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T6.4
Summary report on Discovery Bay sites (including summary of actions, data collected, media articles and photos)

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Olympia Oyster Restoration Summary Report - Discovery Bay
October 2019 – September 2020

This report contains general information about the Olympia oyster restoration and monitoring project at Discovery Bay, including a summary of actions, data collected, and photos.

Project Lead: Neil Harrington
Subcommittee Members: Gordon King, Sarah Fisken, Brenda Johnson, Frank Handler, Greg Brotherton, Heather Burns, Betsy Carlson, Brent Vadopalas

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 WDFW and the Jamestown S'Klallam Tribe, 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 spreading clean cultch and monitoring the Olympia oyster population within a half-acre area in the center of the bay ("Powerline Site"). In 2018, the MRC added another restoration site nearby ("Lagoon Site"), situated adjacently to the extant population.

Summary of Actions, October 2019 – September 2020

January 30 – The MRC received a letter from the U.S. Army Corp of Engineers granting NWP authorization to spread up to 13 cubic yards of sterile cultch in Discovery Bay (valid until March 18, 2022).

May 23 – Jefferson County received approval to move into Phase 2 of Governor Inslee's "Safe Start" phased approach for resuming recreational, social and business activities. With Phase 2, MRC activities were approved to resume with 5 or less volunteers practicing safe distancing, wearing masks, and following other hygiene precautions. Due to COVID-19, plans to spread shell at both the Lagoon and Powerline restoration sites in April were delayed. Layoffs and workload for Taylor Shellfish employees also factored into the delayed scheduling for spreading cultch.

June 20 – The MRC acquired a WDFW Shellfish Transfer Permit to distribute clean Pacific oyster shells at both restoration sites in Discovery Bay.

June 22 – At high tide, Taylor Shellfish delivered 42 cultch bags of clean cultch to the Lagoon site and 10 bulk bags of clean cultch to the Powerline site. Taylor Shellfish no longer bags cultch, so they delivered their remaining stock which went to the Lagoon site and packed clean cultch into bulk bags, or brailers, for the Powerline site.

June 23 – At low tide, the MRC Project Lead with two MRC volunteers (Sarah Fisken and Frank Handler) spread the 42 cultch bags at the Lagoon site.

June 25 – At low tide, the MRC Project Lead, MRC Coordinator and one MRC member (Gordon King) spread the 10 bulk bags of clean cultch at the Powerline site.

August 2 – The MRC Coordinator, Project Lead, and three MRC members (Gordon King, Greg Brotherton, and Brenda Johnson) conducted a population survey of Olympia oysters at the Powerline site.

Additional Subcommittee Actions (Beyond Discovery Bay)

July 24 – The MRC Coordinator, Project Lead, and three MRC members (Frank Handler, Brenda Johnson, and Sarah Fisken) visited the beach near Griffith's Point at Mystery Bay to conduct "reconnaissance" to assess the Olympia oyster population and potential need for a restoration project here. The beach had a significant amount of empty Pacific oyster shells and a healthy Olympia oyster population close to the water. It was determined that no restoration would be needed, though members might be interested in monitoring this site.

August 21 – The Project Lead and four MRC members (Sarah Fisken, Heather Burns, Frank Handler, and Brenda Johnson) assessed the Olympia oyster population at a beach located at the end of Camp Discovery Road, at Dabob Bay. They found a healthy Olympia oyster population here and determined there is no need for restoration efforts.

Data Collected

The MRC conducted its annual monitoring at the Powerlines site on August 2, 2020. The MRC Coordinator, Project Lead, and three MRC members (Gordon King, Greg Brotherton, and Brenda Johnson) surveyed the Olympia oyster population here, counting and measuring the size (mm) of Olympia oysters within a sample area of 2,023.4 m^2 (see Figure 1). Volunteers measured a total of 375 Olympia oysters within the sample area, resulting in an approximated 35,700 Olympia oysters settled at the Powerline site (see Table 1). Observations at this site, supported by decreasing percent cultch cover and average number of Olympia oysters per m^2 over the years (see Table 2), find that previously spread cultch with settled Olympia oysters continue to drift with currents and wave action to just south of the restoration site. This year, however, percent cultch cover is expected to be higher due to having spread clean cultch just 5.5 weeks prior to monitoring. Due to the displacement of cultch over time, we do not measure change in the total number of Olympia oysters settled within the restoration site across the years. The Project Lead, along with the new WA Sea Grant Crab Fellow, observed the Lagoon Site in mid-October and did not see much settlement, possibly due to having spread cultch late in the summer season. However, they noted good settlement on the 2019 cultch.

Table 1: Summary of Discovery Bay Powerline Site Data Collected August 2, 2020

Olympia Oyster Restoration Project - Powerlines Site, Discovery Bay Station Name: DiscoBay 2014 Restoration Site Monitoring Date: August 2, 2020	
# of ¼m^2 quadrats	85
Total # of Olys	375
Total area sampled (m^2)	21.3
Total area of plot (m^2)	2,023.4
Average size of Olys (mm)	40.7
Average # of Olys/m^2	17.7
Total # of Olys in plot	35707.6

Figure 1: Map of sample area surveyed on August 2, 2020.

