



CONFLUENCE
ENVIRONMENTAL COMPANY

SPARO AQUATICS
2022 EELGRASS AND
MACROALGAE SURVEY

PREPARED: May 2022

SPARO AQUATICS 2022 EELGRASS AND MACROALGAE REPORT

Prepared for:

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May 15, 2022

Underwater images were collected and interpreted by personnel from SPARO Aquatics.
Guidance and review provided by Confluence Environmental Company.

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1.0 INTRODUCTION

This document summarizes a field survey that occurred in May 2022 to characterize the presence and extent of submerged aquatic vegetation (SAV) in and around the proposed seaweed/shellfish farm at the Southwestern end of Vashon Island in Colvos Passage.

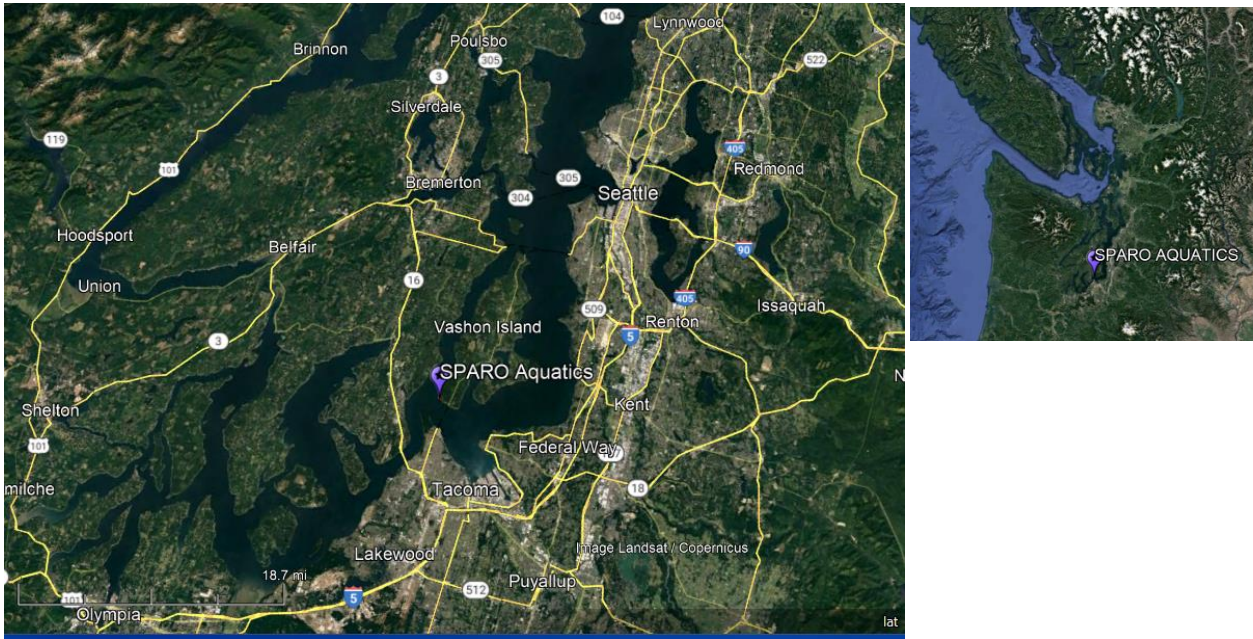
SPARO Aquatics, DBA as Pacific Sea Farms, are planning to build a 10-acre integrated and regenerative seaweed and shellfish farm. The mariculture farm will grow sugar kelp (*Saccharina latissima*), clams (Manila – *Ruditapes philippinarum*), mussels (Blue Mussels/ *Mytilus trossulus* or *M. galloprovincialis*, oysters (Pacific/*Crassostrea gigas*). All these species are either native or naturalized to the proposed area.

