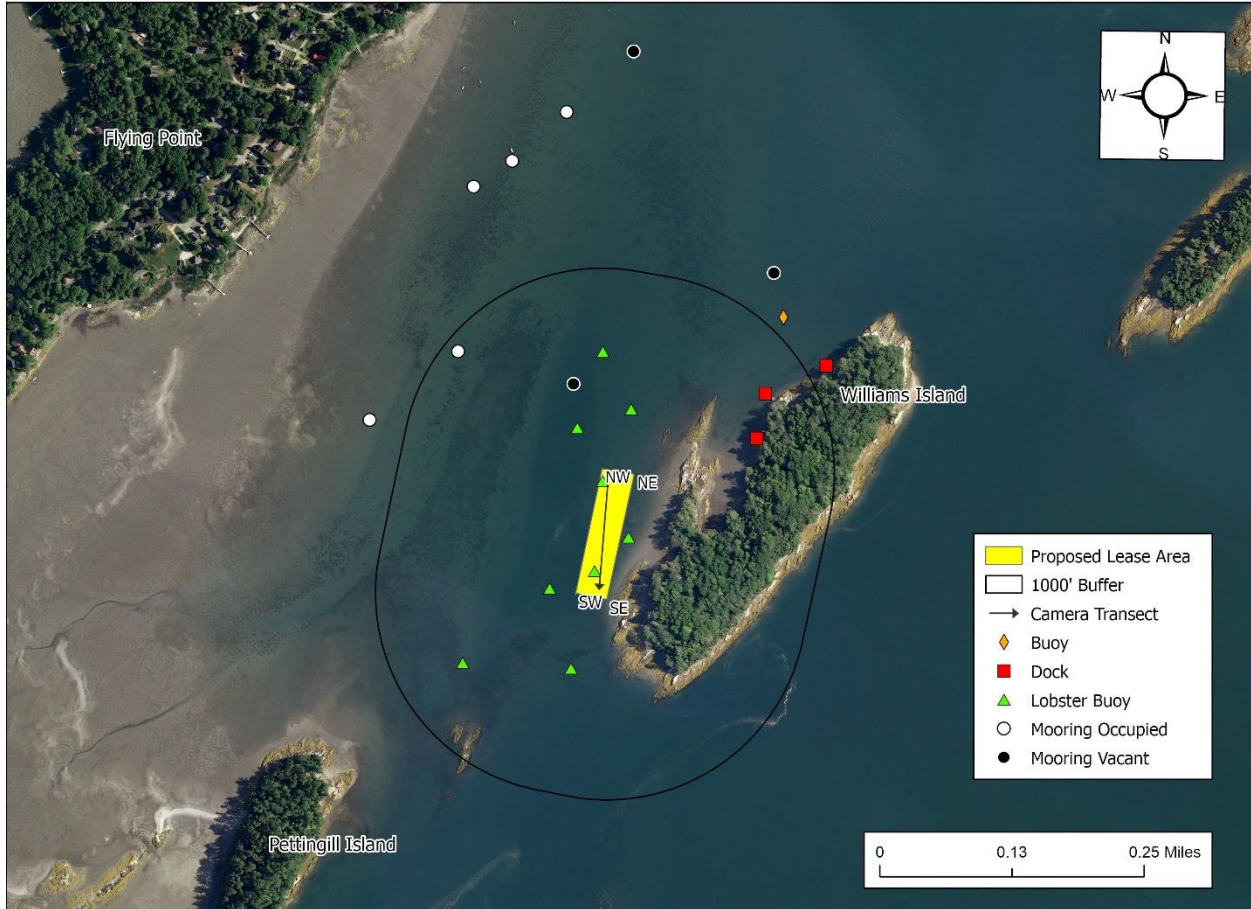


Figure 2. Proposed lease area with site visit observations.

