

COUNTY: Jefferson
Grant No: SEANWS-2021-JeCoWS-00007

PROJECT TITLE: Jefferson County MRC Operations and Projects

TASK NUMBER: 6-Olympia oyster restoration

T6.6

Summary report on Discovery Bay sites

PERIOD COVERED: October 1, 2021 – September 30, 2022

DATE SUBMITTED: September 30, 2022



**Northwest
Straits**
INITIATIVE



PUGET SOUND
PARTNERSHIP



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**Jefferson County Marine Resources Committee
2022 Olympia Oyster Habitat Enhancement Summary Report
Discovery Bay, WA**

Project Overview

Discovery Bay has a small natural Olympia oyster population near the southwest portion of the bay (Maynard Beach area) as well as scattered occurrences throughout the bay. In partnership with the Jamestown S’Klallam Tribe, WA Department of Fish and Wildlife (WDFW), and the Puget Sound Restoration Fund (PSRF), the MRC has been working to expand the extant population by increasing the availability of substrate (i.e., clean Pacific oyster cultch) in nearby areas to facilitate natural recruitment. In 2014, the MRC began monitoring the Olympia oyster population and spreading clean cultch within a half-acre area in the center of the bay (“Powerlines Site”). In 2018, the MRC added another restoration site nearby (“Lagoon Site”). As of 2022, the MRC expanded the Powerlines Site to include a parcel located adjacent and just south of the established Powerlines Site.

Project Lead: Neil Harrington

Subcommittee Members: Gordon King, Sarah Fisksen, Brenda Johnson, Frank Handler, Heather Burns, Brent Vadopalas, Joanie Hendricks, Janette Mestre, Bryan DeCaterina

October 2021 – September 2022 Olympia Oyster Project Activities

October 1 – One MRC member, Gordon, with the help of Taylor Shellfish staff spread 3 cubic yards of shell at the Powerlines Site.

February 17 – Project Lead, Neil, gave a presentation on Olympia oyster restoration efforts, including the MRC’s Discovery Bay project, through the Dungeness River Nature Center. Two MRC members, Troy and Frank, attended.

March 8 – Project Lead, Neil, gave a presentation on Olympia oyster restoration efforts, including the MRC’s Discovery Bay project, through the Jamestown S’Klallam Tribe’s Learning Our Landscape education series ([recording here](#)).

May 2 – The subcommittee (Joan, Bren, Frank, Neil, Sarah) and the MRC Coordinator met to discuss summer scheduling and work plans.

May 19 – The MRC Coordinator, two MRC members (Neil, Gordon), and 4 community volunteers (Ella, Kara, Heather, Steven) – conducted a population survey of Olympia oysters at the new South Powerlines Site.

June 17 – The MRC Coordinator, 4 MRC members (Gordon, Bryan, Frank, Janette) and 5 community volunteers (Susan, Steven, Angela, Jeff, Sandra) helped spread clean cultch at the Lagoon Site (~2 cubic yards). Clean cultch was delivered from Taylor Shellfish. Using wheelbarrows, volunteers transferred half barrels of shell to the pond area, along the pond side of the lagoon, and along the spit, and spread shell by hand.

July 15 – The MRC Coordinator, three MRC members (Neil, Gordon, Brenda), and 7 community volunteers (Ella, Nathaniel, Everest, Logan, Kurt, Mark, Steven) conducted a population survey of Olympia oysters at the North Powerlines Site.

August 12 – The MRC Coordinator helped with Olympia oyster population surveys on the Kilisut Harbor side of Indian Island, in partnership with the Navy, WDFW and PSRF

A total of 140.5 volunteer hours were contributed to the Olympia oyster restoration project by MRC members and community volunteers in 2022.

Data Collected

North Powerlines Site

The Jefferson MRC conducted its annual monitoring at the North Powerlines Site on July 15, with the help of the Project Lead (Neil), MRC Coordinator, and 9 volunteers (Gordon, Brenda, Ella, Nathaniel, Everest, Logan, Kurt, Mark, Steven). Volunteers counted each Olympia oyster individual and measured their size (mm) within a sample area of 11.5 m² representing a total plot area of 1,747 m². Volunteers counted and measured a total of 522 Olympia oysters within the sample area, resulting in an approximated 79,299 Olympia oysters settled within the project site (see Table 1). The average size of Olympia oysters here is determined to be 28 mm and the average number of Olympia oyster individuals per square meter is 45.4, compared to 28.8 just last year (2021).