The farm requires permits/approvals from the following agencies: The Puyallup Tribe, Washington Department of Fish and Wildlife (WDFW), Department of Ecology, the United States Army Corps of Engineers (Corps), the US Coast Guard, and King County. Under the Washington Administrative Code (WAC), eelgrass and macroalgae are defined as saltwater habitats of special concern (WACs 220-110-250 (3)(a, b)). WDFW requires project proponents to: 1) avoid impacting eelgrass and macroalgae, 2) minimize unavoidable impacts, and 3) mitigate for any impacts (WDFW 2008). The Corps requires similar surveys to determine the distribution of eelgrass at the project site (Corps 2018).

A site survey was performed in May 2022 to identify existence, density, and type of species that currently exist at the proposed farm site. In addition, the survey may be used to delineate proposed locations for mooring buoys. Site conditions including swift currents and the relatively large site area dictated conducting the surveys using a boat-deployed remote operating vehicle (ROV) with photo/video capabilities. Location was determined by surface GPS and shoreline sightings.

Eelgrass was not observed at any location or at any depth during the survey. No eelgrass was expected as the substrate of the entire area is subtidal and consists of small/medium (golf ball/softball size) cobble (larger rocks were occasionally seen) with no sand, silt, or muddy areas.

Figure 1. Survey Vicinity



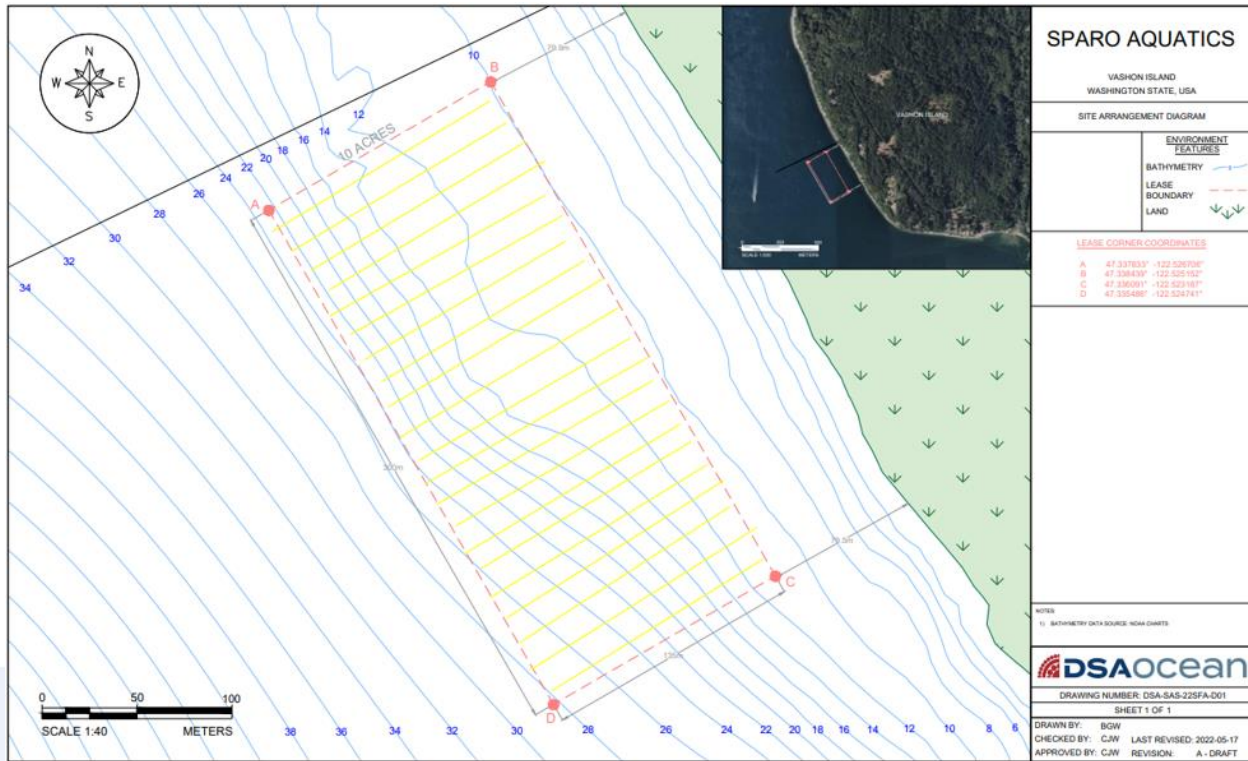
2.0 METHODS

Photo and video data were collected by surveying a series of transects perpendicular to shore. Transects were spaced every 50 feet. A tethered remote operating vehicle (ROV) with an integrated photo/video system was used to visually survey the seafloor vegetative cover and substrate material. Location was determined by surface GPS and shoreline visual sighting.

Navigation difficulties associated with wind, current and waves may have resulted in minor differences in the actual vs. planned transects.

Photos were taken approximately every 60 seconds with a sampling included in the appendix of this document.

