

# Wild Juvenile Salmonid Monitoring Program 2023 Esperanza Inlet, Nootka Sound, BC

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## Summary

Beach seine sampling was conducted on behalf of Grieg Seafood BC Ltd in Esperanza Inlet in 2023. Sampling was completed to monitor sea lice abundance, prevalence, and intensity on juvenile wild salmon within Esperanza Inlet, BC in support of the Aquaculture Stewardship Certification process for Grieg Seafood's finfish aquaculture sites in the area.

Sampling was conducted during four separate sampling events in April and May 2023, selected to coincide with the peak outmigration period of juvenile salmonids. Sampling was completed at 12 sites within or near Esperanza Inlet, BC. The sites were selected based on historical fish capture results and location relative to existing aquaculture sites in the area.

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 12 sites during the sampling events. Total catch numbers of each species were recorded. Water quality measurements including surface, one meter, and five meter depth water temperature, salinity, and dissolved oxygen were recorded at each site during each sampling event.

Collected sample fish were frozen and analyzed in the lab for the presence of sea lice by Mainstream Biological Consulting. Sea lice observed on the individual fish specimens during laboratory analysis were initially identified as either *Lepeophtheirus* spp. or *Caligus* sp. These lice are assumed to be *L. salmonis* and *C. 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 data summary report documents the observed sea lice infestation rate on retained wild juvenile salmon collected in or near to Esperanza Inlet, BC in 2023. A total of 309 fish samples underwent lab analysis for sea lice infestation in 2023 including 307 chum and two coho salmon. No pink, chinook, sockeye or Atlantic salmon were captured during sampling completed in Esperanza, BC in 2023. A total of 105 individuals were found to be infested with sea lice in the total sample population, resulting in a calculated sea lice prevalence of 34.0 % in 2023. A total of 256 sea lice were found during laboratory analysis resulting in an abundance of 0.83 and an average intensity of 2.4 for the salmon sample population.

Chum salmon smolts were captured in significantly greater numbers than coho salmon. A total of 602 chum salmon were captured, representing 99.7 % of all captured salmonids. Of the 602 chum captured, 307 were retained for lab analysis for sea lice infestation. A total of 105 chum smolts were found to be infested with a total of 256 sea lice resulting in a calculated prevalence of 34.2 %, abundance of 0.83 and an average intensity of 2.4 for the chum salmon sample population.

Two coho salmon were captured, representing 0.3 % of all captured salmonids. Two coho salmon were captured and retained for lab analysis for sea lice infestation. None of the coho smolts were found to be infested with sea lice resulting in a calculated prevalence, abundance and average intensity of zero.

A total of 256 *Lepeophtheirus salmonis* sea lice of various life stages were identified on 105 juvenile chum salmon. No *Caligus clemensi* sea lice were identified on the chum or coho salmon sample populations.

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## 1.0 Introduction

Beach seine sampling was conducted at 12 sites in or near to Esperanza Inlet, BC (Figure 1) to capture wild juvenile salmon on behalf of Grieg Seafood BC Ltd. Retained fish were analyzed in the lab for sea lice infestation. Four sampling events were completed between April 18, 2023, and May 30, 2023. Timing was selected to coincide with the estimated peak outmigration of juvenile salmonids in Esperanza Inlet, BC.

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* (*Caligus 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 *L. salmonis* natural hosts on the Pacific coast have been found to include Pacific salmon, threespine stickleback and Pacific herring. During this analysis, *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 Caligidae genera have similar life histories and developmental stages (Kabata, 1972; Johnson and Albright, 1991a). Sea lice hatch from eggs and go through two free-swimming naupilii stages before developing into an infectious free-swimming copepodid. The copepodids attach to their host and develop through several 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 become motile and are no longer attached to their hosts by the frontal filament. The sea lice can now 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 known to influence sea lice development, growth, survival and reproductive rate. In British Columbia, surface seawater temperatures range from approximately 6 °C to 13 °C. Research on sea lice abundance conducted in the Broughton Archipelago and elsewhere on the coast of British Columbia indicates that surface water temperature during the winter months does not appear to hinder the season abundance of *L. salmonis* (Saksida et al. 2007a, b). The rate of development and the generation times for *C. elongates* are strongly temperature dependent (Tully, 1992) and although this research has not been conducted, similar relationships with water temperature may 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).

Grieg Seafood BC Ltd. requested monitoring of sea lice abundance, prevalence, and intensity on juvenile wild salmon in Esperanza Inlet, BC in support of Aquaculture Stewardship Certification for their aquaculture sites within the area. This data summary report documents the observed sea lice infestation rates on juvenile salmonids collected in Esperanza Inlet, BC in 2023. This is the tenth year that sampling was completed in Esperanza Inlet by Grieg Seafood BC Ltd.

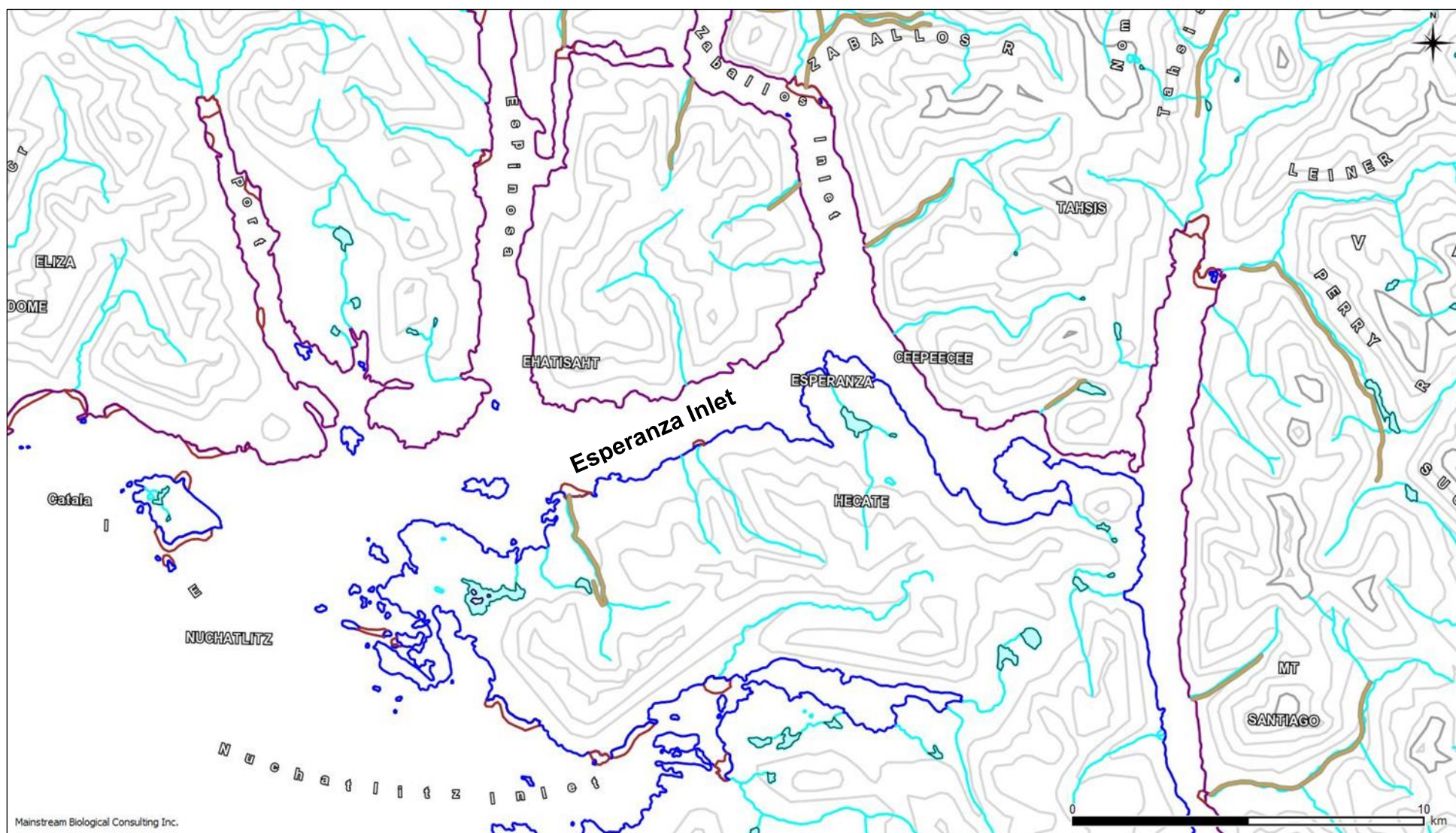


Figure 1: An overview map showing the location of Esperanza Inlet on the west coast of northern Vancouver Island, BC.

## 2.0 Methods

Juvenile salmonids were collected from twelve sites in Esperanza, BC. These sites were chosen based on their locations relative to existing Grieg Seafood finfish aquaculture tenures (Figure 2). The sites were sampled four times in 2023 between April 18, 2023, and May 30, 2023.

### 2.1 Site Locations

Of the 12 sampling sites, four sites were located in Hecate Channel, four sites were located in Zeballos Inlet, and four sites were located in Esperanza Inlet. Field GPS coordinates collected at the sampling sites are provided in Table 1.

Table 1: The site number and locations of the 12 beach seine sites where fish were collected for sea lice analysis in Esperanza Inlet, BC in 2023.

