

# Wild Juvenile Salmonid Monitoring Program 2022 Discovery Islands, BC

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***Prepared For:***

*MOWI Canada West  
#124 – 1334 Island Highway  
Campbell River, BC  
V9W 8C9*

*Cermaq Canada  
203-919 Island Highway  
Campbell River, BC  
V9W 2C2*

*Grieg Seafood BC Ltd.  
106-1180 Ironwood St.  
Campbell River, BC  
V9W 5P7*



**MAINSTREAM**  
Biological Consulting  
**250-287-2462**  
[www.mainstreambio.ca](http://www.mainstreambio.ca)

## Summary

Beach seine sampling was conducted on behalf of MOWI Canada West, Cermaq Canada and Grieg Seafood BC Ltd. in the Discovery Islands, BC in 2022. The intent of the sampling program was to monitor sea lice abundance, prevalence and intensity on juvenile wild salmon within the Discovery Islands. Despite many of the aquaculture sites becoming inactive after the December 2020 decision by Fisheries and Oceans Canada (DFO) to not permit re-stocking as part of the strategy to phase out net pen fish farms, the wild juvenile salmon monitoring program continued over the entire region in 2022.

Sampling was conducted at 29 sites within the Discovery Islands, BC during two separate sampling events in April and May 2022, selected to coincide with the peak outmigration period of juvenile salmonids. The sampling sites were chosen based on their locations relative to existing aquaculture sites in the area and adapted from historical purse seine sites sampled by DFO with three additional new sites.

The data presented, including water quality, fish sample composition, fish size and sea lice infestation rates, has in previous years (2017-2020) been divided into two sections based on the locations of the sample sites relative to aquaculture sites in the area and salmon migration routes. Due to the December 2020 decision to not allow many of the sites to restock, the data since 2021 has been divided into three sub-areas, the south area without farms (Pre-Exposure), the central area where farms were again not active in the 2022 sample period (Inactive) and the north area where at least one farm was active during the 2022 sample period (Post-Exposure).

A total of 29 sites were sampled in 2022. Seven of the sites were in locations on the salmon migration route where out-migrating juvenile salmon would be unlikely to be exposed to existing aquaculture sites. These are considered 'Pre-Exposure' sites. Twelve sites were in locations where aquaculture sites were not restocked after December 2020 due to the change in licensing and inability to obtain a transfer permit to introduce new fish after being harvested or fallowed. These are situated in the 'Inactive' sub-area. Ten sites were in locations where migrating salmon would be exposed to at least one existing aquaculture site at some point along their migration route. These are considered 'Post-Exposure' sites.

Thirty individuals from each target fish species or the total number of captured individuals from each target species (if less than 30 were captured) were collected from each of the 29 sites during the sampling events. Total catch numbers of each species were recorded. Water temperature, salinity and dissolved oxygen were recorded at each site during each sampling event.

Retained fish were frozen and delivered to the Center for Aquatic Health Sciences (CAHS) for laboratory analysis. Sea lice infestation data was tabulated by CAHS and provided to Mainstream Biological Consulting for analysis and reporting. Sea lice observed on the individual fish specimens during laboratory analysis were identified as either *Lepeophtheirus spp.* or *Caligus sp.* These lice are assumed to be *Lepeophtheirus salmonis* and *Caligus clemensi* due to the lack of documented infestation of Pacific salmon by other species. The lice were recorded by life stage and the sex of pre-adult or adult motile lice was determined.

This report documents the observed sea lice infestation rate on wild juvenile chum and pink salmon retained in the Pre-Exposure, Inactive and Post-Exposure sub-areas in the Discovery Islands in 2022. Results for wild juvenile coho and chinook salmon infestation

rate have not been presented but results of the coho and chinook sample analysis are included in Appendix III.

A total of 279 individual samples from Pre-Exposure beach seine sites underwent lab analysis for sea lice infestation in 2022. This included 101 chum (*Oncorhynchus keta*), 146 pink (*O. gorbushca*), two coho (*O. kisutch*) and 30 chinook (*O. tshawytscha*) salmon. Of the 247 chum and pink salmon collected from Pre-Exposure sites, 34 individuals were infested with 42 sea lice. The calculated prevalence for the total Pre-Exposure chum and pink salmon sample population was 13.8 %. The sea lice abundance was 0.17 and the average intensity was 1.2 for the Pre-Exposure sample population collected in the Discovery Islands in 2022.

A total of 534 chum salmon were captured, representing 19.2 % of all captured Pre-Exposure fish. Of the 534 chum captured, 101 were retained for lab analysis for sea lice infestation. A total of 11 chum smolts were found to be infested with 14 lice resulting in a calculated prevalence of 10.9 %, an abundance of 0.14 and an average intensity of 1.3 for the Pre-Exposure chum salmon sample population.

A total of 2203 pink salmon were captured at Pre-Exposure sites, representing 79.2 % of all fish in the Pre-Exposure sub-area. Of the 2203 pinks captured, 146 were kept for lab analysis for sea lice infestation. A total of 23 pink salmon were found to be infested with 28 lice resulting in a calculated prevalence of 15.8 %, an abundance of 0.19 and an average intensity of 1.2 for the Pre-Exposure pink salmon sample population.

For the Pre-Exposure chum and pink salmon sample population (n=247), a total of 15 *L. salmonis* sea lice of various life stages were identified on 14 individuals and 27 *C. clemensi* sea lice were found on 21 of the samples analyzed in the lab. A single fish was found to be infested with both *L. salmonis* and *C. clemensi*.

For the Pre-Exposure chum salmon sample population, a total of four *L. salmonis* sea lice of various life stages were identified on four juvenile chum salmon and ten *C. clemensi* sea lice were found on seven of the juvenile chum salmon. No juvenile chum salmon were infested with both *L. salmonis* and *C. clemensi*.

For the Pre-Exposure pink salmon sample population, a total of 17 *C. clemensi* sea lice were found on 14 of the juvenile pink salmon and 11 *L. salmonis* sea lice were identified on ten juvenile pink salmon. There was a single pink salmon infested with both species of sea lice.

A total of 732 individual samples from the beach seine sites within the Inactive sub-area underwent lab analysis for sea lice infestation including 431 chum, 251 pink, 40 coho and 10 chinook salmon. From the Inactive sub-area chum and pink salmon sample population, 60 individuals were infested with 72 sea lice. The calculated prevalence for the Inactive sub-area chum and pink salmon sample population collected in 2022 was 8.8 %; the sea lice abundance was 0.11 and the average intensity was 1.2.

A total of 1447 chum salmon were captured in the Inactive sub-area, representing 72.2 % of all captured fish for that area. Of the 1447 chum captured, 431 were retained for lab analysis for sea lice infestation. A total of 39 chum smolts were found to be infested with 48 lice resulting in a calculated prevalence of 9.0 %, an abundance of 0.11 and an average intensity of 1.2 for the Inactive sub-area chum salmon sample population.

A total of 480 pink salmon were captured, representing 24.0 % of all fish captured in the Inactive sub-area sampling. Of the 480 pinks captured, 251 were kept for lab analysis

for sea lice infestation. A total of 21 pink salmon were found to be infested with 24 lice resulting in a calculated prevalence of 8.4 %, an abundance of 0.10 and an average intensity of 1.1 for the pink salmon sample population in the Inactive sub-area.

For the Inactive sub-area chum and pink salmon sample population, a total of 14 *L. salmonis* sea lice of various life stages were identified on 14 individuals and 58 *C. clemensi* sea lice were found on 46 of the samples analyzed in the lab. No samples were infested with both *L. salmonis* and *C. clemensi*.

For the Inactive sub-area chum salmon sample population, a total of 11 *L. salmonis* sea lice of various life stages were identified on 11 juvenile chum salmon and 37 *C. clemensi* sea lice were found on 28 of the juvenile chum salmon.

For the Inactive sub-area pink salmon sample population, a total of three *L. salmonis* sea lice of various life stages were identified on three juvenile pink salmon and 21 *C. clemensi* sea lice were found on 18 of the juvenile pink salmon.

A total of 197 individual samples from the Post-Exposure beach seine sites underwent lab analysis for sea lice infestation including 120 chum, 73 pink, two coho and two chinook salmon. From the Post-Exposure chum and pink salmon sample population, 16 individuals were infested with 16 sea lice. The calculated prevalence for the Post-Exposure chum and pink salmon sample population collected in the Discovery Islands in 2022 was 8.3 %; the sea lice abundance was 0.08 and the average intensity was 1.0.

A total of 1152 chum salmon were captured in the Post-Exposure sub-area, representing 47.5 % of all captured fish in that area. Of the 1152 chum captured, 120 were retained for lab analysis for sea lice infestation. A total of ten chum smolts were found to be infested with ten lice resulting in a calculated prevalence of 8.3 %, an abundance of 0.08 and an average intensity of 1.0 for the Post-Exposure chum salmon sample population.

A total of 1270 pink salmon were captured in the Post-Exposure sub-area, representing 52.3 % of all captured fish in that area. Of the 1270 pink salmon captured, 73 were kept for lab analysis for sea lice infestation. A total of six pink salmon were found to be infested with six lice resulting in a calculated prevalence of 8.2 % and an abundance of 0.08 and an average intensity of 1.0 for the Post-Exposure pink salmon sample population.

For the Post-Exposure chum and pink salmon sample population, a total of eight *L. salmonis* sea lice of various life stages were identified on eight individuals and eight *C. clemensi* sea lice were found on eight of the samples analyzed in the lab. There were no samples that were infested with both *L. salmonis* and *C. clemensi*.

For the Post-Exposure sub-area chum salmon sample population, a total of four *L. salmonis* sea lice of various life stages were identified on four juvenile chum salmon and six *C. clemensi* sea lice were found on six of the juvenile chum salmon.

For the Post-Exposure pink salmon sample population, a total of four *L. salmonis* sea lice of various life stages were identified on four juvenile pink salmon and two *C. clemensi* sea lice were found on two of the juvenile pink salmon.

The following summary table provides a comparison of Pre-Exposure, Inactive and Post-Exposure sub areas sea lice infestation statistics on pink and chum salmon collected in the Discovery Islands in 2022.

Species	Sample Sub-area	Sample size (n)	Total number of lice observed	Total number of fish infested	Prevalence (%)	Abundance	Average Intensity
<b>chum</b>	Pre-Exposure	101	14	11	10.9	0.14	1.3
	Inactive	431	48	39	9.0	0.11	1.2
	Post-Exposure	120	10	10	8.3	0.08	1.0
<b>pink</b>	Pre-Exposure	146	28	23	15.8	0.19	1.2
	Inactive	251	24	21	8.4	0.10	1.1
	Post-Exposure	73	6	6	8.2	0.08	1.0

A comparison of the prevalence, abundance and average intensity of sea lice species found on chum and pink salmon was also completed for sample data collected in the Discovery Islands between 2017 and 2022 and can be found in Section 4.2.

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## 1.0 Introduction

At the request of MOWI Canada West, Cermaq Canada and Grieg Seafood BC Ltd. beach seine sampling to capture wild juvenile salmon to be analyzed for sea lice infestation took place at 29 sites in the Discovery Islands, BC (Figure 1). The sample collection occurred on April 18-19 and May 16-18, 2022. These dates were selected to coincide with the estimated peak outmigration dates of juvenile chum (*Oncorhynchus keta*) and pink (*O. nerka*) salmon.

Parasitic copepods from the family Caligidae (sea lice) found in the coastal waters of British Columbia are divided into two genera: *Lepeophtheirus* and *Caligus*. Eleven species of *Lepeophtheirus* have been identified infesting fish in the Pacific Ocean, while only one species of *Caligus* (*C. clemensi*) has been identified (Margolis and Arthur, 1979; McDonald and Margolis, 1995). *C. clemensi* infest an extremely wide range of natural hosts in the marine environment including salmonids and non-salmonids; while the natural hosts of *L. salmonis* on the Pacific coast have been found to include Pacific salmon, threespine stickleback and Pacific herring. *Lepeophtheirus spp.* sea lice found on salmonid specimens were assumed to be *L. salmonis* due to the lack of documented infestations of Pacific salmon by other *Lepeophtheirus* lice species (Jones and Nemec, 2004).

Both genera have similar life histories and developmental stages (Kabata, 1972; Johnson and Albright, 1991a). The sea lice hatch from eggs and go through two free-swimming naupilii stages before developing into an infectious free-swimming copepodid. At this point, the sea lice attach to their host and develop through a number of chalimus stages. The chalimus are non-motile and are attached to their host by a frontal filament. The final chalimus stage terminates as the sea lice detach from their hosts and can move freely on the fish as they develop through a pre-adult stage before becoming reproductively viable adults.

Water temperature and salinity are two environmental variables that influence sea lice development, growth, survival, and reproductive rate. In British Columbia, surface seawater temperatures generally range from approximately 6 °C to 13 °C. Research on sea lice abundance conducted in the Discovery Islands and elsewhere on the coast of British Columbia indicates that surface water temperature during the winter months does not appear to hinder the seasonal abundance of *L. salmonis* (Saksida et al., 2007a, b). The rate of development and generation times for *C. elongates* are strongly temperature dependent (Tully, 1992) and although this research has not been conducted, similar relationships with temperature are to be expected for *C. clemensi* (Jones and Johnson, 2015). Survival and development of *L. salmonis* is optimal in high salinity seawater. Under laboratory conditions copepodid survival was limited to conditions where salinity was greater than 10 ppt (Johnson and Albright, 1991b).

MOWI Canada West, Cermaq Canada and Grieg Seafood BC Ltd. have undertaken annual monitoring of sea lice abundance, prevalence, and intensity on juvenile wild salmon within the Discovery Islands in support of the Aquaculture Stewardship Certification for their active aquaculture sites within the region since 2017. In December 2020, DFO implemented a strategy to phase out 19 finfish farms in the Discovery Islands<sup>1</sup>. While this resulted in many previously active sites to be inactive in the 2021

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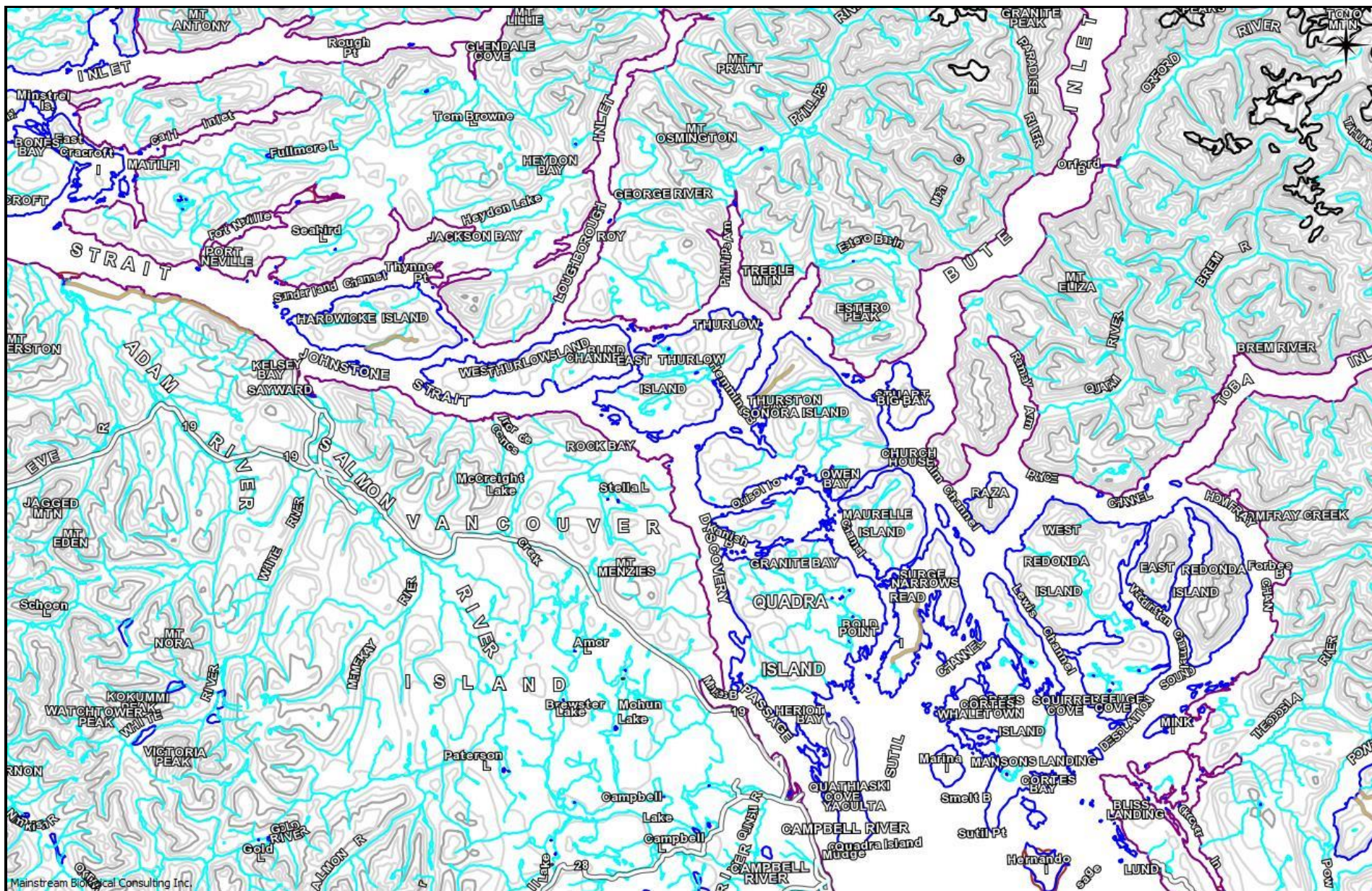
<sup>1</sup> <https://www.canada.ca/en/fisheries-oceans/news/2020/12/measures-to-phase-out-salmon-farming-in-the-discovery-islands-area.html>

and 2022 sampling season, the decision was made to continue with the annual wild juvenile salmon monitoring over the entire region in 2022.

This data report documents the observed sea lice infestation statistics on retained chum and pink juvenile salmonids collected in the Discovery Islands in 2022. Data for retained coho and chinook salmon are included in Appendices II and III. Data presented, including water quality, fish sample composition, fish size and sea lice infestation rates, have in previous years (2017-2020) been divided into two areas based on the locations of the sample sites relative to aquaculture sites in the area and salmon migration routes. With many of the sites in the area inactive since 2021 the data for this year has been divided into three sub-areas, including the southern area without farms (Pre-Exposure), the central area where farms were not active in the 2022 sample period (Inactive) and the north area where farms were active during the 2022 sample period (Post-Exposure) (Table 1; Figure 2).

A total of 29 sites were sampled in 2022. Seven of the sites were in locations on the salmon migration route where out-migrating juvenile salmon would be unlikely to be exposed to existing aquaculture sites. These are considered 'Pre-Exposure' sites. Twelve sites were in locations where aquaculture sites were inactive due to the December 2020 DFO licensing conditions. These are in the 'Inactive' sub-area. Ten sites were in locations where migrating salmon would be exposed to at least one existing (active) aquaculture site at some point along their migration route. These are considered 'Post-Exposure' sites.







## 2.0 Methods

The fish inspected for sea lice infestation were collected from 29 sites in the Discovery Islands, BC (Figure 2). These sites were chosen based on their locations relative to active or inactive aquaculture sites in the area and adapted from historical purse seine sites sampled by Fisheries and Oceans Canada with the addition of three sites. Two sampling events were completed in 2022, with the goal of sampling each site once during each sampling event. Sampling was conducted on April 18-19 and May 16-18, 2022.

### 2.1 Site Locations

The approximate locations of the 29 sampling sites are shown in Figure 2. GPS coordinates collected in the field for the sites are presented in Table 1.

Table 1: The site name and location coordinates of the 29 beach seine sites where fish were collected for sea lice analysis in the Discovery Islands in 2022.

Sub-area	Site Name	Latitude	Longitude
Pre-Exposure	Francisco Point	50 00.467	125 09.031
	Marina Island	50 04.708	125 04.225
	Rebecca Spit	50 06.361	125 11.754
	Viner Point	50 07.886	125 07.809
	SE Hill Island	50 09.573	125 03.600
	Penn Island	50 11.018	125 01.449
	Deepwater Bay	50 11.232	125 19.992
Inactive	Raza	50 19.184	124 58.959
	Raza North	50 21.057	125 02.542
	Okisollo	50 18.499	125 19.865
	Owen Bay	50 19.192	125 14.042
	Rock Bay	50 19.659	125 28.380
	Discovery	50 20.507	125 23.968
	Nodales	50 24.092	125 20.943
	Shoal Bay	50 27.467	125 22.061
	Fanny Bay	50 31.182	125 23.210
	Bickley Bay	50 26.684	125 23.825
	Knox Bay	50 23.618	125 36.348
	Bear Bay	50 21.799	125 38.099
Post-Exposure	Cordero	50 26.953	125 32.677
	Chancellor	50 24.563	125 43.797
	Race Passage	50 23.076	125 53.227
	Wellbore	50 27.167	125 46.127
	Bessborough Bay	50 29.519	125 46.443
	Sunderland	50 28.212	125 50.607
	Blenkinsop Bay	50 28.732	125 59.983
	Primary 3	50 28.546	126 03.880
	Primary 1	50 25.805	126 01.769
	Beautiful Bay	50 26.895	126 05.066



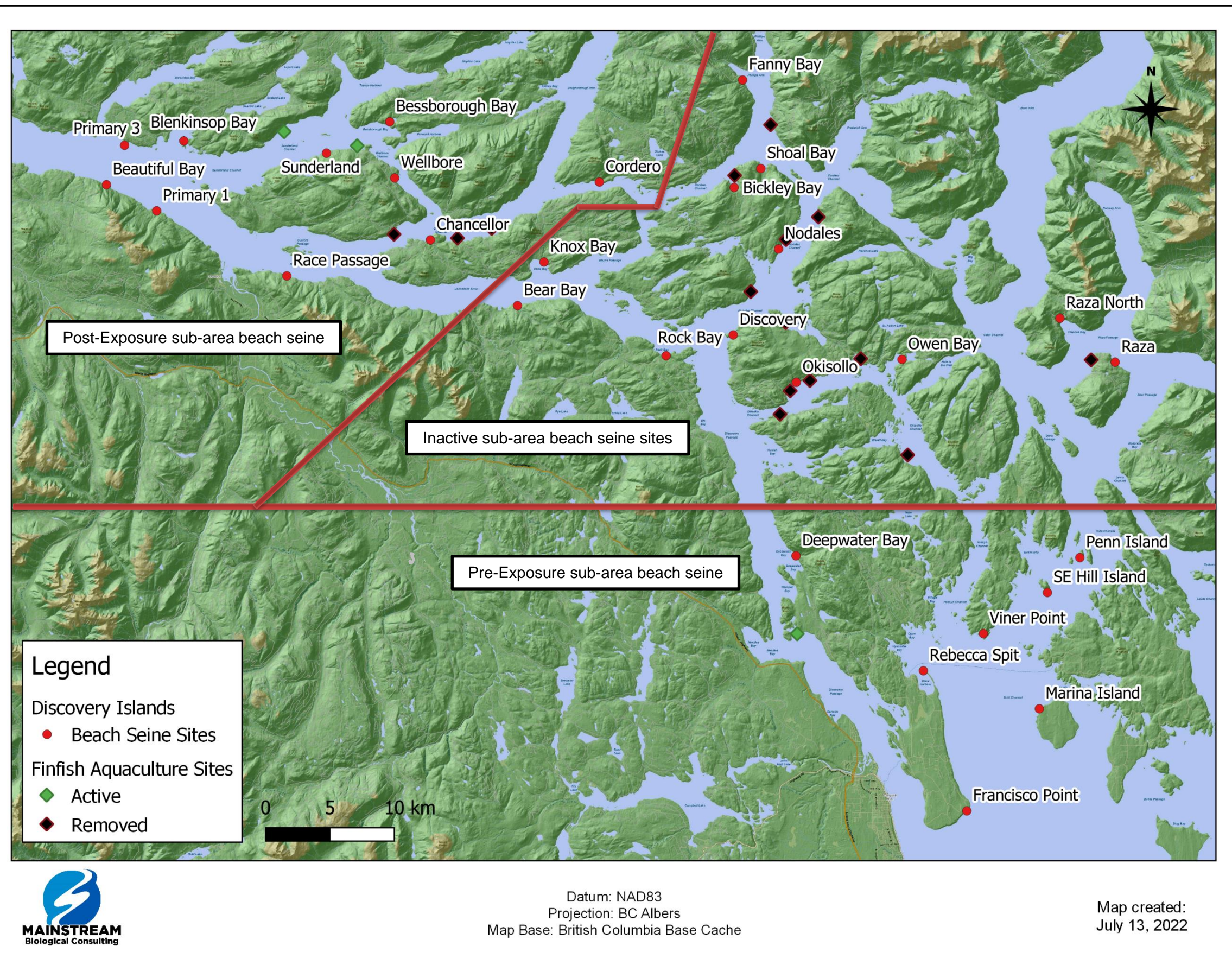


Figure 2: The approximate locations of the 29 beach seine sites (red dots) sampled in the Discovery Islands in 2022, separated into Pre-Exposure, Inactive and Post-Exposure sub-areas shown relative to existing and removed finfish aquaculture sites.



## 2.2 Field Procedures

The procedures implemented for beach seining, fish collection and field data recording in the Discovery Islands during the 2022 sampling period were adapted from those utilized by Fisheries and Oceans Canada (DFO).

An 18 ft Boston Whaler powered by a 70 horsepower outboard motor was used to access the beach seine sites. A 150 ft (45.7 m) long by 12 ft (3.7 m) deep beach seine net was used to capture specimens. The net was constructed in three 50 ft (15.2 m) sections. The centre bunt section consisted of one-quarter inch diameter diamond mesh, with two side panels (wings) of half-inch diameter diamond mesh. Floats were located every 30 cm along the top-line and a lead line weighted the bottom of the net.

Sampling was completed at some sites with assistance of a Wei Wai Kum Fisheries Guardian.

A three or four-person crew conducted the beach seine sets. All sampling sites were approached slowly by boat and the first crewmember was put ashore with the towline from one end of the beach seine net. The onshore crewmember held the towline at one side of the sample site, while another crewmember ensured the net deployed smoothly off the bow or side of the boat. The boat operator backed the boat in a wide semicircle towards the opposite side of the sample site and remained on the boat. When the net was fully deployed, the second crewmember on the bow of the boat stepped into the shallow water with the towline or tossed it to the awaiting crewmember on shore. A slow retrieval of the net began immediately.

As the net was slowly retrieved, the probe of a YSI Professional Plus multiparameter meter was used to collect salinity, dissolved oxygen and water temperature data at the surface (0.2 m) and 1 m depth. The surface parameters were always measured and additional depths were measured if the depth at the site during the tide cycle permitted.

Crewmembers retrieved the net evenly from both ends ensuring that the lead line remained as close to the bottom as possible. All retrieved netting was piled on the beach above the water level. As the retrieval reached the net bunt, the lead line was retrieved at a faster rate than the floats to allow the netting of the bunt to form a bag under the captured fish. The lead line was then pulled up onto the beach above the water level. One crewmember worked their way around the outside of the net in the shallow water to ensure the floats stayed above the surface of the water. In this manner a small, shallow bag formed from the bunt of the net held the captured fish in the water.

All crew members participated in the collection of individual fish to ensure that captured fish remained in the net for as short a period as possible. The net was manipulated as needed in response to changing tides to ensure the captured fish remained in the net and were held in sufficient water to minimize contact with the net or with other fish.

A total of 30 individuals from each target species captured or all of the individuals present (if less than 30) were collected as samples for sea lice infestation analysis. Individual fish were randomly “swam” into an appropriately sized whirl-pak bag. All handling of fish was kept to a minimum.

Once all fish for retention were bagged, a total catch number for each species was recorded. The fish remaining in the net were counted out of the seine net, or an estimate of the remaining fish was made (estimates were used when it appeared that more than 500 individuals from any given species remained in the net). The total of fish

remaining in the net was added to the number of retained individuals to calculate a total capture number for a given species.

Information from each beach seine set was recorded in a standardized field form. The information recorded included the following:

- Site name;
- Date;
- Time at the end of the individual fish collection;
- Comments on weather and oceanic conditions;
- Total capture and retained fish numbers for each specimen group;
- Water temperature (°C) and salinity (ppt) to one decimal place;
- GPS coordinates; and
- The number of salmonid mortalities.

The retained fish from each site were packaged separately in re-sealable bags and labelled with the site name, the date, sample numbers and species. Site sample bags were placed in a cooler with sufficient ice packs during sampling. A portable freezer, which was plugged into the truck was used to transport the specimens from the boat launch to the office. The specimens were transferred to a freezer immediately upon return from the field.

The beach seine net was reloaded onto the bow of the boat. Crewmembers scanned the net for obvious holes, which were repaired immediately if found.

A fourth person remained on a crew boat for additional support. Two out of the three shore crew were transferred to the crew boat for transportation between sites.

The above procedures for beach seine net deployment and retrieval, as well as those described for fish collection, were repeated at all sample locations.

## 2.3 Laboratory Procedures

Collected sample fish were frozen and delivered to the Center for Aquatic Health Sciences (CAHS) for laboratory analysis. Sea lice observed on the individual fish specimens during laboratory analysis were identified as either non-motile chalimus, or motile pre-adults and adults. Lice were identified as either of the two chalimus stages for *Lepeophtheirus salmonis* (Hamre et al., 2013) or four chalimus stages for *Caligus clemensi*. Motile lice, either pre-adults or adults, were identified as either *L. salmonis* or *C. clemensi* and the sex of the louse was determined. Sea lice infestation data was tabulated by CAHS and provided to Mainstream Biological Consulting for reporting.

Data provided by CAHS also included measured fork length in millimetres and weight (recorded to the nearest hundredth of a gram). Lengths and weights were recorded with the specimen's corresponding sea lice analysis results.

## 2.4 Data Analysis

All data collected was analysed and has been summarized into three separate sub-areas based on location of the sample sites: Pre-Exposure, Inactive and Post-Exposure. Pre-Exposure sites included the seven southernmost sites where no fish farm tenures currently exist. These included Francisco Point, Marina Island, Rebecca Spit, Viner Point, SE Hill Island, Penn Island and Deepwater Bay. Fish collected from this area are considered to not have been exposed to fish farms (Table 1, Figure 2). Post-Exposure

sites included the 10 northernmost sites in the vicinity of at least one exist active farm tenure. Fish captured at these sites may or may not have migrated past fish farms (Table 1, Figure 2). The remaining 12 Inactive sites are located in the area of the Discovery Islands between the Pre-Exposure and Post-Exposure sites where farms did not restock prior to and during the 2022 sampling period.