Table 2: Summary of Discovery Bay Powerline Site Data Collected 2017 - 2020

Olympia Oyster Restoration Project - Powerlines Site, Discovery Bay Station Name: DiscoBay 2014 Restoration Site				
Data Collected	**2017**	**2018**	**2019**	**2020**
# of ¼m^2 quadrats	48	77	69	85
Total # of Olys	592	732	398	375
Total area sampled (m^2)	12	19.25	17.25	21.3
Average size of Olys (mm)	38.9	34.0	41.3	40.7
Average % cultch cover/quadrat	11.7%	17.2%	8.2%	15.6%
Average # of Olys/m^2	49	38	23.07	17.7

A small increase in the average size of Olympia oysters indicates their continued presence and growth at the restoration site. In 2020, the sizes of Olympia oysters ranged from 7 to 67mm. The wide range of multiple size (and age) classes, with about one-third of the Olympia oysters counted measuring less than 30mm, continues to support that natural recruitment is occurring at this site (see Figure 2).

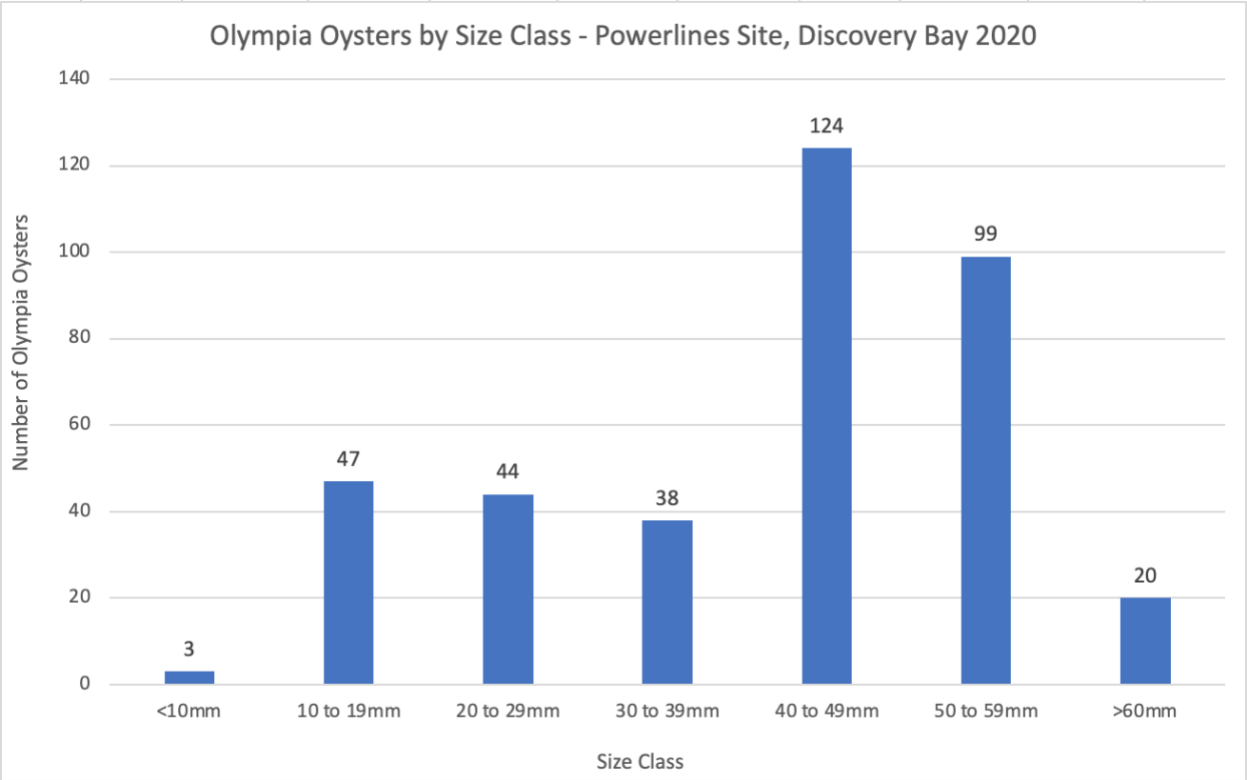

Figure 2: Size class distribution (mm) of Olympia oysters surveyed at the Powerline Site, Discovery Bay on August 2, 2020.

Photos:

Bagging clean cultch into bulk bags at Taylor Shellfish – photo by Gordon King

Bags of clean shell being delivered to Discovery Bay on June 22, 2020 – photo by Gordon King

MRC volunteers spreading clean cultch at the Lagoon Site on June 23, 2020 – photo by Neil Harrington

MRC volunteers spreading clean shell at the Powerline Site on June 25, 2020 – photo by Monica Montgomery

Oyster monitoring at Discovery Bay on August 2, 2020 - photos by Monica Montgomery

Settled Olympia oysters that have drifted south of the Powerlines site - photo by Monica Montgomery

A newly settled Olympia oyster on a clean Pacific oyster shell spread just 5.5 weeks prior – photo by Monica Montgomery