Site Name	Coordinates		
	Site #	Latitude North	Longitude West
McBride Bay	1	49 51.430	126 45.094
Hecate Channel	2	49 52.121	126 45.813
Steamer Point	3	49 53.057	126 47.396
Saltery Bay	4	49 51.784	126 48.687
Ehatisaht Creek	5	49 52.542	126 51.048
Esperanza Inlet	6	49 52.875	126 50.221
Cliff Cove	7	49 53.556	126 49.091
Zeballos Inlet	8	49 54.634	126 48.184
Zeballos North	9	49 56.523	126 49.056
Little Zeballos River	10	49 57.139	126 48.391
Barr Creek	11	49 55.011	126 47.223
Lutes	12	49 53.477	126 46.308

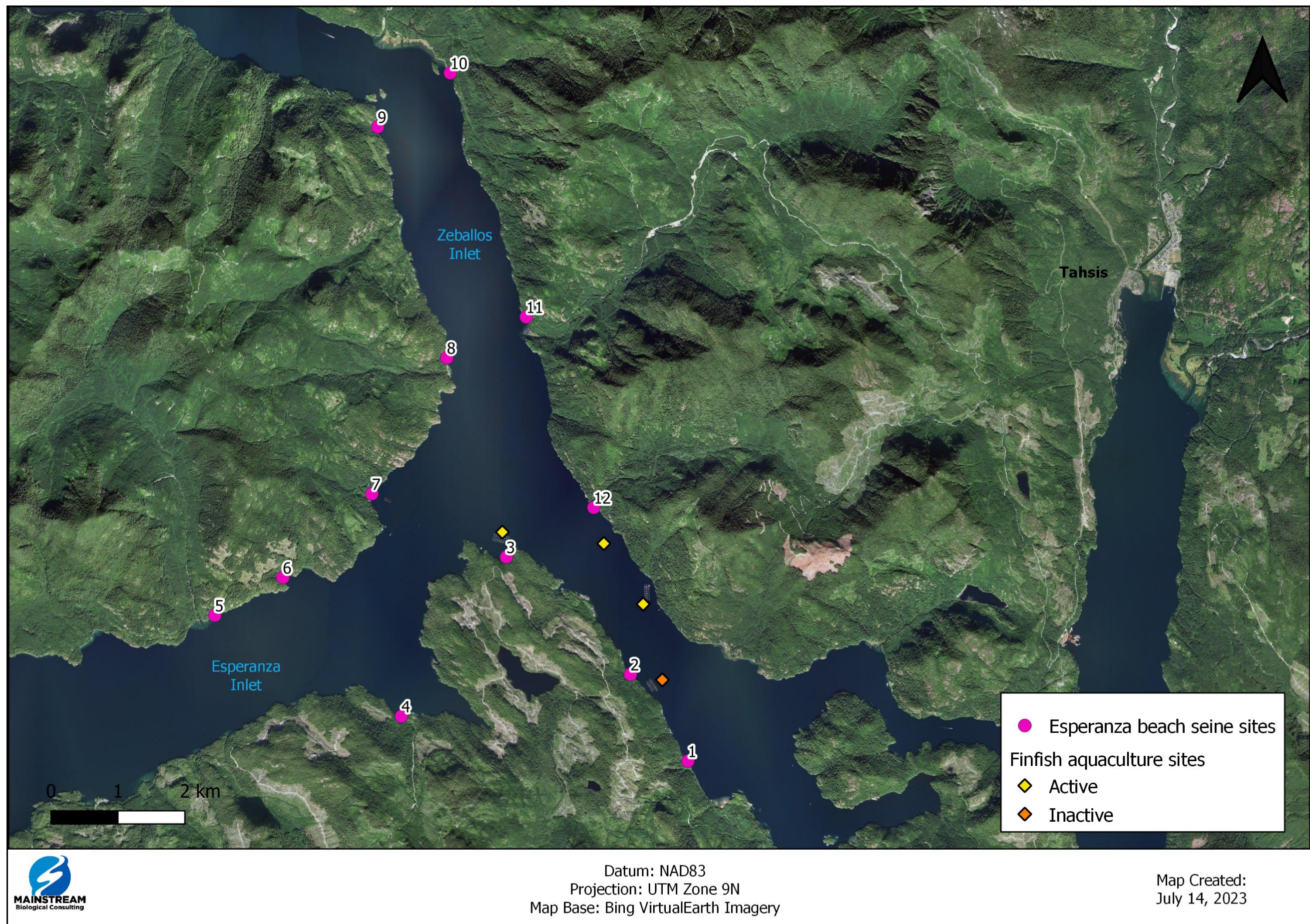


Figure 2: The locations of the 12 beach seine sites in Esperanza Inlet, BC sampled in 2023.

## 2.2 Field Procedures

Procedures used by Mainstream Biological Consulting during 2023 sampling were adapted from procedures for beach seining, fish collection and field data recording utilized by the Department of Fisheries and Oceans (DFO).

An 18 ft Boston Whaler powered by a 60 horsepower outboard motor was used to access sampling 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, with the centre bunt consisting of one-quarter inch diameter diamond mesh, and two side panels (wings) consisting of half-inch diameter diamond mesh. Floats were attached every 30 cm along the top-line and a lead line provided weight along the bottom of the net.

A three person crew conducted the beach seine sets. All beaches were approached slowly by boat and one crewmember was put ashore with one end of the net towline. The onshore crewmember held the towline at one side of the sample site, while the second crewmember ensured the net deployed smoothly off the bow or side of the boat as the third crewmember backed the boat in a wide semicircle towards the opposite side of the sample site. When the net was fully deployed, the second crewmember 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, surface, one meter and five meter depth water quality data was collected for temperature, salinity and dissolved oxygen using a YSI Pro Quatro Probe.

Crewmembers retrieved the net evenly from opposite ends, ensuring that the lead line remained as close to the bottom as possible. 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 any 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 contained the captured fish in the water so that they could be sampled.

The two shore crew members collected individual fish from the bunt to ensure that captured fish remained in the net for as short a period of time as possible. The net was manipulated as necessary in response to changing tides to ensure the captured fish remained in sufficient water to minimize contact with the net or with other fish.

Where possible, a total of 30 individuals from each target species were retained for sea lice infestation analysis. If less than 30 individuals of a target species were captured, all the captured fish were retained. Individual fish were randomly “swam” into an appropriately sized Whirlpac bag. Handling of fish was kept to a minimum.

Once all the fish for retention were collected, a total catch number was recorded for each species. Any fish remaining in the net were counted or estimated (if more than 300 individuals were present) and released. 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.

A standardized field form was used to record the following information for each beach seine set:

- Site name or number
- 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), salinity (ppt) and dissolved oxygen (mg/l) to one decimal place
- GPS coordinates
- The number of salmon mortalities.

Retained fish from each site were packaged separately in re-sealable bags and labelled with the site name or number, the date and sample numbers of each species. Sample bags were stored on ice in a cooler while on board the boat and transferred to a portable freezer on the support boat immediately following completion of the set.

Following each set the net was reloaded onto the bow of the boat. Crewmembers scanned the net for obvious holes, which were repaired immediately if found.

The above sampling procedures were repeated at each of the sample sites.

## **2.3 Laboratory Procedures**

Laboratory procedures for sea lice analysis were adapted from procedures demonstrated by Sheila Dawe and Eliah Kim at the Pacific Biological Station in Nanaimo, BC, during sea lice identification training that was conducted on April 1, 2004. Additional sea lice identification training by Paul Callow was conducted at the Pacific Biological Station in September 2007.

Fish samples were thawed immediately prior to analysis. Individual fish were identified to species and counted. Results of the lab identification and count were compared to the reported data found on the field data sheets to identify any errors.

A standardized data sheet was used to record sea lice analysis results for each site. The site and week number, sample date and number of fish and specimen groups present were recorded. The date of the lab analysis was also noted.

Once thawed, individual fish were removed from their bag using a pair of forceps at the caudal peduncle and placed in a petri dish. Each bag was labelled with an individual fish identification number. Each fish was then scanned for the presence of sea lice under a stereoscopic dissection microscope. The microscope was set at a magnification of 20X for the preliminary survey of each fish sample, and magnification was increased to up to 40X during individual sea lice identification.

Microscopic analysis of each individual fish began at the anterior end of the right side of the specimen. The head was examined first, after which a scan was made along the dorsal half of the specimen working towards the posterior end and the tail. The dorsal fin and caudal fin were lifted and expanded with a pair of forceps to check for lice. From the posterior end a return scan was made along the ventral half of the specimen back to the head. The anal fin, pelvic fin and pectoral fin were lifted and expanded, and the operculum was lifted. The fish was then flipped using a pair of forceps at the caudal peduncle and the procedure was repeated on the opposite side of the specimen.

Additional scans were made longitudinally down the fish if the entire depth of the fish could not be seen in a single pass. Any sea lice observed on the fish were removed and placed in a petri dish of saline solution.

Each Whirlpac bag was visually inspected after the removal of the fish for the presence of pre-adult or adult sea lice that may have become dislodged during handling. Any sea lice found in the sample bags were identified under the microscope using the same characteristics outlined above. These “loose” sea lice were recorded on the data sheet with the data for the corresponding specimen and it was assumed that the lice had come from that individual.

Sea lice were identified using characteristics outlined by Kabata (1972) and Johnson and Albright (1991a). Sea lice observed on individual fish were identified as either non-motile chalimus (including copepodid), or motile pre-adults and adults. Non-motile sea lice were identified as one of two chalimus stages for *L. salmonis* (Hamre et al., 2013) or four chalimus stages for *C. 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.

Chalimus were identified to species primarily by characteristics of the frontal filament. However, size, shape, genital development, and leg development were used as secondary identifying characteristics for speciation as well as primary indicators for life stage identification. Motile sea lice were identified to species by the presence or absence of lunules. If lunules were absent the louse was identified as *Lepeophtheirus* spp. The louse was identified as *Caligus* spp. if lunules were present.

Sea lice found on captured specimens have been assumed to be either *L. salmonis* or *C. clemensi* due to the lack of documented infestations of Pacific salmon by other species of sea lice (Jones and Nemec, 2004).

After microscopic analysis individual fish specimens were measured (fork length) in millimetres and weighed to the nearest tenth of a gram. Lengths and weights were recorded on the data sheet with the specimen’s corresponding sea lice analysis results. The fish were then returned to their respective individual bags and repackaged in the large re-sealable bags by site before being refrozen.

To allow for quality assurance of sea lice identification, all sea lice were placed in vials labelled with the corresponding fish identification number and preserved in 70% isopropyl alcohol. Ten percent of the deloused fish specimens were randomly selected by specimen number and retained. Both the preserved lice and retained deloused fish specimens will be kept at the office of Mainstream Biological Consulting in Campbell River for five years.

## 2.4 Data Analysis

Surface, one meter and five meter depth water quality data collected for temperature, salinity and dissolved oxygen was summarized to report the minimum and maximum values and averages for each sample week.

Beach seine fish sample composition was summarized by species and site for each sample period. The fork lengths and weights of the samples were summarized to present minimum and maximum values as well as averages. Sea lice infestation rates, including the overall number of infested fish and the number of sea lice identified, were determined for the sample population, and prevalence and abundance of sea lice were calculated. Prevalence was defined as the number of host fish found to have one or

more sea lice compared to the total number of host fish examined, while abundance was defined as the total number of sea lice observed compared to the total number of host fish examined. The intensity of sea lice infestation, as described by the average number of sea lice found on a single salmon infested 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 simple presentation and discussion of the number of sea lice found on fish specimens collected from each site during each of the sampling events.

## 3.0 Results

The following sections outline the results of beach seine collection and inspection of juvenile salmonids collected during the 2023 beach seine sampling in Esperanza Inlet, BC. Water quality field data is presented in Appendix I, beach seine fish capture data is included in Appendix II and data on the fish sample population including sea lice lab analysis results are listed in Appendix III.

