

## **Jefferson County Marine Resources Committee 2023 Olympia Oyster Habitat Enhancement Project Summary Report**

### **Project Overview**

Discovery Bay has a 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”), and in 2022, the MRC expanded the original Powerlines Site (now referred to as the “North Powerlines Site”) to include a parcel (now referred to as the “South Powerlines Site”) located adjacent and just south of the original site. In 2023, the MRC organized population surveys and a large shell spread event (~40 cubic yards) at the Powerlines Site (both North and South).

Project Lead: Neil Harrington

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

2023 Volunteers: Call Nichols, Cheryl Lowe, Heather Gordon, Mark Buchli, Steven Yanoff, Cyndi Cross, Chelsy Cross, Carolyn Standridge, Keith Knol, Cameron Currier, Nick Balderson

### **October 2022 – September 2023 Olympia Oyster Project Activities**

October 10 – The subcommittee (Neil, Joan, Sarah, Gordon, Janette, Frank, Brent) along with the MRC Coordinator and a community volunteer (Heather) met to discuss 2023 plans for the Olympia oyster project.

December 1 – Two MRC members (Neil, Joanie) and the MRC Coordinator attended a Climate Change and Shellfish Impacts Workshop hosted by the Jamestown S’Klallam Tribe. The workshop included a presentation by Wendel Raymond about a recent study synthesizing shellfish data across the Puget Sound region (including Jefferson MRC Olympia oyster data) to assess the impacts of the 2021 heat wave.

December 7 – Project lead Neil and the MRC Coordinator met with the Kilisut Harbor team (including Puget Sound Restoration Fund and WDFW staff) to discuss 2023 plans for community outreach and engagement as early steps for a potential restoration project in this priority area.

January 10 – The MRC Coordinator secured a WDFW shellfish transfer permit for shell from Taylor Shellfish between March 1 – October 1, 2023.

February 3 – The MRC Coordinator submitted a JARPA and other materials for renewing the MRC’s five-year Right of Entry with DNR for South Discovery Bay.

May 4 and May 7 – The MRC, along with WDFW and PSRF partners, hosted community presentations on the potential for Olympia oyster restoration work in Kilisut Harbor,

- including a virtual presentation and an in-person presentation with beach walk. This outreach effort resulted in over 20 tideland owners expressing interest in scheduling beach walks over the summer with biologists to explore restoration opportunities.
- June 5 – The MRC conducted an Olympia oyster population survey at the North and partial South Powerlines sites. The project lead, Neil, one MRC member (Gordon), MRC Coordinator, MRC Assistant intern (Amelia), and four community volunteers (Steven, Mark, Call, Cheryl) participated.
- June 22 – The MRC Coordinator secured a WDFW shellfish transfer permit for shell from Hood Canal Oyster Co. between June 20 – December 31, 2023.
- July 6 – Hood Canal Oyster Co. delivered 1,200 bags of clean Pacific oyster shell to the Powerlines Site in South Discovery Bay. Volunteer assistance was provided by two MRC volunteers (Neil and Gordon) and one Taylor shellfish employee (Carson).
- July 17 – The MRC Coordinator, MRC Assistant intern, and 2 MRC members (Neil, Gordon) spread nearly half of the shell delivered.
- July 31 – The project lead (Neil), MRC member Gordon, MRC Coordinator and six community volunteers (Chelsy, Cyndi, Cameron, Carolyn, Nick, Keith) spread the remaining shell at the Powerlines Site.
- September 1 – The MRC's Aquatic Lands Conservation License (#23-A97627) for its three Olympia oyster restoration sites in Discovery Bay was issued, allowing for up to 100 cubic yards of clean shell to be placed through August 31, 2028.
- September 27 – The project lead (Neil) and MRC Coordinator met with Kilisut Harbor partners to discuss the summer beach walks and next steps.

**A total of 131 volunteer hours were contributed** to the Olympia oyster restoration project by MRC members and community volunteers, helping to count and measure Olympias as well as spread clean shell to add substrate for new larval settlement, in 2023.

### **Population Survey Data Results**

On June 5, the annual population survey of Olympia oysters was conducted at the Powerlines Site (both North and South). Eight people participated in the survey, including the MRC project lead (Neil), MRC Coordinator (Monica), MRC Program Assistant intern (Amelia), one MRC member (Gordon), and four community volunteers (Steven, Mark, Call, Cheryl). The group worked as three survey teams of two people each, with Neil setting the locations of each transect and quadrat and Monica moving between the monitoring teams to help as needed. Each survey team recorded the number and size of Olympia oysters as well as percent cultch cover within each quadrat surveyed. Volunteers reported that the simplified data sheet was user friendly, and they were clear on how to record the data.