Surface water quality data collected for temperature, salinity and dissolved oxygen was summarized to report the minimum and maximum values as well as the calculated averages for each sample week.

This report contains analysis of the results for the chum and pink salmon sample population. Data for analyzed coho salmon and chinook salmon has been included in Appendices II and III.

Beach seine fish sample composition was summarized by species and site for each week. The fork lengths and weights of the juvenile salmon sample population were summarized to present minimum and maximum values as well as calculated averages. Sea lice infestation rates, including the number of infested fish and the number of sea lice identified, were determined for the Pre-Exposure, Inactive and Post-Exposure sub-areas sample population.

Prevalence, as defined as the number of host fish found to have one or more sea lice compared to the total number of host fish examined, was determined for the combined sample population and for chum and pink salmon.

Abundance, as defined as the total number of sea lice observed compared to the total number of host fish examined, was also determined for the combined sample population and chum and pink salmon.

The intensity of sea lice infestation, as described by the number of sea lice found on a single salmon was summarized. Average intensity was calculated by dividing the total number of sea lice identified by the number of infested fish.

Statistical analysis of the spatial and temporal distribution of sea lice was not conducted. Spatial and temporal analysis has been limited to the presentation and discussion of the number of sea lice found on fish specimens collected from each site within the Pre-Exposure, Inactive, and Post-Exposure sub-areas during each of the sampling events in 2022.

## 3.0 Results

The following sections outline the results of beach seine collection and subsequent sea lice infestation analysis of juvenile salmonids collected from the Discovery Islands, BC, in 2022. The results are presented in three separate sections based on whether data was collected from Pre-Exposure (southern), Inactive (central) or Post-Exposure (northern) sites.

Water quality field data is presented in Appendix I, beach seine fish capture data is included in Appendix II and data on the sample population including sea lice lab analysis results provided by CAHS are provided in Appendix III.

### 3.1 Pre-Exposure Water Quality Parameters

Surface measurements of water temperature, salinity and dissolved oxygen collected at each of the seven Pre-Exposure sites are presented in Table 2. Water parameters measured at 1 m depth are presented in Table 3 for the Pre-Exposure sites. The complete environmental dataset is also included in Appendix I.

Recorded surface water temperatures at Pre-Exposure sub-area sites ranged from a low of 6.7 °C recorded at Deepwater Bay on April 18, 2022, to a high of 10.7 °C recorded at Marina Island on May 17, 2022 (Table 2; Appendix I). Average surface water temperatures increased from 8.4 °C for April 18-19, 2022, to 10.3 °C for May 16-18, 2022.

Recorded surface water salinity at Pre-Exposure sites ranged from a low of 9.4 ppt recorded at Deepwater Bay on April 18, 2022, to a high of 28.8 ppt recorded at Francisco Point on May 17, 2022 (Table 2; Appendix I). The average surface water salinity increased between the two sample periods from 24.4 ppt for April 18-19, 2022, to 28.5 ppt for May 16-18, 2022.

Recorded surface water dissolved oxygen ranged from a low of 7.2 mg/L at Francisco Point on April 19, 2022, to a high of 11.3 mg/L at Penn Island on May 17, 2022 (Table 2; Appendix I). The weekly average surface dissolved oxygen increased slightly during sampling in 2022 from 8.8 mg/L to 9.8 mg/L (Table 2).

Water temperatures at 1 m depth ranged from a low of 8.0 °C recorded at Francisco Point on April 19, 2022, to a high of 10.7 °C recorded at Rebecca Spit on May 17, 2022 (Table 3; Appendix I). Calculated weekly average water temperatures at 1 m depth were similar to the surface measurements (Table 3).

Recorded salinity at 1 m ranged from a low of 26.8 ppt at Rebecca Spit on April 19, 2022, to a high of 29.1 ppt at Deepwater Bay on May 16, 2022 (Table 3; Appendix I). The weekly average water salinity at 1 m depth increased slightly during sampling in 2022 from 27.1 ppt and 28.6 ppt (Table 3).

Dissolved oxygen recorded at 1 m ranged from a low of 7.3 mg/L at Francisco Point on April 19, 2022, to a high of 11.5 mg/L at Penn Island on May 17, 2022 (Table 3; Appendix I). The weekly average dissolved oxygen at 1 m depth increased slightly during sampling in 2022 from 8.7 mg/L to 10.0 mg/L (Table 3).

Table 2: Surface water quality parameters collected at Pre-Exposure beach seine sites in the Discovery Islands in 2022.

Site Name	April 18-19			May 16-18		
	Temp. (°C)	Salinity (ppt)	DO (mg/L)	Temp. (°C)	Salinity (ppt)	DO (mg/L)
Francisco Point	8.0	27.2	7.2	10.2	28.8	9.3
Marina Island	8.6	27.2	8.3	10.7	28.5	9.6
Rebecca Spit	8.8	26.7	8.7	10.2	27.4	10.4
Viner Point	8.7	26.6	9.8	10.6	28.5	9.6
SE Hill Island	8.9	27.0	9.3	10.6	28.7	10.5
Penn Island	8.9	27.0	9.3	10.4	28.6	11.3
Deepwater Bay	6.7	9.4	-	9.2	28.7	8.1
<b>Average</b>	<b>8.4</b>	<b>24.4</b>	<b>8.8</b>	<b>10.3</b>	<b>28.5</b>	<b>9.8</b>

Table 3: Water quality parameters at 1 m depth collected at Pre-Exposure beach seine sites in the Discovery Islands in 2022.

Site Name	April 18-19			May 16-18		
	Temp. (°C)	Salinity (ppt)	DO (mg/L)	Temp. (°C)	Salinity (ppt)	DO (mg/L)
Francisco Point	8.0	27.2	7.3	10.2	28.8	9.2
Marina Island	8.7	27.2	8.4	-	-	-
Rebecca Spit	8.9	26.8	8.8	10.7	27.8	11.1
Viner Point	8.7	27.1	9.4	10.6	28.7	9.7
SE Hill Island	8.9	27.1	9.3	10.6	28.6	10.8
Penn Island	8.9	27.0	9.4	10.6	28.7	11.5
Deepwater Bay	-	-	-	9.2	29.1	8.0
<b>Average</b>	<b>8.7</b>	<b>27.1</b>	<b>8.7</b>	<b>10.3</b>	<b>28.6</b>	<b>10.0</b>

### 3.2 Inactive Sub-area Water Quality Parameters

Surface measurements of water temperature and salinity collected at each of the 12 sites in the Inactive sub-area are presented in Table 4. Water parameters measured at 1 m depth are presented in Table 5 for the Inactive sub-area. The complete environmental dataset is also included in Appendix I.

Recorded surface water temperatures at sites in this sub-area ranged from a low of 7.9 °C recorded at Rock Bay on April 18, 2022, to a high of 13.0 °C recorded at Owen Bay on May 16, 2022 (Table 4; Appendix I). Average surface water temperatures increased slightly from 8.3 °C for April 18-19, 2022, to 9.5 °C for May 16-18, 2022.

Recorded surface water salinity at the Inactive sub-area sites ranged from a low of 9.2 ppt recorded at Knox Bay on May 16, 2022, to a high of 30.4 ppt recorded at Bear Bay on May 16, 2022 (Table 4; Appendix I). The average surface water salinity decreased from 26.2 ppt on April 18-19, 2022, to 24.7 ppt on May 16-18, 2022.

Recorded surface water dissolved oxygen ranged from a low of 7.0 mg/L at Bickley Bay, Nodales and Okisollo on April 18, 2022, to a high of 11.8 mg/L at Raza and Knox Bay on May 16/17, 2022 (Table 4; Appendix I). The weekly average surface dissolved oxygen increased slightly during sampling in 2022 from 8.4 mg/L to 9.3 mg/L (Table 4).

Water temperatures at 1 m depth ranged from a low of 8.0 °C recorded at Bear Bay on April 18, 2022, to a high of 10.8 °C recorded at Raza on May 17, 2022 (Table 5; Appendix I). Calculated weekly average water temperatures at 1 m depth were similar to the surface measurements (Table 5).

Recorded salinity at 1 m ranged from a low of 11.8 ppt at Fanny Bay on May 16, 2022, to a high of 30.4 ppt at Bear Bay on May 16, 2022 (Table 5; Appendix I). The weekly average water salinity at 1 m depth was relatively stable during sampling in 2022 at 27.1 ppt and 26.4 ppt (Table 5).

Dissolved oxygen recorded at 1 m ranged from a low of 6.8 mg/L at Nodales on April 18, 2022, to a high of 12.0 mg/L at Raza on April 19, 2022 (Table 5; Appendix I). The weekly average dissolved oxygen at 1 m depth was relatively stable during sampling in 2022 at 8.3 mg/L and 9.0 mg/L (Table 5).

Table 4: Surface water quality parameters collected at the Inactive sub-area beach seine sites in the Discovery Islands in 2022.

Site Name	April 18-19			May 16-18		
	Temp. (°C)	Salinity (ppt)	DO (mg/L)	Temp. (°C)	Salinity (ppt)	DO (mg/L)
Raza	9.3	25.3	11.5	10.7	22.5	11.8
Raza North	8.8	25.1	11.5	10.2	19.7	11.6
Rock Bay	7.9	27.0	-	8.7	30.1	7.8
Bear Bay	8.0	28.6	7.1	8.5	30.4	8.3
Knox Bay	8.1	28.5	7.1	8.3	9.2	11.8
Bickley Bay	8.3	28.1	7.0	9.2	27.8	8.1
Fanny Bay	8.0	21.8	10.0	8.5	11.4	10.7
Shoal Bay	8.0	26.2	7.7	9.2	29.0	7.9
Nodales	8.4	28.1	7.0	9.1	29.7	8.0
Discovery	8.0	22.3	7.9	9.1	29.8	7.8
Owen Bay	8.2	25.4	-	13.0	26.9	9.7
Okisollo	8.5	28.1	7.0	9.4	29.7	8.0
<b>Average</b>	<b>8.3</b>	<b>26.2</b>	<b>8.4</b>	<b>9.5</b>	<b>24.7</b>	<b>9.3</b>

Table 5: Water quality parameters collected at 1 m depth at the Inactive sub-area beach seine sites in the Discovery Islands in 2022.

Site Name	April 18-19			May 16-18		
	Temp. (°C)	Salinity (ppt)	DO (mg/L)	Temp. (°C)	Salinity (ppt)	DO (mg/L)
Raza	8.8	25.4	12.0	10.8	23.3	11.8
Raza North	8.8	25.5	11.5	10.3	20.0	11.7
Rock Bay	-	-	-	8.7	30.1	8.0
Bear Bay	8.0	28.5	7.2	8.5	30.4	8.5
Knox Bay	8.1	28.5	7.0	-	-	-
Bickley Bay	8.3	28.2	7.0	8.8	29.8	8.0
Fanny Bay	8.1	22.4	9.9	8.5	11.8	10.6
Shoal Bay	8.1	28.1	7.5	9.1	29.6	7.6
Nodales	8.4	28.1	6.8	9.0	29.6	7.7
Discovery	8.2	28.0	7.1	9.0	29.8	8.1
Owen Bay	-	-	-	-	-	-
Okisollo	8.5	28.0	7.0	9.3	29.7	8.4
<b>Average</b>	<b>8.3</b>	<b>27.1</b>	<b>8.3</b>	<b>9.2</b>	<b>26.4</b>	<b>9.0</b>

### 3.3 Post-Exposure Water Quality Parameters

Surface measurements of water temperature and salinity collected at each of the 10 Post-Exposure sub-area sites are presented in Table 6. Water parameters measured at 1 m depth are presented in Table 7 for the Post-Exposure sites. A complete dataset is also included in Appendix I. Equipment malfunction prevented surface water measurements at seven sites on April 18, 2022 (Table 6). Hazardous weather conditions prevented a surface water measurement at Beautiful Bay on May 18, 2022 (Table 6). The backup water parameter meter did not record dissolved oxygen.

Recorded surface water temperatures at Post-Exposure sites ranged from a low of 7.8 °C recorded at Race Passage on April 18, 2022, to a high of 10.0 °C recorded at Chancellor on April 18, 2022 (Table 6; Appendix I). Calculated weekly average surface water temperatures increased slightly from 8.0 °C for April 18-19, 2022, to 9.0 °C for May 16-18, 2022.

Recorded surface water salinity at Post-Exposure sites ranged from a low of 17.5 ppt recorded at Wellbore on May 18, 2022, to a high of 31.4 ppt recorded at Blenkinsop Bay also on May 18, 2022 (Table 6; Appendix I). The calculated weekly average surface water salinity remained consistent at 29.1 ppt for April 18-19, 2022, and 29.3 ppt for May 16-18, 2022.

Recorded surface water dissolved oxygen ranged from a low of 6.8 mg/L at Cordero on April 18, 2022, to a high of 8.4 mg/L at Primary 1 on May 18, 2022 (Table 6; Appendix I). The weekly average surface dissolved oxygen was consistent during sampling in 2022 at 7.8 mg/L for April 18-19, 2022, and 8.1 mg/L for May 16-18, 2022 (Table 6).

Water temperatures at 1 m depth ranged from a low of 8.0 °C recorded at Race Passage on April 18, 2022, and Primary 1 on May 18, 2022, to a high of 8.7 °C recorded at Cordero on May 16, 2022 (Table 7; Appendix I). Calculated weekly average water temperatures at 1 m depth were stable during sampling in 2022 at 8.1 °C and 8.3 °C (Table 7).

Recorded salinity at 1 m ranged from a low of 28.3 ppt at Cordero on April 18, 2022, to a high of 30.9 ppt at Primary 1 on May 18, 2022 (Table 7; Appendix I). The weekly average water salinity at 1 m depth was relatively stable during sampling in 2022 at 29.1 ppt and 30.5 ppt (Table 7).

Dissolved oxygen recorded at 1 m ranged from a low of 6.9 mg/L at Cordero on April 18, 2022, to a high of 8.4 mg/L at Primary 1 on May 18, 2022 (Table 7; Appendix I). The weekly average dissolved oxygen at 1 m depth was relatively stable during sampling in 2022 at 7.1 mg/L and 8.1 mg/L (Table 7).

Table 6: Surface water quality parameters collected at the Post-Exposure beach seine sites in the Discovery Islands in 2022.

Site Name	April 18-19			May 16-18		
	Temp. (°C)	Salinity (ppt)	DO (mg/L)	Temp. (°C)	Salinity (ppt)	DO (mg/L)
Primary 1	-	-	-	8.0	30.9	8.4
Beautiful Bay	-	-	-	-	-	-
Primary 3	-	-	-	8.9	31.2	-
Blenkinsop Bay	-	-	-	9.1	31.4	-
Sunderland	-	-	-	9.1	30.8	-
Bessborough Bay	-	-	-	9.3	30.9	-
Wellbore	-	-	-	9.3	17.5	-
Chancellor	8.0	29.8	8.2	10.0	30.1	-
Race Passage	7.8	29.3	8.3	8.3	30.8	8.0
Cordero	8.1	28.3	6.8	8.7	29.9	7.7
<b>Average</b>	<b>8.0</b>	<b>29.1</b>	<b>7.8</b>	<b>9.0</b>	<b>29.3</b>	<b>8.1</b>

Table 7: Water quality parameters collected at 1 m depth at the Post-Exposure beach seine sites in the Discovery Islands in 2022.

Site Name	April 18-19			May 16-18		
	Temp. (°C)	Salinity (ppt)	DO (mg/L)	Temp. (°C)	Salinity (ppt)	DO (mg/L)
Primary 1	-	-	-	8.0	30.9	8.4
Beautiful Bay	-	-	-	-	-	-
Primary 3	-	-	-	-	-	-
Blenkinsop Bay	-	-	-	-	-	-
Sunderland	-	-	-	-	-	-
Bessborough Bay	-	-	-	-	-	-
Wellbore	-	-	-	-	-	-
Chancellor	-	-	-	-	-	-
Race Passage	8.0	30.0	7.3	8.3	30.8	8.1
Cordero	8.1	28.3	6.9	8.7	30.0	7.8
<b>Average</b>	<b>8.1</b>	<b>29.1</b>	<b>7.1</b>	<b>8.3</b>	<b>30.5</b>	<b>8.1</b>



### 3.4 Fish Sample Composition

A total of 7211 fish were captured from all sites during beach seine sampling conducted in the Discovery Islands in 2022. Of those, 1208 individual fish (16.8 %) were retained as sample specimens and underwent analysis for sea lice infestation (Table 8). The total collected fish and the representative percentage of the total beach seine capture population for each species are presented in Table 8. Pink salmon and chum salmon were the most common species captured during sampling in 2022. Of the 3953 pink salmon captured, 470 individuals (11.9 %) were retained and underwent lab analysis. Of the 3133 chum salmon captured, 652 individuals (20.8 %) were retained and underwent lab analysis. Of the 70 coho salmon captured, 44 individuals (62.9 %) were retained and underwent lab analysis. Of the 55 chinook salmon captured, 42 individuals (76.4 %) were retained and underwent lab analysis. No threespine stickleback or Atlantic salmon were captured during 2022 sampling in the Discovery Islands.

A summary of the total number of fish captured and collected as specimens at each site over the collection period is provided in Table 12. A complete dataset showing fish capture and collection totals by site in 2022 can be found in Appendix II. No salmonids were captured at SE Hill Island, Penn Island, Primary 3, Blenkinsop Bay and Cordero during either sampling period in 2022.

Table 8: The total of collected individuals of each fish species captured in the Discovery Islands, BC in April and May 2022, and the percentage of the total capture population that they represent.

Common Name	Capture Totals (% of total capture population)	Collection Totals	Collection %
chum salmon	3133 (43.4 %)	652	20.8
pink salmon	3953 (54.8 %)	470	11.9
coho salmon	70 (1.0 %)	44	62.9
chinook salmon	55 (0.8 %)	42	76.4
<b>All species</b>	<b>7211</b>	<b>1208</b>	<b>16.8</b>

#### 3.4.1 Pre-Exposure Sample Composition

A total of 2782 fish were captured during beach seine sampling conducted at the Pre-Exposure sites in the Discovery Islands in 2022. Of those, 279 individual fish (10.0 %) were collected as sample specimens and underwent analysis for sea lice infestation (Table 9). The total collected fish from each species and the percentage that it represents of the total Pre-Exposure capture population are shown in Table 9. Of the 534 chum salmon captured, 101 individuals (18.9 %) were retained and underwent lab analysis. Of the 2203 pink salmon captured, 146 individuals (6.6 %) were retained and underwent lab analysis. Of the 43 chinook salmon captured, 30 individuals (69.8 %) were retained and underwent lab analysis. The coho salmon captured were retained and underwent lab analysis.

Table 9: The total number of collected individuals of each fish species captured in the Pre-Exposure sites in the Discovery Islands, BC, in April and May 2022, and the percentage of the total Pre-Exposure capture population that they represent.

Common Name	Capture Totals (% of total Pre-Exposure capture population)	Collection Totals	Collection %
chum salmon	534 (19.2 %)	101	18.9
pink salmon	2203 (79.2 %)	146	6.6
coho salmon	2 (0.1 %)	2	100
chinook salmon	43 (1.5 %)	30	69.8
<b>All species</b>	<b>2782</b>	<b>279</b>	<b>10.0</b>

### 3.4.2 Inactive Sub-area Sample Composition

A total of 2003 fish were captured during beach seine sampling conducted at the sites in the Inactive sub-area in the Discovery Islands in 2022. Of those, 732 individual fish (36.5 %) were collected as sample specimens and underwent analysis for sea lice infestation (Table 10). The total collected fish from each species and the percentage that it represents of the total beach seine post exposure capture population is shown in Table 10. Of the 1447 chum salmon captured, 431 individuals (29.8 %) were retained and underwent lab analysis. Of the 480 pink salmon captured, 251 individuals (52.3 %) were retained and underwent lab analysis. Of the 66 coho salmon captured, 40 individuals (60.6 %) were retained and underwent lab analysis. All ten of the chinook salmon captured were retained and underwent lab analysis.

Table 10: The total of collected individuals of each fish species captured in the Inactive sub-area sites in the Discovery Islands BC, in April and May 2022, and the percentage of the total Inactive sub-area capture population that they represent.

Common Name	Capture Totals (% of total Post-Exposure capture population)	Collection Totals	Collection %
chum salmon	1447 (72.2 %)	431	29.8
pink salmon	480 (24.0 %)	251	52.3
coho salmon	66 (3.3 %)	40	60.6
chinook salmon	10 (0.5 %)	10	100
<b>All species</b>	<b>2003</b>	<b>732</b>	<b>36.5</b>

### 3.4.3 Post-Exposure Sample Composition

A total of 2426 fish were captured during beach seine sampling conducted at the Post-Exposure sites in the Discovery Islands in 2022. Of those, 197 individual fish (8.1 %) were collected as sample specimens and underwent analysis for sea lice infestation (Table 11). The total collected fish from each species and the percentage that it represents of the total beach seine post exposure capture population is shown in Table 11. Of the 1152 chum salmon captured, 120 individuals (10.4 %) were retained and underwent lab analysis. Of the 1270 pink salmon captured, 73 individuals (5.7 %) were retained and underwent lab analysis. The two coho salmon and two chinook salmon captured were retained and underwent lab analysis.

Table 11: The total of collected individuals of each fish species captured in the Post-Exposure sites in the Discovery Islands BC, in April and May 2022, and the percentage of the total Post-Exposure capture population that they represent.

<b>Common Name</b>	<b>Capture Totals (% of total Post-Exposure capture population)</b>	<b>Collection Totals</b>	<b>Collection %</b>
chum salmon	1152 (47.5 %)	120	10.4
pink salmon	1270 (52.3 %)	73	5.7
coho salmon	2 (0.1 %)	2	100
chinook salmon	2 (0.1 %)	2	100
<b>All species</b>	<b>2426</b>	<b>197</b>	<b>8.1</b>

Table 12: The number of captured fish (Capture Total) and the number of individual fish collected (Sample Total) from each of the 29 sample sites in the Discovery Islands, BC in April, and May 2022, separated into Pre-Exposure, Inactive and Post-Exposure sub-area totals.

		Pink		Chum		Coho		Chinook		Sockeye		Capture Total	Sample Total
Site Location (Sub-area)	Site Name	Capture Total	Sample Total	Capture Total	Sample Total	Capture Total	Sample Total	Capture Total	Sample Total	Capture Total	Sample Total		
Pre-Exposure	Francisco Point	159	47	5	5	0	0	0	0	0	0	164	52
	Marina Island	5	5	5	5	0	0	0	0	0	0	10	10
	Rebecca Spit	2	2	3	3	1	1	0	0	0	0	6	6
	Viner Point	68	31	50	29	0	0	0	0	0	0	118	60
	SE Hill Island	0	0	0	0	0	0	0	0	0	0	0	0
	Penn Island	0	0	0	0	0	0	0	0	0	0	0	0
	Deepwater Bay	1969	61	471	59	1	1	43	30	0	0	2484	151
Pre-Exposure Sites Subtotals		2203	146	534	101	2	2	43	30	0	0	2782	279
Inactive	Raza	170	50	115	57	0	0	0	0	0	0	285	107
	Raza North	65	31	49	30	0	0	0	0	0	0	114	61
	Rock Bay	3	3	3	3	0	0	0	0	0	0	6	6
	Bear Bay	6	6	91	30	0	0	0	0	0	0	97	36
	Knox Bay	17	17	47	43	56	30	0	0	0	0	120	90
	Bickley Bay	0	0	3	3	0	0	1	1	0	0	4	4
	Fanny Bay	35	31	80	39	0	0	8	8	0	0	123	78
	Shoal Bay	1	1	825	60	0	0	0	0	0	0	826	61
	Nodales	132	61	99	54	0	0	0	0	0	0	231	115
	Discovery	16	16	6	6	0	0	0	0	0	0	22	22
	Okisollo	31	31	52	46	0	0	0	0	0	0	83	77
	Owen Bay	4	4	77	60	10	10	1	1	0	0	92	75
Inactive Sites Subtotals		480	251	1447	431	66	40	10	10	0	0	2003	732
Post-Exposure	Primary 1	6	6	0	0	0	0	1	1	0	0	7	7
	Beautiful Bay	2	2	1	1	0	0	0	0	0	0	3	3
	Primary 3	0	0	0	0	0	0	0	0	0	0	0	0
	Blenkinsop Bay	0	0	0	0	0	0	0	0	0	0	0	0
	Sunderland	0	0	0	0	1	1	0	0	0	0	1	1
	Bessborough Bay	1257	60	999	56	0	0	0	0	0	0	2256	116
	Wellbore	0	0	77	32	1	1	1	1	0	0	79	34
	Chancellor	2	2	75	31	0	0	0	0	0	0	77	33
	Race Passage	3	3	0	0	0	0	0	0	0	0	3	3
	Cordero	0	0	0	0	0	0	0	0	0	0	0	0
Post-Exposure Sites Subtotals		1270	73	1152	120	2	2	2	2	0	0	2426	197
Discovery Islands Totals		3953	470	3133	652	70	44	55	42	0	0	7211	1208

### 3.5 Pre-Exposure Fish Sample Size Statistics

Summary statistics for the Pre-Exposure sub-area sample population were completed for weight and fork length of chum and pink salmon (Table 13).

#### 3.5.1 Chum Salmon

The weight of 101 chum smolts collected during the two sample events at the Pre-Exposure sub-area sites in the Discovery Islands in 2022 ranged from 0.29 g to 2.35 g and averaged 0.78 g (SD = 0.37). The fork length of the chum smolts ranged from 30 mm to 58 mm and averaged 40 mm (SD = 5.3). Chum salmon weight and length data was summarized by month, showing an increase in both parameters in the sample population from April to May 2022 (Table 13).

#### 3.5.2 Pink Salmon

The weight of 146 pink smolts collected during the two sample events at the Pre-Exposure sub-area sites in the Discovery Islands in 2022 ranged from 0.23 g to 2.32 g and averaged 0.54 g (SD = 0.32). The fork length of the pink smolts ranged from 30 mm to 57 mm and averaged 37 mm (SD = 5.4). Pink salmon weight and length data was summarized by month, showing an increase in both parameters in the sample population from April to May 2022 (Table 13).

Table 13: Average weights and lengths of the chum and pink salmon collected in the Pre-Exposure sub-area in the Discovery Islands in 2022, summarized by month.

Species	Average Weight (g)		Average Length (mm)	
	April	May	April	May
Chum	0.55 (n=42)	0.94 (n=59)	37	43
Pink	0.32 (n=50)	0.66 (n=96)	33	39

### 3.6 Inactive Sub-area Fish Sample Size Statistics

Summary statistics for the Inactive sub-area sample population were completed for weight and fork length of chum and pink salmon (Table 14).

#### 3.6.1 Chum Salmon

The weight of 431 chum smolts collected during the two sample events at the Inactive sub-area sites in the Discovery Islands in 2022 ranged from 0.27 g to 9.96 g and averaged 1.18 g (SD = 1.39). The fork length of the chum smolts ranged from 29 mm to 92 mm and averaged 44 mm (SD = 12). Chum salmon weight and length data were summarized by month, showing an increase in both parameters in the sample population from April to May 2021 (Table 14).

#### 3.6.2 Pink Salmon

The weight of 251 pink smolts collected during the two sample events at the Inactive sub-area sites in the Discovery Islands in 2022 ranged from 0.16 g to 3.74 g and averaged 0.60 g (SD = 0.52). The fork length of the pink smolts ranged from 26 mm to 69 mm and averaged 38 mm (SD = 8.5). Pink salmon weight and length data were summarized by month, showing an increase in both parameters in the sample population from April to May 2022 (Table 14).

Table 14: Average weights and lengths of the chum and pink salmon collected in the Inactive sub-area in the Discovery Islands in 2022, summarized by month.

Species	Average Weight (g)		Average Length (mm)	
	April	May	April	May
Chum	0.82 (n=245)	1.65 (n=186)	41	48
Pink	0.36 (n=158)	1.00 (n=93)	34	45

### 3.7 Post-Exposure Sub-area Fish Sample Size Statistics

Summary statistics for the Post-Exposure sub-area sample population were completed for weight and fork length of chum and pink salmon (Table 15).

#### 3.7.1 Chum Salmon

The weight of 120 chum smolts collected during the two sample events at sites in the Post-Exposure sub-area in the Discovery Islands in 2022 ranged from 0.26 g to 5.06 g and averaged 1.38 g (SD = 0.98). The fork length of the chum smolts ranged from 32 mm to 73 mm and averaged 47 mm (SD = 9.5). Chum salmon weight and length data were summarized by month, showing an increase in both parameters in the sample population from April to May 2022 (Table 15).

#### 3.7.2 Pink Salmon

The weight of 73 pink smolts collected during the two sample events at the Post-Exposure sub-area sites in the Discovery Islands in 2022 ranged from 0.27 g to 5.05 g and averaged 1.02 g (SD = 0.87). The fork length of the pink smolts ranged from 29 mm to 74 mm and averaged 44 mm (SD = 9.6). Pink salmon weight and length data were summarized by month, showing an increase in both parameters in the sample population from April to May 2022 (Table 15).

Table 15: Average weights and lengths of the Post-Exposure chum and pink salmon collected in the Discovery Islands in 2022, summarized by month.

Species	Average Weight (g)		Average Length (mm)	
	April	May	April	May
Chum	0.92 (n=59)	1.83 (n=61)	43	51
Pink	0.58 (n=42)	1.63 (n=31)	39	51

### 3.8 Pre-Exposure Sub-area Sea Lice Infestation Rates

The results of the laboratory analysis for the presence of sea lice on the Pre-Exposure sub-area sample population collected in the Discovery Islands in 2022 are presented in Table 16 and lab analysis data is included in Appendix III. A total of 247 chum and pink salmon samples were collected at the seven Pre-Exposure sites in the Discovery Islands in 2022 and inspected for sea lice infestation. A total of 34 individuals in the sample population (11 chum and 23 pink salmon), were found to be infested with 42 sea lice (Table 16). This data included sea lice of either species (*L. salmonis* and *C. clemensi*) on the inspected juvenile salmon.

The sea lice prevalence in the 2022 Pre-Exposure sub-area sample population was 13.8 % and the abundance was 0.17. Sea lice counts of both lice species (*L. salmonis* and *C. clemensi*) were combined for the prevalence and abundance calculations.