### 3.1 Water Quality Parameters

Surface, one meter and five meter depth measurements of water temperature salinity and dissolved oxygen taken during beach seining at each of the 12 sites during the four sample periods are summarized in Table 2, Table 3 and Table 4 respectively and the complete dataset is included in Appendix I.

Recorded surface water temperatures ranged from a low of 5.9 °C recorded at Site 4 on April 18, 2023, to a high of 15.1 °C recorded at Site 1 on May 16, 2023 (Table 2; Appendix I). Calculated average surface water temperatures ranged from 7.2 °C on April 18, 2023, to 14.3 °C on May 16, 2023 (Table 2).

Recorded surface water salinity ranged from a low of 8.3 ppt recorded at Site 10 on May 16, 2023, to a high of 24.3 ppt recorded at Site 12 on May 30, 2023 (Table 2, Appendix I). Calculated average surface water salinity increased from 12.3 ppt on April 18, 2023, to 23.5 ppt on May 30, 2023 (Table 2).

Recorded surface dissolved oxygen (DO) ranged from a low of 7.7 mg/L recorded at Site 8, 9 and 10 on May 30, 2023, to a high of 12.6 mg/L recorded at Site 10 on April 18, 2023 (Table 2; Appendix I). Calculated average surface dissolved oxygen decreased over the sampling period from 11.7 mg/L on April 18, 2023, to 8.0 mg/L on May 30, 2023 (Table 2).

Recorded one meter water temperatures ranged from a low of 7.3 °C recorded at Site 1 on April 18, 2023, to a high of 14.8 °C recorded at Site 10 on May 16, 2023 (Table 3; Appendix I). Calculated average one meter water temperatures ranged from 8.0 °C on April 18, 2023, to 14.1 °C on May 16, 2023 (Table 3).

Recorded one meter water salinity ranged from a low of 10.3 ppt recorded at Site 10 on April 18, 2023, to a high of 24.5 ppt recorded at Site 12 on May 30, 2023 (Table 3; Appendix I). Calculated average one meter water salinity ranged from 17.1 ppt on May 2, 2023, to 23.7 ppt on May 30, 2023 (Table 3).

Recorded one meter dissolved oxygen (DO) ranged from a low of 7.7 mg/L recorded at Site 8 on May 30, 2023, to a high of 12.6 mg/L recorded at Site 8 on April 18, 2023 (Table 3; Appendix I). Calculated average one meter dissolved oxygen decreased over the sampling period from 11.2 mg/L on April 18, 2023, to 8.1 mg/L on May 30, 2023 (Table 3).

Recorded five meter water temperatures ranged from a low of 8.0 °C recorded at Site 12 on April 18, 2023, to a high of 13.8 °C recorded at Site 11 on May 16, 2023 (Table 4; Appendix I). Calculated average five meter water temperatures ranged from 8.4 °C on April 18, 2023, to 12.0 °C on May 30, 2023 (Table 4).

Recorded five meter water salinity ranged from a low of 15.9 ppt recorded at Site 10 on April 18, 2023, to a high of 26.0 ppt recorded at Site 9 on May 30, 2023 (Table 4;

Appendix I). Calculated average five meter water salinity ranged from 23.1 ppt on April 18, 2023, to 25.2 ppt on May 30, 2023 (Table 4).

Recorded five meter dissolved oxygen (DO) ranged from a low of 8.5 mg/L recorded at Site 4 on May 30, 2023, to a high of 13.4 mg/L recorded at Site 1 on May 16, 2023 (Table 4; Appendix I). Calculated average five meter dissolved oxygen ranged from 9.0 mg/L on May 30, 2023, to 11.1 mg/L on May 2, 2023 (Table 4).

Table 2: Surface water quality parameters collected during 2023 beach seine sampling in Esperanza Inlet, BC

Site	18-Apr-23			02-May-23			16-May-23			30-May-23		
	Salinity (ppt)	Temp. (°C)	DO (mg/L)	Salinity (ppt)	Temp. (°C)	DO (mg/L)	Salinity (ppt)	Temp. (°C)	DO (mg/L)	Salinity (ppt)	Temp. (°C)	DO (mg/L)
1	14.2	7.4	10.6	15.2	12.6	9.6	20.3	15.1	9.1	23.8	13.6	8.4
2	18.2	7.7	11.6	13.4	11.4	10.2	21.4	13.9	9.6	23.8	14.1	8.0
3	20.7	8.0	10.0	13.7	12.1	10.0	21.2	14.2	9.4	23.8	13.6	8.1
4	9.5	5.9	11.8	16.6	10.6	10.2	21.7	13.7	9.0	23.9	13.6	8.0
5	9.6	6.8	12.1	16.6	12.3	10.0	22.7	14.0	9.3	23.9	13.0	8.0
6	10.0	6.7	12.0	16.8	12.5	9.9	22.2	14.0	9.1	24.1	13.6	7.9
7	11.8	7.3	11.9	12.5	12.4	10.5	21.5	14.0	9.1	23.7	13.7	8.1
8	8.9	6.9	12.4	11.7	12.1	10.4	19.4	14.9	8.9	22.3	13.7	7.7
9	8.4	7.0	12.2	10.5	11.6	10.7	13.9	15.0	9.1	23.0	14.1	7.7
10	9.5	7.3	12.6	9.7	11.2	11.2	8.3	14.0	9.7	22.1	14.1	7.7
11	12.5	7.8	12.0	12.4	13.0	10.3	18.1	14.9	8.9	23.5	13.4	7.9
12	13.7	7.5	11.6	15.1	12.0	10.5	21.4	13.7	9.3	24.3	13.3	8.0
<b>Average</b>	<b>12.3</b>	<b>7.2</b>	<b>11.7</b>	<b>13.7</b>	<b>12.0</b>	<b>10.3</b>	<b>19.3</b>	<b>14.3</b>	<b>9.2</b>	<b>23.5</b>	<b>13.7</b>	<b>8.0</b>

Table 3: One meter water quality parameters collected during 2023 beach seine sampling in Esperanza Inlet, BC

Site	18-Apr-23			02-May-23			16-May-23			30-May-23		
	Salinity (ppt)	Temp. (°C)	DO (mg/L)	Salinity (ppt)	Temp. (°C)	DO (mg/L)	Salinity (ppt)	Temp. (°C)	DO (mg/L)	Salinity (ppt)	Temp. (°C)	DO (mg/L)
1	14.0	7.3	11.6	15.6	12.8	10.2	21.2	14.4	9.9	23.8	13.6	8.8
2	19.7	7.9	11.5	14.2	11.9	10.3	21.6	13.8	9.8	23.8	14.1	8.3
3	21.6	8.1	9.9	14.2	12.5	10.0	21.3	14.2	9.4	23.8	13.7	8.3
4	24.3	8.3	10.1	17.7	12.2	9.8	23.0	13.5	9.3	24.1	13.7	8.1
5	21.9	8.3	10.6	19.5	12.1	10.4	22.9	13.9	9.4	24.3	13.2	8.1
6	22.8	8.3	10.5	22.0	11.2	10.8	22.4	14.0	9.2	24.1	13.6	8.2
7	18.9	7.9	11.2	18.0	12.6	10.2	21.7	13.8	9.4	23.7	13.7	8.2
8	12.9	7.5	12.6	19.9	11.8	10.3	21.4	14.1	9.3	22.3	13.7	7.7
9	18.7	8.3	11.5	19.5	12.0	10.5	19.8	14.7	9.3	23.8	14.0	7.8
10	10.3	7.5	12.4	12.7	11.4	11.3	15.0	14.8	9.4	23.0	14.2	7.8
11	20.0	8.2	11.3	15.8	12.8	10.4	21.3	14.2	9.2	23.5	13.4	8.0
12	18.9	7.9	11.0	16.6	12.0	10.3	21.5	13.6	9.4	24.5	13.2	8.2
<b>Average</b>	<b>18.7</b>	<b>8.0</b>	<b>11.2</b>	<b>17.1</b>	<b>12.1</b>	<b>10.4</b>	<b>21.1</b>	<b>14.1</b>	<b>9.4</b>	<b>23.7</b>	<b>13.7</b>	<b>8.1</b>

Table 4: Five meter water quality parameters collected during 2023 beach seine sampling in Esperanza Inlet, BC.

Site	18-Apr-23			02-May-23			16-May-23			30-May-23		
	Salinity (ppt)	Temp. (°C)	DO (mg/L)	Salinity (ppt)	Temp. (°C)	DO (mg/L)	Salinity (ppt)	Temp. (°C)	DO (mg/L)	Salinity (ppt)	Temp. (°C)	DO (mg/L)
1	24.5	8.5	10.7	25.0	9.1	13.0	24.2	10.7	13.4	25.3	11.3	9.6
2	24.8	8.4	10.2	24.2	9.5	11.0	24.9	10.1	11.4	24.7	12.5	8.9
3	24.4	8.4	9.9	24.6	9.3	10.9	24.6	10.7	9.7	24.5	13.3	8.6
4	24.9	8.4	10.3	25.3	9.0	11.6	25.5	9.9	10.8	24.8	13.1	8.5
5	23.2	8.5	10.5	-	-	-	-	-	-	-	-	-
6	23.6	8.5	10.3	-	-	-	-	-	-	-	-	-
7	22.1	8.3	10.5	-	-	-	25.3	9.7	11.1	25.5	10.9	9.0
8	24.3	8.7	10.6	25.0	9.3	11.7	-	-	-	-	-	-
9	25.1	8.8	10.7	24.9	9.9	11.2	24.8	10.5	10.7	26.0	10.5	9.1
10	15.9	8.1	12.2	25.0	9.2	10.9	-	-	-	25.4	12.0	8.6
11	24.8	8.6	10.4	22.9	11.0	10.5	22.0	13.8	9.5	-	-	-
12	19.6	8.0	10.4	24.0	9.6	8.7	23.2	11.8	9.9	25.0	12.3	9.5
<b>Average</b>	<b>23.1</b>	<b>8.4</b>	<b>10.6</b>	<b>24.5</b>	<b>9.5</b>	<b>11.1</b>	<b>24.3</b>	<b>10.9</b>	<b>10.8</b>	<b>25.2</b>	<b>12.0</b>	<b>9.0</b>

### 3.2 Fish Sample Composition

A total of 604 salmonids were captured during beach seine sampling conducted in and near Esperanza Inlet, BC in 2023 (Table 5). A summary of the total number of salmonids captured and collected as specimens at each site over the collection period is presented in Table 6, with a complete dataset provided in Appendix II. Of the 604 fish captured, 307 individual chum and two coho salmon were retained for lab analysis (Table 5). No chinook, pink, sockeye or Atlantic salmon were captured during sampling completed in Esperanza, BC in 2023.