Table 1: Summary of Discovery Bay North Powerlines Site Data Collected 2017 - 2022

Data Collected	2017	2018	2019	2020	2021	2022
# of ¼m ² quadrats	48	77	69	85	60	46
Total # of Olys	592	732	398	375	432	522
Total area sampled (m ²)	12	19.25	17.25	21.3	15	11.5
Average size of Olys (mm)	38.9	34.0	41.3	40.7	31.9	28.8
Average % cultch cover/quadrat	11.7%	17.2%	8.2%	15.6%	6.9%	21%
Average # of Olys/m ²	49	38	23.07	17.7	28.8	45.4
Total # of Olys in plot	-	-	-	35,708	52,575	79,299

This year, the sizes of Olympia oysters ranged from 2 to 68 mm, with nearly half (42%) of the oysters counted measuring less than 20 mm. This wide range of multiple size (and age) classes and the significant number of smaller Olympias (<20mm) demonstrates that the North Powerlines Site continues to support natural recruitment as well as a persisting population of aging Olympia oysters (see Figure 1).

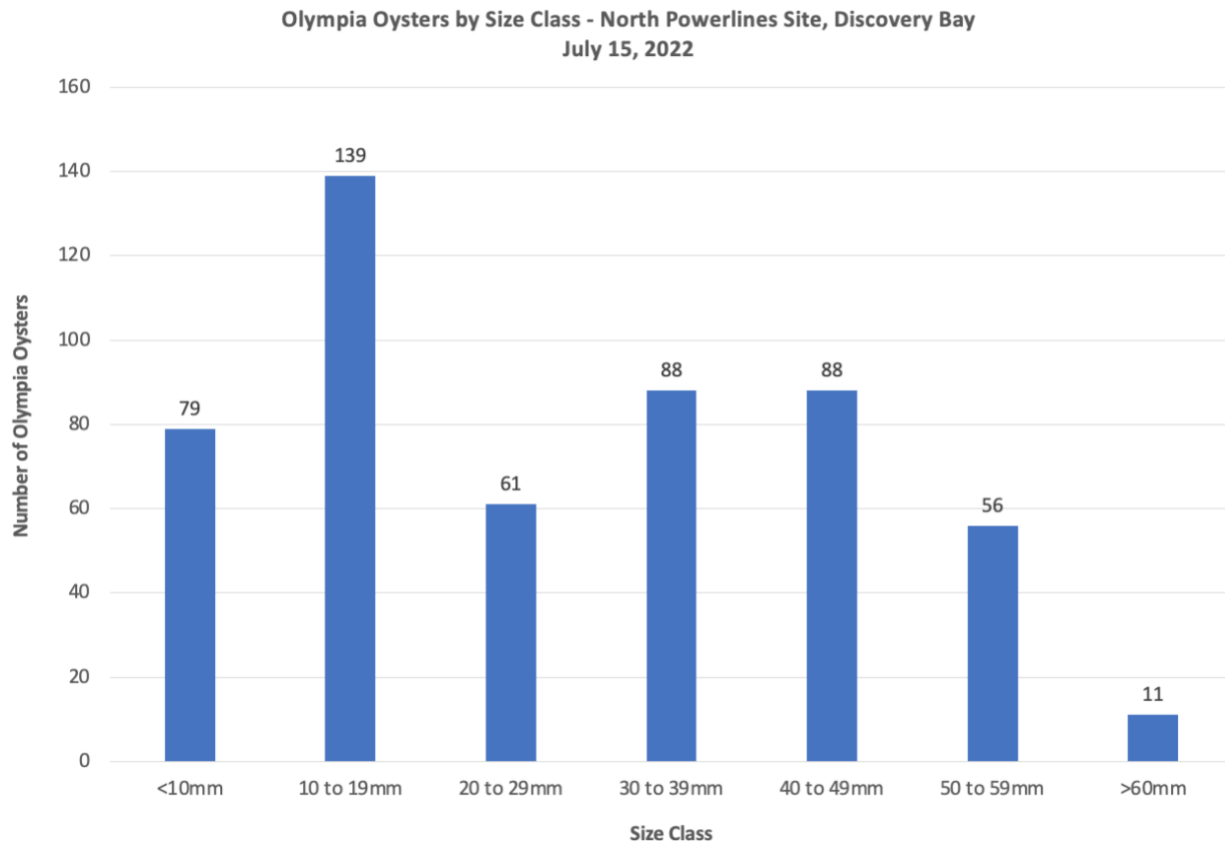


Figure 1: Size class distribution (mm) of Olympia oysters surveyed at the North Powerlines Site, Discovery Bay on July 15, 2022.