The intensity of sea lice infestation, defined as the number of sea lice on a single infested salmon ranged from one louse found on 29 individuals to a maximum of three lice found on three individuals. The average intensity was calculated by dividing the total number of sea lice by the number of infested fish of each species (Table 16).

Table 16: Results of analysis for sea lice infestation on Pre-Exposure sub-area salmonid smolts collected by beach seine in the Discovery Islands, BC in 2022.

Species	Sample size (n)	Total number of lice observed	Total number of fish infested	Prevalence (%)	Abundance	Average Intensity
chum	101	14	11	10.9	0.14	1.3
pink	146	28	23	15.8	0.19	1.2
<b>Total</b>	<b>247</b>	<b>42</b>	<b>34</b>	<b>13.8</b>	<b>0.17</b>	<b>1.2</b>

### 3.8.1 Pre-Exposure Sub-area Infestation Rates on Chum Salmon

The results of the laboratory analysis for sea lice infestation for the Pre-Exposure chum salmon sample population are presented by site in Table 17. Sea lice counts of both sea lice species observed (*L. salmonis* and *C. clemensi*) were combined (Table 16 and 17) for the presentation of sea lice infestation, prevalence, intensity, and abundance on the Pre-Exposure chum salmon sample population.

For the Pre-Exposure chum salmon sample population (n=101) there were more chum sampled, more infested individuals (n=10) and more sea lice (n=12) found on chum salmon collected in May (n=59) than in April (n=42). The prevalence and abundance of sea lice infestation was also higher for the fish captured in May 2022 (Table 17). Average intensity was higher in April than in May however, there was only a single infested chum salmon in April.

A total of 11 chum salmon were found to be infested with at least one sea louse. The prevalence of sea lice on the chum salmon sample population (n=101) collected in the Pre-Exposure sub-area sites in 2022 was 10.9 %. Sea lice prevalence on chum salmon in 2022 was higher in May (16.9 %) than in April (2.4 %). The highest sea lice prevalence (34.5 %) was at Viner Point in May 2022. Sea lice prevalence calculated by site for the total Pre-Exposure sub-area chum sample population was highly variable ranging from 0.0 % at four sites to a high of 34.5 % at Viner Point (Table 17).

A total of 14 sea lice were identified during laboratory analysis of retained chum salmon from Pre-Exposure sites. The abundance of sea lice on the Pre-Exposure chum salmon sample population (n=101) collected in the Discovery Islands in 2022 was 0.14. Sea lice abundance was calculated by week and by site and is presented in Table 17. During 2022 sampling, sea lice abundance on chum salmon was higher in May (0.20) compared to April (0.05). The highest sea lice abundance (0.41) was at Viner Point in May 2022. Sea lice abundance calculated by site for the total Pre-Exposure chum sample population was generally 0.00 except for at Marina Island (0.40) in April and Viner Point (0.41) in May (Table 17).

The 14 identified sea lice were observed on 11 chum salmon during laboratory analysis of samples retained from Pre-Exposure sites. The average intensity of sea lice on the Pre-Exposure chum salmon sample population (n=101) collected in the Discovery

Islands in 2022 was 1.3. Sea lice average intensity was calculated by week and by site and is presented in Table 17. During 2022 sampling, sea lice intensity on chum salmon was slightly higher in April (2.0) compared to May (1.2). The highest sea lice intensity (2.0) was at Marina Island in April 2022. Viner Point in May was the only other site with infested fish and an average intensity of 1.2 (Table 17).

### **3.8.2 Pre-Exposure Sub-area Infestation Rates on Pink Salmon**

The results of the laboratory analysis for sea lice infestation for the Pre-Exposure sub-area pink salmon sample population are presented by site in Table 18. Sea lice counts of both sea lice species observed (*L. salmonis* and *C. clemensi*) were combined for the presentation of sea lice infestation, prevalence and abundance on the Pre-Exposure pink salmon sample population (Table 16 and 18). Of the 146 pink salmon captured, 50 were collected in April and 96 were collected in May 2022 (Table 18).

A total of 23 pink salmon were found to be infested with at least one sea louse while one individual was found to be infested with three. The prevalence of sea lice on the pink salmon sample population (n=146) collected in the Pre-Exposure sub-area sites in 2022 was 15.8 %. The highest sea lice prevalence (48.4 %) was at Viner Point in May 2022. Sea lice prevalence calculated by site for the total Pre-Exposure pink sample population was variable ranging from 0.0 % at all sites in April and Marina Island in May to a high of 48.4 % at Viner Point (Table 18).

A total of 28 sea lice were identified during laboratory analysis of retained Pre-Exposure sub-area pink salmon. The abundance of sea lice on the pink salmon sample population (n=146) collected in the Pre-Exposure sub-area sites in 2022 was 0.19. Sea lice abundance was calculated by week and by site and is presented in Table 18. The highest sea lice abundance (0.61) was at Viner Point in May 2022. There were no infested fish captured at all sites in April and at Marina Island in May (Table 18). Sea lice abundance calculated by site for the infested Pre-Exposure pink sample population was also highly variable ranging from 0.03 at Deepwater Bay to a high of 0.61 at Viner Point (Table 18).

A total of 28 sea lice were observed on 23 pink salmon during laboratory analysis of retained pink salmon from the Pre-Exposure sub-area sites. The average intensity of sea lice on the Pre-Exposure pink salmon sample population (n=146) collected in 2022 was 1.2. Sea lice abundance was calculated by week and by site and is presented in Table 18. During 2022 sampling, sea lice intensity on pink salmon was zero in April compared to 1.2 in May. The highest sea lice intensity (1.3) was at Viner Point in May 2022 (Table 15).



Table 17: The number of sea lice found on chum salmon collected from the Pre-Exposure sub-area sample sites in the Discovery Islands in 2022, summarized by site. Calculated sea lice prevalence, abundance and average intensity is also included by site.

Site	Sample Week															Total Pre-Exposure Chum Sample Population		
	April 18-19							May 16-18										
	# of Chum Analyzed	# of Infested Chum	Average Weight of Infested Chum (g)	# of Lice	Prevalence (%)	Abundance	Average Intensity	# of Chum Analyzed	# of Infested Chum	Average Weight of Infested Chum (g)	# of Lice	Prevalence (%)	Abundance	Average Intensity	Prevalence (%)	Abundance	Average Intensity	
Francisco Point	5	0	-	0	0.0	0.00	0.0	0	-	-	-	-	-	-	0.0	0.00	0.0	
Marina Island	5	1	0.70	2	20.0	0.40	2.0	0	-	-	-	-	-	-	20.0	0.40	2.0	
Rebecca Spit	3	0	-	0	0.0	0.00	0.0	0	-	-	-	-	-	-	0.0	0.00	0.0	
Viner Point	0	-	-	-	-	-	-	29	10	1.00	12	34.5	0.41	1.2	34.5	0.41	1.2	
SE Hill Island	0	-	-	-	-	-	-	0	-	-	-	-	-	-	-	-	-	
Penn Island	0	-	-	-	-	-	-	0	-	-	-	-	-	-	-	-	-	
Deepwater Bay	29	0	-	0	0.0	0.00	0.0	30	0	-	0	0.0	0.00	0.0	0.0	0.00	0.0	
Total	42	1	0.70	2	2.4	0.05	2.0	59	10	1.00	12	16.9	0.20	1.2	10.9	0.14	1.3	

Table 18: The number of sea lice found on pink salmon collected in the Pre-Exposure sub-area samples sites in 2022, summarized by site. Calculated sea lice prevalence, abundance and average intensity is also included by site.

Site	Sample Week														Total Pre-Exposure Pink Sample Population		
	April 18-19							May 16-18									
	# of Pinks Analyzed	# of Infested Pinks	Average Weight of Infested Pinks (g)	# of Lice	Prevalence (%)	Abundance	Average Intensity	# of Pinks Analyzed	# of Infested Pinks	Average Weight of Infested Pinks (g)	# of Lice	Prevalence (%)	Abundance	Average Intensity	Prevalence (%)	Abundance	Average Intensity
Francisco Point	16	0	-	0	0.0	0.00	0.0	31	7	0.50	8	22.6	0.26	1.1	14.9	0.17	1.1
Marina Island	1	0	-	0	0.0	0.00	0.0	4	0	-	0	0.0	0.00	-	0.0	0.00	0.0
Rebecca Spit	2	0	-	0	0.0	0.00	0.0	0	-	-	-	-	-	-	0.0	0.00	0.0
Viner Point	0	-	-	-	-	-	-	31	15	0.71	19	48.4	0.61	1.3	48.4	0.61	1.3
SE Hill Island	0	-	-	-	-	-	-	0	-	-	-	-	-	-	-	-	-
Penn Island	0	-	-	-	-	-	-	0	-	-	-	-	-	-	-	-	-
Deepwater Bay	31	0	-	0	0.0	0.00	0.0	30	1	0.78	1	3.3	0.03	1.0	1.6	0.02	1.0
Total	50	0	-	0	0.0	0.00	0.0	96	23	0.65	28	24.0	0.29	1.2	15.8	0.19	1.2

### 3.9 Inactive Sub-area Sea Lice Infestation Rates

The results of the laboratory analysis for the presence of sea lice on the Inactive sub-area sample population collected in the Discovery Islands in 2022 are presented in Table 19. The data recorded for each fish in the sample population during lab analysis are included in Appendix III. A total of 682 chum and pink salmon samples were collected at the 12 Inactive sites in the Discovery Islands in 2022 and were inspected for sea lice infestation. A total of 60 individuals, consisting of 39 chum and 21 pink salmon were found to be infested with 72 sea lice in the Inactive sub-area sample population (Table 19). This data included sea lice of either species (*L. salmonis* and *C. clemensi*).

The sea lice prevalence in the Inactive sub-area sample population collected in 2022 was 8.8 % and the abundance was 0.11 (Table 19). Sea lice counts of both species observed (*L. salmonis* and *C. clemensi*) were combined for the prevalence and abundance calculations.

The intensity of sea lice infestation is defined as the number of sea lice on a single infested salmon. There were 52 samples infested with one louse, five with two lice, two with three lice and one individual infested with a maximum four lice. The average intensity (1.2) was calculated by dividing the total number of sea lice by the number of infested fish of both species (Table 19).

Table 19: Results of analysis for sea lice infestation on Inactive sub-area samples collected by beach seine in 2022.

Species	Sample size (n)	Total number of lice observed	Total number of fish infested	Prevalence (%)	Abundance	Average Intensity
chum	431	48	39	9.0	0.11	1.2
pink	251	24	21	8.4	0.10	1.1
<b>Total</b>	<b>682</b>	<b>72</b>	<b>60</b>	<b>8.8</b>	<b>0.11</b>	<b>1.2</b>

#### 3.9.1 Inactive Sub-area Sea Lice Infestation Rates on Chum Salmon

The results of the laboratory analysis for sea lice infestation for the Inactive sub-area chum salmon sample population are presented by site in Table 20. Sea lice counts of both sea lice species observed (*L. salmonis* and *C. clemensi*) were combined for the presentation of sea lice infestation, prevalence, and abundance on the Inactive sub-area chum salmon sample population (Table 19 and 20).

A total of 39 chum salmon were found to be infested with at least one sea louse. The prevalence of sea lice on the chum salmon sample population (n=431) collected in the Inactive sub-area sites in 2022 was 9.0 %. The highest sea lice prevalence (100 %) was at Raza North (n=1) in April and Discovery (n=1) in May 2022 (Table 20). The lowest sea lice prevalence of 0.0 % was recorded six times in April and May (Table 20).

A total of 39 sea lice were identified during laboratory analysis of the retained Inactive sub-area chum salmon. The abundance of sea lice on the Inactive sub-area chum salmon sample population (n=431) collected in the Discovery Islands in 2022 was 0.11. Sea lice abundance was calculated by week and by site and is presented in Table 20. The highest sea lice abundance (1.00) was at Raza North in April and Discovery in May

2022. The lowest sea lice abundance for the total Inactive sub-area chum sample population was 0.00 recorded six times in April and May (Table 20).

A total of 48 sea lice were observed on 39 chum salmon during laboratory analysis of the retained chum salmon from Inactive sub-area sites. The average intensity of sea lice on the Inactive sub-area chum salmon sample population (n=431) collected in 2022 was 1.2. Sea lice intensity was calculated by week and by site and is presented in Table 20. During 2022 sampling, sea lice intensity on chum salmon was relatively consistent in April (1.2) and May (1.3). The highest sea lice intensity (2.5) was observed at Shoal Bay in May 2022. Sea lice intensity calculated by site for the total Inactive sub-area chum sample population ranged from 0.0 to 2.5 (Table 20).

### **3.9.2 Inactive Sub-area Sea Lice Infestation Rates on Pink Salmon**

The results of the laboratory analysis for sea lice infestation for the Inactive sub-area pink salmon sample population are presented by site in Table 19. Sea lice counts of both sea lice species observed (*L. salmonis* and *C. clemensi*) were combined for the presentation of sea lice infestation, prevalence and abundance on the Inactive pink salmon sample population (Table 19 and 21).

A total of 21 pink salmon were found to be infested with at least one louse. The prevalence of sea lice on the pink salmon sample population (n=251) collected in the Inactive sub-area sites in 2022 was 8.4 %. The highest sea lice prevalence (25.0 %) was found at the Owen Bay site in May 2022. Sea lice prevalence calculated by site for the total Inactive sub-area pink sample population was generally low but variable ranging from 0.0 % at ten sites in April and May to a high of 25.0 % at Owen Bay (Table 21).

A total of 24 sea lice were identified during laboratory analysis of retained Inactive sub-area pink salmon. The abundance of sea lice on the Inactive sub-area pink salmon sample population (n=251) collected in 2022 was 0.10. Sea lice abundance on pink salmon is presented by week and by site in Table 21. The highest sea lice abundance (0.25) was found at Owen Bay in May 2022. Sea lice abundance calculated by site for the total Inactive sub-area pink sample population was generally low but variable, ranging from 0.00 at ten sites to a high of 0.25 at Owen Bay (Table 21).

A total of 24 sea lice were observed on 21 pink salmon during laboratory analysis of samples retained from the Inactive sub-area sites. The average intensity of sea lice on the Inactive sub-area pink salmon sample population (n=251) collected in 2022 was 1.1. Sea lice abundance was calculated by week and by site and is presented in Table 21. During 2022 sampling, sea lice intensity on pink salmon was higher in April (1.3) compared to May (1.1). The highest sea lice intensity (1.7) was at Okisollo in April 2022. Sea lice intensity calculated by site for the total Inactive sub-area pink salmon sample population ranged from 0.0 to 1.7 (Table 21).

Table 20: The number of sea lice found on chum salmon collected from the Inactive sub-area sites in the Discovery Islands in 2022, summarized by site. Calculated sea lice prevalence, abundance and average intensity is also included by site.

Site	Sample Week															Total Post-Exposure Chum Sample Population		
	April 18-19							May 16-18										
	# of Chum Analyzed	# of Infested Chum	Average Weight of Infested Chum (g)	# of Lice	Prevalence (%)	Abundance	Average Intensity	# of Chum Analyzed	# of Infested Chum	Average Weight of Infested Chum (g)	# of Lice	Prevalence (%)	Abundance	Average Intensity	Prevalence (%)	Abundance	Average Intensity	
Raza	30	4	0.97	4	13.3	0.13	1.0	27	0	-	0	0.0	0.00	0.0	7.0	0.07	1.0	
Raza North	1	1	0.48	1	100	1.00	1.0	29	2	1.23	2	6.9	0.07	1.0	10.0	0.10	1.0	
Rock Bay	3	1	0.66	1	33.3	0.33	1.0	0	-	-	-	-	-	-	33.3	0.33	1.0	
Bear Bay	30	4	0.84	4	13.3	0.13	1.0	0	-	-	-	-	-	-	13.3	0.13	1.0	
Knox Bay	30	2	0.70	2	6.7	0.07	1.0	13	0	-	0	0.0	0.00	0.0	4.7	0.05	1.0	
Bickley Bay	2	0	-	0	0.0	0.00	0.0	1	0	-	0	0.0	0.00	0.0	0.0	0.00	0.0	
Fanny Bay	30	1	0.96	1	3.3	0.03	1.0	9	0	-	0	0.0	0.00	0.0	2.6	0.03	1.0	
Shoal Bay	31	6	1.00	9	19.4	0.29	1.5	29	2	0.57	5	6.9	0.17	2.5	13.3	0.23	1.8	
Nodales	23	0	-	0	0.0	0.00	0.0	31	6	1.57	7	19.4	0.23	1.2	11.1	0.13	1.2	
Discovery	5	1	0.46	1	20.0	0.20	1.0	1	1	1.95	1	100	1.00	1.0	33.3	0.33	1.0	
Okisollo	30	3	0.75	5	10.0	0.17	1.7	16	3	1.31	3	18.8	0.19	1.0	13.0	0.17	1.3	
Owen Bay	30	1	2.12	1	3.3	0.03	1.0	30	1	6.07	1	3.3	0.03	1.0	3.3	0.03	1.0	
Total	245	24	0.90	29	9.8	0.12	1.2	186	15	1.66	19	8.1	0.10	1.3	9.0	0.11	1.2	

Table 21: The number of sea lice found on pink salmon collected from the Inactive sub-area sites in the Discovery Islands in 2022 summarized by site. Calculated sea lice prevalence, abundance and average intensity is also included by site.

Site	Sample Week															Total Post-Exposure Pink Sample Population		
	April 18-19							May 16-18										
	# of Pink Analyzed	# of Infested Pinks	Average Weight of Infested Pinks (g)	# of Lice	Prevalence (%)	Abundance	Average Intensity	# of Pinks Analyzed	# of Infested Pinks	Average Weight of Infested Pinks (g)	# of Lice	Prevalence (%)	Abundance	Average Intensity	Prevalence (%)	Abundance	Average Intensity	
Raza	30	5	0.40	6	16.7	0.20	1.2	20	0	-	0	0.0	0.00	0.0	10.0	0.12	1.2	
Raza North	0	-	-	-	-	-	-	31	4	1.30	4	12.9	0.13	1.0	12.9	0.13	1.0	
Rock Bay	3	0	-	0	0.0	0.00	0.0	0	-	-	-	-	-	-	0.0	0.00	0.0	
Bear Bay	6	0	-	0	0.0	0.00	0.0	0	-	-	-	-	-	-	0.0	0.00	0.0	
Knox Bay	14	1	0.23	1	7.1	0.07	1.0	3	0	-	0	0.0	0.00	0.0	5.9	0.06	1.0	
Bickley Bay	0	-	-	-	-	-	-	0	-	-	-	-	-	-	-	-	-	
Fanny Bay	30	0	-	0	0.0	0.00	0.0	1	0	-	0	0.0	0.00	0.0	0.0	0.00	0.0	
Shoal Bay	0	-	-	-	-	-	-	1	0	-	0	0.0	0.00	0.0	0.0	0.00	0.0	
Nodales	32	1	0.40	1	3.1	0.03	1.0	29	6	1.11	6	20.7	0.21	1.0	11.5	0.11	1.0	
Discovery	15	0	-	0	0.0	0.00	0.0	1	0	-	0	0.0	0.00	0.0	0.0	0.00	0.0	
Okisollo	28	3	0.44	5	10.7	0.18	1.7	3	0	-	0	0.0	0.00	0.0	9.7	0.16	1.7	
Owen Bay	0	-	-	-	-	-	-	4	1	1.25	1	25.0	0.25	1.0	25.0	0.25	1.0	
Total	158	10	0.40	13	6.3	0.08	1.3	93	11	1.19	11	11.8	0.12	1.0	8.4	0.10	1.1	

### 3.10 Post-Exposure Sub-area Sea Lice Infestation Rates

The results of the laboratory analysis for the presence of sea lice on the Post-Exposure sub-area chum and pink salmon sample population collected in 2022 are presented in Table 22. The data recorded for each fish in the sample population during lab analysis are included in Appendix III. A total of 193 samples were collected at the ten Post-Exposure sites in 2022 and were inspected for sea lice infestation. A total of 16 individuals consisting of 10 chum and six pink salmon were found to be infested with 16 sea lice in the Post-Exposure sample population (Table 22). This data included sea lice of either species (*L. salmonis* and *C. clemensi*).

The sea lice prevalence in the Post-Exposure sub-area sample population collected in 2022 was 8.3 % and the abundance was 0.08 (Table 22). Sea lice counts of both species observed (*L. salmonis* and *C. clemensi*) were combined for the prevalence and abundance calculations.

The intensity of sea lice infestation is defined as the number of sea lice on a single infested salmon. All 16 infested samples were infested with a single louse. The average intensity (1.0) was calculated by dividing the total number of sea lice by the number of infested fish of each species (Table 22).

Table 22: Results of analysis for sea lice infestation on Post-Exposure sub-area samples collected by beach seine in the Discovery Islands, BC in 2022.

Species	Sample size (n)	Total number of lice observed	Total number of fish infested	Prevalence (%)	Abundance	Average Intensity
chum	120	10	10	8.3	0.08	1.0
pink	73	6	6	8.2	0.08	1.0
<b>Total</b>	<b>193</b>	<b>16</b>	<b>16</b>	<b>8.3</b>	<b>0.08</b>	<b>1.0</b>

#### 3.10.1 Post-Exposure Sub-area Sea Lice Infestation Rates on Chum Salmon

The results of the laboratory analysis for sea lice infestation for the Post-Exposure chum salmon sample population are presented by site in Table 23. Sea lice counts of both sea lice species observed (*L. salmonis* and *C. clemensi*) were combined for the presentation of sea lice infestation, prevalence and abundance on the Post-Exposure sub-area chum salmon sample population (Table 22 and 23). For the chum salmon sample population collected in 2022 (n=120), there were more infested individuals and more sea lice found on chum salmon collected in April than in May (Table 23).

A total of ten chum salmon were found to be infested with a single sea louse. The prevalence of sea lice on the chum salmon sample population (n=120) collected in the Post-Exposure sub-area sites in 2022 was 8.3 %. The highest sea lice prevalence (26.9 %) was at Bessborough Bay in April 2022 (Table 23). Sea lice prevalence calculated by site for the total Post-Exposure chum sample population was highly variable ranging from 0.0 % at four sites to a high of 26.9 % at Bessborough Bay (Table 23).

A total of ten sea lice were identified during laboratory analysis of the retained Post-Exposure sub-area chum salmon. The abundance of sea lice on the Post-Exposure chum salmon sample population (n=120) collected in the Discovery Islands in 2022 was

0.08. Sea lice abundance was calculated by week and by site and is presented in Table 23. The highest sea lice abundance (0.27) was at Bessborough Bay in April 2022. Sea lice abundance calculated by site for the total Post-Exposure chum sample population was also highly variable ranging from 0.00 at four sites to a high of 0.27 at Bessborough Bay (Table 23).

A total of ten sea lice were observed on ten chum salmon during laboratory analysis of retained chum salmon from the Post-Exposure sub-area sites. The average intensity of sea lice on the Post-Exposure chum salmon sample population (n=120) collected in the Discovery Islands in 2022 was 1.0. Sea lice average intensity was calculated by week and by site and is presented in Table 23. During 2022 sampling, sea lice intensity on chum salmon was the same in April and May (1.0). Sea lice intensity was 1.0 at Bessborough Bay, Wellbore and Chancellor. The remaining sites had a sea lice intensity of 0.0 (Table 23).

### **3.10.2 Post-Exposure Sub-area Sea Lice Infestation Rates on Pink Salmon**

The results of the laboratory analysis for sea lice infestation for the Post-Exposure sub-area pink salmon sample population are presented by site in Table 24. Sea lice counts of both sea lice species observed (*L. salmonis* and *C. clemensi*) were combined for the presentation of sea lice infestation, prevalence and abundance on the Post-Exposure pink salmon sample population (Table 22 and 24).

A total of six pink salmon were found to be infested with one louse. The prevalence of sea lice on the pink salmon sample population (n=73) collected in the Post-Exposure sub-area sites in 2022 was 8.2 %. The highest sea lice prevalence (13.3 %) was found at the Bessborough Bay site in April 2022. Sea lice prevalence calculated by site for the total Post-Exposure pink sample population was generally low, ranging from 0.0 % at five sites to a high of 8.2 % at Bessborough Bay (Table 24).

A total of six sea lice were identified during laboratory analysis of the retained Post-Exposure sub-area pink salmon. The abundance of sea lice on the Post-Exposure pink salmon sample population (n=73) collected in 2022 was 0.08. Sea lice abundance is presented by week and by site in Table 24. The highest sea lice abundance (0.13) was found at Bessborough Bay in April 2022. Sea lice abundance calculated by site for the total Post-Exposure pink sample population was generally low, ranging from 0.00 at five sites to a high of 0.13 at Bessborough Bay (Table 24).

A total of six sea lice were observed on six pink salmon during laboratory analysis of retained pink salmon from Post-Exposure sub-area sites. The average intensity of sea lice on the Post-Exposure pink salmon sample population (n=73) collected in the Discovery Islands in 2022 was 1.0. Sea lice intensity was calculated by week and by site and is presented in Table 24. During 2022 sampling, sea lice intensity on pink salmon was the same in April and May (1.0). Sea lice intensity was 1.0 at Bessborough Bay in April and May. The remaining sites had a sea lice intensity of 0.0 (Table 24).

Table 23: The number of sea lice found on chum salmon collected from the Post-Exposure sub-area sites in the Discovery Islands in 2022 summarized by site. Calculated sea lice prevalence, abundance and average intensity is also included by site.

Site	Sample Week															Total Post-Exposure Chum Sample Population		
	April 18-19							May 16-18										
	# of Chum Analyzed	# of Infested Chum	Average Weight of Infested Chum (g)	# of Lice	Prevalence (%)	Abundance	Average Intensity	# of Chum Analyzed	# of Infested Chum	Average Weight of Infested Chum (g)	# of Lice	Prevalence (%)	Abundance	Average Intensity	Prevalence (%)	Abundance	Average Intensity	
Primary 1	0	-	-	-	-	-	-	0	-	-	-	-	-	-	-	-	-	
Beautiful Bay	1	0	-	0	0.0	0.00	0.0	0	-	-	-	-	-	-	0.0	0.00	0.0	
Primary 3	0	-	-	-	-	-	-	0	-	-	-	-	-	-	-	-	-	
Blenkinsop Bay	0	-	-	-	-	-	-	0	-	-	-	-	-	-	-	-	-	
Sunderland	0	-	-	-	-	-	-	0	-	-	-	-	-	-	-	-	-	
Bessborough Bay	26	7	1.24	7	26.9	0.27	1.0	30	0	-	0	0.0	0.00	0.0	12.5	0.13	1.0	
Wellbore	31	2	0.66	2	6.5	0.06	1.0	1	0	-	0	0.0	0.00	0.0	6.3	0.06	1.0	
Chancellor	1	0	-	0	0.0	0.00	0.0	30	1	1.98	1	3.3	0.03	1.0	3.2	0.03	1.0	
Race Passage	0	-	-	-	-	-	-	0	-	-	-	-	-	-	-	-	-	
Cordero	0	-	-	-	-	-	-	0	-	-	-	-	-	-	-	-	-	
Total	59	9	1.11	9	15.3	0.15	1.0	61	1	1.98	1	1.6	0.02	1.0	8.3	0.08	1.0	

Table 24: The number of sea lice found on pink salmon collected from the Post-Exposure sub-area sites in the Discovery Islands in 2022 summarized by site. Calculated sea lice prevalence, abundance and average intensity is also included by site.

Site	Sample Week															Total Post-Exposure Pink Sample Population		
	April 18-19							May 16-18										
	# of Pink Analyzed	# of Infested Pinks	Average Weight of Infested Pinks (g)	# of Lice	Prevalence (%)	Abundance	Average Intensity	# of Pinks Analyzed	# of Infested Pinks	Average Weight of Infested Pinks (g)	# of Lice	Prevalence (%)	Abundance	Average Intensity	Prevalence (%)	Abundance	Average Intensity	
Primary 1	6	0	-	0	0.0	0.00	0.0	0	-	-	-	-	-	-	0.0	0.00	0.0	
Beautiful Bay	2	0	-	0	0.0	0.00	0.0	0	-	-	-	-	-	-	0.0	0.00	0.0	
Primary 3	0	-	-	-	-	-	-	0	-	-	-	-	-	-	-	-	-	
Blenkinsop Bay	0	-	-	-	-	-	-	0	-	-	-	-	-	-	-	-	-	
Sunderland	0	-	-	-	-	-	-	0	-	-	-	-	-	-	-	-	-	
Bessborough Bay	30	4	0.59	4	13.3	0.13	1.0	30	2	1.30	2	6.7	0.07	1.0	10.0	0.10	1.0	
Wellbore	0	-	-	-	-	-	-	0	-	-	-	-	-	-	-	-	-	
Chancellor	1	0	-	0	0.0	0.00	0.0	1	0	-	0	0.0	0.00	0.0	0.0	0.00	0.0	
Race Passage	3	0	-	0	0.0	0.00	0.0	0	-	-	-	-	-	-	0.0	0.00	0.0	
Cordero	0	-	-	-	-	-	-	0	-	-	-	-	-	-	-	-	-	
Total	42	4	0.59	4	9.5	0.10	1.0	31	2	1.30	2	6.5	0.06	1.0	8.2	0.08	1.0	

### 3.11 Pre-Exposure Sub-area Infestation by Sea Lice Species

For the Pre-Exposure sub-area chum and pink salmon sample population (n=247), a total of 15 *L. salmonis* sea lice of various life stages were identified on 14 individuals, and 27 *C. clemensi* sea lice were found on 21 individuals (Appendix III). A single fish was found to be infested with both a *L. salmonis* and a *C. clemensi*.

#### 3.11.1 Pre-Exposure Sub-area Infestation by Sea Lice Species on Chum Salmon

A breakdown of the species of sea lice (by life stage) identified on the 101 chum salmon collected at the Pre-Exposure sites in the Discovery Islands is presented in Table 25. A total of four *L. salmonis* sea lice of various life stages were identified on four juvenile chum salmon and ten *C. clemensi* sea lice were found on seven of the juvenile chum salmon analyzed in the lab (Appendix III). No juvenile chum salmon were infested with both *L. salmonis* and *C. clemensi*. The sea lice species identified on chum salmon are also presented by site and by week in Table 27.

For the chum salmon sample population infested with *C. clemensi* sea lice (n=7) there were five samples infested with one louse, one with two lice and one with three lice (Appendix III). For the chum salmon sample population infested with *L. salmonis* sea lice (n=4), all individuals were infested with one louse.