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

During the site visit on September 9, 2022, MDMR scientists observed three docks and eight moorings in the vicinity of the proposal. The docks were located approximately 640, 770, and 1,100 feet northeast of the proposal. The closest mooring was approximately 445 feet to the northwest. Three moorings were vacant at the time of the site visit. The other five documented moorings had either a small powerboat or a small sailboat present (Figure 2). Additionally, MDMR scientists observed four moorings west of the documented moorings in Figure 2.



(2) Navigation

At high tide, there is approximately 240 feet of navigable water between Williams Island and the proposal. At MLW, there is approximately 50 feet of navigable water between the southeastern corner of the proposal and Williams Island. Additionally, at MLW there is approximately 1,430 feet of navigable water between the proposal and Pettingill Island and approximately 1,630 feet of navigable water between the proposal and Flying Point (Figure 3).

During the site assessment, MDMR scientists observed a small powerboat operating to the west of the proposal.

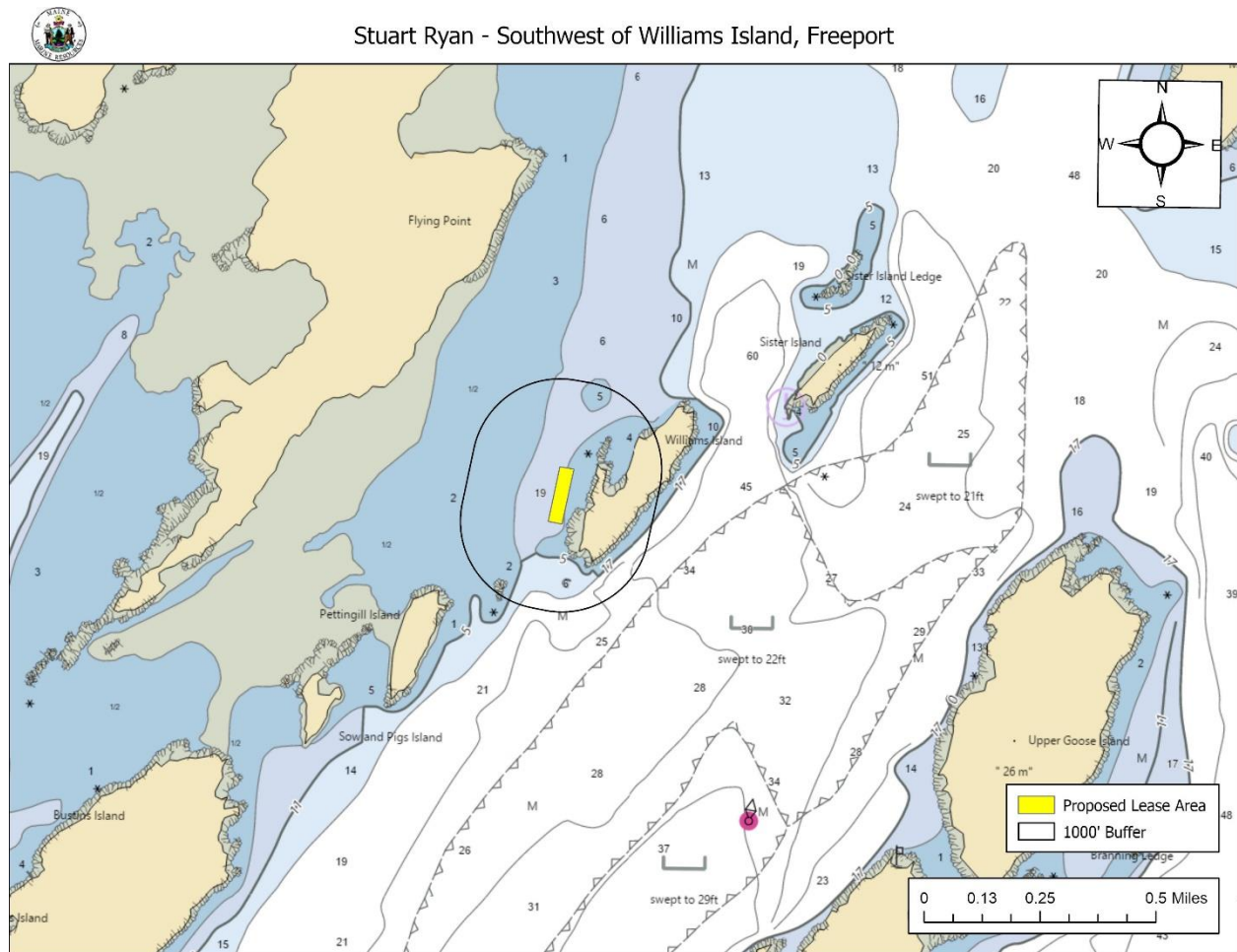


Figure 3. Navigational channels in the vicinity of the proposal.



(3) Fishing and Other Uses

During the site assessment, MDMR scientists observed two lobster buoys within the proposal boundaries and seven additional lobster buoys in the vicinity of the proposal (Figure 2). MDMR scientists observed additional lobster gear and lobster buoys to the west of the proposal. No lobster (*Homarus americanus*) was observed within the proposal boundaries on MDMR's underwater camera footage.

A recreational fishing vessel navigated through the proposed lease area during MDMR's site assessment.

(4) Other Aquaculture Uses

There are no aquaculture leases or limited purpose aquaculture (LPA) sites within 1,000 feet of the proposed lease area (Figure 4).