Chum salmon (*O. keta*) smolts were captured in significantly greater numbers than coho salmon. A total of 602 chum salmon were captured, representing 99.7 % of all captured salmonids.

Table 5: The total of collected individuals of each fish species captured in in Esperanza Inlet, BC between April 18, 2023, and May 30, 2023, and the percentage of the total capture population that they represent.

Common Name	Capture Total (% of total capture population)	Collection Totals	Collection %
chum salmon	602 (99.7 %)	307	51.0
coho salmon	2 (0.3 %)	2	100.0
<b>All Species</b>	<b>604</b>	<b>309</b>	<b>51.2</b>

Table 6: The number of captured fish (Capture Total) and the number of individual fish collected (Sample Total) from each of the 12 sample sites in Esperanza Inlet, BC between April 18, 2023, and May 30, 2023.

SITE	Chum		Coho		Capture Totals	Sample Totals
	Capture Total	Sample Total	Capture Total	Sample Total		
1	1	1	0	0	1	1
2	0	0	0	0	0	0
3	7	7	0	0	7	7
4	54	45	0	0	54	45
5	40	40	0	0	40	40
6	6	6	0	0	6	6
7	0	0	0	0	0	0
8	77	62	2	2	79	64
9	69	38	0	0	69	38
10	3	3	0	0	3	3
11	6	6	0	0	6	6
12	339	99	0	0	339	99
<b>Total</b>	<b>602</b>	<b>307</b>	<b>2</b>	<b>2</b>	<b>604</b>	<b>309</b>

### 3.3 Fish Sample Size Statistics

Summary statistics for weight and fork length were calculated for the sample population of juvenile salmonids. Length (Table 7) and weight (Table 8) data were summarized by sampling event for each species.

#### 3.3.1 Chum Salmon

Individual weight of the 307 chum smolts collected during the four sample events ranged from 0.1 g to 1.3 g and averaged 0.6 g (SD = 0.2). Fork Length of the chum smolts ranged from 25 mm to 48 mm and averaged 38 mm (SD = 3).

#### 3.3.2 Coho Salmon

Individual weight of the two coho smolts collected during the four sample events ranged from 4.2 g to 8.0 g and averaged 6.1 g (SD = 2.7). Fork length of the coho smolts ranged from 71 mm to 87 mm and averaged 79 mm (SD = 11).

Table 7: Average lengths of chum and coho salmon collected in Esperanza Inlet, BC in 2023, summarized by sampling event.

Species	Length (mm)			
	18-Apr-23	02-May-23	16-May-23	30-May-23
chum	38	37	39	39
coho	71	87	-	-

Table 8: Average weights of chum and coho salmon collected in Esperanza Inlet, BC in 2023, summarized by sampling event.

Species	Weight (g)			
	18-Apr-23	02-May-23	16-May-23	30-May-23
chum	0.6	0.6	0.7	0.8
coho	4.2	8.0	-	-

### 3.4 Sea Lice Infestation Rates

The results of laboratory analysis for the presence of sea lice on the fish sample population collected in Esperanza Inlet, BC in 2023 are presented in Table 9. A complete dataset is included in Appendix III. A total of 309 samples were collected at 12 sites in Esperanza, BC and inspected for sea lice infestation. A total of 105 fish in the sample population were found to be infested with 256 sea lice (Table 9).

The sea lice prevalence in the sample population collected in Esperanza, BC in 2023 was 34.0 %, the abundance was 0.83 and the average intensity was 2.4 (Table 9).

Table 9: Results of analysis for sea lice infestation on fish collected by beach seine in Esperanza Inlet, BC in 2023.

Species	Sample size (n)	Total number of lice observed	Total number of fish infested	Prevalence (%)	Abundance	Average Intensity
chum	307	256	105	34.2	0.83	2.4
coho	2	0	0	0.0	0.00	0.0
<b>Total</b>	<b>309</b>	<b>256</b>	<b>105</b>	<b>34.0</b>	<b>0.83</b>	<b>2.4</b>

### 3.4.1 Infestation Rates on Chum Salmon

The results of the laboratory analysis for sea lice infestation for chum salmon are presented by site in Table 10. A total of 105 chum salmon were found to be infested with 256 sea lice. The largest number of chum salmon infested with sea lice (57 chum) and the largest number of total sea lice (180 lice) found on samples were at Site 12 (Table 10). Sea lice were found on fish at every site except for Site 1 and Site 11. At least one chum salmon was collected from every site except for Site 2 and Site 7.

A total of 105 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= 307) collected in Esperanza, BC in 2023 was 34.2 %. Sea lice prevalence calculated by site for chum salmon is presented in Table 10. The highest sea lice prevalence (66.7 %) was at Site 6 and Site 10.

A total of 256 sea lice were identified during laboratory analysis of retained chum salmon. The abundance of sea lice on the chum salmon sample population (n= 307) collected in Esperanza, BC in 2023 was 0.83. The 256 sea lice identified were observed on 105 individual chum salmon resulting in an average intensity of 2.4. Sea lice abundance and intensity were calculated by site and are presented in Table 10. The highest sea lice abundance (1.82) and the highest intensity (3.2) were both found at Site 12.

Table 10: Total number, prevalence, abundance, and intensity of sea lice infestation on chum salmon collected in Esperanza Inlet, BC in 2023 summarized by sampling site.

Site	# of Chum Analyzed	# of Infested Chum	Average Weight of Infested Chum (g)	# of Lice	Prevalence (%)	Abundance	Average Intensity
1	1	0	-	0	0.0	0.00	0.0
2	0	0	-	0	0.0	0.00	0.0
3	7	3	0.5	3	42.9	0.43	1.0
4	45	10	0.6	15	22.2	0.33	1.5
5	40	18	0.7	33	45.0	0.83	1.8
6	6	4	0.6	9	66.7	1.50	2.3
7	0	0	-	0	0.0	0.00	0.0
8	62	8	0.6	8	12.9	0.13	1.0
9	38	3	0.9	3	7.9	0.08	1.0
10	3	2	0.9	5	66.7	1.67	2.5
11	6	0	-	0	0.0	0.00	0.0
12	99	57	0.7	180	57.6	1.82	3.2
<b>TOTAL</b>	<b>307</b>	<b>105</b>	<b>0.7</b>	<b>256</b>	<b>34.2</b>	<b>0.83</b>	<b>2.4</b>

### 3.5 Infestation by Sea Lice Species

A total of 256 *Lepeophtheirus salmonis* sea lice of various life stages were identified on 105 juvenile salmon (Appendix III). No *Caligus clemensi* sea lice were identified on the salmon sample population.

#### 3.5.1 Infestation by Life Stage on Chum Salmon

An analysis of the species of sea lice identified on the 105 infested chum salmon is presented in Table 11. A total of 256 *Lepeophtheirus salmonis* sea lice of various life stages were identified on 105 juvenile chum salmon (Appendix III). No *Caligus clemensi* sea lice were identified on the chum salmon sample population. The sea life species identified on chum salmon by site are also presented in Table 12.

Table 11: The number of *Lepeophtheirus salmonis* and *Caligus clemensi* in each life stage identified on the chum salmon sample population from Esperanza Inlet, BC, in 2023. LEP = *Lepeophtheirus salmonis* CAL= *Caligus clemensi*

Life Stage <sup>1</sup>	18-Apr-23	02-May-23	16-May-23	30-May-23
LEP Co	15	35	48	1
LEP C1	9	11	60	14
LEP C2	1	1	12	2
LEP NM No ID	0	0	5	0
LEP PAM	0	1	2	5
LEP PAF	0	0	9	22
LEP AM	0	0	2	1
LEP AF	0	0	0	0
<b>TOTAL LEP</b>	<b>25</b>	<b>48</b>	<b>138</b>	<b>45</b>
CAL Co	0	0	0	0
CAL C1	0	0	0	0
CAL C2	0	0	0	0
CAL C3	0	0	0	0
CAL C4	0	0	0	0
CAL NM No ID	0	0	0	0
CAL PAM	0	0	0	0
CAL PAF	0	0	0	0
CAL AM	0	0	0	0
CAL AF	0	0	0	0
<b>TOTAL CAL</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</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 12: The number of sea lice found on chum salmon collected in Esperanza Inlet, BC in 2023 summarized by sampling site. LEP = *Lepeophtheirus salmonis* CAL= *Caligus clemensi*

Site	Sample Period																TOTAL		
	18-Apr-23				02-May-23				16-May-23				30-May-23				# 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	# of Chum Analyzed	# of Infested Chum	# of LEP	# of CAL	# of Chum Analyzed	# of Infested Chum	# of LEP	# of CAL			
1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0
2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3	0	0	0	0	7	3	3	0	0	0	0	0	0	0	0	0	7	3	3
4	29	6	9	0	8	0	0	0	8	4	6	0	0	0	0	0	45	10	15
5	10	4	11	0	17	5	5	0	13	9	17	0	0	0	0	0	40	18	33
6	1	0	0	0	0	0	0	0	5	4	9	0	0	0	0	0	6	4	9
7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8	30	4	4	0	30	4	4	0	2	0	0	0	0	0	0	0	62	8	8
9	7	0	0	0	30	3	3	0	1	0	0	0	0	0	0	0	38	3	3
10	0	0	0	0	1	0	0	0	1	1	1	0	1	1	4	0	3	2	5
11	4	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	6	0	0
12	30	1	1	0	30	21	33	0	29	25	105	0	10	10	41	0	99	57	180
TOTAL	111	15	25	0	126	36	48	0	59	43	138	0	11	11	45	0	307	105	256

## 4.0 Conclusions

This report presents the data from the nineteenth year of beach seining and sea lice analysis conducted for wild juvenile salmonid in Esperanza, BC by Grieg Seafood. This report is limited to the summary and presentation of the 2023 collected data.

A total of 309 fish samples underwent lab analysis for sea lice infestation in 2023 including 307 chum and two coho salmon. No pink, chinook, sockeye or Atlantic salmon were captured during sampling completed in Esperanza, BC in 2023. A total of 105 individuals were found to be infested with sea lice in the total sample population, resulting in a calculated sea lice prevalence of 34.0 % in 2023. A total of 256 sea lice were found during laboratory analysis resulting in an abundance of 0.83 and an average intensity of 2.4 for the salmon sample population.