Table 25: The number of sea lice in each life stage by species identified on the Pre-Exposure chum salmon sample population from the Discovery Islands in 2022. LEP = *Lepeophtheirus salmonis* CAL = *Caligus clemensi*

Life Stage <sup>1</sup>	April 18-19	May 16-18
LEP Co	0	2
LEP C1	0	0
LEP C2	0	2
LEP PAM	0	0
LEP PAF	0	0
LEP AM	0	0
LEP AF	0	0
<b>Total LEP</b>	<b>0</b>	<b>4</b>
CAL Co	0	0
CAL C1	2	3
CAL C2	0	3
CAL C3	0	0
CAL C4	0	1
CAL PAM	0	0
CAL PAF	0	0
CAL AM	0	1
CAL AF	0	0
<b>Total CAL</b>	<b>2</b>	<b>8</b>

<sup>1</sup> Lice life stage codes: Co = copepodid, C1-4 = chalimus 1-4, PAM = pre-adult male, PAF = pre-adult female, AM = adult male, AF = adult female.



### 3.11.2 Pre-Exposure Sub-area Infestation by Sea Lice Species on Pink Salmon

A breakdown of the species of sea lice (by life stage) identified on the 146 pink salmon collected at the Pre-Exposure sub-area sites in the Discovery Islands in 2022 is presented in Table 26. A total of 17 *C. clemensi* sea lice were found on 14 of the juvenile pink salmon analyzed in the lab (Appendix III). A total of 11 *L. salmonis* sea lice were identified on ten juvenile pink salmon. There was a single pink salmon infested with both species of sea lice. Sea lice identified on pink salmon are also presented by site and week in Table 28.

For the pink salmon sample population infested with *C. clemensi* sea lice (n=14) there were 12 individuals infested with one louse, one individual infested with two lice and one individual infested with three lice. For the pink salmon sample population infested with *L. salmonis* sea lice (n=10), there were nine individuals infested with one louse and one individual infested with two lice.

Table 26: The number of sea lice in each life stage by species identified on the Pre-Exposure sub-area pink salmon sample population from the Discovery Islands in 2022. LEP = *Lepeophtheirus salmonis* CAL = *Caligus clemensi*

Life Stage <sup>1</sup>	April 18-19	May 16-18
LEP Co	0	4
LEP C1	0	2
LEP C2	0	5
LEP PAM	0	0
LEP PAF	0	0
LEP AM	0	0
LEP AF	0	0
<b>Total LEP</b>	<b>0</b>	<b>11</b>
CAL Co	0	1
CAL C1	0	11
CAL C2	0	3
CAL C3	0	1
CAL C4	0	1
CAL PAM	0	0
CAL PAF	0	0
CAL AM	0	0
CAL AF	0	0
<b>Total CAL</b>	<b>0</b>	<b>17</b>

<sup>1</sup> Lice life stage codes: Co = copepodid, C1-4 = chalimus 1-4, PAM = pre-adult male, PAF = pre-adult female, AM = adult male, AF = adult female.

Table 27: The species of sea lice found on Pre-Exposure sub-area chum salmon collected in the Discovery Islands in 2022 summarized by site.  
LEP = *Lepeophtheirus salmonis* CAL = *Caligus clemensi*

Site	Sample Week								TOTAL		
	April 18-19				May 16-18				# of Chum Analyzed	# of Infested Chum	# of Lice
	# of Chum Analyzed	# of Infested Chum	# of LEP	# of CAL	# of Chum Analyzed	# of Infested Chum	# of LEP	# of CAL			
Francisco Point	5	0	0	0	0	-	-	-	5	0	0
Marina Island	5	1	0	2	0	-	-	-	5	1	2
Rebecca Spit	3	0	0	0	0	-	-	-	3	0	0
Viner Point	0	-	-	-	29	10	4	8	29	10	12
SE Hill Island	0	-	-	-	0	-	-	-	0	0	0
Penn Island	0	-	-	-	0	-	-	-	0	0	0
Deepwater Bay	29	0	0	0	30	0	0	0	59	0	0
<b>Total</b>	<b>42</b>	<b>1</b>	<b>0</b>	<b>2</b>	<b>59</b>	<b>10</b>	<b>4</b>	<b>8</b>	<b>101</b>	<b>11</b>	<b>14</b>

Table 28: The species of sea lice found on Pre-Exposure pink salmon collected in the Discovery Islands in 2022 summarized by site.  
LEP = *Lepeophtheirus salmonis* CAL = *Caligus clemensi*

Site	Sample Week								TOTAL		
	April 18-19				May 16-18				# of Pinks Analyzed	# of Infested Pinks	# of Lice
	# of Pinks Analyzed	# of Infested Pinks	# of LEP	# of CAL	# of Pinks Analyzed	# of Infested Pinks	# of LEP	# of CAL			
Francisco Point	16	0	0	0	31	7	4	4	47	7	8
Marina Island	1	0	0	0	4	0	0	0	5	0	0
Rebecca Spit	2	0	0	0	0	-	-	-	2	0	0
Viner Point	0	-	-	-	31	15	7	12	31	15	19
SE Hill Island	0	-	-	-	0	-	-	-	0	0	0
Penn Island	0	-	-	-	0	-	-	-	0	0	0
Deepwater Bay	31	0	0	0	30	1	0	1	61	1	1
<b>Total</b>	<b>50</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>96</b>	<b>23</b>	<b>11</b>	<b>17</b>	<b>146</b>	<b>23</b>	<b>28</b>

### 3.12 Inactive Sub-area Sea Lice Infestation by Sea Lice Species

Within the Inactive sub-area sample population (n=682), a total of 14 *L. salmonis* sea lice of various life stages were identified on 14 individuals and 58 *C. clemensi* sea lice were found on 46 of the samples analyzed in the lab (Appendix III). No samples were infested with both *L. salmonis* and *C. clemensi*.

#### 3.12.1 Inactive Sub-area Infestation by Sea Lice Species on Chum Salmon

A breakdown of the species of sea lice (by life stage) identified on the 431 chum salmon collected in the Inactive sites in the Discovery Islands is presented in Table 29. A total of 11 *L. salmonis* sea lice of various life stages were identified on 11 juvenile chum salmon and 37 *C. clemensi* sea lice were found on 28 of the juvenile chum salmon analyzed in the lab (Appendix III). There were no juvenile chum salmon infested with both *L. salmonis* and *C. clemensi*. The sea lice species identified on chum salmon are also presented by site by week in Table 31.

For the chum salmon sample population infested with *L. salmonis* sea lice (n=11), all samples were infested with one louse. For the chum salmon sample population infested with *C. clemensi* sea lice (n=28), 22 of the infested chum had one louse, four individuals had two lice, one individual had three lice and one sample had four lice.

Table 29: The number of sea lice in each life stage by species identified on the Inactive sub-area chum salmon sample population from the Discovery Islands in 2022. LEP = *Lepeophtheirus salmonis* CAL = *Caligus clemensi*

Life Stage <sup>1</sup>	April 18-19	May 16-18
LEP Co	0	1
LEP C1	2	3
LEP C2	2	3
LEP PAM	0	0
LEP PAF	0	0
LEP AM	0	0
LEP AF	0	0
<b>Total LEP</b>	<b>4</b>	<b>7</b>
CAL Co	7	1
CAL C1	11	8
CAL C2	0	1
CAL C3	3	1
CAL C4	0	1
CAL PAM	0	0
CAL PAF	0	0
CAL AM	4	0
CAL AF	0	0
<b>Total CAL</b>	<b>25</b>	<b>12</b>

<sup>1</sup> Lice life stage codes: Co = copepodid, C1-4 = chalimus 1-4, PAM = pre-adult male, PAF = pre-adult female, AM = adult male, AF = adult female.

### 3.12.2 Inactive Sub-area Infestation by Sea Lice Species on Pink Salmon

A breakdown of the species of sea lice (by life stage) identified on the 251 pink salmon collected at the Inactive sub-area sites in the Discovery Islands is presented in Table 30. A total of three *L. salmonis* sea lice of various life stages were identified on three juvenile pink salmon and 21 *C. clemensi* sea lice were found on 18 of the juvenile pink salmon analyzed in the lab (Appendix III). No juvenile pink salmon were infested with both *L. salmonis* and *C. clemensi*. The sea lice species identified on pink salmon are also presented by site and by week in Table 32.

For the pink salmon sample population infested with *L. salmonis* sea lice (n=3), all of the samples were infested with one louse. For the pink salmon sample population infested with *C. clemensi* sea lice (n=18) there were 16 samples infested with one louse, one sample infested with two lice and one sample was infested with three lice.

Table 30: The number of sea lice in each life stage by species identified on the Inactive sub-area pink salmon sample population from the Discovery Islands in 2022. LEP = *Lepeophtheirus salmonis* CAL = *Caligus clemensi*

Life Stage <sup>1</sup>	April 18-19	May 16-18
LEP Co	0	0
LEP C1	0	1
LEP C2	1	1
LEP PAM	0	0
LEP PAF	0	0
LEP AM	0	0
LEP AF	0	0
<b>Total LEP</b>	<b>1</b>	<b>2</b>
CAL Co	0	0
CAL C1	5	7
CAL C2	0	0
CAL C3	1	1
CAL C4	0	1
CAL PAM	0	0
CAL PAF	0	0
CAL AM	4	0
CAL AF	2	0
<b>Total CAL</b>	<b>12</b>	<b>9</b>

<sup>1</sup> Lice life stage codes: Co = copepodid, C1-4 = chalimus 1-4, PAM = pre-adult male, PAF = pre-adult female, AM = adult male, AF = adult female.

Table 31: The species of sea lice found on Inactive sub-area chum salmon collected in the Discovery Islands in 2022 summarized by site. LEP = *Lepeophtheirus salmonis* CAL = *Caligus clemensi*

Site	Sample Week								TOTAL		
	April 18-19				May 16-18				# of Chum Analyzed	# of Infested Chum	# of Lice
	# of Chum Analyzed	# of Infested Chum	# of LEP	# of CAL	# of Chum Analyzed	# of Infested Chum	# of LEP	# of CAL			
Raza	30	4	0	4	27	0	0	0	57	4	4
Raza North	1	1	0	1	29	2	1	1	30	3	3
Rock Bay	3	1	1	0	0	-	-	-	3	1	1
Bear Bay	30	4	1	3	0	-	-	-	30	4	4
Knox Bay	30	2	0	2	13	0	0	0	43	2	2
Bickley Bay	2	0	0	0	1	0	0	0	3	0	0
Fanny Bay	30	1	1	0	9	0	0	0	39	1	1
Shoal Bay	31	6	1	8	29	2	1	4	60	8	14
Nodales	23	0	0	0	31	6	4	3	54	6	7
Discovery	5	1	0	1	1	1	0	1	6	2	2
Okisollo	30	3	0	5	16	3	1	2	46	6	8
Owen Bay	30	1	0	1	30	1	0	1	60	2	2
<b>Total</b>	<b>245</b>	<b>24</b>	<b>4</b>	<b>25</b>	<b>186</b>	<b>15</b>	<b>7</b>	<b>12</b>	<b>431</b>	<b>39</b>	<b>48</b>

Table 32: The species of sea lice found on Inactive sub-area pink salmon collected in the Discovery Islands in 2022 summarized by site. LEP = *Lepeophtheirus salmonis* CAL = *Caligus clemensi*

Site	Sample Week								TOTAL		
	April 18-19				May 16-18				# of Pinks Analyzed	# of Infested pink	# of Lice
	# of pink Analyzed	# of Infested Pinks	# of LEP	# of CAL	# of pink Analyzed	# of Infested Pinks	# of LEP	# of CAL			
Raza	30	5	0	6	20	0	0	0	50	5	6
Raza North	0	-	-	-	31	4	0	4	31	4	4
Rock Bay	3	0	0	0	0	-	-	-	3	0	0
Bear Bay	6	0	0	0	0	-	-	-	6	0	0
Knox Bay	14	1	0	1	3	0	0	0	17	1	1
Bickley Bay	0	-	-	-	0	-	-	-	0	0	0
Fanny Bay	30	0	0	0	1	0	0	0	31	0	0
Shoal Bay	0	-	-	-	1	0	0	0	1	0	0
Nodales	32	1	1	0	29	6	1	5	61	7	7
Discovery	15	0	0	0	1	0	0	0	16	0	0
Okisollo	28	3	0	5	3	0	0	0	31	3	5
Owen Bay	0	-	-	-	4	1	1	0	4	1	1
<b>Total</b>	<b>158</b>	<b>10</b>	<b>1</b>	<b>12</b>	<b>93</b>	<b>11</b>	<b>2</b>	<b>9</b>	<b>251</b>	<b>21</b>	<b>24</b>

### 3.13 Post-Exposure Sub-area Sea Lice Infestation by Sea Lice Species

Within the 2022 Post-Exposure sub-area sample population, a total of eight *L. salmonis* sea lice of various life stages were identified on eight individuals and eight *C. clemensi* sea lice were found on eight of the samples analyzed in the lab (Appendix III). There were no samples infested with both *L. salmonis* and *C. clemensi*.

#### 3.13.1 Post-Exposure Sub-area Infestation by Sea Lice Species on Chum Salmon

An analysis of the species of sea lice identified on the 120 chum salmon collected in the Post-Exposure sites in the Discovery Islands is presented in Table 33. A total of four *L. salmonis* sea lice of various life stages were identified on four juvenile chum salmon and six *C. clemensi* sea lice were found on six of the juvenile chum salmon analyzed in the lab (Appendix III). There were no juvenile chum salmon infested with both *L. salmonis* and *C. clemensi*. The sea lice species identified on chum salmon are also presented by site and by week in Table 35.

For the chum salmon sample population infested with *L. salmonis* sea lice (n=4), all samples were infested with one louse. For the chum salmon sample population infested with *C. clemensi* sea lice (n=6), all of the infested chum had one louse.

Table 33: The number of sea lice in each life stage by species identified on the Post-Exposure sub-area chum salmon sample population from the Discovery Islands in 2022. LEP = *Lepeophtheirus salmonis* CAL = *Caligus clemensi*

Life Stage <sup>1</sup>	April 18-19	May 16-18
LEP Co	1	0
LEP C1	2	0
LEP C2	1	0
LEP PAM	0	0
LEP PAF	0	0
LEP AM	0	0
LEP AF	0	0
<b>Total LEP</b>	<b>4</b>	<b>0</b>
CAL Co	1	0
CAL C1	2	1
CAL C2	2	0
CAL C3	0	0
CAL C4	0	0
CAL PAM	0	0
CAL PAF	0	0
CAL AM	0	0
CAL AF	0	0
<b>Total CAL</b>	<b>5</b>	<b>1</b>

<sup>1</sup> Lice life stage codes: Co = copepodid, C1-4 = chalimus 1-4, PAM = pre-adult male, PAF = pre-adult female, AM = adult male, AF = adult female.

### 3.13.2 Post Exposure Sub-area Infestation by Sea Lice Species on Pink Salmon

An analysis of the species of sea lice identified on the 73 pink salmon collected at the Post-Exposure sites in the Discovery Islands is presented in Table 34. A total of four *L. salmonis* sea lice of various life stages were identified on four juvenile pink salmon and two *C. clemensi* sea lice were found on two of the juvenile pink salmon analyzed in the lab (Appendix III). No juvenile pink salmon were infested with both *L. salmonis* and *C. clemensi*. The sea lice species identified on pink salmon are also presented by site and by week in Table 36.

For the pink salmon sample population infested with *L. salmonis* sea lice (n=4), all four of the samples were infested with one louse. For the pink salmon sample population infested with *C. clemensi* sea lice (n=2), both samples were infested with one louse.

Table 34: The number of sea lice in each life stage by species identified on the Post-Exposure sub-area pink salmon sample population from the Discovery Islands in 2022. LEP = *Lepeophtheirus salmonis* CAL = *Caligus clemensi*

Life Stage <sup>1</sup>	April 18-19	May 16-18
LEP Co	0	0
LEP C1	1	0
LEP C2	2	0
LEP PAM	0	1
LEP PAF	0	0
LEP AM	0	0
LEP AF	0	0
<b>Total LEP</b>	<b>3</b>	<b>1</b>
CAL Co	0	1
CAL C1	0	0
CAL C2	0	0
CAL C3	1	0
CAL C4	0	0
CAL PAM	0	0
CAL PAF	0	0
CAL AM	0	0
CAL AF	0	0
<b>Total CAL</b>	<b>1</b>	<b>1</b>

<sup>1</sup> Lice life stage codes: Co = copepodid, C1-4 = chalimus 1-4, PAM = pre-adult male, PAF = pre-adult female, AM = adult male, AF = adult female.

Table 35: The species of sea lice found on Post-Exposure sub-area chum salmon collected in the Discovery Islands in 2022 summarized by site. LEP = *Lepeophtheirus salmonis* CAL = *Caligus clemensi*

Site	Sample Week								TOTAL		
	April 18-19				May 16-18				# of Chum Analyzed	# of Infested Chum	# of Lice
	# of Chum Analyzed	# of Infested Chum	# of LEP	# of CAL	# of Chum Analyzed	# of Infested Chum	# of LEP	# of CAL			
Primary 1	0	-	-	-	0	-	-	-	0	0	0
Beautiful Bay	1	0	0	0	0	-	-	-	1	0	0
Primary 3	0	-	-	-	0	-	-	-	0	0	0
Blenkinsop Bay	0	-	-	-	0	-	-	-	0	0	0
Sunderland	0	-	-	-	0	-	-	-	0	0	0
Bessborough Bay	26	7	2	5	30	0	0	0	56	7	7
Wellbore	31	2	2	0	1	0	0	0	32	2	2
Chancellor	1	0	0	0	30	1	0	1	31	1	1
Race Passage	0	-	-	-	0	-	-	-	0	0	0
Cordero	0	-	-	-	0	-	-	-	0	0	0
<b>Total</b>	<b>59</b>	<b>9</b>	<b>4</b>	<b>5</b>	<b>61</b>	<b>1</b>	<b>0</b>	<b>1</b>	<b>120</b>	<b>10</b>	<b>10</b>

Table 36: The species of sea lice found on Post-Exposure sub-area pink salmon collected in the Discovery Islands in 2022 summarized by site. LEP = *Lepeophtheirus salmonis* CAL = *Caligus clemensi*

Site	Sample Week								TOTAL		
	April 18-19				May 16-18				# of pink Analyzed	# of Infested Pinks	# of Lice
	# of pink Analyzed	# of Infested Pinks	# of LEP	# of CAL	# of pink Analyzed	# of Infested Pinks	# of LEP	# of CAL			
Primary 1	6	0	0	0	0	-	-	-	6	0	0
Beautiful Bay	2	0	0	0	0	-	-	-	2	0	0
Primary 3	0	-	-	-	0	-	-	-	0	0	0
Blenkinsop Bay	0	-	-	-	0	-	-	-	0	0	0
Sunderland	0	-	-	-	0	-	-	-	0	0	0
Bessborough Bay	30	4	3	1	30	2	1	1	60	6	6
Wellbore	0	-	-	-	0	-	-	-	0	0	0
Chancellor	1	0	0	0	1	0	0	0	2	0	0
Race Passage	3	0	0	0	0	-	-	-	3	0	0
Cordero	0	-	-	-	0	-	-	-	0	0	0
<b>Total</b>	<b>42</b>	<b>4</b>	<b>3</b>	<b>1</b>	<b>31</b>	<b>2</b>	<b>1</b>	<b>1</b>	<b>73</b>	<b>6</b>	<b>6</b>



## 4.0 Conclusions

This report presents the data from the sixth year of industry supported beach seining and sea lice analysis for wild juvenile salmonid monitoring in the Discovery Islands region of BC by MOWI Canada West, Cermaq Canada and Grieg Seafood BC Ltd. This report is focused on the summary and presentation of data collected in 2022. In addition, several tables compiling results from 2017-2022 have been added to present the multi-year data.

### 4.1 Pre-Exposure, Inactive and Post-Exposure Sub-area Sites

The following summary tables have been prepared to allow for comparison of the Pre-Exposure, Inactive and Post-Exposure sub-areas data on sea lice infestation statistics for pink and chum salmon collected during both sample weeks in the Discovery Islands in 2022. Table 37 presents the infestation rates for the species as a combination of both *L. salmonis* and *C. clemensi*.

Table 37: A comparison of sea lice infestation rates on the chum and pink salmon sample populations collected at Pre-Exposure, Inactive and Post-Exposure sub-area sites in the Discovery Islands in 2022.

Species	Sample Location (Sub-area)	Sample size (n)	Total number of lice observed	Total number of fish infested	Prevalence (%)	Abundance	Average Intensity
Chum	Pre-Exposure	101	14	11	10.9	0.14	1.3
	Inactive	431	48	39	9.0	0.11	1.2
	Post-Exposure	120	10	10	8.3	0.08	1.0
Pink	Pre-Exposure	146	28	23	15.8	0.19	1.2
	Inactive	251	24	21	8.4	0.10	1.1
	Post-Exposure	73	6	6	8.2	0.08	1.0

The percentage of the Pre-Exposure, Inactive and Post-Exposure sub-areas chum salmon sample population with the number of sea lice per sample was graphed and is presented in Figure 3. As shown in the figure, 89.1 % of the Pre-Exposure chum salmon sample population, 91.0 % of the Inactive chum salmon population and 91.7 % of the Post-Exposure chum salmon sample population retained in 2022 were not infested with sea lice.

The percentage of the Pre-Exposure, Inactive and Post-Exposure sub-areas pink salmon sample population with the number of sea lice per sample was graphed and is presented in Figure 4. As shown in the figure, 84.2 % of the Pre-Exposure pink salmon sample population, 91.6 % of the Inactive pink salmon population and 91.8 % of the Post-Exposure pink salmon sample population retained in 2022 were not infested with sea lice.

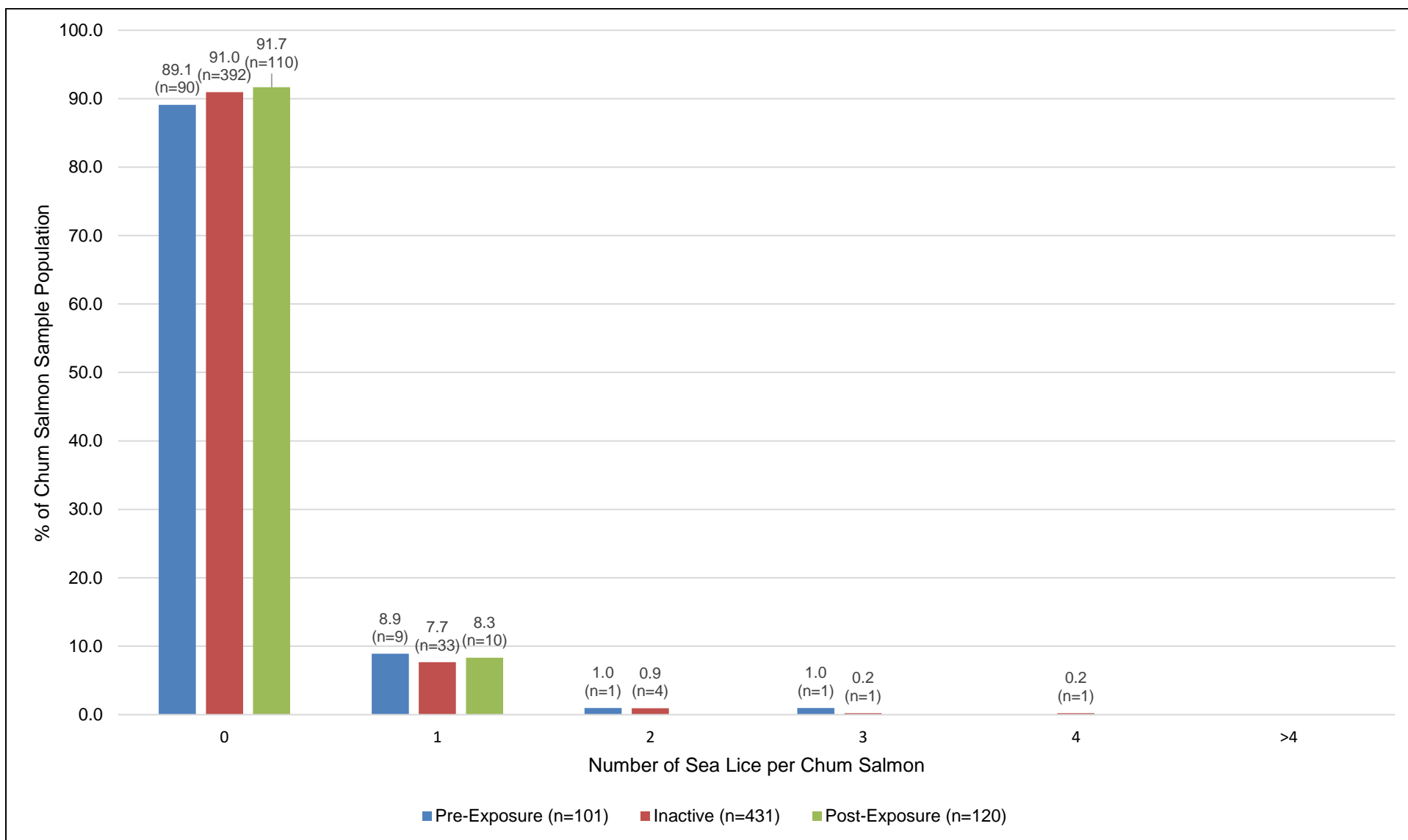


Figure 3: The number of sea lice per chum salmon presented as a percentage of the total chum salmon sample population collected from Pre-Exposure, Inactive and Post-Exposure sub-area sites in the Discovery Islands in 2022.

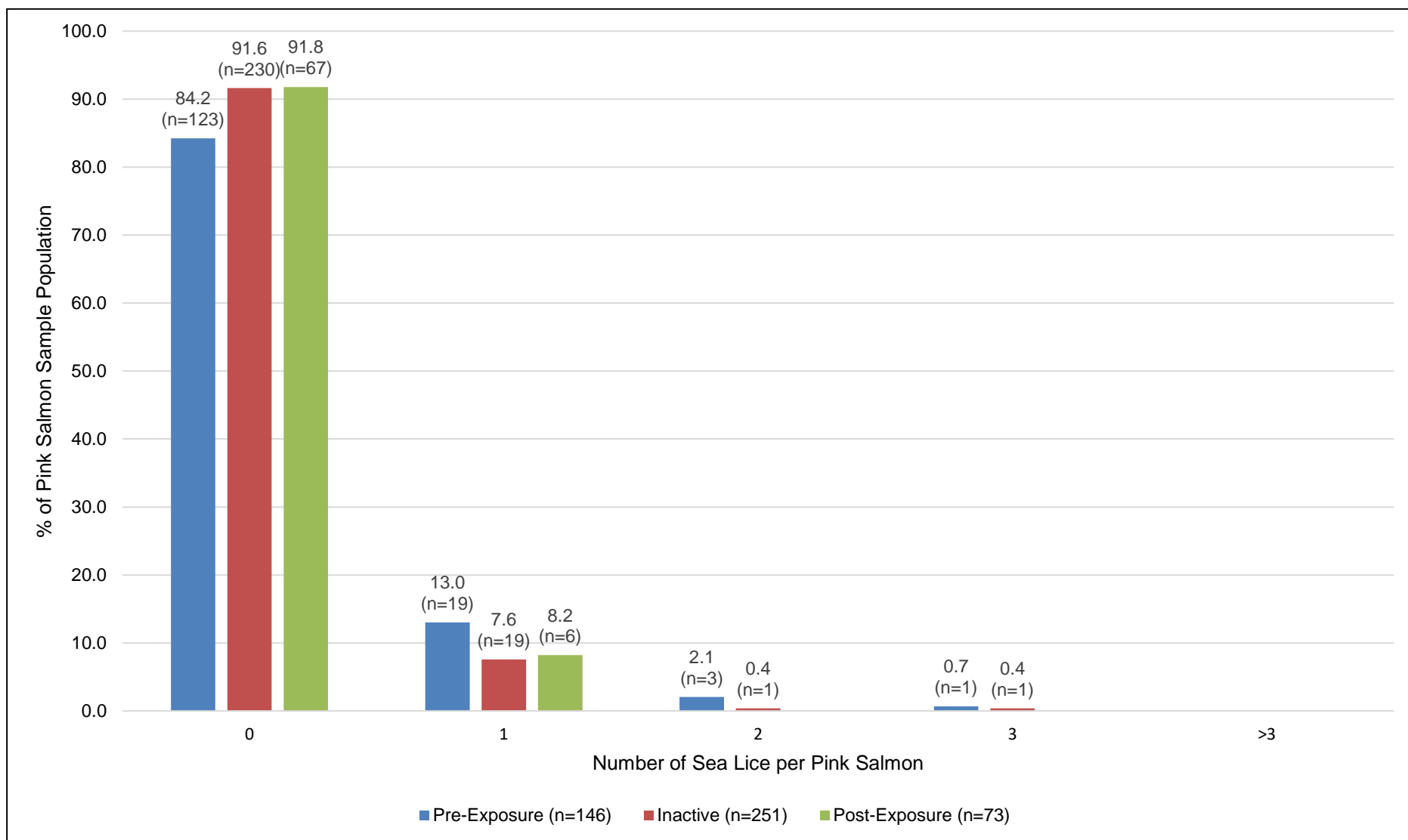


Figure 4: The number of sea lice per pink salmon presented as a percentage of the total pink salmon sample population collected from Pre-Exposure, Inactive and Post-Exposure sub-areas sites in the Discovery Islands in 2022.

## 4.2 Pre-Exposure, Inactive and Post Exposure Sub-areas Across Sample Years

A comparison of the prevalence, abundance and average intensity of sea lice species found on chum and pink salmon collected in the Discovery Islands between 2017 and 2022 is presented in the following summary tables. Data from 2017 to 2020 had previously reported for two sub-areas only (Pre-Exposure and Post-Exposure) and has been divided into the same three areas as the 2021 and 2022 data presented in this report (Pre-Exposure, Inactive and Post-Exposure) to allow for the year to year comparison. The data from 2017 to 2020 represents the same beach seine sites and also includes data from two sampling periods (one in April and one in May), as there were no changes to the sampling program from 2017 to 2022. Between 2017 and 2020 varying numbers of aquaculture sites were active in the Inactive sub-area. The number of active farms in the Inactive sub-area in any given year has not been presented in this report.

### 4.2.1 Chum Salmon Comparison 2017-2022

The prevalence, abundance and intensity of sea lice on juvenile chum salmon between 2017 and 2022 in the Pre-Exposure area, Inactive area and Post-Exposure area is shown in Table 38. This data included sea lice of either species (*L. salmonis* and *C. clemensi*) identified on the inspected juvenile salmon from those areas.