Figure 2 – Planned Survey Transects



3.0 FINDINGS

The surveyed area extends from approximately the mean lower low water (-20 MLLW) along the shoreline extending waterward to approximately -85 feet MLLW. The shoreline is adjacent to a bluff (approx. 150' tall) extending the entire length of the proposed farm. Typical vegetation (grasses, shrubs, and trees) is found in, around, and on top of the bluff as well as the actual shore.

Natural debris exists on the shore including driftwood, downed trees, etc. A small amount of manmade garbage was observed on the shore.

No eelgrass or bull kelp was observed in any portion of the surveyed area. Submerged aquatic vegetation (SAV) in the surveyed area was predominately comprised of Laminariales and unidentified red macroalgae. Density ranged from approximately 60% per square meter to 10% per meter in shallower depths (25-35'). Very little (<5% plant per square meter) macroalgae was seen at depths exceeding 45' and no macroalgae was seen at depths exceeding 80'.

While a comprehensive identification of macroalgae species was outside the scope of this assessment, species of red, brown, and green alga were all noted during the survey. Portions of the site where rocky material is present also contained macroalgae in the genus Laminariales. Laminariales were represented mainly by sessile, non-floating specimens of Sugar Wrack Kelp (*Laminaria saccharina*). As noted, no Floating bull kelp (*Nereocystis luetkeana*) was observed in the proposed farm site.

However, a small area of Bull Kelp approximately 1000 feet to the South of the proposed farm site was observed.

Figure 3: Bull kelp location



See Appendix A for representative photos of the SAV categories surveyed at the site

4.0 REFERENCES

United States Army Corps of Engineers. 2018. Components of a Complete Eelgrass Delineation Report. January 9, 2018. Available online at:

<https://www.nws.usace.army.mil/Portals/27/docs/regulatory2/FormsEtc/Components%20of%20Eelgrass%20Delineation%2020180109.pdf?ver=2018-01-12-102015-010>

Washington Department of Fish and Wildlife. 2008. Eelgrass/Macroalgae Habitat Interim Survey Guidelines. Rev. 06/16/2008.