#### North Powerlines Site

Volunteers counted each Olympia oyster individual and measured their size (mm) within a sample area of 10 m<sup>2</sup> representing a total plot area of 1883.4 m<sup>2</sup>. Volunteers counted and measured a total of 369 Olympia oysters within the sample area, resulting in an approximate population of 69,497 Olympia oysters within the project site. The average size of Olympia oysters here was determined to be 30 mm, with an average number of 37 Olympia oyster

individuals per square meter. Across the North Powerlines Site, Olympia oysters ranged from 2 to 62 mm in size, with nearly half (48%) of the oysters counted measuring less than 30 mm. This wide range of multiple size (and age) classes and the significant number of smaller Olympias demonstrates that natural recruitment continues to occur at this site.

*Table 1: Summary of Discovery Bay North Powerlines Site Data Collected 2017-2023*

<b>Data Collected</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>2022</b>	<b>2023</b>
# of ¼ m <sup>2</sup> quadrats	48	77	69	85	60	46	40
Total # of Olys	592	732	398	375	432	522	369
Total area sampled (m <sup>2</sup> )	12	19.25	17.25	21.3	15	11.5	10
Total plot area (m <sup>2</sup> )	-	-	-	2023.4	1825.5	2023.4	1883.4
Average size of Olys (mm)	38.9	34.0	41.3	40.7	31.9	28.8	30
Average % cultch cover/quadrat	11.7%	17.2%	8.2%	15.6%	6.9%	21%	12%
Average # of Olys/m <sup>2</sup>	49	38	23	18	29	45	37
Total # of Olys in plot	-	-	-	35,708	52,575	79,299	69,497

#### South Powerlines Site

In 2022, the Jefferson MRC acquired a Right of Entry and other agency permits to include the parcel (now referred to as the South Powerlines Site) located just south and adjacent to the original North Powerlines Site. Due to wave action and currents, Olympia oysters and shell has tended to drift from the North to the South Powerlines Site. The MRC conducted a baseline population survey in 2022 and its second survey in 2023. The baseline survey was split into two sections- the high density area just south of the existing restoration area (table 2) and the much larger low density area. The estimated population in the 11,868m<sup>2</sup> low density area was 9231 oysters versus 34,886 oysters in the 660m<sup>2</sup> of the high density area.

In 2023, volunteers counted each Olympia oyster individual and measured their size (mm) within a sample area of 6.5 m<sup>2</sup> representing a total plot area of 1214 m<sup>2</sup>. Volunteers counted and measured a total of 289 Olympia oysters within the sample area, resulting in an approximated 53,976 Olympia oysters settled within the project site. The average size of Olympia oysters here was determined to be 35 mm, with an average number of 45 Olympia oyster individuals per square meter. Compared to the 2022 baseline survey, the number of Olympia oysters per m<sup>2</sup> and percent cultch coverage had increased, nearly tripling (see Table 2). Across the South Powerlines Site, Olympia oysters ranged from 6 to 81mm in size, with the majority (67%) of Olympias measuring more than 30 mm. This wide range of multiple size (and age) classes demonstrates that the South Powerlines Site supports natural recruitment.

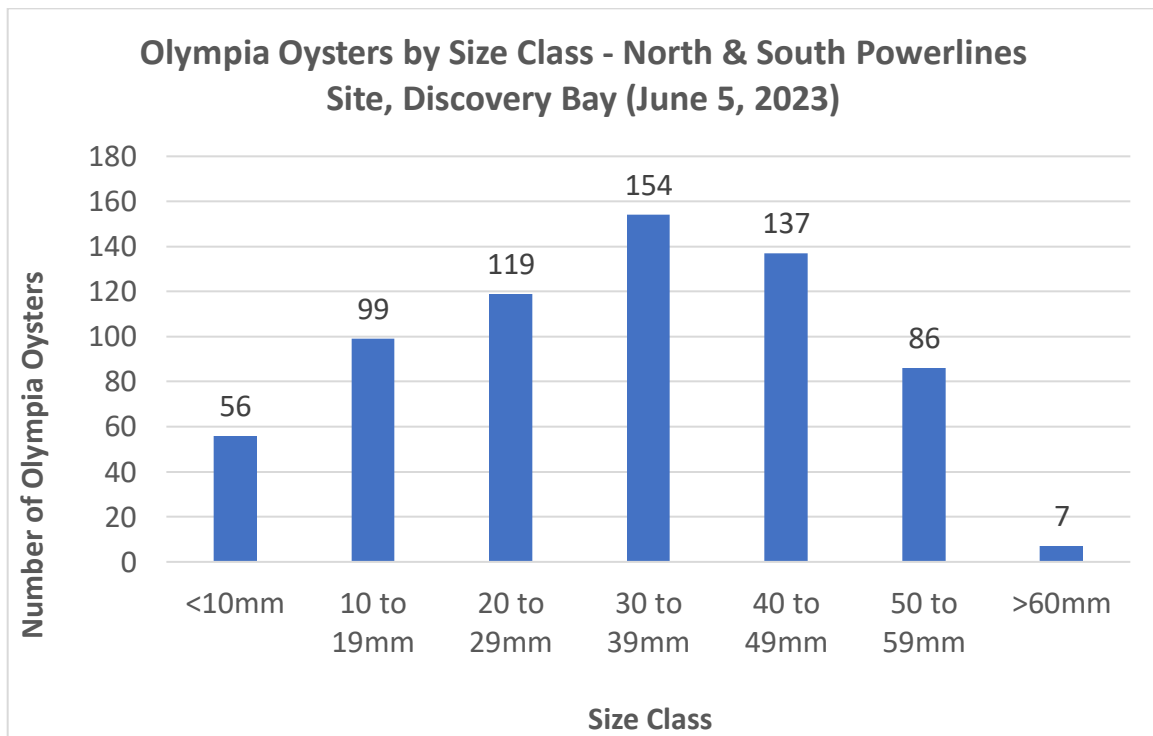
*Table 2: Summary of Discovery Bay South Powerlines Site Data (in the high density area, just south of the existing restoration area) Collected 2022-2023*