The prevalence of sea lice on chum salmon within the Pre-Exposure sample area has ranged between 10.9 % (2022) and 27.8 % (2019) with an average of 20.3 % (SD 5.7). The prevalence within the Pre-Exposure sub-area was always higher than the Inactive sub-area prevalence and the Post-Exposure sub-area prevalence in all years, except for in 2019 and 2020 when the prevalence in the Inactive sub-area was marginally higher (Table 38).

The prevalence of sea lice on chum salmon within the Inactive sample area has ranged between 4.4 % (2018) and 28.8 % (2019) with an average of 13.6 % (SD 9.2). The 2022 prevalence (9.0 %) within the Inactive sub-area was below average (13.6 %).

The prevalence of sea lice on chum salmon within the Post-Exposure sample area has ranged between 3.5 % (2018) and 17.1 % (2021) with an average of 8.6 % (SD 5.0). The prevalence within the Post-Exposure sub-area was always lower than the Inactive sub area prevalence and the Pre-Exposure sub-area prevalence in all years except for in 2021, when the Post-Exposure area was 17.1 % and the Inactive area was 11.0 %.

The abundance of sea lice on chum salmon within the Pre-Exposure sample area has ranged between 0.14 (2022) and 0.49 (2019) with an average of 0.32 (SD 0.13). The abundance within the Pre-Exposure sub-area has been higher than the Inactive sub-area abundance and the Post-Exposure sub-area abundance in all years except for in 2020 when the Inactive sub-area was 0.35 and the Pre-Exposure area was 0.24.

The abundance of sea lice on chum salmon within the Inactive sample area has ranged between 0.05 (2018) and 0.42 (2019) with an average of 0.19 (SD 0.15). The 2022 abundance (0.11) within the Inactive sub-area was below the average (0.19).

The abundance of sea lice on chum salmon within the Post-Exposure sample area has ranged between 0.03 (2018) and 0.23 (2021) with an average of 0.10 (SD 0.07). The abundance within the Post-Exposure sub-area was lower than the Inactive sub-area

abundance and the Pre-Exposure area abundance in all years, except for in 2021 when the Post-Exposure area was 0.10 greater than the Inactive sub-area.

The intensity of sea lice on chum salmon within the Pre-Exposure sample area has ranged between 1.2 (2018) and 2.4 (2017) with an average of 1.5 (SD 0.5). The intensity within the Pre-Exposure sub-area has been higher than the Inactive sub-area intensity and the Post-Exposure sub-area intensity in all years except for in 2020 when the Inactive sub-area was greater than the Pre-Exposure sub-area and in 2021 when the Post-Exposure area was equal to the Pre-Exposure area.

The intensity of sea lice on chum salmon within the Inactive sample area has ranged between 1.1 (2018) and 1.7 (2020) with an average of 1.3 (SD 0.3). The intensity in the Inactive sub-area in 2022 (1.2) was slightly below the average of 1.3.

The intensity of sea lice on chum salmon within the Post-Exposure sample area ranged between 1.0 (2017, 2018 and 2022) and 1.4 (2019 and 2021) with an average of 1.2 (SD 0.2). The intensity within the Post-Exposure sub-area was lower than the results for the Inactive sub-area intensity and the Pre-Exposure sub-area intensity in all years except for in 2020 and 2021 (Table 38).

Table 38: A summary of the prevalence, abundance, and intensity on juvenile chum salmon samples from the Pre-Exposure, Inactive and Post-Exposure sub-area sites in the Discovery Islands between 2017 and 2022.

Pre-Exposure Sub-Area Juvenile Chum Salmon										
Parameter	Sample Year and Size (n)						Min (year)	Max (year)	Average	SD
	2017 (n=215)	2018 (n=123)	2019 (n=126)	2020 (n=112)	2021 (n=203)	2022 (n=101)				
Prevalence (%)	18.6	24.4	27.8	19.6	20.7	10.9	10.9 (2022)	27.8 (2019)	20.3	5.7
Abundance	0.44	0.29	0.49	0.24	0.29	0.14	0.14 (2022)	0.49 (2019)	0.32	0.13
Intensity	2.4	1.2	1.8	1.2	1.4	1.3	1.2 (2018)	2.4 (2017)	1.5	0.5
Inactive Sub-Area Juvenile Chum Salmon										
Parameter	Sample Year and Size (n)						Min (year)	Max (year)	Average	SD
	2017 (n=515)	2018 (n=369)	2019 (n=371)	2020 (n=315)	2021 (n=435)	2022 (n=431)				
Prevalence (%)	7.8	4.3	28.8	20.6	11.0	9.0	4.3 (2018)	28.8 (2019)	13.6	9.2
Abundance	0.09	0.05	0.42	0.35	0.13	0.11	0.05 (2018)	0.42 (2019)	0.19	0.15
Intensity	1.2	1.1	1.5	1.7	1.1	1.2	1.1 (2018)	1.7 (2020)	1.3	0.3
Post-Exposure Sub-Area Juvenile Chum Salmon										
Parameter	Sample Year and Size (n)						Min (year)	Max (year)	Average	SD
	2017 (n=212)	2018 (n=230)	2019 (n=148)	2020 (n=137)	2021 (n=280)	2022 (n=120)				
Prevalence (%)	3.8	3.5	8.8	8.8	17.1	8.3	3.5 (2018)	17.1 (2021)	8.4	4.9
Abundance	0.04	0.03	0.15	0.10	0.23	0.08	0.03 (2018)	0.23 (2021)	0.11	0.08
Intensity	1.0	1.0	1.4	1.2	1.4	1.0	1.0 (2017/18/22)	1.4 (2019/21)	1.2	0.2

#### **4.2.2 Pink Salmon Comparison 2017-2022**

The prevalence, abundance and intensity of sea lice on juvenile pink salmon between 2017 and 2022 in the Pre-Exposure sub-area, Inactive sub-area and Post-Exposure sub-area is shown in Table 39. This data included sea lice of either species (*L. salmonis* and *C. clemensi*) on the inspected juvenile salmon.

The prevalence of sea lice on pink salmon within the Pre-Exposure sample area ranged between 12.5 % (2019) and 30.1 % (2020) with an average of 21.6 % (SD 6.4). The prevalence within the Pre-Exposure sub-area has been higher than the Inactive sub-area prevalence and the Post-Exposure sub-area prevalence in all years.

The prevalence of sea lice on pink salmon within the Inactive sample area ranged between 5.8 % (2018) and 21.1 % (2020) with an average of 12.0 % (SD 5.3). The prevalence of sea lice in 2022 (8.4 %) within the Inactive sub-area was below the average of 12.0 %.

The prevalence of sea lice on pink salmon within the Post-Exposure sample area ranged between 1.8 % (2017) and 13.7 % (2020) with an average of 8.0 % (SD 4.6). The prevalence within the Post-Exposure sub-area has been lower than the Inactive sub-area prevalence and the Pre-Exposure sub-area prevalence in all years except for in 2019 when the Post-Exposure area was 11.9 % and the Inactive area was 10.9 %.

The abundance of sea lice on pink salmon within the Pre-Exposure sample area ranged between 0.19 (2022) and 0.57 (2017) with an average of 0.32 (SD 0.13). The abundance within the Pre-Exposure area has been higher than the Inactive sub-area abundance and the Post-Exposure sub-area abundance in all years.

The abundance of sea lice on pink salmon within the Inactive sample area ranged between 0.06 (2018) and 0.34 (2020) with an average of 0.15 (SD 0.10). The abundance of sea lice in 2022 (0.10) within the Inactive sub-area was below the average (0.15).

The abundance of sea lice on pink salmon within the Post-Exposure sample area ranged between 0.02 (2017) and 0.17 (2020) with an average of 0.09 (SD 0.06). The abundance on juvenile pink salmon within the Post-Exposure sub-area has been lower than the Inactive sub-area abundance and the Pre-Exposure sub-area abundance in all years except for in 2019 when the Post-Exposure area was 0.02 greater than the calculated abundance in the Inactive sub-area.

The intensity of sea lice on pink salmon within the Pre-Exposure sample area ranged between 1.2 (2020, 2021 and 2022) and 2.4 (2017) with an average of 1.5 (SD 0.5). The calculated intensity within the Pre-Exposure sub-area for 2022 was equal to the minimum value but was higher than the Inactive and Post-Exposure sub-areas.

The intensity of sea lice on pink salmon within the Inactive sample area ranged between 1.1 (2017, 2018, 2019 and 2022) and 1.6 (2020) with an average of 1.2 (SD 0.2). The intensity of sea lice infestation in 2022 (1.1) within the Inactive sub-area is equal to the minimum value of the six years of data in this portion of the Discovery Islands.

The intensity of sea lice on pink salmon within the Post-Exposure sample area ranged between 1.0 (2017, 2018 and 2022) and 1.2 (2019 and 2020) with an average of 1.1 (SD 0.1). The calculated intensity within the Post-Exposure sub-area has been lower than the Inactive sub-area intensity and the Pre-Exposure sub-area intensity in all years except for in 2019 when the Inactive sub-area was 0.1 less and 2020 when the Pre-Exposure area was the same.

Table 39: A summary of the prevalence, abundance, and intensity on juvenile pink salmon samples from the Pre-Exposure, Inactive and Post-Exposure sites between 2017 and 2022.

Pre-Exposure Sub-Area Juvenile Pink Salmon										
Parameter	Sample Year and Size (n)						Min (year)	Max (year)	Average	SD
	2017 (n=97)	2018 (n=125)	2019 (n=40)	2020 (n=173)	2021 (n=139)	2022 (n=146)				
Prevalence (%)	23.7	23.2	12.5	30.1	24.5	15.8	12.5 (2019)	30.1 (2020)	21.6	6.4
Abundance	0.57	0.30	0.23	0.36	0.29	0.19	0.19 (2022)	0.57 (2017)	0.32	0.13
Intensity	2.4	1.3	1.8	1.2	1.2	1.2	1.2 (2020/21/22)	2.4 (2017)	1.5	0.5
Inactive Sub-Area Juvenile Pink Salmon										
Parameter	Sample Year and Size (n)						Min (year)	Max (year)	Average	SD
	2017 (n=168)	2018 (n=191)	2019 (n=293)	2020 (n=266)	2021 (n=380)	2022 (n=251)				
Prevalence (%)	13.7	5.8	10.9	21.1	12.1	8.4	5.8 (2018)	21.1 (2020)	12.0	5.3
Abundance	0.15	0.06	0.12	0.34	0.15	0.10	0.06 (2018)	0.34 (2020)	0.15	0.10
Intensity	1.1	1.1	1.1	1.6	1.2	1.1	1.1 (2017/18-19/22)	1.6 (2020)	1.2	0.2
Post-Exposure Sub-Area Juvenile Pink Salmon										
Parameter	Sample Year and Size (n)						Min (year)	Max (year)	Average	SD
	2017 (n=109)	2018 (n=118)	2019 (n=177)	2020 (n=139)	2021 (n=329)	2022 (n=73)				
Prevalence (%)	1.8	3.4	11.9	13.7	8.8	8.2	1.8 (2017)	13.7 (2020)	8.0	4.6
Abundance	0.02	0.03	0.14	0.17	0.10	0.08	0.02 (2017)	0.17 (2020)	0.09	0.06
Intensity	1.0	1.0	1.2	1.2	1.1	1.0	1.0 (2017/18/22)	1.2 (2019/20)	1.1	0.1



## 5.0 References

- Hamre L.A., C Eichner, C.M.A. Caipang, S.T. Dalvin, J.E. Bron, F. Nilsen, G. Boxshall and R. Skern-Mauitzen. 2013. The Salmon Louse *Lepeophtheirus salmonis* (Copepoda: Caligidae) Life Cycle Has Only Two Chalimus Stages. PLoS ONE 8(9): e73539.
- Healey M.C. 1991. Life history of chinook salmon (*Oncorhynchus tshawytscha*). In: Pacific Salmon Life Histories. C Grott, L Margolis (eds). UBC Press, Vancouver. Pp 313-393.
- Jones S. and S. Johnson. 2015. Sea lice monitoring and non-chemical measures A: Biology of sea lice, *Lepeophtheirus salmonis* and *Caligus spp.*, in western and eastern Canada. DFO Canadian Science Advisory Secretariat. Research Document 2014/019 Pacific Region. Pacific Biological Station, Fisheries and Oceans Canada.
- Jones S. and A. Nemec. 2004. Pink Salmon Action Plan Research. Part II: Sea Lice on Juvenile Salmon and on Three-spine Sticklebacks in 2003. PSARC Working Paper H2004-01.
- Johnson S.C. and L.J. Albright. 1991a. The developmental stages of *Lepeophtheirus salmonis* (Kroyer, 1837) (Copepoda: Caligidae). Canadian Journal of Zoology 69: 929-950.
- Johnson S.C. and L.J. Albright. 1991b. Development, growth and survival of *Lepeophtheirus salmonis* (Copepoda: Caligidae) under laboratory conditions. Journal of the Marine Biological Association of the UK 71: 425-436.
- Kabata Z. 1972. Developmental stages of *Caligus clemensi* (Copepoda: Caligidae) from fishes of British Columbia. Journal of the Fisheries Research Board of Canada 29: 1571-1593.
- Kabata Z. 1974. The species of *Lepeophtheirus* (Copepoda: Caligidae), from fishes of British Columbia. Journal of the Fisheries Research Board of Canada 30: 729-759.
- Margolis L., J.R. Arthur. 1979. Synopsis of the parasites of fishes of Canada. Bulletin of the Fisheries Research Board of Canada, Number 199. Ottawa. 269 pages.
- McDonald T.E., and L. Margolis. 1995. Synopsis of the parasites of fishes of Canada (1978-1993). Canadian Special Publication of Fisheries and Aquatic Sciences No. 122. National Research Council of Canada, Ottawa. 265 pages.
- Mainstream Biological Consulting. 2021. Wild Juvenile Salmonid Monitoring Program Discovery Islands 2021. Unpublished report prepared for MOWI Canada West, Cermaq Canada and Grieg Seafood BC Ltd.
- Pacific Aquaculture Regulations. Finfish Aquaculture Licence conditions under the Pacific Aquaculture Regulations. Section 7. Sea Lice Monitoring
- Parker R.R. and L. Margolis. 1964. A new species of parasitic copepod, *Caligus clemensi* sp. nov. (Clogoida: Caligidae), from pelagic fishes in the coastal waters of British Columbia. Journal of Fisheries Research Board of Canada 21: 873-889.

- Pollard W.R., G.F. Hartman, C. Groot, and P. Edgell. 1997. Field Identification of Coastal Juvenile Salmonids. Published by Harbour Publishing for the Federal Department of Fisheries and Oceans and MacMillan Bloedel Ltd. Madeira Park, BC Canada.
- Saksida, S., Constantine J., Karreman G.A. and Donald A. 2007a. Evaluation of sea lice abundance levels on farmed Atlantic salmon (*Salmo salar* L) located in the Discovery Islands of British Columbia from 2003 to 2005. Aquacult. Res. 38: 219-231.
- Saksida, S., Karreman G.A., Constantine J., and Donald A. 2007b. Differences in *Lepeophtheirus salmonis* abundance levels on Atlantic salmon farms in the Discovery Islands, British Columbia, Canada. J. Fish Dis. 30:357-366.
- Salo E.O. 1991. Life history of chum salmon (*Oncorhynchus keta*). In: Pacific Salmon Life Histories. C Groot, L Margolis (eds). UBC Press, Vancouver. Pp 233-309.
- Sandercock F.K. 1991. Life history of coho salmon (*Oncorhynchus kisutch*). In: Pacific Salmon Life Histories. C. Groot, L. Margolis (eds). UBC Press, Vancouver. Pp 397-445.
- Tully O. 1992. Predicting infestation parameters and impacts of caligid copepods in wild and captured fish populations. Invert. Reprod. Develop. 22: 91-102.

Appendix I – Field Data

Date	Time	Site Name	Salinity (ppt)	Temperature (°C)	Dissolved Oxygen (mg/L)	Salinity (ppt)	Temperature (°C)	Dissolved Oxygen (mg/L)
			0.2m	0.2m	0.2m	1.0m	1.0m	1.0m
18-Apr-22	9:03	Rock Bay	27.0	7.9	-	-	-	-
18-Apr-22	9:43	Bear Bay	28.6	8.0	7.1	28.5	8.0	7.2
18-Apr-22	10:19	Knox Bay	28.5	8.1	7.1	28.5	8.1	7.0
18-Apr-22	11:18	Cordero	28.3	8.1	6.8	28.3	8.1	6.9
18-Apr-22	11:54	Bickley Bay	28.1	8.3	7.0	28.2	8.3	7.0
18-Apr-22	12:22	Shoal Bay	26.2	8.0	7.7	28.1	8.1	7.5
18-Apr-22	13:07	Fanny Bay	21.8	8.0	10.0	22.4	8.1	9.9
18-Apr-22	14:12	Nodales	28.1	8.4	7.0	28.1	8.4	6.8
18-Apr-22	14:56	Discovery	22.3	8.0	7.9	28.0	8.2	7.1
18-Apr-22	15:27	Okisollo	28.1	8.5	7.0	28.0	8.5	7.0
18-Apr-22	16:11	Owen Bay	25.4	8.2	-	-	-	-
18-Apr-22	17:20	Deepwater Bay	9.4	6.7	-	-	-	-
18-Apr-22	8:35	Primary 1	-	-	-	-	-	-
18-Apr-22	8:59	Beautiful Bay	-	-	-	-	-	-
18-Apr-22	9:26	Primary 3	-	-	-	-	-	-
18-Apr-22	9:58	Blenkinsop Bay	-	-	-	-	-	-
18-Apr-22	10:27	Sunderland	-	-	-	-	-	-
18-Apr-22	10:52	Bessborough Bay	-	-	-	-	-	-
18-Apr-22	11:30	Wellbore Channel	-	-	-	-	-	-
18-Apr-22	12:15	Chancellor	29.8	8.0	8.2	-	-	-
18-Apr-22	12:50	Race Passage	29.3	7.8	8.3	30.0	8.0	7.3
19-Apr-22	8:16	Francisco Point	27.2	8.0	7.2	27.2	8.0	7.3
19-Apr-22	8:49	Marina Island	27.2	8.6	8.3	27.2	8.7	8.4
19-Apr-22	9:20	Rebecca Spit	26.7	8.8	8.7	26.8	8.9	8.8
19-Apr-22	9:47	Viner Point	26.6	8.7	9.8	27.1	8.7	9.4
19-Apr-22	10:13	SE Hill Island	27.0	8.9	9.3	27.1	8.9	9.3
19-Apr-22	10:37	Penn Island	27.0	8.9	9.3	27.0	8.9	9.4
19-Apr-22	11:14	Raza	25.3	9.3	11.5	25.4	8.8	12.0
19-Apr-22	11:55	Raza North	25.1	8.8	11.5	25.5	8.8	11.5
16-May-22	7:53	Rock Bay	30.1	8.7	7.8	30.1	8.7	8.0
16-May-22	8:30	Bear Bay	30.4	8.5	8.3	30.4	8.5	8.5
16-May-22	8:56	Knox Bay	9.2	8.3	11.8	-	-	-
16-May-22	9:49	Cordero	29.9	8.7	7.7	30.0	8.7	7.8
16-May-22	10:22	Bickley Bay	27.8	9.2	8.1	29.8	8.8	8.0
16-May-22	10:46	Shoal Bay	29.0	9.2	7.9	29.6	9.1	7.6
16-May-22	11:27	Fanny Bay	11.4	8.5	10.7	11.8	8.5	10.6
16-May-22	12:09	Nodales	29.7	9.1	8.0	29.6	9.0	7.7
16-May-22	13:01	Discovery	29.8	9.1	7.8	29.8	9.0	8.1
16-May-22	13:29	Okisollo	29.7	9.4	8.0	29.7	9.3	8.4
16-May-22	14:04	Owen Bay	26.9	13.0	9.7	-	-	-
16-May-22	15:11	Deepwater Bay	28.7	9.2	8.1	29.1	9.2	8.0
17-May-22	7:15	Francisco Point	28.8	10.2	9.3	28.8	10.2	9.2
17-May-22	7:54	Marina Island	28.5	10.7	9.6	-	-	-
17-May-22	8:29	Rebecca Spit	27.4	10.2	10.4	27.8	10.7	11.1
17-May-22	8:53	Viner Point	28.5	10.6	9.6	28.7	10.6	9.7
17-May-22	9:35	SE Hill Island	28.7	10.6	10.5	28.6	10.6	10.8
17-May-22	10:01	Penn Island	28.6	10.4	11.3	28.7	10.6	11.5
17-May-22	10:41	Raza	22.5	10.7	11.8	23.3	10.8	11.8
17-May-22	11:22	Raza North	19.7	10.2	11.6	20.0	10.3	11.7
18-May-22	8:15	Race Passage	30.8	8.3	8.0	30.8	8.3	8.1
18-May-22	9:03	Primary 1	30.9	8.0	8.4	30.9	8.0	8.4
18-May-22	9:30	Beautiful Bay	-	-	-	-	-	-
18-May-22	9:54	Primary 3	31.2	8.9	-	-	-	-
18-May-22	10:26	Blenkinsop Bay	31.4	9.1	-	-	-	-
18-May-22	11:29	Sunderland	30.8	9.1	-	-	-	-
18-May-22	12:09	Bessborough Bay	30.9	9.3	-	-	-	-
18-May-22	12:54	Wellbore Channel	17.5	9.3	-	-	-	-
18-May-22	13:20	Chancellor	30.1	10.0	-	-	-	-

## Appendix II – Capture and Collection Sample Totals

Date	Site Name	Weather Comments	Pink Captured	Pink Retained	Chum Captured	Chum Retained	Coho Captured	Coho Retained	Chinook Captured	Chinook Retained	Sockeye Captured	Sockeye Retained	TSB Captured	TSB Retained	Comments
19-Apr-22	Francisco Point	Sun/Cloud/Calm	16	16	5	5	0	0	0	0	0	0	0	0	
19-Apr-22	Marina Island	Cloud/Calm	1	1	5	5	0	0	0	0	0	0	0	0	50 sand lances
19-Apr-22	Rebecca Spit	Sun/Cloud/Calm	2	2	3	3	0	0	0	0	0	0	0	0	1 sculpin
19-Apr-22	Viner Point	Cloud/Calm	0	0	0	0	0	0	0	0	0	0	0	0	300 sand lances
19-Apr-22	SE Hill Island	Sun/Cloud/Calm	0	0	0	0	0	0	0	0	0	0	0	0	
19-Apr-22	Penn Island	Sun/Cloud/Calm	0	0	0	0	0	0	0	0	0	0	0	0	20 sand lances
19-Apr-22	Raza	Sun/Cloud/Calm	150	30	85	30	0	0	0	0	0	0	0	0	Abundant sand lances
19-Apr-22	Raza North	Overcast/Calm	0	0	1	1	0	0	0	0	0	0	0	0	Merganzers onsite, 20 sand lances
18-Apr-22	Rock Bay	Rain/Calm	3	3	3	3	0	0	0	0	0	0	0	0	3 sculpins, Twist in net
18-Apr-22	Bear Bay	Rain/Calm	6	6	91	30	0	0	0	0	0	0	0	0	2 cockscombs, 2 sculpins, 4 shrimp, green urchins
18-Apr-22	Knox Bay	Rain/Calm	14	14	34	30	0	0	0	0	0	0	0	0	200 tubesnouts, 10 flounder, 20 sculpins
18-Apr-22	Cordero	Rain/Calm	0	0	0	0	0	0	0	0	0	0	0	0	1 green urchin, 1 striped sunstar, 12 sand lances
18-Apr-22	Bickley Bay	Rain/Calm	0	0	2	2	0	0	0	0	0	0	0	0	1 sculpin, 13 juvenile greenling, 1 flounder
18-Apr-22	Shoal Bay	Rain/Calm	0	0	84	31	0	0	0	0	0	0	0	0	4 flounder, 2 sculpins
18-Apr-22	Fanny Bay	Rain/Calm	34	30	71	30	0	0	0	0	0	0	0	0	1 kelp perch, 1 juvenile lingcod, 2 sculpins
18-Apr-22	Nodales	Rain/Calm	35	32	23	23	0	0	0	0	0	0	0	0	1 greenling
18-Apr-22	Discovery	Rain/Calm	15	15	5	5	0	0	0	0	0	0	0	0	sand lances
18-Apr-22	Okisollo	Rain/Calm	28	28	36	30	0	0	0	0	0	0	0	0	2 sculpin
18-Apr-22	Owen Bay	Rain/Calm	0	0	41	30	0	0	0	0	0	0	0	0	Abundant shrimp larvae
18-Apr-22	Deepwater Bay	Rain/Calm	251	31	149	29	0	0	0	0	0	0	0	0	Fish farm debris in bay
18-Apr-22	Primary 1	Rain/Overcast	6	6	0	0	0	0	0	0	0	0	0	0	12 sculpin, Juvenile lingcod
18-Apr-22	Beautiful Bay	Chop, Rain, Overcast	2	2	1	1	0	0	0	0	0	0	0	0	5 sculpins, 1 Juvenile Lingcod
18-Apr-22	Primary 3	Chop, Rain, Overcast	0	0	0	0	0	0	0	0	0	0	0	0	Strong tides and hangups
18-Apr-22	Blenkinsop Bay	Light rain/Calm	0	0	0	0	0	0	0	0	0	0	0	0	1 sculpin, 3 urchins
18-Apr-22	Sunderland	Rain/Calm	0	0	0	0	0	0	0	0	0	0	0	0	1 kelp perch, 2 pipefish, shrimp
18-Apr-22	Bessborough Bay	Rain/Calm/Light wind	75	30	26	26	0	0	0	0	0	0	0	0	15 sculpin, 6 flounder, 2 pipefish
18-Apr-22	Wellbore Channel	Rain/Chop	0	0	76	31	0	0	0	0	0	0	0	0	250 urchins, 10 sculpin, 5 flounder
18-Apr-22	Chancellor	Rain/Calm	1	1	1	1	0	0	0	0	0	0	0	0	25 juvenile lingcod, 15 sculpin, pile perch, abundant kelp
18-Apr-22	Race Passage	Rain/Calm	3	3	0	0	0	0	0	0	0	0	0	0	Some hangups
16-May-22	Rock Bay	Sun/Cloud/Calm	0	0	0	0	0	0	0	0	0	0	0	0	20 sculpin, 20 juvenile flounder, 2 dungeness, 3 gunnells, 7 pipefish
16-May-22	Bear Bay	Sun/Cloud/Light breeze	0	0	0	0	0	0	0	0	0	0	0	0	4 gunnel, 14 urchins, 400 sculpin
16-May-22	Knox Bay	Sun/Cloud/Calm	3	3	13	13	56	30	0	0	0	0	0	0	50 sculpin, 11 gunnel, 2 kelp crab
16-May-22	Cordero	Sun/Cloud/Calm	0	0	0	0	0	0	0	0	0	0	0	0	urchins
16-May-22	Bickley Bay	Sun/Cloud/Calm	0	0	1	1	0	0	1	1	0	0	0	0	4 sculpins, 3 greenlings
16-May-22	Shoal Bay	Sunny/Calm	1	1	741	29	0	0	0	0	0	0	0	0	tube snouts, dungeness crabs, sculpins, 1 red rock, flounder
16-May-22	Fanny Bay	Sunny/Calm	1	1	9	9	0	0	8	8	0	0	0	0	sculpins, flounder, gunnel
16-May-22	Nodales	Overcast/Calm	97	29	76	31	0	0	0	0	0	0	0	0	33 gunnel, 45 sculpin, 3 urchin, 8 tube snout, 4 kelp crab, 9 juvenile ling
16-May-22	Discovery	Overcast/Calm	1	1	1	1	0	0	0	0	0	0	0	0	1 gunnel, 2 juvenile ling, 1 sculpin
16-May-22	Okisollo	Overcast/Calm	3	3	16	16	0	0	0	0	0	0	0	0	10 gunnel, 6 tube snout, 45 sculpins
16-May-22	Owen Bay	Overcast/Calm	4	4	36	30	10	10	1	1	0	0	0	0	sculpins
16-May-22	Deepwater Bay	Rain/Calm	1718	30	322	30	1	1	43	30	0	0	0	0	sand lances, moved set further out because of too much farm debris at site

Date	Site Name	Weather Comments	Pink Captured	Pink Retained	Chum Captured	Chum Retained	Coho Captured	Coho Retained	Chinook Captured	Chinook Retained	Sockeye Captured	Sockeye Retained	TSB Captured	TSB Retained	Comments
17-May-22	Francisco Point	Overcast/Waves	143	31	0	0	0	0	0	0	0	0	0	0	rock in set
17-May-22	Marina Island	Overcast/Calm	4	4	0	0	0	0	0	0	0	0	0	0	100 sculpin
17-May-22	Rebecca Spit	Overcast/Calm	0	0	0	0	1	1	0	0	0	0	0	0	1 lion's mane, 2 sculpins, 1 lobed nudibranch
17-May-22	Viner Point	Overcast/Calm	68	31	50	29	0	0	0	0	0	0	0	0	3 perch, 1 rockfish, 1 tubesnout
17-May-22	SE Hill Island	Overcast/Calm	0	0	0	0	0	0	0	0	0	0	0	0	1000 sandlance
17-May-22	Penn Island	Overcast/Calm	0	0	0	0	0	0	0	0	0	0	0	0	15 stickleback
17-May-22	Raza	Overcast/Calm	20	20	30	27	0	0	0	0	0	0	0	0	1 lion's mane, 1000 sand lances
17-May-22	Raza North	Overcast/Calm	65	31	48	29	0	0	0	0	0	0	0	0	jellies, 2 gobis
18-May-22	Race Passage	Rain/Tide	0	0	0	0	0	0	0	0	0	0	0	0	limpets
18-May-22	Primary 1	Wind/Rain	0	0	0	0	0	0	1	1	0	0	0	0	2 greenling, 2 gunnel, 2 perch
18-May-22	Beautiful Bay	Wind	0	0	0	0	0	0	0	0	0	0	0	0	gunnel, too choppy to fix YSI meters
18-May-22	Primary 3	Wind	0	0	0	0	0	0	0	0	0	0	0	0	urchins, gunnels
18-May-22	Blenkinsop Bay	Overcast/Calm	0	0	0	0	0	0	0	0	0	0	0	0	1 helmet crab
18-May-22	Sunderland	Rain/Calm	0	0	0	0	1	1	0	0	0	0	0	0	1 sculpin, 1 copper rockfish
18-May-22	Bessborough Bay	Rain/Calm	1182	30	973	30	0	0	0	0	0	0	0	0	perch, gunnels, shrimp, snakefish
18-May-22	Wellbore Channel	Light wind/Overcast	0	0	1	1	1	1	1	1	0	0	0	0	4 sculpins, 10 tubesnouts, 10 perch
18-May-22	Chancellor	Rain/Calm	1	1	74	30	0	0	0	0	0	0	0	0	10 sculpins, 1 flounder