Chum salmon smolts were captured in significantly greater numbers than coho salmon. A total of 602 chum salmon were captured, representing 99.7 % of all captured salmonids. Of the 602 chum captured, 307 were retained for lab analysis for sea lice infestation. A total of 105 chum smolts were found to be infested with a total of 256 sea lice resulting in a calculated prevalence of 34.2 %, abundance of 0.83 and an average intensity of 2.4 for the chum salmon sample population.

Two coho salmon were captured, representing 0.3 % of all captured salmonids. Two coho salmon were captured and retained for lab analysis for sea lice infestation. None of the coho smolts were found to be infested with sea lice resulting in a calculated prevalence, abundance and average intensity of zero.

A total of 256 *Lepeophtheirus salmonis* sea lice of various life stages were identified on 105 juvenile chum salmon. No *Caligus clemensi* sea lice were identified on the chum or coho salmon sample populations.

## 5.0 References

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Appendix I – Field Data

Date	Time	Site Name	Salinity (ppt)	Temperature (deg C.)	DO (mg/L)	Salinity (ppt)	Temperature (deg C.)	DO (mg/L)	Salinity (ppt)	Temperature (deg C.)	DO (mg/L)
			0.2m	0.2m	0.2m	1.0m	1.0m	1.0m	5.0m	5.0m	5.0m
18-Apr-23	07:19	McBride Bay	14.2	7.4	10.6	14	7.3	11.6	24.5	8.5	10.7
18-Apr-23	07:40	Hecate Channel	18.2	7.7	11.6	19.7	7.9	11.5	24.8	8.4	10.2
18-Apr-23	08:05	Steamer Point	20.7	8	10	21.6	8.1	9.9	24.4	8.4	9.9
18-Apr-23	08:29	Saltery Bay	9.5	5.9	11.8	24.3	8.3	10.1	24.9	8.4	10.3
18-Apr-23	10:35	Ehatisaht Creek	9.6	6.8	12.1	21.9	8.3	10.6	23.2	8.5	10.5
18-Apr-23	11:03	Esperanza Inlet	10	6.7	12	22.8	8.3	10.5	23.6	8.5	10.3
18-Apr-23	11:19	Cliff Cove	11.8	7.3	11.9	18.9	7.9	11.2	22.1	8.3	10.5
18-Apr-23	11:39	Zeballos Inlet	8.9	6.9	12.4	12.9	7.5	12.6	24.3	8.7	10.6
18-Apr-23	12:03	Zeballos North	8.4	7	12.2	18.7	8.3	11.5	25.1	8.8	10.7
18-Apr-23	12:26	Little Zeballos River	9.5	7.3	12.6	10.3	7.5	12.4	15.9	8.1	12.2
18-Apr-23	12:41	Barr Creek	12.5	7.8	12	20	8.2	11.3	24.8	8.6	10.4
18-Apr-23	13:22	Lutes	13.7	7.5	11.6	18.9	7.9	11	19.6	8	10.4
02-May-23	06:45	McBride Bay	15.2	12.6	9.6	15.6	12.8	10.2	25	9.1	13
02-May-23	06:57	Hecate Channel	13.4	11.4	10.2	14.2	11.9	10.3	24.2	9.5	11
02-May-23	07:13	Steamer Point	13.7	12.1	10	14.2	12.5	10	24.6	9.3	10.9
02-May-23	07:30	Saltery Bay	16.6	10.6	10.2	17.7	12.2	9.8	25.3	9	11.6
02-May-23	09:10	Ehatisaht Creek	16.6	12.3	10	19.5	12.1	10.4	-	-	-
02-May-23	09:28	Esperanza Inlet	16.8	12.5	9.9	22	11.2	10.8	-	-	-
02-May-23	09:43	Cliff Cove	12.5	12.4	10.5	18	12.6	10.2	-	-	-
02-May-23	10:01	Zeballos Inlet	11.7	12.1	10.4	19.9	11.8	10.3	25	9.3	11.7
02-May-23	10:27	Zeballos North	10.5	11.6	10.7	19.5	12	10.5	24.9	9.9	11.2
02-May-23	10:58	Little Zeballos River	9.7	11.2	11.2	12.7	11.4	11.3	25	9.2	10.9
02-May-23	11:09	Barr Creek	12.4	13	10.3	15.8	12.8	10.4	22.9	11	10.5
02-May-23	11:27	Lutes	15.1	12	10.5	16.6	12	10.3	24	9.6	8.7
16-May-23	06:38	McBride Bay	20.3	15.1	9.1	21.2	14.4	9.9	24.2	10.7	13.4
16-May-23	07:02	Hecate Channel	21.4	13.9	9.6	21.6	13.8	9.8	24.9	10.1	11.4
16-May-23	07:15	Steamer Point	21.2	14.2	9.4	21.3	14.2	9.4	24.6	10.7	9.7
16-May-23	07:35	Saltery Bay	21.7	13.7	9	23	13.5	9.3	25.5	9.9	10.8
16-May-23	09:40	Ehatisaht Creek	22.7	14	9.3	22.9	13.9	9.4	-	-	-
16-May-23	09:53	Esperanza Inlet	22.2	14	9.1	22.4	14	9.2	-	-	-
16-May-23	10:17	Cliff Cove	21.5	14	9.1	21.7	13.8	9.4	25.3	9.7	11.1
16-May-23	10:30	Zeballos Inlet	19.4	14.9	8.9	21.4	14.1	9.3	-	-	-
16-May-23	10:56	Zeballos North	13.9	15	9.1	19.8	14.7	9.3	24.8	10.5	10.7
16-May-23	11:11	Little Zeballos River	8.3	14	9.7	15	14.8	9.4	-	-	-
16-May-23	11:26	Barr Creek	18.1	14.9	8.9	21.3	14.2	9.2	22	13.8	9.5
16-May-23	11:48	Lutes	21.4	13.7	9.3	21.5	13.6	9.4	23.2	11.8	9.9
30-May-23	06:45	McBride Bay	23.8	13.6	8.4	23.8	13.6	8.8	25.3	11.3	9.6
30-May-23	07:02	Hecate Channel	23.8	14.1	8	23.8	14.1	8.3	24.7	12.5	8.9
30-May-23	07:18	Steamer Point	23.8	13.6	8.1	23.8	13.7	8.3	24.5	13.3	8.6
30-May-23	07:32	Saltery Bay	23.9	13.6	8	24.1	13.7	8.1	24.8	13.1	8.5
30-May-23	09:00	Ehatisaht Creek	23.9	13	8	24.3	13.2	8.1	-	-	-
30-May-23	09:13	Esperanza Inlet	24.1	13.6	7.9	24.1	13.6	8.2	-	-	-
30-May-23	09:32	Cliff Cove	23.7	13.7	8.1	23.7	13.7	8.2	25.5	10.9	9
30-May-23	09:47	Zeballos Inlet	22.3	13.7	7.7	22.3	13.7	7.7	-	-	-
30-May-23	10:06	Zeballos North	23	14.1	7.7	23.8	14	7.8	26	10.5	9.1
30-May-23	10:19	Little Zeballos River	22.1	14.1	7.7	23	14.2	7.8	25.4	12	8.6
30-May-23	10:41	Barr Creek	23.5	13.4	7.9	23.5	13.4	8	-	-	-
30-May-23	10:56	Lutes	24.3	13.3	8	24.5	13.2	8.2	25	12.3	9.5

Appendix II – Capture and Collection Sample Totals

Date	Time	Site Name	Weather Comments	Tide Stage	Chum Captured	Chum Retained	Coho Captured	Coho Retained	Salmonid Mortalities	Comments
18-Apr-23	07:19	McBride Bay	Calm, overcast	Low	0	0	0	0	0	
18-Apr-23	07:40	Hecate Channel	Calm, overcast	Low	0	0	0	0	0	4 sculpins, jellyfish
18-Apr-23	08:05	Steamer Point	Calm, overcast	Low	0	0	0	0	0	
18-Apr-23	08:29	Saltery Bay	Calm, cloud, sun	Low	38	29	0	0	0	1 juvenile rockfish, 5 flatfish
18-Apr-23	10:35	Ehatisaht Creek	Light rain, slight swell	High	10	10	0	0	0	12 sculpins, abundant jellyfish
18-Apr-23	11:03	Esperanza Inlet	Calm, light rain	High	1	1	0	0	0	5 sculpins
18-Apr-23	11:19	Cliff Cove	Light rain, slight chop	High	0	0	0	0	0	Abundant jellyfish
18-Apr-23	11:39	Zeballos Inlet	Sun, cloud, chop	High	34	30	1	1	0	6 sculpins
18-Apr-23	12:03	Zeballos North	Cloudy, calm	High	7	7	0	0	0	4 sculpins
18-Apr-23	12:26	Little Zeballos River	Cloudy, calm	High	0	0	0	0	0	No bycatch
18-Apr-23	12:41	Barr Creek	Cloudy, calm	High	4	4	0	0	0	No bycatch
18-Apr-23	13:22	Lutes	Cloudy, calm	High	66	30	0	0	0	No bycatch
02-May-23	06:45	McBride Bay	Calm, sun	Low	1	1	0	0	0	1 adult sand lance, 1 sculpin
02-May-23	06:57	Hecate Channel	Calm, sun	Low	0	0	0	0	0	No bycatch
02-May-23	07:13	Steamer Point	Calm, sun	Mid	7	7	0	0	0	No bycatch
02-May-23	07:30	Saltery Bay	Calm, sun	Mid	8	8	0	0	0	1 juvenile rockfish, 1 shiner perch, 3 sculpins, 1 gunnel
02-May-23	09:10	Ehatisaht Creek	Slight chop, sun	Mid	17	17	0	0	0	5 sculpins
02-May-23	09:28	Esperanza Inlet	Calm, sun	High	0	0	0	0	0	1 sculpin
02-May-23	09:43	Cliff Cove	Calm, sun	High	0	0	0	0	0	2 sculpins, 2 crabs
02-May-23	10:01	Zeballos Inlet	Calm, sun	High	41	30	1	1	0	2 sculpins, 1 flatfish, 1 jellyfish
02-May-23	10:27	Zeballos North	Calm, sun	High	61	30	0	0	0	3 sculpins
02-May-23	10:58	Little Zeballos River	Calm, sun	High	1	1	0	0	0	No bycatch
02-May-23	11:09	Barr Creek	Calm, sun	High	2	2	0	0	0	4 juvenile lingcod, 2 juvenile flatfish
02-May-23	11:27	Lutes	Calm, sun	High	179	30	0	0	1	No bycatch
16-May-23	06:38	McBride Bay	Overcast, calm	Low	0	0	0	0	0	No bycatch
16-May-23	07:02	Hecate Channel	Overcast, calm	Low	0	0	0	0	0	1 kelp greenling, 1 juvenile lingcod
16-May-23	07:15	Steamer Point	Overcast, calm	Low	0	0	0	0	0	60 sand lances
16-May-23	07:35	Saltery Bay	Overcast, calm	Low	8	8	0	0	0	1 juvenile rockfish, 1 silver spotted sculpin
16-May-23	09:40	Ehatisaht Creek	Overcast, calm	Mid	13	13	0	0	0	17 pile perch, 20 sculpins
16-May-23	09:53	Esperanza Inlet	Overcast, calm	Mid	5	5	0	0	0	Abundant seaweed, no bycatch
16-May-23	10:17	Cliff Cove	Overcast, calm	High	0	0	0	0	0	No bycatch
16-May-23	10:30	Zeballos Inlet	Calm, sun	High	2	2	0	0	0	2 juvenile lingcod
16-May-23	10:56	Zeballos North	Overcast, calm	High	1	1	0	0	0	1 juvenile lingcod, 3 sculpins
16-May-23	11:11	Little Zeballos River	Overcast, calm	High	1	1	0	0	0	No bycatch
16-May-23	11:26	Barr Creek	Overcast, calm	High	0	0	0	0	0	12 juvenile lingcod, 4 flatfish, 1 pipefish
16-May-23	11:48	Lutes	Slight chop, overcast	High	84	29	0	0	0	1 trout, 20 fish kept for fish health
30-May-23	06:45	McBride Bay	Calm, overcast	Mid	0	0	0	0	0	40 herring, 1 shiner perch
30-May-23	07:02	Hecate Channel	Slight chop, overcast	Mid	0	0	0	0	0	1 sculpin
30-May-23	07:18	Steamer Point	Calm, overcast	Mid	0	0	0	0	0	8 shiner perch, 3 juvenile lingcod
30-May-23	07:32	Saltery Bay	Calm, overcast	Mid	0	0	0	0	0	1 sculpin, 4 juvenile lingcod
30-May-23	09:00	Ehatisaht Creek	Calm, sun, cloud	High	0	0	0	0	0	3 pile perch
30-May-23	09:13	Esperanza Inlet	Calm, sun, cloud	High	0	0	0	0	0	No bycatch
30-May-23	09:32	Cliff Cove	Choppy, sun, cloud	High	0	0	0	0	0	1 juvenile lingcod, 2 sculpins
30-May-23	09:47	Zeballos Inlet	Calm, sun, cloud	High	0	0	0	0	0	3 sculpins
30-May-23	10:06	Zeballos North	Calm, sun, cloud	High	0	0	0	0	0	3 sculpins
30-May-23	10:19	Little Zeballos River	Slight chop, sun, cloud	High	1	1	0	0	0	1 sculpin
30-May-23	10:41	Barr Creek	Calm, sun, cloud	High	0	0	0	0	0	1 pipefish, 2 juvenile lingcod
30-May-23	10:56	Lutes	Calm, wind, sun, cloud	High	10	10	0	0	0	No bycatch