South Powerlines Site

Previously spread cultch with settled Olympia oysters tend to drift with currents and wave action to just south of the North Powerlines Site. To better assess and expand habitat enhancement efforts, in 2022, the Jefferson MRC updated its permits and acquired a Right of Entry to add the parcel located just south and adjacent to the established North Powerlines Site, which will be referred to as the South Powerlines Site (see permit drawing on page 12).

The Jefferson MRC conducted the first Olympia oyster population survey at the South Powerlines Site on May 19, with the help of the Project Lead (Neil), MRC Coordinator, and five volunteers (Gordon, Ella, Kara, Heather, Steven). Volunteers counted and measured 192 Olympia oyster individuals within a sample area of 12.5 m² representing a total plot area of 12,528 m². The density of Olympia oysters was unevenly distributed across the site, with the highest density located along its northeast boundary which is shared with the established North Powerlines Site (see permit drawing on page 12). Within this high density area (660 m²), there is an average of 52.6 individuals per square meter and an estimated total population of 34,886 Olympia oysters. Within the rest of the plot, a baseline low density area spanning 11,868 m², there is an average of 0.78 individuals per square meter and an estimated total population of 9,231 Olympia oysters. See Table 2 below.

Table 2: Summary of Discovery Bay South Powerlines Site Data Collected on May 19, 2022

Data Collected	High Density Area Near the Powerlines	Baseline Low Density Area
# of ¼m ² quadrats	14	36
Total # of Olys	185	7
Total area sampled (m ²)	3.5	9
Average size of Olys (mm)	41.5	38.1
Average % cultch cover/quadrat	13%	0%
Average # of Olys/m ²	52.9	0.78
Total # of Olys in plot	34,886	9,231

Across the South Powerlines Site, Olympia oysters ranged from 6 to 81mm, with the majority (64%) of Olympias measuring more than 40 mm. This wide range of multiple size (and age) classes demonstrates that the South Powerlines Site supports natural recruitment (see Figure 2).