### Appendix III – Sea Lice Analysis Data

Date of seine	Location	Fish Species	Length (mm)	Weight (g)	LEP Co	LEP C1	LEP C2	LEP PAM	LEP PAF	LEP AM	LEP AF	LEP Total	Cal Co	Cal C1	Cal C2	Cal C3	Cal C4	CAL PAM	CALP AF	CAL AM	CAL AF	CAL Total
18-Apr-22	Bear Bay	Chum	30	0.3								0										0
18-Apr-22	Bear Bay	Chum	39	0.56								0										0
18-Apr-22	Bear Bay	Chum	42	0.6								0										0
18-Apr-22	Bear Bay	Chum	45	0.81			1					1										0
18-Apr-22	Bear Bay	Chum	35	0.45								0										0
18-Apr-22	Bear Bay	Chum	38	0.57								0										0
18-Apr-22	Bear Bay	Chum	38	0.52								0										0
18-Apr-22	Bear Bay	Chum	41	0.71								0										0
18-Apr-22	Bear Bay	Chum	43	0.81								0										0
18-Apr-22	Bear Bay	Chum	34	0.32								0										0
18-Apr-22	Bear Bay	Chum	35	0.38								0										0
18-Apr-22	Bear Bay	Chum	37	0.55								0										0
18-Apr-22	Bear Bay	Chum	36	0.46								0										0
18-Apr-22	Bear Bay	Chum	35	0.35								0										0
18-Apr-22	Bear Bay	Chum	37	0.43								0										0
18-Apr-22	Bear Bay	Chum	39	0.59								0										0
18-Apr-22	Bear Bay	Chum	35	0.4								0										0
18-Apr-22	Bear Bay	Chum	37	0.49								0										0
18-Apr-22	Bear Bay	Chum	35	0.42								0										0
18-Apr-22	Bear Bay	Chum	44	0.76								0										0
18-Apr-22	Bear Bay	Chum	33	0.35								0										0
18-Apr-22	Bear Bay	Chum	34	0.36								0										0
18-Apr-22	Bear Bay	Chum	36	0.48								0										0
18-Apr-22	Bear Bay	Chum	43	0.89								0		1								1
18-Apr-22	Bear Bay	Chum	35	0.47								0										0
18-Apr-22	Bear Bay	Chum	35	0.46								0										0
18-Apr-22	Bear Bay	Chum	47	1.1								0		1								1
18-Apr-22	Bear Bay	Chum	29	0.27								0										0
18-Apr-22	Bear Bay	Chum	40	0.57								0		1								1
18-Apr-22	Bear Bay	Chum	39	0.6								0										0
18-Apr-22	Bear Bay	Pink	33	0.34								0										0
18-Apr-22	Bear Bay	Pink	37	0.41								0										0
18-Apr-22	Bear Bay	Pink	30	0.26								0										0
18-Apr-22	Bear Bay	Pink	32	0.32								0										0
18-Apr-22	Bear Bay	Pink	32	0.34								0										0
18-Apr-22	Bear Bay	Pink	30	0.26								0										0
18-Apr-22	Beautiful Bay	Chum	54	1.46								0										0
18-Apr-22	Beautiful Bay	Pink	42	0.75								0										0
18-Apr-22	Beautiful Bay	Pink	31	0.3								0										0
18-Apr-22	Bessborough Bay	Chum	47	1.18								0										0
18-Apr-22	Bessborough Bay	Chum	49	1.02								0			1							1
18-Apr-22	Bessborough Bay	Chum	45	1.04		1						1										0
18-Apr-22	Bessborough Bay	Chum	44	0.86								0										0
18-Apr-22	Bessborough Bay	Chum	46	1.1								0										0

Date of seine	Location	Fish Species	Length (mm)	Weight (g)	LEP Co	LEP C1	LEP C2	LEP PAM	LEP PAF	LEP AM	LEP AF	LEP Total	Cal Co	Cal C1	Cal C2	Cal C3	Cal C4	CAL PAM	CALP AF	CAL AM	CAL AF	CAL Total
18-Apr-22	Bessborough Bay	Chum	35	0.45								0	1									1
18-Apr-22	Bessborough Bay	Chum	48	1.07								0			1							1
18-Apr-22	Bessborough Bay	Chum	48	1.17								0										0
18-Apr-22	Bessborough Bay	Chum	48	0.72								0										0
18-Apr-22	Bessborough Bay	Chum	48	0.81								0										0
18-Apr-22	Bessborough Bay	Chum	54	1.91								0										0
18-Apr-22	Bessborough Bay	Chum	65	2.58								0		1								1
18-Apr-22	Bessborough Bay	Chum	53	1.54			1					1										0
18-Apr-22	Bessborough Bay	Chum	48	1.14								0										0
18-Apr-22	Bessborough Bay	Chum	50	1.35								0										0
18-Apr-22	Bessborough Bay	Chum	50	1.35								0										0
18-Apr-22	Bessborough Bay	Chum	47	1.04								0										0
18-Apr-22	Bessborough Bay	Chum	45	1.11								0										0
18-Apr-22	Bessborough Bay	Chum	44	0.82								0										0
18-Apr-22	Bessborough Bay	Chum	47	1								0		1								1
18-Apr-22	Bessborough Bay	Chum	42	0.65								0										0
18-Apr-22	Bessborough Bay	Chum	43	0.81								0										0
18-Apr-22	Bessborough Bay	Chum	32	0.79								0										0
18-Apr-22	Bessborough Bay	Chum	45	0.92								0										0
18-Apr-22	Bessborough Bay	Chum	54	1.71								0										0
18-Apr-22	Bessborough Bay	Chum	39	0.61								0										0
18-Apr-22	Bessborough Bay	Pink	29	0.29								0										0
18-Apr-22	Bessborough Bay	Pink	41	0.58								0										0
18-Apr-22	Bessborough Bay	Pink	40	0.58								0										0
18-Apr-22	Bessborough Bay	Pink	35	0.43								0										0
18-Apr-22	Bessborough Bay	Pink	45	0.83								0										0
18-Apr-22	Bessborough Bay	Pink	50	1.2								0										0
18-Apr-22	Bessborough Bay	Pink	48	0.74								0										0
18-Apr-22	Bessborough Bay	Pink	39	0.57								0										0
18-Apr-22	Bessborough Bay	Pink	36	0.51								0										0
18-Apr-22	Bessborough Bay	Pink	42	0.64								0				1						1
18-Apr-22	Bessborough Bay	Pink	38	0.43								0										0
18-Apr-22	Bessborough Bay	Pink	44	0.62			1					1										0
18-Apr-22	Bessborough Bay	Pink	46	0.76								0										0
18-Apr-22	Bessborough Bay	Pink	44	0.66								0										0
18-Apr-22	Bessborough Bay	Pink	48	0.81								0										0
18-Apr-22	Bessborough Bay	Pink	30	0.35								0										0
18-Apr-22	Bessborough Bay	Pink	29	0.42								0										0
18-Apr-22	Bessborough Bay	Pink	39	0.54								0										0
18-Apr-22	Bessborough Bay	Pink	38	0.53								0										0
18-Apr-22	Bessborough Bay	Pink	39	0.56								0										0
18-Apr-22	Bessborough Bay	Pink	35	0.48								0										0
18-Apr-22	Bessborough Bay	Pink	45	0.81								0										0
18-Apr-22	Bessborough Bay	Pink	34	0.34								0										0
18-Apr-22	Bessborough Bay	Pink	36	0.53								0										0
18-Apr-22	Bessborough Bay	Pink	31	0.34								0										0
18-Apr-22	Bessborough Bay	Pink	45	0.83								0										0

Date of seine	Location	Fish Species	Length (mm)	Weight (g)	LEP Co	LEP C1	LEP C2	LEP PAM	LEP PAF	LEP AM	LEP AF	LEP Total	Cal Co	Cal C1	Cal C2	Cal C3	Cal C4	CAL PAM	CALP AF	CAL AM	CAL AF	CAL Total
18-Apr-22	Bessborough Bay	Pink	42	0.86								0										0
18-Apr-22	Bessborough Bay	Pink	35	0.45		1						1										0
18-Apr-22	Bessborough Bay	Pink	38	0.51								0										0
18-Apr-22	Bessborough Bay	Pink	40	0.64			1					1										0
18-Apr-22	Bickley Bay	Chum	37	0.42								0										0
18-Apr-22	Bickley Bay	Chum	35	0.45								0										0
18-Apr-22	Chancellor	Chum	40	0.68								0										0
18-Apr-22	Chancellor	Pink	40	0.57								0										0
18-Apr-22	Deepwater Bay	Chum	37	0.42								0										0
18-Apr-22	Deepwater Bay	Chum	40	0.62								0										0
18-Apr-22	Deepwater Bay	Chum	38	0.49								0										0
18-Apr-22	Deepwater Bay	Chum	39	0.61								0										0
18-Apr-22	Deepwater Bay	Chum	35	0.36								0										0
18-Apr-22	Deepwater Bay	Chum	38	0.52								0										0
18-Apr-22	Deepwater Bay	Chum	42	0.68								0										0
18-Apr-22	Deepwater Bay	Chum	38	0.53								0										0
18-Apr-22	Deepwater Bay	Chum	36	0.39								0										0
18-Apr-22	Deepwater Bay	Chum	41	0.71								0										0
18-Apr-22	Deepwater Bay	Chum	43	0.82								0										0
18-Apr-22	Deepwater Bay	Chum	35	0.4								0										0
18-Apr-22	Deepwater Bay	Chum	36	0.42								0										0
18-Apr-22	Deepwater Bay	Chum	32	0.31								0										0
18-Apr-22	Deepwater Bay	Chum	35	0.46								0										0
18-Apr-22	Deepwater Bay	Chum	43	0.81								0										0
18-Apr-22	Deepwater Bay	Chum	36	0.48								0										0
18-Apr-22	Deepwater Bay	Chum	38	0.54								0										0
18-Apr-22	Deepwater Bay	Chum	36	0.55								0										0
18-Apr-22	Deepwater Bay	Chum	37	0.52								0										0
18-Apr-22	Deepwater Bay	Chum	34	0.38								0										0
18-Apr-22	Deepwater Bay	Chum	35	0.48								0										0
18-Apr-22	Deepwater Bay	Chum	37	0.51								0										0
18-Apr-22	Deepwater Bay	Chum	36	0.49								0										0
18-Apr-22	Deepwater Bay	Chum	35	0.4								0										0
18-Apr-22	Deepwater Bay	Chum	41	0.67								0										0
18-Apr-22	Deepwater Bay	Chum	45	1								0										0
18-Apr-22	Deepwater Bay	Chum	45	0.98								0										0
18-Apr-22	Deepwater Bay	Chum	42	0.8								0										0
18-Apr-22	Deepwater Bay	Pink	32	0.26								0										0
18-Apr-22	Deepwater Bay	Pink	32	0.27								0										0
18-Apr-22	Deepwater Bay	Pink	32	0.28								0										0
18-Apr-22	Deepwater Bay	Pink	35	0.35								0										0
18-Apr-22	Deepwater Bay	Pink	35	0.37								0										0
18-Apr-22	Deepwater Bay	Pink	32	0.27								0										0
18-Apr-22	Deepwater Bay	Pink	33	0.33								0										0
18-Apr-22	Deepwater Bay	Pink	35	0.39								0										0
18-Apr-22	Deepwater Bay	Pink	32	0.28								0										0
18-Apr-22	Deepwater Bay	Pink	39	0.37								0										0



Date of seine	Location	Fish Species	Length (mm)	Weight (g)	LEP Co	LEP C1	LEP C2	LEP PAM	LEP PAF	LEP AM	LEP AF	LEP Total	Cal Co	Cal C1	Cal C2	Cal C3	Cal C4	CAL PAM	CALP AF	CAL AM	CAL AF	CAL Total
18-Apr-22	Deepwater Bay	Pink	35	0.36								0										0
18-Apr-22	Deepwater Bay	Pink	37	0.41								0										0
18-Apr-22	Deepwater Bay	Pink	32	0.29								0										0
18-Apr-22	Deepwater Bay	Pink	34	0.4								0										0
18-Apr-22	Deepwater Bay	Pink	32	0.28								0										0
18-Apr-22	Deepwater Bay	Pink	33	0.28								0										0
18-Apr-22	Deepwater Bay	Pink	31	0.3								0										0
18-Apr-22	Deepwater Bay	Pink	37	0.44								0										0
18-Apr-22	Deepwater Bay	Pink	38	0.54								0										0
18-Apr-22	Deepwater Bay	Pink	30	0.24								0										0
18-Apr-22	Deepwater Bay	Pink	32	0.3								0										0
18-Apr-22	Deepwater Bay	Pink	34	0.31								0										0
18-Apr-22	Deepwater Bay	Pink	37	0.48								0										0
18-Apr-22	Deepwater Bay	Pink	32	0.28								0										0
18-Apr-22	Deepwater Bay	Pink	31	0.29								0										0
18-Apr-22	Deepwater Bay	Pink	35	0.33								0										0
18-Apr-22	Deepwater Bay	Pink	33	0.3								0										0
18-Apr-22	Deepwater Bay	Pink	33	0.3								0										0
18-Apr-22	Deepwater Bay	Pink	32	0.34								0										0
18-Apr-22	Deepwater Bay	Pink	33	0.33								0										0
18-Apr-22	Deepwater Bay	Pink	33	0.32								0										0
18-Apr-22	Discovery	Chum	34	0.38								0										0
18-Apr-22	Discovery	Chum	35	0.44								0										0
18-Apr-22	Discovery	Chum	33	0.28								0										0
18-Apr-22	Discovery	Chum	36	0.46								0	1									1
18-Apr-22	Discovery	Chum	35	0.46								0										0
18-Apr-22	Discovery	Pink	38	0.49								0										0
18-Apr-22	Discovery	Pink	32	0.29								0										0
18-Apr-22	Discovery	Pink	32	0.28								0										0
18-Apr-22	Discovery	Pink	37	0.46								0										0
18-Apr-22	Discovery	Pink	35	0.38								0										0
18-Apr-22	Discovery	Pink	32	0.29								0										0
18-Apr-22	Discovery	Pink	34	0.34								0										0
18-Apr-22	Discovery	Pink	36	0.39								0										0
18-Apr-22	Discovery	Pink	34	0.36								0										0
18-Apr-22	Discovery	Pink	31	0.26								0										0
18-Apr-22	Discovery	Pink	31	0.26								0										0
18-Apr-22	Discovery	Pink	35	0.47								0										0
18-Apr-22	Discovery	Pink	33	0.41								0										0
18-Apr-22	Discovery	Pink	32	0.44								0										0
18-Apr-22	Discovery	Pink	35	0.34								0										0
18-Apr-22	Fanny Bay	Chum	34	0.42								0										0
18-Apr-22	Fanny Bay	Chum	36	0.45								0										0
18-Apr-22	Fanny Bay	Chum	34	0.29								0										0
18-Apr-22	Fanny Bay	Chum	35	0.45								0										0
18-Apr-22	Fanny Bay	Chum	44	0.87								0										0
18-Apr-22	Fanny Bay	Chum	47	1.16								0										0

Date of seine	Location	Fish Species	Length (mm)	Weight (g)	LEP Co	LEP C1	LEP C2	LEP PAM	LEP PAF	LEP AM	LEP AF	LEP Total	Cal Co	Cal C1	Cal C2	Cal C3	Cal C4	CAL PAM	CALP AF	CAL AM	CAL AF	CAL Total
18-Apr-22	Fanny Bay	Chum	33	0.37								0										0
18-Apr-22	Fanny Bay	Chum	45	1.14								0										0
18-Apr-22	Fanny Bay	Chum	35	0.39								0										0
18-Apr-22	Fanny Bay	Chum	44	0.96		1						1										0
18-Apr-22	Fanny Bay	Chum	34	0.42								0										0
18-Apr-22	Fanny Bay	Chum	34	0.34								0										0
18-Apr-22	Fanny Bay	Chum	46	1.04								0										0
18-Apr-22	Fanny Bay	Chum	54	1.66								0										0
18-Apr-22	Fanny Bay	Chum	41	0.7								0										0
18-Apr-22	Fanny Bay	Chum	40	0.78								0										0
18-Apr-22	Fanny Bay	Chum	54	1.88								0										0
18-Apr-22	Fanny Bay	Chum	72	3.55								0										0
18-Apr-22	Fanny Bay	Chum	35	0.44								0										0
18-Apr-22	Fanny Bay	Chum	50	1.15								0										0
18-Apr-22	Fanny Bay	Chum	36	0.45								0										0
18-Apr-22	Fanny Bay	Chum	35	0.35								0										0
18-Apr-22	Fanny Bay	Chum	36	0.38								0										0
18-Apr-22	Fanny Bay	Chum	39	0.65								0										0
18-Apr-22	Fanny Bay	Chum	47	1.08								0										0
18-Apr-22	Fanny Bay	Chum	34	0.45								0										0
18-Apr-22	Fanny Bay	Chum	34	0.46								0										0
18-Apr-22	Fanny Bay	Chum	34	0.33								0										0
18-Apr-22	Fanny Bay	Chum	40	0.84								0										0
18-Apr-22	Fanny Bay	Chum	39	0.65								0										0
18-Apr-22	Fanny Bay	Pink	32	0.26								0										0
18-Apr-22	Fanny Bay	Pink	31	0.2								0										0
18-Apr-22	Fanny Bay	Pink	32	0.22								0										0
18-Apr-22	Fanny Bay	Pink	33	0.27								0										0
18-Apr-22	Fanny Bay	Pink	33	0.24								0										0
18-Apr-22	Fanny Bay	Pink	32	0.24								0										0
18-Apr-22	Fanny Bay	Pink	33	0.27								0										0
18-Apr-22	Fanny Bay	Pink	32	0.27								0										0
18-Apr-22	Fanny Bay	Pink	32	0.28								0										0
18-Apr-22	Fanny Bay	Pink	32	0.18								0										0
18-Apr-22	Fanny Bay	Pink	32	0.2								0										0
18-Apr-22	Fanny Bay	Pink	34	0.25								0										0
18-Apr-22	Fanny Bay	Pink	32	0.24								0										0
18-Apr-22	Fanny Bay	Pink	38	0.48								0										0
18-Apr-22	Fanny Bay	Pink	31	0.23								0										0
18-Apr-22	Fanny Bay	Pink	32	0.26								0										0
18-Apr-22	Fanny Bay	Pink	33	0.24								0										0
18-Apr-22	Fanny Bay	Pink	32	0.25								0										0
18-Apr-22	Fanny Bay	Pink	32	0.24								0										0
18-Apr-22	Fanny Bay	Pink	31	0.22								0										0
18-Apr-22	Fanny Bay	Pink	42	0.62								0										0
18-Apr-22	Fanny Bay	Pink	31	0.24								0										0
18-Apr-22	Fanny Bay	Pink	30	0.23								0										0

Date of seine	Location	Fish Species	Length (mm)	Weight (g)	LEP Co	LEP C1	LEP C2	LEP PAM	LEP PAF	LEP AM	LEP AF	LEP Total	Cal Co	Cal C1	Cal C2	Cal C3	Cal C4	CAL PAM	CALP AF	CAL AM	CAL AF	CAL Total
18-Apr-22	Fanny Bay	Pink	31	0.22								0										0
18-Apr-22	Fanny Bay	Pink	34	0.3								0										0
18-Apr-22	Fanny Bay	Pink	42	0.6								0										0
18-Apr-22	Fanny Bay	Pink	47	1.02								0										0
18-Apr-22	Fanny Bay	Pink	35	0.44								0										0
18-Apr-22	Fanny Bay	Pink	42	0.71								0										0
18-Apr-22	Fanny Bay	Pink	62	1.92								0										0
18-Apr-22	Knox Bay	Chum	38	0.7								0										0
18-Apr-22	Knox Bay	Chum	43	0.75								0	1									1
18-Apr-22	Knox Bay	Chum	44	0.93								0										0
18-Apr-22	Knox Bay	Chum	32	0.58								0										0
18-Apr-22	Knox Bay	Chum	39	0.62								0										0
18-Apr-22	Knox Bay	Chum	40	0.51								0										0
18-Apr-22	Knox Bay	Chum	37	0.45								0										0
18-Apr-22	Knox Bay	Chum	36	0.54								0										0
18-Apr-22	Knox Bay	Chum	30	0.41								0										0
18-Apr-22	Knox Bay	Chum	50	1.44								0										0
18-Apr-22	Knox Bay	Chum	39	0.64								0		1								1
18-Apr-22	Knox Bay	Chum	34	0.34								0										0
18-Apr-22	Knox Bay	Chum	36	0.44								0										0
18-Apr-22	Knox Bay	Chum	39	0.81								0										0
18-Apr-22	Knox Bay	Chum	41	0.86								0										0
18-Apr-22	Knox Bay	Chum	37	0.53								0										0
18-Apr-22	Knox Bay	Chum	46	0.95								0										0
18-Apr-22	Knox Bay	Chum	38	0.54								0										0
18-Apr-22	Knox Bay	Chum	50	1.26								0										0
18-Apr-22	Knox Bay	Chum	36	0.46								0										0
18-Apr-22	Knox Bay	Chum	40	0.7								0										0
18-Apr-22	Knox Bay	Chum	38	0.37								0										0
18-Apr-22	Knox Bay	Chum	39	0.56								0										0
18-Apr-22	Knox Bay	Chum	44	0.88								0										0
18-Apr-22	Knox Bay	Chum	35	0.5								0										0
18-Apr-22	Knox Bay	Chum	38	0.65								0										0
18-Apr-22	Knox Bay	Chum	35	0.43								0										0
18-Apr-22	Knox Bay	Chum	35	0.55								0										0
18-Apr-22	Knox Bay	Chum	37	0.52								0										0
18-Apr-22	Knox Bay	Chum	36	0.52								0										0
18-Apr-22	Knox Bay	Pink	30	0.22								0										0
18-Apr-22	Knox Bay	Pink	30	0.27								0										0
18-Apr-22	Knox Bay	Pink	30	0.21								0										0
18-Apr-22	Knox Bay	Pink	30	0.22								0										0
18-Apr-22	Knox Bay	Pink	31	0.28								0										0
18-Apr-22	Knox Bay	Pink	31	0.23								0		1								1
18-Apr-22	Knox Bay	Pink	39	0.49								0										0
18-Apr-22	Knox Bay	Pink	35	0.35								0										0
18-Apr-22	Knox Bay	Pink	30	0.22								0										0
18-Apr-22	Knox Bay	Pink	30	0.22								0										0

Date of seine	Location	Fish Species	Length (mm)	Weight (g)	LEP Co	LEP C1	LEP C2	LEP PAM	LEP PAF	LEP AM	LEP AF	LEP Total	Cal Co	Cal C1	Cal C2	Cal C3	Cal C4	CAL PAM	CALP AF	CAL AM	CAL AF	CAL Total
18-Apr-22	Knox Bay	Pink	30	0.24								0										0
18-Apr-22	Knox Bay	Pink	31	0.32								0										0
18-Apr-22	Knox Bay	Pink	31	0.25								0										0
18-Apr-22	Knox Bay	Pink	31	0.24								0										0
18-Apr-22	Marina Island	Chum	40	0.6								0										0
18-Apr-22	Marina Island	Chum	51	1.26								0										0
18-Apr-22	Marina Island	Chum	32	0.33								0										0
18-Apr-22	Marina Island	Chum	39	0.7								0		2								2
18-Apr-22	Marina Island	Chum	36	0.59								0										0
18-Apr-22	Marina Island	Pink	34	0.32								0										0
18-Apr-22	Nodales	Chum	30	0.3								0										0
18-Apr-22	Nodales	Chum	44	0.95								0										0
18-Apr-22	Nodales	Chum	32	0.37								0										0
18-Apr-22	Nodales	Chum	36	0.42								0										0
18-Apr-22	Nodales	Chum	34	0.38								0										0
18-Apr-22	Nodales	Chum	33	0.37								0										0
18-Apr-22	Nodales	Chum	33	0.42								0										0
18-Apr-22	Nodales	Chum	34	0.38								0										0
18-Apr-22	Nodales	Chum	34	0.4								0										0
18-Apr-22	Nodales	Chum	32	0.36								0										0
18-Apr-22	Nodales	Chum	34	0.37								0										0
18-Apr-22	Nodales	Chum	30	0.3								0										0
18-Apr-22	Nodales	Chum	48	1								0										0
18-Apr-22	Nodales	Chum	41	0.76								0										0
18-Apr-22	Nodales	Chum	32	0.34								0										0
18-Apr-22	Nodales	Chum	33	0.33								0										0
18-Apr-22	Nodales	Chum	33	0.36								0										0
18-Apr-22	Nodales	Chum	36	0.42								0										0
18-Apr-22	Nodales	Chum	35	0.39								0										0
18-Apr-22	Nodales	Chum	35	0.48								0										0
18-Apr-22	Nodales	Chum	34	0.39								0										0
18-Apr-22	Nodales	Chum	36	0.56								0										0
18-Apr-22	Nodales	Chum	36	0.53								0										0
18-Apr-22	Nodales	Pink	31	0.34								0										0
18-Apr-22	Nodales	Pink	33	0.28								0										0
18-Apr-22	Nodales	Pink	35	0.4			1					1										0
18-Apr-22	Nodales	Pink	31	0.26								0										0
18-Apr-22	Nodales	Pink	29	0.28								0										0
18-Apr-22	Nodales	Pink	30	0.2								0										0
18-Apr-22	Nodales	Pink	31	0.28								0										0
18-Apr-22	Nodales	Pink	31	0.23								0										0
18-Apr-22	Nodales	Pink	30	0.26								0										0
18-Apr-22	Nodales	Pink	34	0.31								0										0
18-Apr-22	Nodales	Pink	26	0.16								0										0
18-Apr-22	Nodales	Pink	28	0.25								0										0
18-Apr-22	Nodales	Pink	30	0.25								0										0
18-Apr-22	Nodales	Pink	30	0.36								0										0

Date of seine	Location	Fish Species	Length (mm)	Weight (g)	LEP Co	LEP C1	LEP C2	LEP PAM	LEP PAF	LEP AM	LEP AF	LEP Total	Cal Co	Cal C1	Cal C2	Cal C3	Cal C4	CAL PAM	CALP AF	CAL AM	CAL AF	CAL Total
18-Apr-22	Nodales	Pink	30	0.29								0										0
18-Apr-22	Nodales	Pink	26	0.23								0										0
18-Apr-22	Nodales	Pink	30	0.25								0										0
18-Apr-22	Nodales	Pink	30	0.29								0										0
18-Apr-22	Nodales	Pink	30	0.29								0										0
18-Apr-22	Nodales	Pink	30	0.28								0										0
18-Apr-22	Nodales	Pink	31	0.3								0										0
18-Apr-22	Nodales	Pink	31	0.27								0										0
18-Apr-22	Nodales	Pink	33	0.38								0										0
18-Apr-22	Nodales	Pink	31	0.31								0										0
18-Apr-22	Nodales	Pink	30	0.21								0										0
18-Apr-22	Nodales	Pink	30	0.2								0										0
18-Apr-22	Nodales	Pink	28	0.24								0										0
18-Apr-22	Nodales	Pink	34	0.35								0										0
18-Apr-22	Nodales	Pink	34	0.51								0										0
18-Apr-22	Nodales	Pink	29	0.18								0										0
18-Apr-22	Nodales	Pink	30	0.34								0										0
18-Apr-22	Nodales	Pink	31	0.3								0										0
18-Apr-22	Okisollo	Chum	35	0.55								0										0
18-Apr-22	Okisollo	Chum	42	0.82								0	1	1		1						3
18-Apr-22	Okisollo	Chum	42	0.7								0										0
18-Apr-22	Okisollo	Chum	42	0.72								0										0
18-Apr-22	Okisollo	Chum	41	0.66								0										0
18-Apr-22	Okisollo	Chum	37	0.48								0										0
18-Apr-22	Okisollo	Chum	33	0.31								0										0
18-Apr-22	Okisollo	Chum	39	0.65								0										0
18-Apr-22	Okisollo	Chum	40	0.81								0										0
18-Apr-22	Okisollo	Chum	36	0.58								0										0
18-Apr-22	Okisollo	Chum	45	1.05								0		1								1
18-Apr-22	Okisollo	Chum	46	1.03								0										0
18-Apr-22	Okisollo	Chum	43	0.83								0										0
18-Apr-22	Okisollo	Chum	35	0.42								0										0
18-Apr-22	Okisollo	Chum	36	0.52								0										0
18-Apr-22	Okisollo	Chum	38	0.62								0										0
18-Apr-22	Okisollo	Chum	39	0.7								0										0
18-Apr-22	Okisollo	Chum	41	0.88								0										0
18-Apr-22	Okisollo	Chum	38	0.58								0										0
18-Apr-22	Okisollo	Chum	31	0.34								0										0
18-Apr-22	Okisollo	Chum	40	0.92								0										0
18-Apr-22	Okisollo	Chum	39	0.64								0										0
18-Apr-22	Okisollo	Chum	35	0.38								0	1									1
18-Apr-22	Okisollo	Chum	45	0.96								0										0
18-Apr-22	Okisollo	Chum	38	0.52								0										0
18-Apr-22	Okisollo	Chum	37	0.64								0										0
18-Apr-22	Okisollo	Chum	38	0.73								0										0
18-Apr-22	Okisollo	Chum	38	0.66								0										0
18-Apr-22	Okisollo	Chum	36	0.42								0										0