Appendix III – Sea Lice Analysis

SITE #	SITE	WEEK	DATE COLLECTED	FISH SPECIES	LENGTH IN MM	WEIGHT IN G	LEP Co	LEP C1	LEP C2	LEP NM NOT ID	LEP PAM	LEP PAF	LEP AM	LEP AF	LEP MOT NOT ID	CAL Co	CAL C1	CAL C2	CAL C3	CAL C4	CAL NM NOT ID	CAL PAM	CAL_PAF	CAL AM	CAL AF	CAL MOT NOT ID	TOT LICE ID	TOT LEP	TOT CAL
1	McBride Bay	2	02-May-23	Chum	42	0.7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3	Steamer Point	2	02-May-23	Chum	36	0.4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3	Steamer Point	2	02-May-23	Chum	30	0.3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3	Steamer Point	2	02-May-23	Chum	40	0.7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3	Steamer Point	2	02-May-23	Chum	37	0.6	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0
3	Steamer Point	2	02-May-23	Chum	35	0.4	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0
3	Steamer Point	2	02-May-23	Chum	35	0.4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3	Steamer Point	2	02-May-23	Chum	37	0.5	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0
4	Saltery Bay	1	18-Apr-23	Chum	41	0.7	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	0
4	Saltery Bay	1	18-Apr-23	Chum	41	0.7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4	Saltery Bay	1	18-Apr-23	Chum	40	0.7	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0
4	Saltery Bay	1	18-Apr-23	Chum	36	0.4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4	Saltery Bay	1	18-Apr-23	Chum	39	0.6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4	Saltery Bay	1	18-Apr-23	Chum	38	0.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4	Saltery Bay	1	18-Apr-23	Chum	42	0.8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4	Saltery Bay	1	18-Apr-23	Chum	40	0.7	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	0
4	Saltery Bay	1	18-Apr-23	Chum	40	0.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4	Saltery Bay	1	18-Apr-23	Chum	47	1.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4	Saltery Bay	1	18-Apr-23	Chum	37	0.6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4	Saltery Bay	1	18-Apr-23	Chum	37	0.6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4	Saltery Bay	1	18-Apr-23	Chum	35	0.4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4	Saltery Bay	1	18-Apr-23	Chum	40	0.6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4	Saltery Bay	1	18-Apr-23	Chum	36	0.4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4	Saltery Bay	1	18-Apr-23	Chum	36	0.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4	Saltery Bay	1	18-Apr-23	Chum	38	0.6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4	Saltery Bay	1	18-Apr-23	Chum	37	0.6	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0
4	Saltery Bay	1	18-Apr-23	Chum	44	0.9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4	Saltery Bay	1	18-Apr-23	Chum	39	0.6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4	Saltery Bay	1	18-Apr-23	Chum	36	0.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

SITE #	SITE	WEEK	DATE COLLECTED	FISH SPECIES	LENGTH IN MM	WEIGHT IN G	LEP Co	LEP C1	LEP C2	LEP NM NOT ID	LEP PAM	LEP PAF	LEP AM	LEP AF	LEP MOT NOT ID	CAL Co	CAL C1	CAL C2	CAL C3	CAL C4	CAL NM NOT ID	CAL PAM	CAL_PAF	CAL AM	CAL AF	CAL MOT NOT ID	TOT LICE ID	TOT LEP	TOT CAL
4	Saltery Bay	1	18-Apr-23	Chum	37	0.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4	Saltery Bay	1	18-Apr-23	Chum	44	0.6	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	0
4	Saltery Bay	1	18-Apr-23	Chum	40	0.4	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0
4	Saltery Bay	1	18-Apr-23	Chum	37	0.6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4	Saltery Bay	1	18-Apr-23	Chum	38	0.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4	Saltery Bay	1	18-Apr-23	Chum	35	0.4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4	Saltery Bay	1	18-Apr-23	Chum	38	0.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4	Saltery Bay	1	18-Apr-23	Chum	38	0.6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4	Saltery Bay	3	16-May-23	Chum	37	0.4	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0
4	Saltery Bay	3	16-May-23	Chum	39	0.6	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0
4	Saltery Bay	3	16-May-23	Chum	41	0.7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4	Saltery Bay	3	16-May-23	Chum	37	0.6	0	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	3	0
4	Saltery Bay	3	16-May-23	Chum	34	0.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4	Saltery Bay	3	16-May-23	Chum	36	0.6	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0
4	Saltery Bay	3	16-May-23	Chum	35	0.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4	Saltery Bay	3	16-May-23	Chum	40	0.8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4	Saltery Bay	2	02-May-23	Chum	32	0.4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4	Saltery Bay	2	02-May-23	Chum	33	0.3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4	Saltery Bay	2	02-May-23	Chum	35	0.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4	Saltery Bay	2	02-May-23	Chum	35	0.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4	Saltery Bay	2	02-May-23	Chum	37	0.7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4	Saltery Bay	2	02-May-23	Chum	35	0.4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4	Saltery Bay	2	02-May-23	Chum	35	0.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4	Saltery Bay	2	02-May-23	Chum	35	0.4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5	Ehatisaht Creek	1	18-Apr-23	Chum	45	1.0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	6	0
5	Ehatisaht Creek	1	18-Apr-23	Chum	38	0.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5	Ehatisaht Creek	1	18-Apr-23	Chum	48	1.0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0
5	Ehatisaht Creek	1	18-Apr-23	Chum	43	0.8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5	Ehatisaht Creek	1	18-Apr-23	Chum	38	0.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5	Ehatisaht Creek	1	18-Apr-23	Chum	45	0.9	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0
5	Ehatisaht Creek	1	18-Apr-23	Chum	47	1.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

SITE #	SITE	WEEK	DATE COLLECTED	FISH SPECIES	LENGTH IN MM	WEIGHT IN G	LEP Co	LEP C1	LEP C2	LEP NM NOT ID	LEP PAM	LEP PAF	LEP AM	LEP AF	LEP MOT NOT ID	CAL Co	CAL C1	CAL C2	CAL C3	CAL C4	CAL NM NOT ID	CAL PAM	CAL_PAF	CAL AM	CAL AF	CAL MOT NOT ID	TOT LICE ID	TOT LEP	TOT CAL
5	Ehatisaht Creek	1	18-Apr-23	Chum	43	0.8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5	Ehatisaht Creek	1	18-Apr-23	Chum	41	0.6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5	Ehatisaht Creek	1	18-Apr-23	Chum	45	1.0	0	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	3	0	0
5	Ehatisaht Creek	2	02-May-23	Chum	32	0.3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5	Ehatisaht Creek	2	02-May-23	Chum	34	0.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5	Ehatisaht Creek	2	02-May-23	Chum	35	0.4	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0
5	Ehatisaht Creek	2	02-May-23	Chum	35	0.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5	Ehatisaht Creek	2	02-May-23	Chum	36	0.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5	Ehatisaht Creek	2	02-May-23	Chum	34	0.5	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0
5	Ehatisaht Creek	2	02-May-23	Chum	36	0.5	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0
5	Ehatisaht Creek	2	02-May-23	Chum	34	0.4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5	Ehatisaht Creek	2	02-May-23	Chum	40	0.6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5	Ehatisaht Creek	2	02-May-23	Chum	36	0.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5	Ehatisaht Creek	2	02-May-23	Chum	35	0.4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5	Ehatisaht Creek	2	02-May-23	Chum	37	0.6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5	Ehatisaht Creek	2	02-May-23	Chum	34	0.5	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0
5	Ehatisaht Creek	2	02-May-23	Chum	34	0.4	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0
5	Ehatisaht Creek	2	02-May-23	Chum	36	0.4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5	Ehatisaht Creek	2	02-May-23	Chum	35	0.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5	Ehatisaht Creek	2	02-May-23	Chum	36	0.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5	Ehatisaht Creek	3	16-May-23	Chum	40	0.8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5	Ehatisaht Creek	3	16-May-23	Chum	41	0.8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5	Ehatisaht Creek	3	16-May-23	Chum	38	0.7	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0
5	Ehatisaht Creek	3	16-May-23	Chum	40	0.7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5	Ehatisaht Creek	3	16-May-23	Chum	40	0.6	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	0	0
5	Ehatisaht Creek	3	16-May-23	Chum	38	0.7	2	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	3	0	0
5	Ehatisaht Creek	3	16-May-23	Chum	36	0.6	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0
5	Ehatisaht Creek	3	16-May-23	Chum	40	0.7	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0
5	Ehatisaht Creek	3	16-May-23	Chum	36	0.5	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0
5	Ehatisaht Creek	3	16-May-23	Chum	35	0.5	2	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	6	0	0
5	Ehatisaht Creek	3	16-May-23	Chum	43	0.8	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0