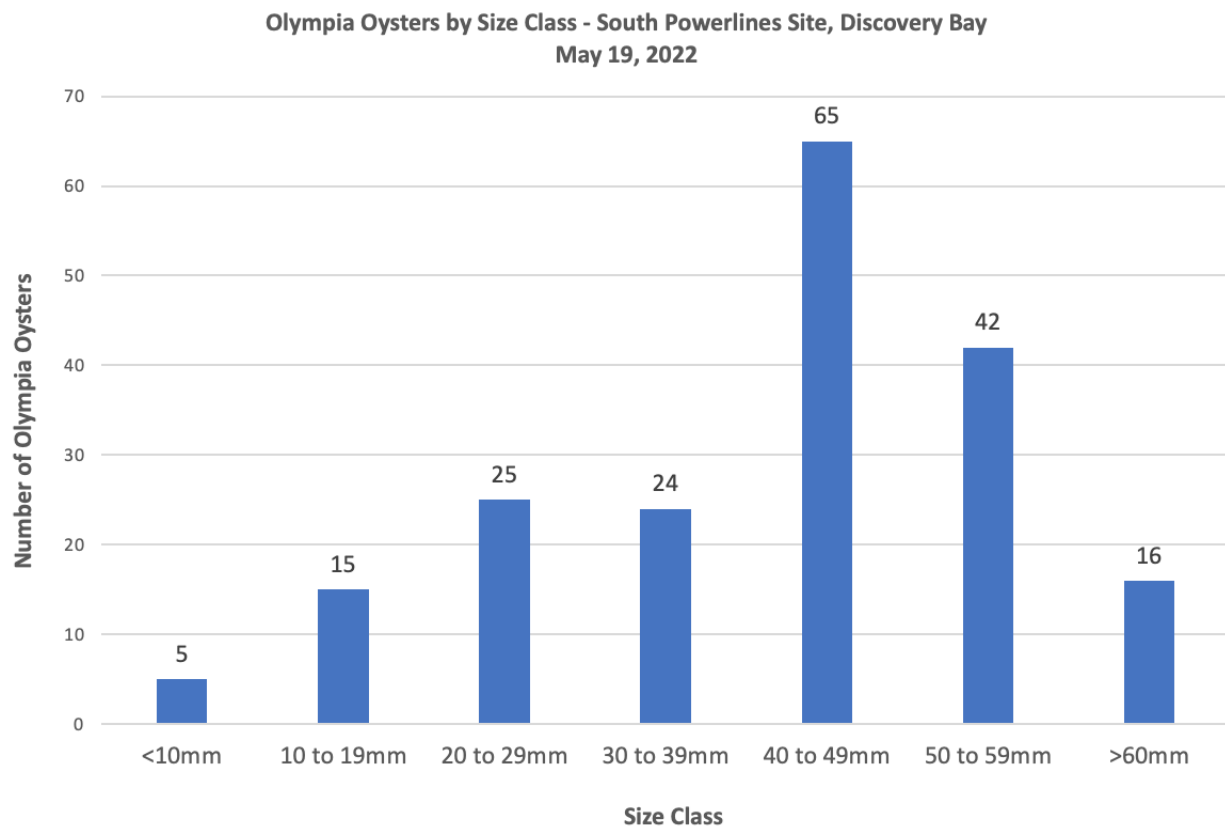


Figure 2: Size class distribution (mm) of Olympia oysters surveyed at the new South Powerlines Site, Discovery Bay on May 19, 2022.

Lagoon Site

The Lagoon Site houses the extant Olympia oyster population in Discovery Bay. The linear shape of its geography makes it difficult to conduct a traditional population survey here. However, recruitment is easily observed as settlement of new Olympia oysters on added substrate, which continues to be observed each year. Additionally, in partnership with the Puget Sound Restoration Fund (PSRF), Neil began deploying shell stacks at the Lagoon Site in 2021 to assess recruitment. Data is not yet available for 2022, but in 2021, the recovered shell stacks had a mean of 1.93 live Olympia oysters per shell, ranking in the top ten for recruitment sites that PSRF monitors.

Table 3: 2021 Discovery Bay Lagoon Site Shell Stack Data

2021 PSRF Shell Stack Recruitment Results Lagoon Site, Discovery Bay	
Mean live Oly/shell	1.93
Sample size	30
Standard error	0.56

Photos



October 1, 2021: Cultch loaded up for spreading at the North Powerlines Site (3 cu yds).

Photo by Gordon King.



October 1, 2021: Spreading cultch at the North Powerlines Site. Photo by Gordon King.



May 19, 2022: Cluster of Olympia oysters at the South Powerlines Site. Photo by Steven Yanoff.



May 19, 2022: Volunteers prepping to survey the South Powerlines Site. Photo by Monica Montgomery.



May 19, 2022: Ella counting and measuring Olympia oysters the South Powerlines Site. Photo by Monica Montgomery.



May 19, 2022: South Powerlines Site Olympia oyster population survey. Photo by Monica Montgomery.



June 17, 2022: Gordon and Frank getting ready to load up wheelbarrows with cultch for transporting to the Lagoon Site. Photo by Monica Montgomery.



June 17, 2022: Frank and Steven unloading cultch to spread at the Lagoon Site. Photo by Monica Montgomery.



June 17, 2022: Janette spreading cultch by hand at the Lagoon Site. Photo by Monica Montgomery.



June 17, 2022: Joanie and Susan spreading cultch at the Lagoon Site. Photo by Monica Montgomery.



July 15, 2022: The MRC Coordinator demonstrating the survey protocol at the North Powerlines Site. Photo by Logan Flanagan.