<b>Data Collected</b>	<b>2022</b>	<b>2023</b>
# of ¼ m <sup>2</sup> quadrats	14	26
Total # of Olys	185	289

Total area sampled (m <sup>2</sup> )	3.5	6.5
Average size of Olys (mm)	41.4	35
Average % cultch cover/quadrat	13%	9%
Average # of Olys/m <sup>2</sup>	53	45
Total # of Olys in plot	34886	53,976

### Summary

The size class distribution of Olympia oysters measured across both sites demonstrate a normal distribution curve (see Figure 1). This continues to support that natural recruitment of native Olympia oysters is occurring across the Powerlines Site, and with existing substrate as no additional shell was distributed in 2022. The total estimated population of Olympia oysters across the Powerlines Site as of 2023 is 123,000, compared to an estimated 114,185 in 2022 and essentially zero when this project began in 2014.



*Figure 1. Size class distribution (mm) of Olympia oysters surveyed by the Jefferson MRC across the Powerlines Site (North and South) in South Discovery Bay on June 5, 2023.*

### **Shell Spread and Permit Updates**

The MRC acquired a new WDFW Shellfish Transfer Permit in June and contracted Hood Canal Oyster Co. to deliver 1,200 bags (approximately 40 cubic yards) of clean Pacific oyster shell to the Powerlines Site on July 6. Across just two workdays, the MRC – with the help of two members, one staff, one intern, and six volunteers – emptied each bag and evenly distributed the shell. As of September, the MRC was issued a new Aquatic Lands Conservation License (#23-A97627) for its three Olympia oyster restoration sites in



Discovery Bay, allowing for up to 100 cubic yards of clean shell to be placed between September 1, 2023 and August 31, 2028. Most of the plastic mesh bags were given to the WDFW shellfish unit to be given away to recreational clam harvesters for reuse as catch bags.

**Photos** by Monica Montgomery, unless otherwise noted.



*6/5/2023 Settled Olympia and substrate observed across the North Powerlines Site.*



*6/5/2023 Volunteers surveying Olympia oysters at the Powerlines Site. Photo by Monica Montgomery.*





*6/5/2023 Settled Olympias and substrate observed across the South Powerlines Site.*



*6/5/2023 MRC member, Gordon, and volunteer, Mark, posing with a cluster of Olys. Photo by Monica Montgomery.*





*6/5/2023 Community volunteers, Steven and Cheryl (and former MRC Coordinator), counting and measuring Olympia oysters within a quadrat. Photo by Monica Montgomery.*



*6/5/2023 MRC intern, Amelia, and volunteer, Call, counting and measuring Olys. Photo by Monica Montgomery.*





*7/6/2023 Hood Canal Oyster Co. delivering 1,200 bags of shell to the Powerlines Site. Photo by Neil Harrington.*



*7/6/2023 MRC member, Gordon, wrapping up shell delivery to the Powerlines Site, by hand. Photo by Neil Harrington.*





*7/17/2023 Neil, Amelia, and Gordon beginning to empty the bags of shell. Photo by Monica Montgomery.*



*7/17/2023 Nearly half of the bags emptied and shell spread. Photo by Monica Montgomery.*





*7/31/2023 Volunteers spreading the remaining bags of shell. Photo by Monica Montgomery.*



*7/31/2023 Carolyn and Cyndi smiling as they haul away emptied bags. Photo by Monica Montgomery.*





*7/31/2023 Volunteers tying up emptied bags to haul off. Photo by Monica Montgomery.*



*7/31/2023 Accomplished volunteers still smiling after a long morning of spreading shell.  
Photo by Monica Montgomery.*