SITE #	SITE	WEEK	DATE COLLECTED	FISH SPECIES	LENGTH IN MM	WEIGHT IN G	LEP Co	LEP C1	LEP C2	LEP NM NOT ID	LEP PAM	LEP PAF	LEP AM	LEP AF	LEP MOT NOT ID	CAL Co	CAL C1	CAL C2	CAL C3	CAL C4	CAL NM NOT ID	CAL PAM	CAL_PAF	CAL AM	CAL AF	CAL MOT NOT ID	TOT LICE ID	TOT LEP	TOT CAL
5	Ehatisaht Creek	3	16-May-23	Chum	38	0.7	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	
5	Ehatisaht Creek	3	16-May-23	Chum	38	0.7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
6	Esperanza Inlet	1	18-Apr-23	Chum	33	0.4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
6	Esperanza Inlet	3	16-May-23	Chum	38	0.7	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	0	
6	Esperanza Inlet	3	16-May-23	Chum	38	0.7	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	0	
6	Esperanza Inlet	3	16-May-23	Chum	34	0.5	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	3	0	
6	Esperanza Inlet	3	16-May-23	Chum	34	0.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
6	Esperanza Inlet	3	16-May-23	Chum	35	0.6	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	0	
8	Zeballos Inlet	1	18-Apr-23	Coho	71	4.2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
8	Zeballos Inlet	1	18-Apr-23	Chum	37	0.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
8	Zeballos Inlet	1	18-Apr-23	Chum	40	0.6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
8	Zeballos Inlet	1	18-Apr-23	Chum	38	0.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
8	Zeballos Inlet	1	18-Apr-23	Chum	37	0.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
8	Zeballos Inlet	1	18-Apr-23	Chum	45	0.9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
8	Zeballos Inlet	1	18-Apr-23	Chum	40	0.6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
8	Zeballos Inlet	1	18-Apr-23	Chum	36	0.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
8	Zeballos Inlet	1	18-Apr-23	Chum	39	0.6	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	
8	Zeballos Inlet	1	18-Apr-23	Chum	39	0.6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
8	Zeballos Inlet	1	18-Apr-23	Chum	38	0.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
8	Zeballos Inlet	1	18-Apr-23	Chum	39	0.6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
8	Zeballos Inlet	1	18-Apr-23	Chum	38	0.6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
8	Zeballos Inlet	1	18-Apr-23	Chum	38	0.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
8	Zeballos Inlet	1	18-Apr-23	Chum	40	0.7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
8	Zeballos Inlet	1	18-Apr-23	Chum	39	0.7	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	
8	Zeballos Inlet	1	18-Apr-23	Chum	37	0.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
8	Zeballos Inlet	1	18-Apr-23	Chum	38	0.6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
8	Zeballos Inlet	1	18-Apr-23	Chum	36	0.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
8	Zeballos Inlet	1	18-Apr-23	Chum	38	0.6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
8	Zeballos Inlet	1	18-Apr-23	Chum	36	0.5	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	
8	Zeballos Inlet	1	18-Apr-23	Chum	36	0.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
8	Zeballos Inlet	1	18-Apr-23	Chum	41	0.7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	

SITE #	SITE	WEEK	DATE COLLECTED	FISH SPECIES	LENGTH IN MM	WEIGHT IN G	LEP Co	LEP C1	LEP C2	LEP NM NOT ID	LEP PAM	LEP PAF	LEP AM	LEP AF	LEP MOT NOT ID	CAL Co	CAL C1	CAL C2	CAL C3	CAL C4	CAL NM NOT ID	CAL PAM	CAL_PAF	CAL AM	CAL AF	CAL MOT NOT ID	TOT LICE ID	TOT LEP	TOT CAL
8	Zeballos Inlet	1	18-Apr-23	Chum	38	0.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
8	Zeballos Inlet	1	18-Apr-23	Chum	37	0.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
8	Zeballos Inlet	1	18-Apr-23	Chum	39	0.6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
8	Zeballos Inlet	1	18-Apr-23	Chum	37	0.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
8	Zeballos Inlet	1	18-Apr-23	Chum	41	0.7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
8	Zeballos Inlet	1	18-Apr-23	Chum	37	0.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
8	Zeballos Inlet	1	18-Apr-23	Chum	38	0.6	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0
8	Zeballos Inlet	1	18-Apr-23	Chum	41	0.6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
8	Zeballos Inlet	2	02-May-23	Coho	87	8.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
8	Zeballos Inlet	2	02-May-23	Chum	35	0.4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
8	Zeballos Inlet	2	02-May-23	Chum	38	0.6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
8	Zeballos Inlet	2	02-May-23	Chum	35	0.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
8	Zeballos Inlet	2	02-May-23	Chum	36	0.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
8	Zeballos Inlet	2	02-May-23	Chum	36	0.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
8	Zeballos Inlet	2	02-May-23	Chum	36	0.6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
8	Zeballos Inlet	2	02-May-23	Chum	36	0.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
8	Zeballos Inlet	2	02-May-23	Chum	37	0.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
8	Zeballos Inlet	2	02-May-23	Chum	35	0.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
8	Zeballos Inlet	2	02-May-23	Chum	35	0.4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
8	Zeballos Inlet	2	02-May-23	Chum	35	0.4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
8	Zeballos Inlet	2	02-May-23	Chum	36	0.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
8	Zeballos Inlet	2	02-May-23	Chum	39	0.8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
8	Zeballos Inlet	2	02-May-23	Chum	36	0.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
8	Zeballos Inlet	2	02-May-23	Chum	45	1.0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0
8	Zeballos Inlet	2	02-May-23	Chum	35	0.4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
8	Zeballos Inlet	2	02-May-23	Chum	34	0.4	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0
8	Zeballos Inlet	2	02-May-23	Chum	40	0.8	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0
8	Zeballos Inlet	2	02-May-23	Chum	27	0.2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
8	Zeballos Inlet	2	02-May-23	Chum	36	0.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
8	Zeballos Inlet	2	02-May-23	Chum	39	0.7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
8	Zeballos Inlet	2	02-May-23	Chum	39	0.7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	

SITE #	SITE	WEEK	DATE COLLECTED	FISH SPECIES	LENGTH IN MM	WEIGHT IN G	LEP Co	LEP C1	LEP C2	LEP NM NOT ID	LEP PAM	LEP PAF	LEP AM	LEP AF	LEP MOT NOT ID	CAL Co	CAL C1	CAL C2	CAL C3	CAL C4	CAL NM NOT ID	CAL PAM	CAL_PAF	CAL AM	CAL AF	CAL MOT NOT ID	TOT LICE ID	TOT LEP	TOT CAL
8	Zeballos Inlet	2	02-May-23	Chum	34	0.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8	Zeballos Inlet	2	02-May-23	Chum	35	0.4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8	Zeballos Inlet	2	02-May-23	Chum	34	0.3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8	Zeballos Inlet	2	02-May-23	Chum	37	0.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8	Zeballos Inlet	2	02-May-23	Chum	34	0.3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8	Zeballos Inlet	2	02-May-23	Chum	36	0.4	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0
8	Zeballos Inlet	2	02-May-23	Chum	38	0.6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8	Zeballos Inlet	2	02-May-23	Chum	34	0.4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8	Zeballos Inlet	3	16-May-23	Chum	35	0.4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8	Zeballos Inlet	3	16-May-23	Chum	38	0.6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9	Zeballos North	1	18-Apr-23	Chum	28	0.2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9	Zeballos North	1	18-Apr-23	Chum	38	0.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9	Zeballos North	1	18-Apr-23	Chum	36	0.4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9	Zeballos North	1	18-Apr-23	Chum	37	0.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9	Zeballos North	1	18-Apr-23	Chum	35	0.4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9	Zeballos North	1	18-Apr-23	Chum	37	0.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9	Zeballos North	1	18-Apr-23	Chum	27	0.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9	Zeballos North	2	02-May-23	Chum	37	0.4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9	Zeballos North	2	02-May-23	Chum	36	0.5	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0
9	Zeballos North	2	02-May-23	Chum	36	0.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9	Zeballos North	2	02-May-23	Chum	43	0.9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9	Zeballos North	2	02-May-23	Chum	42	0.8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9	Zeballos North	2	02-May-23	Chum	34	0.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9	Zeballos North	2	02-May-23	Chum	39	0.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9	Zeballos North	2	02-May-23	Chum	36	0.4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9	Zeballos North	2	02-May-23	Chum	47	1.1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0
9	Zeballos North	2	02-May-23	Chum	36	0.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9	Zeballos North	2	02-May-23	Chum	38	0.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9	Zeballos North	2	02-May-23	Chum	36	0.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9	Zeballos North	2	02-May-23	Chum	37	0.6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9	Zeballos North	2	02-May-23	Chum	40	0.7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