Appendix A

Site Photos



Representative Photos – Categories of Submerged Aquatic Vegetation

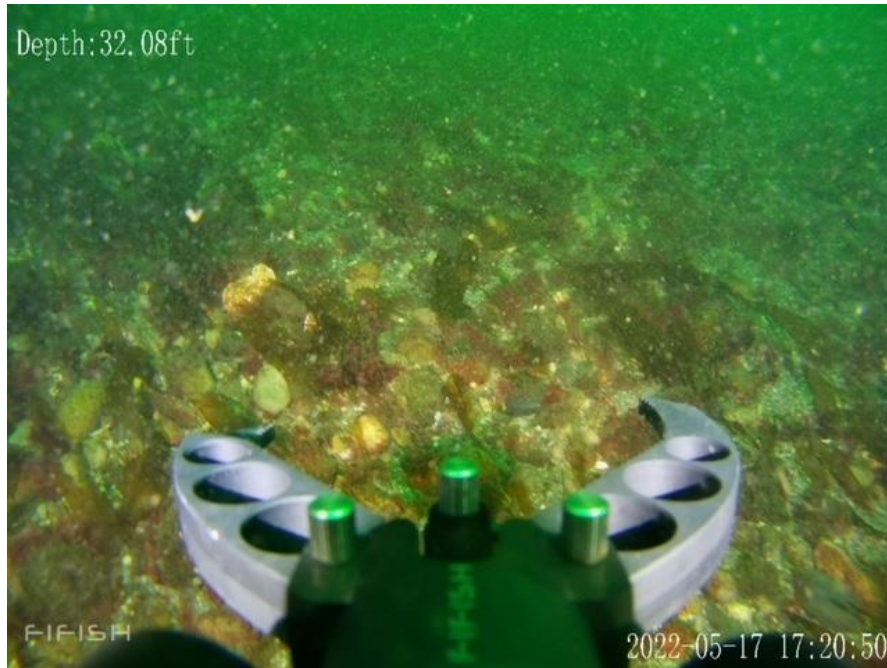
Depth: 22-32' ft (Adjusted to -16 to -24 MLLW) Location: 47.337228 N -122523970 W to 47.3364484 N -122525549 W



Mixed Macroalgae



Mixed macroalgae



Mixed Macroalgae



Sargassum

Depth 48-52' (Adjusted to -40 to -44 MLLW). Location: 47.228100 N, -122.525900 to 47.225700 N, -122.524000



Sea star and urchins. Minimal macroalgae (crustose corallines, unidentified filamentous red) found



Sea Star and urchin. No macroalgae found



Urchin. Minimal macroalgae (red) found



No macroalgae found



Clams. No macroalgae found

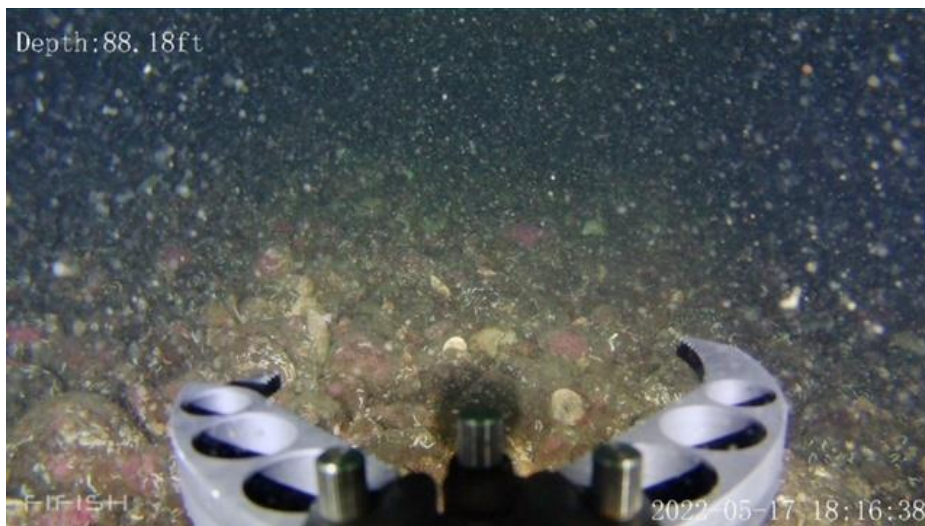
Depth 76-90' (Adjusted to -68 to -82 MLLW). Location: 47.337833 N, -122526706 W to 47.335486 N, -1225247451



Urchin and sea pen. No macroalgae found



No macroalgae found



No macroalgae found



Clams, urchin, scallop. No macroalgae found



No macroalgae found

Representative Photos - Wildlife



Sea Star



Red Rock Crab



Green urchin, clams and Feathered scallop

Representative Photos – Shoreline