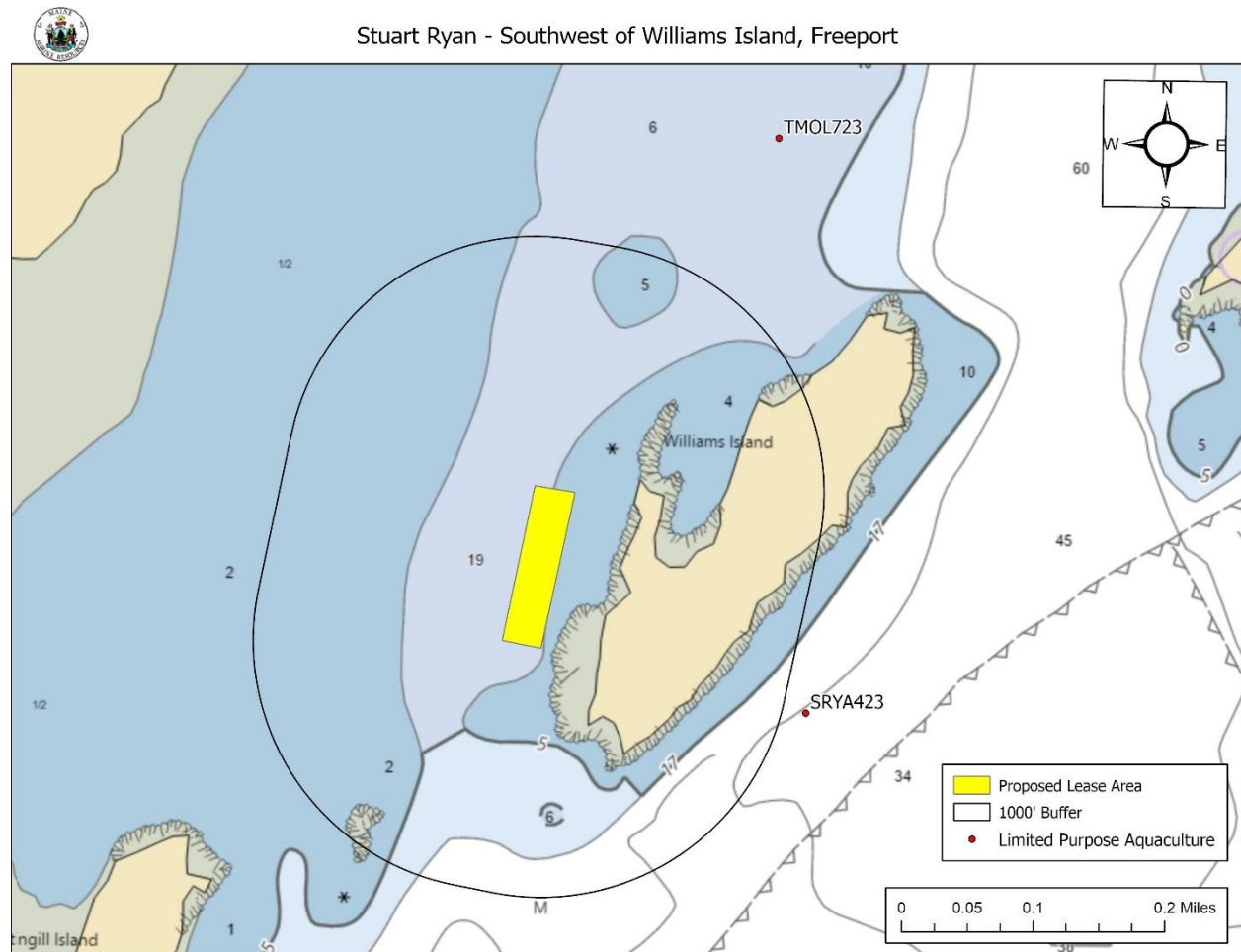


Figure 4. Aquaculture leases and LPA licenses in the general vicinity of the proposal.



(5) Existing System Support

Epibenthic Flora and Fauna

On September 9, 2022, MDMR scientists conducted a drop-camera transect to assess the epibenthic ecology of the proposed lease. The relative abundance of epibenthic flora and fauna observed in the video transect is described below in Table 4.

Table 4. Species observed using underwater camera footage.

Species Observed	Abundance
Horseshoe Crab (<i>Limulus polyphemus</i>)	Occasional
Rockweed drifting (<i>Ascophyllum nodosum</i>)	Occasional

Eelgrass (*Zostera marina*)

Data collected by The Maine Department of Environmental Protection (MDEP) and Casco Bay Estuary Partnership (CBEP) in 2022 indicates there is no mapped eelgrass presence in the vicinity of the proposal (Figure 5).⁵ No eelgrass was observed within the proposal boundaries during MDMR’s site assessment.

⁵ Data obtained from The Maine Office of GIS “GISVIEW.MEDEP.Seagrass2022”. This is the most current record of mapped eelgrass in the vicinity of the proposal.



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Figure 5. Mapped eelgrass (*Z. marina*) near the proposed lease utilizing 2022 data.

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 located within mapped tidal waterfowl and wading bird habitat. Data collected by the United States Fish and Wildlife Service in 2022 by aerial nest survey shows the closest mapped bald eagle nesting site to be approximately 1,400 feet northeast of the proposal (Figure 6).

During MDMR’s site assessment, an Osprey (*Pandion haliaetus*) nest was observed approximately 150 feet east of the proposal on Williams Island.

On February 11, 2022, a Wildlife Biologist with MDIFW responded by email to a “Request for Agency Review and Comment” stating minimal impacts to wildlife are anticipated for this project.⁶

⁶ Email correspondence between MDIFW and MDMR



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Figure 6. Mapped Bald Eagle nests⁷ and Tidal Wading Bird and Waterfowl Habitat⁸.

(6) Interference with Public Facilities

The proposed lease is not located within 1,000 feet of any beach, park, or docking facility owned by federal, state, or municipal governments.

⁷ Data obtained from USFWS "Bald_Eagle_Nests_-_Maine_2023"

⁸ Data obtained from MDIWF maintained SDE Feature Class "GISVIEW.MEIFW.Twwh"



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(7) Water Quality

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

On January 7, 2022, a staff member from the Bureau of Public Health responded by email to a “Request for Agency Review and Comment”, stating that the applicant is proposing to harvest whole or roe on scallops, which would require a memorandum of understanding and self-funding for testing.⁹

⁹ Email correspondence MDMR Bureau of Public Health