SITE #	SITE	WEEK	DATE COLLECTED	FISH SPECIES	LENGTH IN MM	WEIGHT IN G	LEP Co	LEP C1	LEP C2	LEP NM NOT ID	LEP PAM	LEP PAF	LEP AM	LEP AF	LEP MOT NOT ID	CAL Co	CAL C1	CAL C2	CAL C3	CAL C4	CAL NM NOT ID	CAL PAM	CAL_PAF	CAL AM	CAL AF	CAL MOT NOT ID	TOT LICE ID	TOT LEP	TOT CAL
9	Zeballos North	2	02-May-23	Chum	44	1.0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	
9	Zeballos North	2	02-May-23	Chum	37	0.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
9	Zeballos North	2	02-May-23	Chum	38	0.6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
9	Zeballos North	2	02-May-23	Chum	37	0.4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
9	Zeballos North	2	02-May-23	Chum	35	0.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
9	Zeballos North	2	02-May-23	Chum	40	0.7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
9	Zeballos North	2	02-May-23	Chum	37	0.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
9	Zeballos North	2	02-May-23	Chum	36	0.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
9	Zeballos North	2	02-May-23	Chum	30	0.3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
9	Zeballos North	2	02-May-23	Chum	36	0.4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
9	Zeballos North	2	02-May-23	Chum	36	0.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
9	Zeballos North	2	02-May-23	Chum	35	0.4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
9	Zeballos North	2	02-May-23	Chum	34	0.4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
9	Zeballos North	2	02-May-23	Chum	37	0.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
9	Zeballos North	2	02-May-23	Chum	38	0.6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
9	Zeballos North	2	02-May-23	Chum	40	0.7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
9	Zeballos North	3	16-May-23	Chum	36	0.4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
10	Little Zeballos River	3	16-May-23	Chum	42	0.9	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	
10	Little Zeballos River	4	30-May-23	Chum	39	0.8	0	2	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	4	4	0	
10	Little Zeballos River	2	02-May-23	Chum	41	0.7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
11	Barr Creek	1	18-Apr-23	Chum	37	0.4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
11	Barr Creek	1	18-Apr-23	Chum	37	0.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
11	Barr Creek	1	18-Apr-23	Chum	36	0.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
11	Barr Creek	1	18-Apr-23	Chum	38	0.4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
11	Barr Creek	2	02-May-23	Chum	35	0.4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
11	Barr Creek	2	02-May-23	Chum	25	0.2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
12	Lutes	1	18-Apr-23	Chum	41	0.8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
12	Lutes	1	18-Apr-23	Chum	35	0.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
12	Lutes	1	18-Apr-23	Chum	37	0.6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
12	Lutes	1	18-Apr-23	Chum	45	1.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
12	Lutes	1	18-Apr-23	Chum	36	0.6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
12	Lutes	1	18-Apr-23	Chum	36	0.6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
12	Lutes	1	18-Apr-23	Chum	36	0.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	

SITE #	SITE	WEEK	DATE COLLECTED	FISH SPECIES	LENGTH IN MM	WEIGHT IN G	LEP Co	LEP C1	LEP C2	LEP NM NOT ID	LEP PAM	LEP PAF	LEP AM	LEP AF	LEP MOT NOT ID	CAL Co	CAL C1	CAL C2	CAL C3	CAL C4	CAL NM NOT ID	CAL PAM	CAL_PAF	CAL AM	CAL AF	CAL MOT NOT ID	TOT LICE ID	TOT LEP	TOT CAL
12	Lutes	1	18-Apr-23	Chum	35	0.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12	Lutes	1	18-Apr-23	Chum	35	0.4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12	Lutes	1	18-Apr-23	Chum	36	0.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12	Lutes	1	18-Apr-23	Chum	39	0.6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12	Lutes	1	18-Apr-23	Chum	36	0.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12	Lutes	1	18-Apr-23	Chum	35	0.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12	Lutes	1	18-Apr-23	Chum	37	0.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12	Lutes	1	18-Apr-23	Chum	37	0.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12	Lutes	1	18-Apr-23	Chum	36	0.6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12	Lutes	1	18-Apr-23	Chum	35	0.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12	Lutes	1	18-Apr-23	Chum	37	0.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12	Lutes	1	18-Apr-23	Chum	35	0.4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12	Lutes	1	18-Apr-23	Chum	37	0.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12	Lutes	1	18-Apr-23	Chum	40	0.7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12	Lutes	1	18-Apr-23	Chum	36	0.6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12	Lutes	1	18-Apr-23	Chum	35	0.4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12	Lutes	1	18-Apr-23	Chum	38	0.6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12	Lutes	1	18-Apr-23	Chum	35	0.6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12	Lutes	1	18-Apr-23	Chum	26	0.2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12	Lutes	1	18-Apr-23	Chum	35	0.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12	Lutes	1	18-Apr-23	Chum	41	0.8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12	Lutes	1	18-Apr-23	Chum	34	0.4	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0
12	Lutes	1	18-Apr-23	Chum	35	0.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12	Lutes	2	02-May-23	Chum	45	1.0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	0
12	Lutes	2	02-May-23	Chum	40	0.7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12	Lutes	2	02-May-23	Chum	42	0.8	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0
12	Lutes	2	02-May-23	Chum	38	0.6	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0
12	Lutes	2	02-May-23	Chum	37	0.5	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0
12	Lutes	2	02-May-23	Chum	41	0.8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12	Lutes	2	02-May-23	Chum	44	1.0	1	4	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	6	0
12	Lutes	2	02-May-23	Chum	38	0.6	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0
12	Lutes	2	02-May-23	Chum	38	0.5	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0
12	Lutes	2	02-May-23	Chum	41	0.7	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0
12	Lutes	2	02-May-23	Chum	42	0.7	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0
12	Lutes	2	02-May-23	Chum	38	0.6	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	0
12	Lutes	2	02-May-23	Chum	35	0.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12	Lutes	2	02-May-23	Chum	45	1.0	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	3	0
12	Lutes	2	02-May-23	Chum	40	0.6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12	Lutes	2	02-May-23	Chum	40	0.7	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0
12	Lutes	2	02-May-23	Chum	39	0.7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12	Lutes	2	02-May-23	Chum	36	0.6	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	0
12	Lutes	2	02-May-23	Chum	37	0.6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

SITE #	SITE	WEEK	DATE COLLECTED	FISH SPECIES	LENGTH IN MM	WEIGHT IN G	LEP Co	LEP C1	LEP C2	LEP NM NOT ID	LEP PAM	LEP PAF	LEP AM	LEP AF	LEP MOT NOT ID	CAL Co	CAL C1	CAL C2	CAL C3	CAL C4	CAL NM NOT ID	CAL PAM	CAL_PAF	CAL AM	CAL AF	CAL MOT NOT ID	TOT LICE ID	TOT LEP	TOT CAL
12	Lutes	2	02-May-23	Chum	39	0.7	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	
12	Lutes	2	02-May-23	Chum	38	0.6	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	
12	Lutes	2	02-May-23	Chum	42	0.8	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	
12	Lutes	2	02-May-23	Chum	37	0.5	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	
12	Lutes	2	02-May-23	Chum	40	0.7	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	
12	Lutes	2	02-May-23	Chum	43	1.0	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	3	0	
12	Lutes	2	02-May-23	Chum	38	0.6	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	
12	Lutes	2	02-May-23	Chum	37	0.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
12	Lutes	2	02-May-23	Chum	37	0.6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
12	Lutes	2	02-May-23	Chum	40	0.6	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	
12	Lutes	2	02-May-23	Chum	37	0.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
12	Lutes	3	18-May-23	Chum	42	1.0	1	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	4	0	
12	Lutes	3	18-May-23	Chum	36	0.5	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	
12	Lutes	3	18-May-23	Chum	37	0.6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
12	Lutes	3	18-May-23	Chum	36	0.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
12	Lutes	3	18-May-23	Chum	36	0.5	2	21	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	24	24	0	
12	Lutes	3	18-May-23	Chum	40	0.7	1	2	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	4	4	0	
12	Lutes	3	18-May-23	Chum	45	1.1	2	2	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	5	5	0	
12	Lutes	3	18-May-23	Chum	38	0.6	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	0	
12	Lutes	3	18-May-23	Chum	40	0.7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
12	Lutes	3	18-May-23	Chum	38	0.7	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	
12	Lutes	3	18-May-23	Chum	39	0.6	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	0	
12	Lutes	3	18-May-23	Chum	39	0.7	3	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	6	0	
12	Lutes	3	18-May-23	Chum	37	0.5	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	3	0	
12	Lutes	3	18-May-23	Chum	41	0.9	2	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	4	0	
12	Lutes	3	18-May-23	Chum	43	0.9	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	0	
12	Lutes	3	18-May-23	Chum	39	0.8	1	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	3	0	
12	Lutes	3	18-May-23	Chum	38	0.5	1	4	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	6	0	
12	Lutes	3	18-May-23	Chum	40	0.6	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	0	
12	Lutes	3	18-May-23	Chum	41	0.8	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	
12	Lutes	3	18-May-23	Chum	38	0.5	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	3	0	
12	Lutes	3	18-May-23	Chum	36	0.5	2	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	5	0	
12	Lutes	3	18-May-23	Chum	43	0.9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
12	Lutes	3	18-May-23	Chum	38	0.7	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	
12	Lutes	3	18-May-23	Chum	41	0.8	1	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	4	0	
12	Lutes	3	18-May-23	Chum	38	0.6	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	3	0	
12	Lutes	3	18-May-23	Chum	47	1.2	2	1	0	0	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	6	6	0	
12	Lutes	3	18-May-23	Chum	48	1.3	2	1	0	1	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	9	9	0	
12	Lutes	3	18-May-23	Chum	41	0.8	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	0	
12	Lutes	3	18-May-23	Chum	39	0.6	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	0	
12	Lutes	4	30-May-23	Chum	40	0.8	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	
12	Lutes	4	30-May-23	Chum	41	0.9	0	0	1	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	3	3	0	

SITE #	SITE	WEEK	DATE COLLECTED	FISH SPECIES	LENGTH IN MM	WEIGHT IN G	LEP Co	LEP C1	LEP C2	LEP NM NOT ID	LEP PAM	LEP PAF	LEP AM	LEP AF	LEP MOT NOT ID	CAL Co	CAL C1	CAL C2	CAL C3	CAL C4	CAL NM NOT ID	CAL PAM	CAL_PAF	CAL AM	CAL AF	CAL MOT NOT ID	TOT LICE ID	TOT LEP	TOT CAL
12	Lutes	4	30-May-23	Chum	39	0.7	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	0
12	Lutes	4	30-May-23	Chum	39	0.7	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	0
12	Lutes	4	30-May-23	Chum	39	0.8	0	0	1	0	1	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	5	0
12	Lutes	4	30-May-23	Chum	39	0.7	0	0	0	0	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	3	0
12	Lutes	4	30-May-23	Chum	37	0.7	0	2	0	0	1	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	6	0
12	Lutes	4	30-May-23	Chum	44	1.0	0	2	0	0	2	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	8	0
12	Lutes	4	30-May-23	Chum	35	0.6	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	8	0
12	Lutes	4	30-May-23	Chum	39	0.7	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	3	0