Date of seine	Location	Fish Species	Length (mm)	Weight (g)	LEP Co	LEP C1	LEP C2	LEP PAM	LEP PAF	LEP AM	LEP AF	LEP Total	Cal Co	Cal C1	Cal C2	Cal C3	Cal C4	CAL PAM	CALP AF	CAL AM	CAL AF	CAL Total
18-Apr-22	Okisollo	Chum	38	0.52								0										0
18-Apr-22	Okisollo	Pink	40	0.64								0		2		1						3
18-Apr-22	Okisollo	Pink	32	0.29								0										0
18-Apr-22	Okisollo	Pink	43	0.82								0										0
18-Apr-22	Okisollo	Pink	42	0.75								0										0
18-Apr-22	Okisollo	Pink	37	0.56								0										0
18-Apr-22	Okisollo	Pink	37	0.53								0										0
18-Apr-22	Okisollo	Pink	44	0.77								0										0
18-Apr-22	Okisollo	Pink	35	0.48								0										0
18-Apr-22	Okisollo	Pink	42	0.75								0										0
18-Apr-22	Okisollo	Pink	32	0.34								0										0
18-Apr-22	Okisollo	Pink	32	0.31								0										0
18-Apr-22	Okisollo	Pink	34	0.39								0										0
18-Apr-22	Okisollo	Pink	42	0.67								0										0
18-Apr-22	Okisollo	Pink	35	0.37								0										0
18-Apr-22	Okisollo	Pink	33	0.35								0										0
18-Apr-22	Okisollo	Pink	32	0.35								0		1								1
18-Apr-22	Okisollo	Pink	39	0.59								0										0
18-Apr-22	Okisollo	Pink	30	0.33								0		1								1
18-Apr-22	Okisollo	Pink	40	0.84								0										0
18-Apr-22	Okisollo	Pink	34	0.39								0										0
18-Apr-22	Okisollo	Pink	36	0.51								0										0
18-Apr-22	Okisollo	Pink	31	0.31								0										0
18-Apr-22	Okisollo	Pink	35	0.38								0										0
18-Apr-22	Okisollo	Pink	40	0.76								0										0
18-Apr-22	Okisollo	Pink	39	0.63								0										0
18-Apr-22	Okisollo	Pink	32	0.28								0										0
18-Apr-22	Okisollo	Pink	30	0.22								0										0
18-Apr-22	Okisollo	Pink	32	0.35								0										0
18-Apr-22	Owen Bay	Chum	50	1.46								0										0
18-Apr-22	Owen Bay	Chum	50	1.46								0										0
18-Apr-22	Owen Bay	Chum	47	1.24								0										0
18-Apr-22	Owen Bay	Chum	55	2.05								0										0
18-Apr-22	Owen Bay	Chum	53	1.95								0										0
18-Apr-22	Owen Bay	Chum	55	1.78								0										0
18-Apr-22	Owen Bay	Chum	61	2.56								0										0
18-Apr-22	Owen Bay	Chum	54	1.73								0										0
18-Apr-22	Owen Bay	Chum	57	2.31								0										0
18-Apr-22	Owen Bay	Chum	50	1.62								0										0
18-Apr-22	Owen Bay	Chum	46	1.16								0										0
18-Apr-22	Owen Bay	Chum	56	2.09								0										0
18-Apr-22	Owen Bay	Chum	48	1.49								0										0
18-Apr-22	Owen Bay	Chum	64	2.88								0										0
18-Apr-22	Owen Bay	Chum	54	2.07								0										0
18-Apr-22	Owen Bay	Chum	55	2.16								0										0
18-Apr-22	Owen Bay	Chum	51	1.6								0										0
18-Apr-22	Owen Bay	Chum	58	2.61								0										0



Date of seine	Location	Fish Species	Length (mm)	Weight (g)	LEP Co	LEP C1	LEP C2	LEP PAM	LEP PAF	LEP AM	LEP AF	LEP Total	Cal Co	Cal C1	Cal C2	Cal C3	Cal C4	CAL PAM	CALP AF	CAL AM	CAL AF	CAL Total
18-Apr-22	Owen Bay	Chum	59	2.3								0										0
18-Apr-22	Owen Bay	Chum	67	2.94								0										0
18-Apr-22	Owen Bay	Chum	48	1.61								0										0
18-Apr-22	Owen Bay	Chum	45	1.05								0										0
18-Apr-22	Owen Bay	Chum	53	1.7								0										0
18-Apr-22	Owen Bay	Chum	66	3.58								0										0
18-Apr-22	Owen Bay	Chum	45	1.11								0										0
18-Apr-22	Owen Bay	Chum	59	2.12								0				1						1
18-Apr-22	Owen Bay	Chum	54	1.55								0										0
18-Apr-22	Owen Bay	Chum	52	1.63								0										0
18-Apr-22	Owen Bay	Chum	50	1.46								0										0
18-Apr-22	Owen Bay	Chum	48	1.49								0										0
18-Apr-22	Primary 1	Pink	38	0.48								0										0
18-Apr-22	Primary 1	Pink	34	0.33								0										0
18-Apr-22	Primary 1	Pink	34	0.44								0										0
18-Apr-22	Primary 1	Pink	40	0.48								0										0
18-Apr-22	Primary 1	Pink	48	0.91								0										0
18-Apr-22	Primary 1	Pink	31	0.27								0										0
18-Apr-22	Race Passage	Pink	39	0.53								0										0
18-Apr-22	Race Passage	Pink	40	0.64								0										0
18-Apr-22	Race Passage	Pink	40	0.66								0										0
18-Apr-22	Rock Bay	Chum	38	0.75								0										0
18-Apr-22	Rock Bay	Chum	39	0.66		1						1										0
18-Apr-22	Rock Bay	Chum	39	0.58								0										0
18-Apr-22	Rock Bay	Pink	33	0.39								0										0
18-Apr-22	Rock Bay	Pink	33	0.35								0										0
18-Apr-22	Rock Bay	Pink	32	0.3								0										0
18-Apr-22	Shoal Bay	Chum	48	1.26								0		1		1						2
18-Apr-22	Shoal Bay	Chum	36	0.44								0										0
18-Apr-22	Shoal Bay	Chum	35	0.41								0										0
18-Apr-22	Shoal Bay	Chum	38	0.58								0										0
18-Apr-22	Shoal Bay	Chum	39	0.66								0										0
18-Apr-22	Shoal Bay	Chum	42	0.84								0										0
18-Apr-22	Shoal Bay	Chum	34	0.41								0										0
18-Apr-22	Shoal Bay	Chum	44	0.92								0										0
18-Apr-22	Shoal Bay	Chum	37	0.6								0										0
18-Apr-22	Shoal Bay	Chum	38	0.6								0										0
18-Apr-22	Shoal Bay	Chum	37	0.53								0										0
18-Apr-22	Shoal Bay	Chum	38	0.57								0	2									2
18-Apr-22	Shoal Bay	Chum	36	0.48								0		1								1
18-Apr-22	Shoal Bay	Chum	41	0.79								0										0
18-Apr-22	Shoal Bay	Chum	33	0.38								0										0
18-Apr-22	Shoal Bay	Chum	37	0.59								0										0
18-Apr-22	Shoal Bay	Chum	36	0.51								0										0
18-Apr-22	Shoal Bay	Chum	47	1.2								0										0
18-Apr-22	Shoal Bay	Chum	42	0.93								0										0
18-Apr-22	Shoal Bay	Chum	41	0.69								0										0

Date of seine	Location	Fish Species	Length (mm)	Weight (g)	LEP Co	LEP C1	LEP C2	LEP PAM	LEP PAF	LEP AM	LEP AF	LEP Total	Cal Co	Cal C1	Cal C2	Cal C3	Cal C4	CAL PAM	CALP AF	CAL AM	CAL AF	CAL Total
18-Apr-22	Shoal Bay	Chum	48	1.24								0										0
18-Apr-22	Shoal Bay	Chum	44	1								0		1								1
18-Apr-22	Shoal Bay	Chum	37	0.59								0	1	1								2
18-Apr-22	Shoal Bay	Chum	49	0.59								0										0
18-Apr-22	Shoal Bay	Chum	35	0.39								0										0
18-Apr-22	Shoal Bay	Chum	40	0.69								0										0
18-Apr-22	Shoal Bay	Chum	40	0.65								0										0
18-Apr-22	Shoal Bay	Chum	71	3.68								0										0
18-Apr-22	Shoal Bay	Chum	57	2.08			1					1										0
18-Apr-22	Shoal Bay	Chum	37	0.63								0										0
18-Apr-22	Shoal Bay	Chum	39	0.68								0										0
18-Apr-22	Wellbore Channel	Chum	36	0.52								0										0
18-Apr-22	Wellbore Channel	Chum	46	1.24								0										0
18-Apr-22	Wellbore Channel	Chum	59	2.21								0										0
18-Apr-22	Wellbore Channel	Chum	32	0.26								0										0
18-Apr-22	Wellbore Channel	Chum	41	0.76								0										0
18-Apr-22	Wellbore Channel	Chum	38	0.53								0										0
18-Apr-22	Wellbore Channel	Chum	38	0.61								0										0
18-Apr-22	Wellbore Channel	Chum	45	1.04								0										0
18-Apr-22	Wellbore Channel	Chum	38	0.67								0										0
18-Apr-22	Wellbore Channel	Chum	37	0.52								0										0
18-Apr-22	Wellbore Channel	Chum	34	0.39								0										0
18-Apr-22	Wellbore Channel	Chum	38	0.6								0										0
18-Apr-22	Wellbore Channel	Chum	47	1.25								0										0
18-Apr-22	Wellbore Channel	Chum	41	0.8								0										0
18-Apr-22	Wellbore Channel	Chum	45	1.08								0										0
18-Apr-22	Wellbore Channel	Chum	42	0.77		1						1										0
18-Apr-22	Wellbore Channel	Chum	45	1.02								0										0
18-Apr-22	Wellbore Channel	Chum	34	0.44								0										0
18-Apr-22	Wellbore Channel	Chum	37	0.61								0										0
18-Apr-22	Wellbore Channel	Chum	32	0.31								0										0
18-Apr-22	Wellbore Channel	Chum	38	0.55	1							1										0
18-Apr-22	Wellbore Channel	Chum	34	0.38								0										0
18-Apr-22	Wellbore Channel	Chum	39	0.58								0										0
18-Apr-22	Wellbore Channel	Chum	38	0.63								0										0
18-Apr-22	Wellbore Channel	Chum	38	0.68								0										0
18-Apr-22	Wellbore Channel	Chum	45	1.1								0										0
18-Apr-22	Wellbore Channel	Chum	35	0.55								0										0
18-Apr-22	Wellbore Channel	Chum	46	1.24								0										0
18-Apr-22	Wellbore Channel	Chum	38	0.6								0										0
18-Apr-22	Wellbore Channel	Chum	41	1.05								0										0
18-Apr-22	Wellbore Channel	Chum	33	0.36								0										0
19-Apr-22	Francisco Point	Chum	30	0.29								0										0
19-Apr-22	Francisco Point	Chum	30	0.35								0										0
19-Apr-22	Francisco Point	Chum	34	0.43								0										0
19-Apr-22	Francisco Point	Chum	35	0.45								0										0
19-Apr-22	Francisco Point	Chum	38	0.6								0										0



Date of seine	Location	Fish Species	Length (mm)	Weight (g)	LEP Co	LEP C1	LEP C2	LEP PAM	LEP PAF	LEP AM	LEP AF	LEP Total	Cal Co	Cal C1	Cal C2	Cal C3	Cal C4	CAL PAM	CALP AF	CAL AM	CAL AF	CAL Total
19-Apr-22	Francisco Point	Pink	32	0.26								0										0
19-Apr-22	Francisco Point	Pink	33	0.29								0										0
19-Apr-22	Francisco Point	Pink	32	0.25								0										0
19-Apr-22	Francisco Point	Pink	32	0.26								0										0
19-Apr-22	Francisco Point	Pink	33	0.28								0										0
19-Apr-22	Francisco Point	Pink	32	0.27								0										0
19-Apr-22	Francisco Point	Pink	31	0.27								0										0
19-Apr-22	Francisco Point	Pink	31	0.33								0										0
19-Apr-22	Francisco Point	Pink	31	0.24								0										0
19-Apr-22	Francisco Point	Pink	31	0.27								0										0
19-Apr-22	Francisco Point	Pink	31	0.32								0										0
19-Apr-22	Francisco Point	Pink	31	0.27								0										0
19-Apr-22	Francisco Point	Pink	30	0.27								0										0
19-Apr-22	Francisco Point	Pink	30	0.24								0										0
19-Apr-22	Francisco Point	Pink	33	0.33								0										0
19-Apr-22	Francisco Point	Pink	33	0.38								0										0
19-Apr-22	Raza	Chum	41	0.64								0										0
19-Apr-22	Raza	Chum	58	1.99								0										0
19-Apr-22	Raza	Chum	47	1.05								0										0
19-Apr-22	Raza	Chum	47	1.02								0										0
19-Apr-22	Raza	Chum	40	0.69								0										0
19-Apr-22	Raza	Chum	36	0.5								0										0
19-Apr-22	Raza	Chum	44	0.96								0										0
19-Apr-22	Raza	Chum	45	1.18								0								1		1
19-Apr-22	Raza	Chum	42	0.64								0										0
19-Apr-22	Raza	Chum	48	1.15								0										0
19-Apr-22	Raza	Chum	44	0.86								0										0
19-Apr-22	Raza	Chum	40	0.63								0										0
19-Apr-22	Raza	Chum	40	0.64								0										0
19-Apr-22	Raza	Chum	39	0.65								0										0
19-Apr-22	Raza	Chum	44	0.84								0										0
19-Apr-22	Raza	Chum	50	1.15								0								1		1
19-Apr-22	Raza	Chum	38	0.56								0										0
19-Apr-22	Raza	Chum	50	1.3								0										0
19-Apr-22	Raza	Chum	38	0.52								0										0
19-Apr-22	Raza	Chum	37	0.52								0										0
19-Apr-22	Raza	Chum	44	0.91								0										0
19-Apr-22	Raza	Chum	38	0.59								0										0
19-Apr-22	Raza	Chum	44	0.81								0										0
19-Apr-22	Raza	Chum	37	0.58								0								1		1
19-Apr-22	Raza	Chum	38	0.58								0										0
19-Apr-22	Raza	Chum	38	0.55								0										0
19-Apr-22	Raza	Chum	41	0.66								0										0
19-Apr-22	Raza	Chum	39	0.56								0										0
19-Apr-22	Raza	Chum	35	0.4								0										0
19-Apr-22	Raza	Chum	46	0.95								0								1		1
19-Apr-22	Raza	Pink	34	0.36								0										0

Date of seine	Location	Fish Species	Length (mm)	Weight (g)	LEP Co	LEP C1	LEP C2	LEP PAM	LEP PAF	LEP AM	LEP AF	LEP Total	Cal Co	Cal C1	Cal C2	Cal C3	Cal C4	CAL PAM	CALP AF	CAL AM	CAL AF	CAL Total
19-Apr-22	Raza	Pink	31	0.25								0										0
19-Apr-22	Raza	Pink	38	0.47								0										0
19-Apr-22	Raza	Pink	39	0.66								0								1		1
19-Apr-22	Raza	Pink	40	0.57								0										0
19-Apr-22	Raza	Pink	34	0.33								0										0
19-Apr-22	Raza	Pink	36	0.44								0										0
19-Apr-22	Raza	Pink	32	0.28								0										0
19-Apr-22	Raza	Pink	35	0.39								0										0
19-Apr-22	Raza	Pink	32	0.28								0								2		2
19-Apr-22	Raza	Pink	35	0.55								0										0
19-Apr-22	Raza	Pink	34	0.41								0										0
19-Apr-22	Raza	Pink	32	0.27								0										0
19-Apr-22	Raza	Pink	30	0.17								0										0
19-Apr-22	Raza	Pink	30	0.2								0								1		1
19-Apr-22	Raza	Pink	33	0.3								0										0
19-Apr-22	Raza	Pink	43	0.68								0									1	1
19-Apr-22	Raza	Pink	40	0.62								0										0
19-Apr-22	Raza	Pink	33	0.28								0										0
19-Apr-22	Raza	Pink	30	0.22								0										0
19-Apr-22	Raza	Pink	42	0.64								0										0
19-Apr-22	Raza	Pink	38	0.44								0										0
19-Apr-22	Raza	Pink	32	0.23								0										0
19-Apr-22	Raza	Pink	34	0.41								0										0
19-Apr-22	Raza	Pink	34	0.34								0										0
19-Apr-22	Raza	Pink	30	0.18								0									1	1
19-Apr-22	Raza	Pink	30	0.25								0										0
19-Apr-22	Raza	Pink	30	0.2								0										0
19-Apr-22	Raza	Pink	34	0.37								0										0
19-Apr-22	Raza	Pink	33	0.29								0										0
19-Apr-22	Raza North	Chum	38	0.48								0		1								1
19-Apr-22	Rebecca Spit	Chum	34	0.34								0										0
19-Apr-22	Rebecca Spit	Chum	34	0.4								0										0
19-Apr-22	Rebecca Spit	Chum	36	0.39								0										0
19-Apr-22	Rebecca Spit	Pink	31	0.28								0										0
19-Apr-22	Rebecca Spit	Pink	37	0.43								0										0
16-May-22	Bickley Bay	Chinook	100	12.74								0										0
16-May-22	Bickley Bay	Chum	88	7.23								0										0
16-May-22	Deepwater Bay	Chinook	84	7.07								0										0
16-May-22	Deepwater Bay	Chinook	81	6.88								0										0
16-May-22	Deepwater Bay	Chinook	77	5.78								0										0
16-May-22	Deepwater Bay	Chinook	83	6.3								0										0
16-May-22	Deepwater Bay	Chinook	100	11.88								0										0
16-May-22	Deepwater Bay	Chinook	99	12.64								0										0
16-May-22	Deepwater Bay	Chinook	95	11.55								0										0
16-May-22	Deepwater Bay	Chinook	89	9.15								0										0
16-May-22	Deepwater Bay	Chinook	91	10.5								0										0
16-May-22	Deepwater Bay	Chinook	75	5.4								0										0

Date of seine	Location	Fish Species	Length (mm)	Weight (g)	LEP Co	LEP C1	LEP C2	LEP PAM	LEP PAF	LEP AM	LEP AF	LEP Total	Cal Co	Cal C1	Cal C2	Cal C3	Cal C4	CAL PAM	CALP AF	CAL AM	CAL AF	CAL Total
16-May-22	Deepwater Bay	Chinook	88	8.78								0										0
16-May-22	Deepwater Bay	Chinook	92	11.64								0										0
16-May-22	Deepwater Bay	Chinook	92	10.65								0										0
16-May-22	Deepwater Bay	Chinook	97	12.15								0										0
16-May-22	Deepwater Bay	Chinook	95	11.4								0										0
16-May-22	Deepwater Bay	Chinook	100	12.84								0										0
16-May-22	Deepwater Bay	Chinook	100	11.22								0										0
16-May-22	Deepwater Bay	Chinook	75	6.15								0										0
16-May-22	Deepwater Bay	Chinook	82	6.86								0										0
16-May-22	Deepwater Bay	Chinook	90	8.63								0										0
16-May-22	Deepwater Bay	Chinook	91	8.34								0										0
16-May-22	Deepwater Bay	Chinook	82	8.62								0										0
16-May-22	Deepwater Bay	Chinook	86	7.47								0								1		1
16-May-22	Deepwater Bay	Chinook	93	12.36								0										0
16-May-22	Deepwater Bay	Chinook	80	6.98								0										0
16-May-22	Deepwater Bay	Chinook	90	9.17								0										0
16-May-22	Deepwater Bay	Chinook	90	10.03								0										0
16-May-22	Deepwater Bay	Chinook	90	9.69								0										0
16-May-22	Deepwater Bay	Chinook	91	9.28								0										0
16-May-22	Deepwater Bay	Chinook	86	8.3								0										0
16-May-22	Deepwater Bay	Chum	37	0.46								0										0
16-May-22	Deepwater Bay	Chum	41	0.9								0										0
16-May-22	Deepwater Bay	Chum	47	1.34								0										0
16-May-22	Deepwater Bay	Chum	46	1.1								0										0
16-May-22	Deepwater Bay	Chum	34	0.35								0										0
16-May-22	Deepwater Bay	Chum	43	1.1								0										0
16-May-22	Deepwater Bay	Chum	35	0.33								0										0
16-May-22	Deepwater Bay	Chum	43	0.89								0										0
16-May-22	Deepwater Bay	Chum	43	0.84								0										0
16-May-22	Deepwater Bay	Chum	48	1.15								0										0
16-May-22	Deepwater Bay	Chum	38	0.71								0										0
16-May-22	Deepwater Bay	Chum	41	0.81								0										0
16-May-22	Deepwater Bay	Chum	50	1.34								0										0
16-May-22	Deepwater Bay	Chum	48	1.43								0										0
16-May-22	Deepwater Bay	Chum	43	0.84								0										0
16-May-22	Deepwater Bay	Chum	58	2.35								0										0
16-May-22	Deepwater Bay	Chum	34	0.37								0										0
16-May-22	Deepwater Bay	Chum	42	0.88								0										0
16-May-22	Deepwater Bay	Chum	50	1.33								0										0
16-May-22	Deepwater Bay	Chum	40	0.79								0										0
16-May-22	Deepwater Bay	Chum	37	0.54								0										0
16-May-22	Deepwater Bay	Chum	38	0.68								0										0
16-May-22	Deepwater Bay	Chum	37	0.58								0										0
16-May-22	Deepwater Bay	Chum	43	0.96								0										0
16-May-22	Deepwater Bay	Chum	40	0.8								0										0
16-May-22	Deepwater Bay	Chum	44	1.03								0										0
16-May-22	Deepwater Bay	Chum	48	1.36								0										0

Date of seine	Location	Fish Species	Length (mm)	Weight (g)	LEP Co	LEP C1	LEP C2	LEP PAM	LEP PAF	LEP AM	LEP AF	LEP Total	Cal Co	Cal C1	Cal C2	Cal C3	Cal C4	CAL PAM	CALP AF	CAL AM	CAL AF	CAL Total
16-May-22	Deepwater Bay	Chum	46	1.18								0										0
16-May-22	Deepwater Bay	Chum	41	0.88								0										0
16-May-22	Deepwater Bay	Chum	41	0.72								0										0
16-May-22	Deepwater Bay	Coho	103	12.2								0										0
16-May-22	Deepwater Bay	Pink	39	0.63								0										0
16-May-22	Deepwater Bay	Pink	45	0.87								0										0
16-May-22	Deepwater Bay	Pink	43	0.82								0										0
16-May-22	Deepwater Bay	Pink	42	0.71								0										0
16-May-22	Deepwater Bay	Pink	36	0.44								0										0
16-May-22	Deepwater Bay	Pink	47	1								0										0
16-May-22	Deepwater Bay	Pink	45	0.86								0										0
16-May-22	Deepwater Bay	Pink	45	0.95								0										0
16-May-22	Deepwater Bay	Pink	37	0.51								0										0
16-May-22	Deepwater Bay	Pink	39	0.65								0										0
16-May-22	Deepwater Bay	Pink	42	0.74								0										0
16-May-22	Deepwater Bay	Pink	40	0.67								0										0
16-May-22	Deepwater Bay	Pink	41	0.78								0										0
16-May-22	Deepwater Bay	Pink	44	0.97								0										0
16-May-22	Deepwater Bay	Pink	47	1.17								0										0
16-May-22	Deepwater Bay	Pink	40	0.74								0										0
16-May-22	Deepwater Bay	Pink	44	0.88								0										0
16-May-22	Deepwater Bay	Pink	39	0.58								0										0
16-May-22	Deepwater Bay	Pink	49	1.23								0										0
16-May-22	Deepwater Bay	Pink	36	0.43								0										0
16-May-22	Deepwater Bay	Pink	46	0.97								0										0
16-May-22	Deepwater Bay	Pink	38	0.56								0										0
16-May-22	Deepwater Bay	Pink	38	0.61								0										0
16-May-22	Deepwater Bay	Pink	57	2.32								0										0
16-May-22	Deepwater Bay	Pink	42	0.84								0										0
16-May-22	Deepwater Bay	Pink	42	0.71								0										0
16-May-22	Deepwater Bay	Pink	39	0.53								0										0
16-May-22	Deepwater Bay	Pink	42	0.89								0										0
16-May-22	Deepwater Bay	Pink	42	0.78								0				1						1
16-May-22	Deepwater Bay	Pink	46	1.11								0										0
16-May-22	Discovery	Chum	58	1.95								0		1								1
16-May-22	Discovery	Pink	32	0.51								0										0
16-May-22	Fanny Bay	Chinook	45	1.05								0										0
16-May-22	Fanny Bay	Chinook	38	0.67								0										0
16-May-22	Fanny Bay	Chinook	45	1.02								0										0
16-May-22	Fanny Bay	Chinook	40	0.76								0										0
16-May-22	Fanny Bay	Chinook	39	0.69								0										0
16-May-22	Fanny Bay	Chinook	40	0.76								0										0
16-May-22	Fanny Bay	Chinook	38	0.71								0										0
16-May-22	Fanny Bay	Chinook	44	1.07								0										0
16-May-22	Fanny Bay	Chum	36	0.48								0										0
16-May-22	Fanny Bay	Chum	35	0.42								0										0
16-May-22	Fanny Bay	Chum	34	0.41								0										0

Date of seine	Location	Fish Species	Length (mm)	Weight (g)	LEP Co	LEP C1	LEP C2	LEP PAM	LEP PAF	LEP AM	LEP AF	LEP Total	Cal Co	Cal C1	Cal C2	Cal C3	Cal C4	CAL PAM	CALP AF	CAL AM	CAL AF	CAL Total
16-May-22	Fanny Bay	Chum	35	0.34								0										0
16-May-22	Fanny Bay	Chum	35	0.42								0										0
16-May-22	Fanny Bay	Chum	38	0.5								0										0
16-May-22	Fanny Bay	Chum	35	0.38								0										0
16-May-22	Fanny Bay	Chum	34	0.33								0										0
16-May-22	Fanny Bay	Chum	34	0.37								0										0
16-May-22	Fanny Bay	Pink	34	0.33								0										0
16-May-22	Knox Bay	Chum	45	1								0										0
16-May-22	Knox Bay	Chum	43	0.78								0										0
16-May-22	Knox Bay	Chum	43	0.87								0										0
16-May-22	Knox Bay	Chum	50	1.13								0										0
16-May-22	Knox Bay	Chum	48	1.08								0										0
16-May-22	Knox Bay	Chum	46	0.9								0										0
16-May-22	Knox Bay	Chum	43	0.75								0										0
16-May-22	Knox Bay	Chum	48	1.16								0										0
16-May-22	Knox Bay	Chum	44	0.82								0										0
16-May-22	Knox Bay	Chum	46	0.86								0										0
16-May-22	Knox Bay	Chum	44	0.82								0										0
16-May-22	Knox Bay	Chum	41	0.72								0										0
16-May-22	Knox Bay	Chum	39	0.55								0										0
16-May-22	Knox Bay	Coho	107	13.95								0										0
16-May-22	Knox Bay	Coho	108	14.39								0										0
16-May-22	Knox Bay	Coho	80	8.1								0										0
16-May-22	Knox Bay	Coho	82	8								0										0
16-May-22	Knox Bay	Coho	90	10.72								0										0
16-May-22	Knox Bay	Coho	85	8.42								0										0
16-May-22	Knox Bay	Coho	95	10.63								0										0
16-May-22	Knox Bay	Coho	109	17.93								0										0
16-May-22	Knox Bay	Coho	110	15.28								0										0
16-May-22	Knox Bay	Coho	76	5.49								0										0
16-May-22	Knox Bay	Coho	78	6.75								0										0
16-May-22	Knox Bay	Coho	82	6.01								0										0
16-May-22	Knox Bay	Coho	86	7.53								0										0
16-May-22	Knox Bay	Coho	86	8.31								0										0
16-May-22	Knox Bay	Coho	94	9.59								0										0
16-May-22	Knox Bay	Coho	78	6.33								0										0
16-May-22	Knox Bay	Coho	79	5.72								0										0
16-May-22	Knox Bay	Coho	89	7.32								0										0
16-May-22	Knox Bay	Coho	90	8.92								0										0
16-May-22	Knox Bay	Coho	92	9.17								0										0
16-May-22	Knox Bay	Coho	91	8.64								0										0
16-May-22	Knox Bay	Coho	95	9.87								0										0
16-May-22	Knox Bay	Coho	97	10.43								0										0
16-May-22	Knox Bay	Coho	83	6.44								0										0
16-May-22	Knox Bay	Coho	87	8.03								0										0
16-May-22	Knox Bay	Coho	94	9								0										0
16-May-22	Knox Bay	Coho	105	12.88								0										0

Date of seine	Location	Fish Species	Length (mm)	Weight (g)	LEP Co	LEP C1	LEP C2	LEP PAM	LEP PAF	LEP AM	LEP AF	LEP Total	Cal Co	Cal C1	Cal C2	Cal C3	Cal C4	CAL PAM	CALP AF	CAL AM	CAL AF	CAL Total
16-May-22	Knox Bay	Coho	85	7.62								0										0
16-May-22	Knox Bay	Coho	113	15.44								0										0
16-May-22	Knox Bay	Coho	90	8.07								0										0
16-May-22	Knox Bay	Pink	56	1.61								0										0
16-May-22	Knox Bay	Pink	50	1.12								0										0
16-May-22	Knox Bay	Pink	40	0.58								0										0
16-May-22	Nodales	Chum	46	0.98								0										0
16-May-22	Nodales	Chum	35	0.4								0										0
16-May-22	Nodales	Chum	44	0.64								0										0
16-May-22	Nodales	Chum	48	1.14								0										0
16-May-22	Nodales	Chum	43	0.74								0										0
16-May-22	Nodales	Chum	44	0.83								0										0
16-May-22	Nodales	Chum	41	0.68								0										0
16-May-22	Nodales	Chum	55	1.91								0				1	1					2
16-May-22	Nodales	Chum	43	0.8								0										0
16-May-22	Nodales	Chum	46	1.01								0										0
16-May-22	Nodales	Chum	47	0.98								0										0
16-May-22	Nodales	Chum	55	1.65		1						1										0
16-May-22	Nodales	Chum	48	0.98		1						1										0
16-May-22	Nodales	Chum	48	1.23								0										0
16-May-22	Nodales	Chum	46	1								0										0
16-May-22	Nodales	Chum	55	1.72								0		1								1
16-May-22	Nodales	Chum	44	0.86								0										0
16-May-22	Nodales	Chum	42	0.8								0										0
16-May-22	Nodales	Chum	50	1.28								0										0
16-May-22	Nodales	Chum	38	0.5								0										0
16-May-22	Nodales	Chum	48	1.22		1						1										0
16-May-22	Nodales	Chum	39	0.71								0										0
16-May-22	Nodales	Chum	45	1.02								0										0
16-May-22	Nodales	Chum	60	1.92			1					1										0
16-May-22	Nodales	Chum	40	0.64								0										0
16-May-22	Nodales	Chum	47	1.23								0										0
16-May-22	Nodales	Chum	45	0.93								0										0
16-May-22	Nodales	Chum	45	0.9								0										0
16-May-22	Nodales	Chum	58	1.9								0										0
16-May-22	Nodales	Chum	45	0.84								0										0
16-May-22	Nodales	Chum	50	1.36								0										0
16-May-22	Nodales	Pink	48	1.07								0		1								1
16-May-22	Nodales	Pink	38	0.39								0										0
16-May-22	Nodales	Pink	30	0.38								0										0
16-May-22	Nodales	Pink	49	1.01								0		1								1
16-May-22	Nodales	Pink	40	0.67			1					1										0
16-May-22	Nodales	Pink	55	1.54								0				1						1
16-May-22	Nodales	Pink	37	0.48								0										0
16-May-22	Nodales	Pink	55	1.55								0										0
16-May-22	Nodales	Pink	44	0.65								0		1								1
16-May-22	Nodales	Pink	55	1.83								0										0