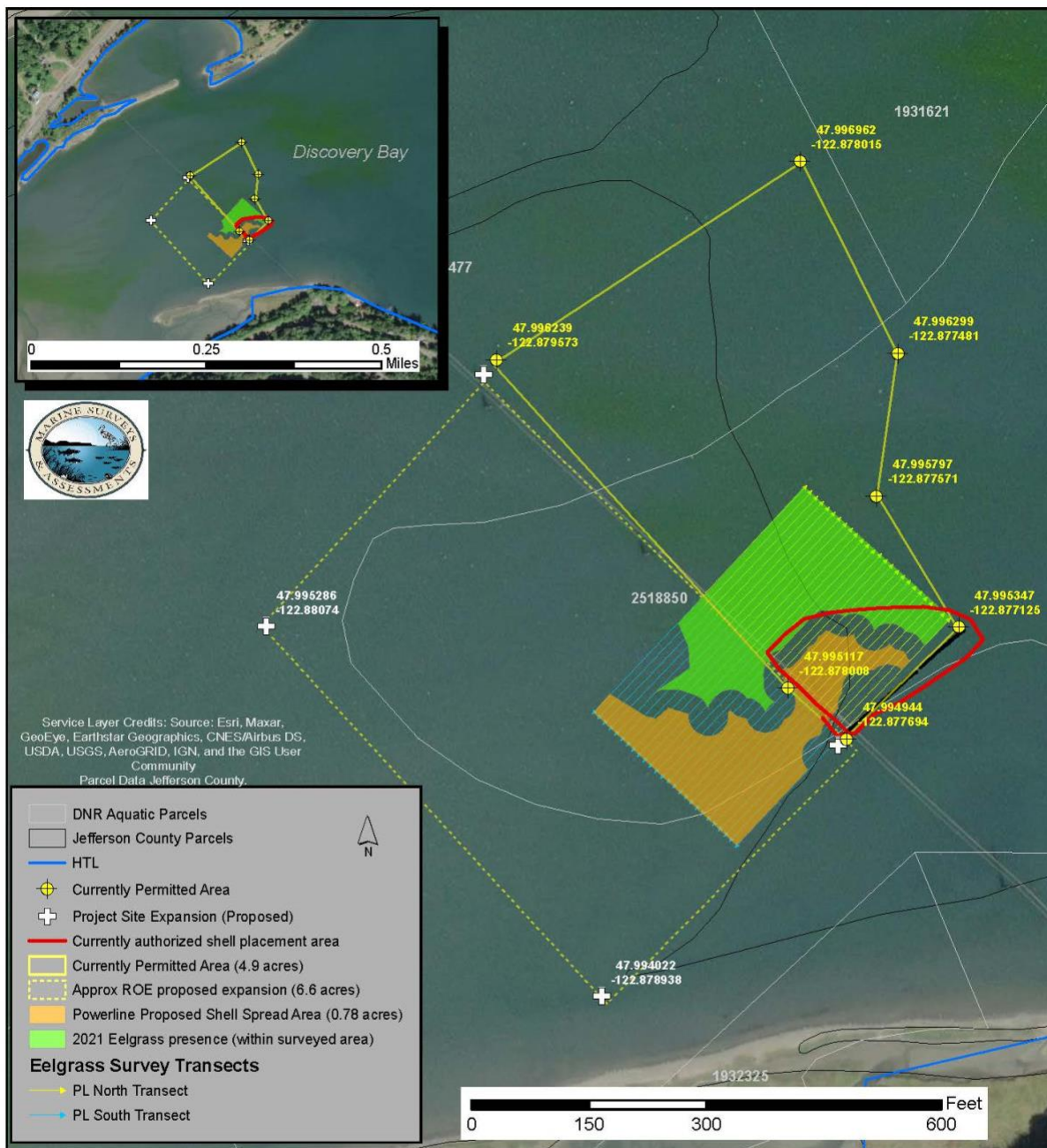


July 15, 2022: North Powerlines Site population survey. Photo by Monica Montgomery.



July 15, 2022: North Powerlines Site population survey team. Photo by Monica Montgomery.

Permit Drawing of the North and South Powerlines Sites in Discovery Bay



USACE REFERENCE #: NWS-2014-292	PARCEL ID/OWNER	PROPOSED PROJECT
APPLICANT: Jefferson County Marine Resources Committee c/o Monica Montgomery	000000001 - Department of Natural Resources (referred to as "Site b." under Right of Entry No. 23-097627)	Olympia oyster habitat enhancement w/ shell placement
LOCATION: Parcel # 000000001 (waterways) Area corners: 47.996962 / -122.878015, 47.995347 / -122.877125, 47.995286 / -122.88074, 47.994022 / -122.878938 In: Discovery Bay Near: Port Townsend County: Jefferson State: WA	ADJACENT PROPERTY OWNERS: 902243045 - Jefferson Land Trust 1033 Lawrence St., Port Townsend, WA 98368 902243039 - Julie Campbell 17871 SE 192nd Dr., Renton, WA 98058	Sheet 3 of 3 DATE: 11/16/2021 Tidal datum: ft MLLW