Date of seine	Location	Fish Species	Length (mm)	Weight (g)	LEP Co	LEP C1	LEP C2	LEP PAM	LEP PAF	LEP AM	LEP AF	LEP Total	Cal Co	Cal C1	Cal C2	Cal C3	Cal C4	CAL PAM	CALP AF	CAL AM	CAL AF	CAL Total
16-May-22	Nodales	Pink	48	1								0										0
16-May-22	Nodales	Pink	55	1.4								0										0
16-May-22	Nodales	Pink	58	1.7								0					1					1
16-May-22	Nodales	Pink	45	0.78								0										0
16-May-22	Nodales	Pink	42	0.82								0										0
16-May-22	Nodales	Pink	44	0.78								0										0
16-May-22	Nodales	Pink	56	1.64								0										0
16-May-22	Nodales	Pink	38	0.54								0										0
16-May-22	Nodales	Pink	50	1.07								0										0
16-May-22	Nodales	Pink	38	0.55								0										0
16-May-22	Nodales	Pink	34	0.38								0										0
16-May-22	Nodales	Pink	40	0.59								0										0
16-May-22	Nodales	Pink	64	2.16								0										0
16-May-22	Nodales	Pink	35	0.4								0										0
16-May-22	Nodales	Pink	41	0.68								0										0
16-May-22	Nodales	Pink	44	0.76								0										0
16-May-22	Nodales	Pink	38	0.75								0										0
16-May-22	Nodales	Pink	45	0.97								0										0
16-May-22	Nodales	Pink	45	0.9								0										0
16-May-22	Okisollo	Chum	52	1.64								0										0
16-May-22	Okisollo	Chum	43	1.05								0		1								1
16-May-22	Okisollo	Chum	47	1.02								0										0
16-May-22	Okisollo	Chum	45	0.93								0		1								1
16-May-22	Okisollo	Chum	38	0.52								0										0
16-May-22	Okisollo	Chum	47	1.09								0										0
16-May-22	Okisollo	Chum	49	1.16								0										0
16-May-22	Okisollo	Chum	45	1.28								0										0
16-May-22	Okisollo	Chum	56	2.33								0										0
16-May-22	Okisollo	Chum	55	1.95			1					1										0
16-May-22	Okisollo	Chum	45	1.06								0										0
16-May-22	Okisollo	Chum	53	1.85								0										0
16-May-22	Okisollo	Chum	53	1.86								0										0
16-May-22	Okisollo	Chum	56	2.05								0										0
16-May-22	Okisollo	Chum	53	1.65								0										0
16-May-22	Okisollo	Chum	58	2.08								0										0
16-May-22	Okisollo	Pink	37	0.51								0										0
16-May-22	Okisollo	Pink	33	0.36								0										0
16-May-22	Okisollo	Pink	34	0.28								0										0
16-May-22	Owen Bay	Chinook	78	6.28								0										0
16-May-22	Owen Bay	Chum	71	3.73								0										0
16-May-22	Owen Bay	Chum	85	7.67								0										0
16-May-22	Owen Bay	Chum	88	8.05								0										0
16-May-22	Owen Bay	Chum	70	3.46								0										0
16-May-22	Owen Bay	Chum	87	7.46								0										0
16-May-22	Owen Bay	Chum	80	5.79								0										0
16-May-22	Owen Bay	Chum	80	6.01								0										0
16-May-22	Owen Bay	Chum	67	3.34								0										0

Date of seine	Location	Fish Species	Length (mm)	Weight (g)	LEP Co	LEP C1	LEP C2	LEP PAM	LEP PAF	LEP AM	LEP AF	LEP Total	Cal Co	Cal C1	Cal C2	Cal C3	Cal C4	CAL PAM	CALP AF	CAL AM	CAL AF	CAL Total
16-May-22	Owen Bay	Chum	85	7.8								0										0
16-May-22	Owen Bay	Chum	58	2.3								0										0
16-May-22	Owen Bay	Chum	65	3.41								0										0
16-May-22	Owen Bay	Chum	80	6								0										0
16-May-22	Owen Bay	Chum	82	5.3								0										0
16-May-22	Owen Bay	Chum	83	5.71								0										0
16-May-22	Owen Bay	Chum	92	9.96								0										0
16-May-22	Owen Bay	Chum	80	5.9								0										0
16-May-22	Owen Bay	Chum	74	4.18								0										0
16-May-22	Owen Bay	Chum	73	4.32								0										0
16-May-22	Owen Bay	Chum	75	4.77								0										0
16-May-22	Owen Bay	Chum	50	1.76								0										0
16-May-22	Owen Bay	Chum	76	6.07								0		1								1
16-May-22	Owen Bay	Chum	63	3.31								0										0
16-May-22	Owen Bay	Chum	83	7.65								0										0
16-May-22	Owen Bay	Chum	67	3.47								0										0
16-May-22	Owen Bay	Chum	82	6.68								0										0
16-May-22	Owen Bay	Chum	65	2.73								0										0
16-May-22	Owen Bay	Chum	60	2.82								0										0
16-May-22	Owen Bay	Chum	72	5.14								0										0
16-May-22	Owen Bay	Chum	85	6.27								0										0
16-May-22	Owen Bay	Chum	92	7.83								0										0
16-May-22	Owen Bay	Coho	108	17.61								0	1									1
16-May-22	Owen Bay	Coho	90	9.55								0										0
16-May-22	Owen Bay	Coho	86	8.27								0										0
16-May-22	Owen Bay	Coho	80	7.02								0										0
16-May-22	Owen Bay	Coho	102	14.15								0	1									1
16-May-22	Owen Bay	Coho	86	7.89								0										0
16-May-22	Owen Bay	Coho	83	8.16								0										0
16-May-22	Owen Bay	Coho	91	8.6								0										0
16-May-22	Owen Bay	Coho	100	12.18								0										0
16-May-22	Owen Bay	Coho	90	8.81								0										0
16-May-22	Owen Bay	Pink	52	1.59								0										0
16-May-22	Owen Bay	Pink	49	1.25		1						1										0
16-May-22	Owen Bay	Pink	42	0.8								0										0
16-May-22	Owen Bay	Pink	44	0.89								0										0
16-May-22	Shoal Bay	Chum	43	0.87								0										0
16-May-22	Shoal Bay	Chum	36	0.58								0										0
16-May-22	Shoal Bay	Chum	38	0.76								0										0
16-May-22	Shoal Bay	Chum	43	0.88								0										0
16-May-22	Shoal Bay	Chum	44	1.22								0										0
16-May-22	Shoal Bay	Chum	35	0.47								0										0
16-May-22	Shoal Bay	Chum	40	0.71								0										0
16-May-22	Shoal Bay	Chum	42	0.81								0										0
16-May-22	Shoal Bay	Chum	36	0.56	1							1										0
16-May-22	Shoal Bay	Chum	41	0.84								0										0
16-May-22	Shoal Bay	Chum	38	0.66								0										0



Date of seine	Location	Fish Species	Length (mm)	Weight (g)	LEP Co	LEP C1	LEP C2	LEP PAM	LEP PAF	LEP AM	LEP AF	LEP Total	Cal Co	Cal C1	Cal C2	Cal C3	Cal C4	CAL PAM	CALP AF	CAL AM	CAL AF	CAL Total
16-May-22	Shoal Bay	Chum	39	0.86								0										0
16-May-22	Shoal Bay	Chum	36	0.49								0										0
16-May-22	Shoal Bay	Chum	40	0.78								0										0
16-May-22	Shoal Bay	Chum	45	1.08								0										0
16-May-22	Shoal Bay	Chum	43	1.05								0										0
16-May-22	Shoal Bay	Chum	40	0.72								0										0
16-May-22	Shoal Bay	Chum	42	1.02								0										0
16-May-22	Shoal Bay	Chum	42	1.01								0										0
16-May-22	Shoal Bay	Chum	45	1.01								0										0
16-May-22	Shoal Bay	Chum	44	0.92								0										0
16-May-22	Shoal Bay	Chum	39	0.58								0	1	2	1							4
16-May-22	Shoal Bay	Chum	42	0.94								0										0
16-May-22	Shoal Bay	Chum	40	0.75								0										0
16-May-22	Shoal Bay	Chum	45	1.18								0										0
16-May-22	Shoal Bay	Chum	41	0.79								0										0
16-May-22	Shoal Bay	Chum	41	0.75								0										0
16-May-22	Shoal Bay	Chum	40	0.81								0										0
16-May-22	Shoal Bay	Chum	40	0.93								0										0
16-May-22	Shoal Bay	Pink	33	0.37								0										0
17-May-22	Francisco Point	Pink	32	0.39								0										0
17-May-22	Francisco Point	Pink	36	0.52								0										0
17-May-22	Francisco Point	Pink	36	0.46								0										0
17-May-22	Francisco Point	Pink	37	0.34								0										0
17-May-22	Francisco Point	Pink	33	0.45			1					1										0
17-May-22	Francisco Point	Pink	33	0.35								0										0
17-May-22	Francisco Point	Pink	34	0.39								0										0
17-May-22	Francisco Point	Pink	44	0.78								0										0
17-May-22	Francisco Point	Pink	38	0.53								0										0
17-May-22	Francisco Point	Pink	35	0.51								0										0
17-May-22	Francisco Point	Pink	32	0.39								0										0
17-May-22	Francisco Point	Pink	35	0.49								0										0
17-May-22	Francisco Point	Pink	34	0.46								0										0
17-May-22	Francisco Point	Pink	40	0.61								0		1								1
17-May-22	Francisco Point	Pink	31	0.33								0										0
17-May-22	Francisco Point	Pink	35	0.45			1					1										0
17-May-22	Francisco Point	Pink	33	0.3								0										0
17-May-22	Francisco Point	Pink	34	0.41								0										0
17-May-22	Francisco Point	Pink	35	0.42								0										0
17-May-22	Francisco Point	Pink	34	0.43								0										0
17-May-22	Francisco Point	Pink	38	0.51								0										0
17-May-22	Francisco Point	Pink	35	0.46								0										0
17-May-22	Francisco Point	Pink	35	0.56								0										0
17-May-22	Francisco Point	Pink	32	0.32								0										0
17-May-22	Francisco Point	Pink	31	0.38								0		1								1
17-May-22	Francisco Point	Pink	36	0.55			1					1		1								1
17-May-22	Francisco Point	Pink	36	0.42								0										0
17-May-22	Francisco Point	Pink	36	0.5								0										0

Date of seine	Location	Fish Species	Length (mm)	Weight (g)	LEP Co	LEP C1	LEP C2	LEP PAM	LEP PAF	LEP AM	LEP AF	LEP Total	Cal Co	Cal C1	Cal C2	Cal C3	Cal C4	CAL PAM	CALP AF	CAL AM	CAL AF	CAL Total
17-May-22	Francisco Point	Pink	30	0.31		1						1										0
17-May-22	Francisco Point	Pink	40	0.68								0										0
17-May-22	Francisco Point	Pink	40	0.78								0		1								1
17-May-22	Marina Island	Pink	35	0.43								0										0
17-May-22	Marina Island	Pink	54	1.56								0										0
17-May-22	Marina Island	Pink	35	0.38								0										0
17-May-22	Marina Island	Pink	32	0.23								0										0
17-May-22	Raza	Chum	37	0.52								0										0
17-May-22	Raza	Chum	50	1.26								0										0
17-May-22	Raza	Chum	37	0.56								0										0
17-May-22	Raza	Chum	37	0.5								0										0
17-May-22	Raza	Chum	38	0.6								0										0
17-May-22	Raza	Chum	35	0.45								0										0
17-May-22	Raza	Chum	40	0.75								0										0
17-May-22	Raza	Chum	38	0.55								0										0
17-May-22	Raza	Chum	41	0.78								0										0
17-May-22	Raza	Chum	38	0.59								0										0
17-May-22	Raza	Chum	37	0.52								0										0
17-May-22	Raza	Chum	40	0.6								0										0
17-May-22	Raza	Chum	40	0.68								0										0
17-May-22	Raza	Chum	39	0.57								0										0
17-May-22	Raza	Chum	40	0.73								0										0
17-May-22	Raza	Chum	40	0.75								0										0
17-May-22	Raza	Chum	39	0.68								0										0
17-May-22	Raza	Chum	35	0.39								0										0
17-May-22	Raza	Chum	37	0.54								0										0
17-May-22	Raza	Chum	37	0.47								0										0
17-May-22	Raza	Chum	34	0.4								0										0
17-May-22	Raza	Chum	37	0.53								0										0
17-May-22	Raza	Chum	37	0.5								0										0
17-May-22	Raza	Chum	41	0.72								0										0
17-May-22	Raza	Chum	36	0.51								0										0
17-May-22	Raza	Chum	40	0.68								0										0
17-May-22	Raza	Chum	43	0.9								0										0
17-May-22	Raza	Pink	37	0.5								0										0
17-May-22	Raza	Pink	39	0.59								0										0
17-May-22	Raza	Pink	38	0.53								0										0
17-May-22	Raza	Pink	40	0.77								0										0
17-May-22	Raza	Pink	37	0.52								0										0
17-May-22	Raza	Pink	31	0.24								0										0
17-May-22	Raza	Pink	40	0.69								0										0
17-May-22	Raza	Pink	32	0.33								0										0
17-May-22	Raza	Pink	37	0.54								0										0
17-May-22	Raza	Pink	40	0.66								0										0
17-May-22	Raza	Pink	38	0.57								0										0
17-May-22	Raza	Pink	54	1.79								0										0
17-May-22	Raza	Pink	39	0.58								0										0

Date of seine	Location	Fish Species	Length (mm)	Weight (g)	LEP Co	LEP C1	LEP C2	LEP PAM	LEP PAF	LEP AM	LEP AF	LEP Total	Cal Co	Cal C1	Cal C2	Cal C3	Cal C4	CAL PAM	CALP AF	CAL AM	CAL AF	CAL Total
17-May-22	Raza	Pink	32	0.33								0										0
17-May-22	Raza	Pink	42	0.8								0										0
17-May-22	Raza	Pink	46	1.05								0										0
17-May-22	Raza	Pink	37	0.5								0										0
17-May-22	Raza	Pink	40	0.72								0										0
17-May-22	Raza	Pink	37	0.62								0										0
17-May-22	Raza	Pink	33	0.3								0										0
17-May-22	Raza North	Chum	35	0.4								0										0
17-May-22	Raza North	Chum	35	0.46								0										0
17-May-22	Raza North	Chum	55	1.76								0										0
17-May-22	Raza North	Chum	35	0.54								0										0
17-May-22	Raza North	Chum	48	1.07			1					1										0
17-May-22	Raza North	Chum	41	0.71								0										0
17-May-22	Raza North	Chum	36	0.43								0										0
17-May-22	Raza North	Chum	50	1.35								0										0
17-May-22	Raza North	Chum	51	1.39								0		1								1
17-May-22	Raza North	Chum	56	1.84								0										0
17-May-22	Raza North	Chum	38	0.56								0										0
17-May-22	Raza North	Chum	35	0.46								0										0
17-May-22	Raza North	Chum	50	1.52								0										0
17-May-22	Raza North	Chum	35	0.37								0										0
17-May-22	Raza North	Chum	36	0.4								0										0
17-May-22	Raza North	Chum	60	2.53								0										0
17-May-22	Raza North	Chum	48	1.07								0										0
17-May-22	Raza North	Chum	40	0.65								0										0
17-May-22	Raza North	Chum	35	0.44								0										0
17-May-22	Raza North	Chum	35	0.31								0										0
17-May-22	Raza North	Chum	54	1.6								0										0
17-May-22	Raza North	Chum	34	0.38								0										0
17-May-22	Raza North	Chum	48	1.2								0										0
17-May-22	Raza North	Chum	44	1.85								0										0
17-May-22	Raza North	Chum	34	0.42								0										0
17-May-22	Raza North	Chum	35	0.36								0										0
17-May-22	Raza North	Chum	35	0.44								0										0
17-May-22	Raza North	Chum	46	0.91								0										0
17-May-22	Raza North	Chum	34	0.36								0										0
17-May-22	Raza North	Pink	30	0.23								0										0
17-May-22	Raza North	Pink	60	2.28								0										0
17-May-22	Raza North	Pink	58	1.7								0										0
17-May-22	Raza North	Pink	31	0.2								0										0
17-May-22	Raza North	Pink	48	0.98								0										0
17-May-22	Raza North	Pink	44	0.85								0		1								1
17-May-22	Raza North	Pink	42	0.76								0										0
17-May-22	Raza North	Pink	53	1.29								0										0
17-May-22	Raza North	Pink	55	1.73								0										0
17-May-22	Raza North	Pink	48	0.95								0										0
17-May-22	Raza North	Pink	44	0.97								0										0

Date of seine	Location	Fish Species	Length (mm)	Weight (g)	LEP Co	LEP C1	LEP C2	LEP PAM	LEP PAF	LEP AM	LEP AF	LEP Total	Cal Co	Cal C1	Cal C2	Cal C3	Cal C4	CAL PAM	CALP AF	CAL AM	CAL AF	CAL Total
17-May-22	Raza North	Pink	58	2.2								0										0
17-May-22	Raza North	Pink	49	1.13								0										0
17-May-22	Raza North	Pink	54	1.46								0										0
17-May-22	Raza North	Pink	50	1.41								0		1								1
17-May-22	Raza North	Pink	56	1.66								0										0
17-May-22	Raza North	Pink	59	1.99								0										0
17-May-22	Raza North	Pink	69	3.74								0										0
17-May-22	Raza North	Pink	43	0.78								0										0
17-May-22	Raza North	Pink	48	1.15								0										0
17-May-22	Raza North	Pink	44	0.9								0										0
17-May-22	Raza North	Pink	40	0.68								0										0
17-May-22	Raza North	Pink	30	0.26								0										0
17-May-22	Raza North	Pink	64	2.5								0										0
17-May-22	Raza North	Pink	56	1.85								0										0
17-May-22	Raza North	Pink	54	1.66								0		1								1
17-May-22	Raza North	Pink	38	0.59								0										0
17-May-22	Raza North	Pink	50	1.27								0		1								1
17-May-22	Raza North	Pink	56	2.05								0										0
17-May-22	Raza North	Pink	57	2.66								0										0
17-May-22	Raza North	Pink	46	0.99								0										0
17-May-22	Rebecca Spit	Coho	105	12.15								0		3								3
17-May-22	Viner Point	Chum	37	0.54								0		1								1
17-May-22	Viner Point	Chum	43	0.8								0										0
17-May-22	Viner Point	Chum	35	0.45								0										0
17-May-22	Viner Point	Chum	51	1.72								0										0
17-May-22	Viner Point	Chum	38	0.44								0										0
17-May-22	Viner Point	Chum	51	1.6								0			1							1
17-May-22	Viner Point	Chum	47	1.21								0										0
17-May-22	Viner Point	Chum	43	0.83	1							1										0
17-May-22	Viner Point	Chum	38	0.64								0										0
17-May-22	Viner Point	Chum	45	1.46								0										0
17-May-22	Viner Point	Chum	38	0.75								0										0
17-May-22	Viner Point	Chum	50	1.44								0		2	1							3
17-May-22	Viner Point	Chum	41	0.71	1							1										0
17-May-22	Viner Point	Chum	42	0.93								0										0
17-May-22	Viner Point	Chum	45	1.06								0					1					1
17-May-22	Viner Point	Chum	42	0.84								0										0
17-May-22	Viner Point	Chum	47	1.28								0										0
17-May-22	Viner Point	Chum	43	0.9								0										0
17-May-22	Viner Point	Chum	46	1.17								0			1							1
17-May-22	Viner Point	Chum	42	0.85								0										0
17-May-22	Viner Point	Chum	48	1.23								0										0
17-May-22	Viner Point	Chum	43	1.25								0								1		1
17-May-22	Viner Point	Chum	41	0.81			1					1										0
17-May-22	Viner Point	Chum	40	0.77								0										0
17-May-22	Viner Point	Chum	46	0.94								0										0
17-May-22	Viner Point	Chum	45	1.04								0										0

Date of seine	Location	Fish Species	Length (mm)	Weight (g)	LEP Co	LEP C1	LEP C2	LEP PAM	LEP PAF	LEP AM	LEP AF	LEP Total	Cal Co	Cal C1	Cal C2	Cal C3	Cal C4	CAL PAM	CALP AF	CAL AM	CAL AF	CAL Total
17-May-22	Viner Point	Chum	35	0.54								0										0
17-May-22	Viner Point	Chum	36	0.44								0										0
17-May-22	Viner Point	Chum	37	0.6			1					1										0
17-May-22	Viner Point	Pink	36	0.46								0										0
17-May-22	Viner Point	Pink	36	0.49	1							1										0
17-May-22	Viner Point	Pink	35	0.39								0										0
17-May-22	Viner Point	Pink	34	0.32								0										0
17-May-22	Viner Point	Pink	49	1.41								0										0
17-May-22	Viner Point	Pink	34	0.43	1							1										0
17-May-22	Viner Point	Pink	36	0.49								0										0
17-May-22	Viner Point	Pink	34	0.44								0										0
17-May-22	Viner Point	Pink	42	0.69								0		1								1
17-May-22	Viner Point	Pink	45	1.06	1							1										0
17-May-22	Viner Point	Pink	46	1.05		1	1					2										0
17-May-22	Viner Point	Pink	40	0.76								0		1								1
17-May-22	Viner Point	Pink	37	0.55								0		1								1
17-May-22	Viner Point	Pink	34	0.35								0		1								1
17-May-22	Viner Point	Pink	44	0.88								0										0
17-May-22	Viner Point	Pink	40	0.72								0		1								1
17-May-22	Viner Point	Pink	48	1.22								0										0
17-May-22	Viner Point	Pink	48	1.17								0										0
17-May-22	Viner Point	Pink	40	0.72								0			1							1
17-May-22	Viner Point	Pink	35	0.38								0										0
17-May-22	Viner Point	Pink	40	0.7								0			2		1					3
17-May-22	Viner Point	Pink	50	1.6								0										0
17-May-22	Viner Point	Pink	47	1.12								0		2								2
17-May-22	Viner Point	Pink	33	0.36								0										0
17-May-22	Viner Point	Pink	36	0.59	1							1										0
17-May-22	Viner Point	Pink	34	0.43								0										0
17-May-22	Viner Point	Pink	44	0.82			1					1										0
17-May-22	Viner Point	Pink	34	0.36								0										0
17-May-22	Viner Point	Pink	34	0.28								0										0
17-May-22	Viner Point	Pink	37	0.57								0	1									1
17-May-22	Viner Point	Pink	34	0.43								0										0
18-May-22	Bessborough Bay	Chum	68	3.59								0										0
18-May-22	Bessborough Bay	Chum	58	2.41								0										0
18-May-22	Bessborough Bay	Chum	43	0.94								0										0
18-May-22	Bessborough Bay	Chum	53	1.49								0										0
18-May-22	Bessborough Bay	Chum	45	1.01								0										0
18-May-22	Bessborough Bay	Chum	73	5.06								0										0
18-May-22	Bessborough Bay	Chum	53	1.81								0										0
18-May-22	Bessborough Bay	Chum	60	2.44								0										0
18-May-22	Bessborough Bay	Chum	55	2.01								0										0
18-May-22	Bessborough Bay	Chum	49	1.67								0										0
18-May-22	Bessborough Bay	Chum	72	4.96								0										0
18-May-22	Bessborough Bay	Chum	64	3.17								0										0
18-May-22	Bessborough Bay	Chum	60	2.86								0										0

Date of seine	Location	Fish Species	Length (mm)	Weight (g)	LEP Co	LEP C1	LEP C2	LEP PAM	LEP PAF	LEP AM	LEP AF	LEP Total	Cal Co	Cal C1	Cal C2	Cal C3	Cal C4	CAL PAM	CALP AF	CAL AM	CAL AF	CAL Total
18-May-22	Bessborough Bay	Chum	65	3.3								0										0
18-May-22	Bessborough Bay	Chum	53	1.95								0										0
18-May-22	Bessborough Bay	Chum	57	2.53								0										0
18-May-22	Bessborough Bay	Chum	68	4.27								0										0
18-May-22	Bessborough Bay	Chum	51	1.57								0										0
18-May-22	Bessborough Bay	Chum	54	1.88								0										0
18-May-22	Bessborough Bay	Chum	49	1.38								0										0
18-May-22	Bessborough Bay	Chum	67	3.74								0										0
18-May-22	Bessborough Bay	Chum	46	1.22								0										0
18-May-22	Bessborough Bay	Chum	44	1.08								0										0
18-May-22	Bessborough Bay	Chum	69	3.97								0										0
18-May-22	Bessborough Bay	Chum	42	0.85								0										0
18-May-22	Bessborough Bay	Chum	44	1.06								0										0
18-May-22	Bessborough Bay	Chum	68	4.36								0										0
18-May-22	Bessborough Bay	Chum	62	2.88								0										0
18-May-22	Bessborough Bay	Chum	60	2.6								0										0
18-May-22	Bessborough Bay	Chum	50	1.54								0										0
18-May-22	Bessborough Bay	Pink	39	0.59								0										0
18-May-22	Bessborough Bay	Pink	67	3.86								0										0
18-May-22	Bessborough Bay	Pink	54	1.59								0										0
18-May-22	Bessborough Bay	Pink	60	2.45								0										0
18-May-22	Bessborough Bay	Pink	43	0.82								0										0
18-May-22	Bessborough Bay	Pink	37	0.52								0										0
18-May-22	Bessborough Bay	Pink	51	1.31								0										0
18-May-22	Bessborough Bay	Pink	50	1.37								0										0
18-May-22	Bessborough Bay	Pink	55	1.79								0										0
18-May-22	Bessborough Bay	Pink	41	0.7								0										0
18-May-22	Bessborough Bay	Pink	53	1.56								0	1									1
18-May-22	Bessborough Bay	Pink	60	2.05								0										0
18-May-22	Bessborough Bay	Pink	50	1.57								0										0
18-May-22	Bessborough Bay	Pink	47	1.03				1				1										0
18-May-22	Bessborough Bay	Pink	55	1.85								0										0
18-May-22	Bessborough Bay	Pink	46	1.05								0										0
18-May-22	Bessborough Bay	Pink	58	2.06								0										0
18-May-22	Bessborough Bay	Pink	64	2.73								0										0
18-May-22	Bessborough Bay	Pink	42	0.69								0										0
18-May-22	Bessborough Bay	Pink	54	1.99								0										0
18-May-22	Bessborough Bay	Pink	37	0.51								0										0
18-May-22	Bessborough Bay	Pink	60	3.02								0										0
18-May-22	Bessborough Bay	Pink	58	1.29								0										0
18-May-22	Bessborough Bay	Pink	42	0.83								0										0
18-May-22	Bessborough Bay	Pink	53	1.73								0										0
18-May-22	Bessborough Bay	Pink	63	2.9								0										0
18-May-22	Bessborough Bay	Pink	74	5.05								0										0
18-May-22	Bessborough Bay	Pink	40	0.6								0										0
18-May-22	Bessborough Bay	Pink	43	0.83								0										0
18-May-22	Bessborough Bay	Pink	39	0.59								0										0



Date of seine	Location	Fish Species	Length (mm)	Weight (g)	LEP Co	LEP C1	LEP C2	LEP PAM	LEP PAF	LEP AM	LEP AF	LEP Total	Cal Co	Cal C1	Cal C2	Cal C3	Cal C4	CAL PAM	CALP AF	CAL AM	CAL AF	CAL Total
18-May-22	Chancellor	Chum	42	0.8								0										0
18-May-22	Chancellor	Chum	39	0.64								0										0
18-May-22	Chancellor	Chum	35	0.44								0										0
18-May-22	Chancellor	Chum	49	1.48								0										0
18-May-22	Chancellor	Chum	48	1.26								0										0
18-May-22	Chancellor	Chum	49	1.4								0										0
18-May-22	Chancellor	Chum	37	0.63								0										0
18-May-22	Chancellor	Chum	35	0.61								0										0
18-May-22	Chancellor	Chum	43	1.07								0										0
18-May-22	Chancellor	Chum	43	1								0										0
18-May-22	Chancellor	Chum	42	0.95								0										0
18-May-22	Chancellor	Chum	40	0.83								0										0
18-May-22	Chancellor	Chum	33	0.38								0										0
18-May-22	Chancellor	Chum	50	1.49								0										0
18-May-22	Chancellor	Chum	39	0.75								0										0
18-May-22	Chancellor	Chum	50	1.44								0										0
18-May-22	Chancellor	Chum	54	1.91								0										0
18-May-22	Chancellor	Chum	46	1.14								0										0
18-May-22	Chancellor	Chum	42	0.89								0										0
18-May-22	Chancellor	Chum	45	1.16								0										0
18-May-22	Chancellor	Chum	52	1.99								0										0
18-May-22	Chancellor	Chum	44	0.94								0										0
18-May-22	Chancellor	Chum	56	2.15								0										0
18-May-22	Chancellor	Chum	55	2.01								0										0
18-May-22	Chancellor	Chum	34	0.37								0										0
18-May-22	Chancellor	Chum	52	1.75								0										0
18-May-22	Chancellor	Chum	45	1.01								0										0
18-May-22	Chancellor	Chum	46	1.28								0										0
18-May-22	Chancellor	Chum	54	1.98								0		1								1
18-May-22	Chancellor	Chum	48	1.46								0										0
18-May-22	Chancellor	Pink	49	1.48								0										0
18-May-22	Primary 1	Chinook	40	0.81								0										0
18-May-22	Sunderland	Coho	80	7.27								0			1							1
18-May-22	Wellbore Channel	Chinook	73	5								0										0
18-May-22	Wellbore Channel	Chum	60	2.75								0										0
18-May-22	Wellbore Channel	Coho	79	6.65								0										0