

# ***Wild Juvenile Salmonid Monitoring Program 2021 Clio Channel and Chatham Channel, BC***

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**Prepared For:**

Grieg Seafood Ltd.  
106 – 1180 Ironwood Street  
Campbell River, BC  
V9W 5P7



1310 Marwalk Cres.  
Campbell River, BC. V9W 5X1  
phone: (250) 287-2462  
info@mainstreambio.ca  
www.mainstreambio.ca



## Summary

Beach seine sampling was conducted on behalf of Grieg Seafood at ten sites in Clio Channel and Chatham Channel, BC in 2021. Sampling was completed on behalf of Grieg Seafood Ltd. to provide data on sea lice abundance, prevalence and intensity on juvenile wild salmon within the specified area. This data report represents the third year of wild juvenile salmonid monitoring in Clio Channel and Chatham Channel completed as part of preliminary data collection for existing and potential aquaculture sites nearby. Three existing finfish aquaculture tenures are present in the sampling area near the east end of Clio Channel.

Four sampling events were completed, with sampling dates selected to coincide with the estimated peak outmigration period of juvenile salmonids.

Thirty individuals from each target fish species (Pacific salmonids) or the total number of captured individuals from each target species (if less than 30 were captured) were collected from each of the ten sites during the sampling events. Total catch numbers of each species were recorded. Surface temperature and salinity 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 identified as either *Lepeophtheirus* spp. (*L. salmonis*) or *Caligus* sp. (*C. clemensi*). 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 chum and pink salmon collected from Clio Channel and Chatham Channel in 2021. A total of 357 fish samples underwent lab analysis for sea lice infestation in 2021 including 55 chum salmon and 302 pink salmon. Ten coho salmon and five threespine stickleback were captured but were not retained for analysis. A total of 124 individuals were found to be infested with sea lice in the total sample population, resulting in a calculated sea lice prevalence of 34.7 % in 2021. A total of 216 sea lice were identified during laboratory analysis resulting in an abundance of 0.61 and an average intensity of 1.7 for the sample population.

A total of 55 chum salmon were captured, representing 4.9 % of the capture total. Of the 55 chum salmon captured, 55 were retained for lab analysis for sea lice infestation. A total of 34 chum salmon smolts were infested with 52 *L. salmonis* lice and 29 *C. clemensi* lice of various life stages resulting in a calculated prevalence of 61.8 %, abundance of 1.47 and an average intensity of 2.4 for the chum salmon sample population.

The number of pink salmon captured was greater than the number of chum salmon captured. A total of 1042 pink salmon were captured, representing 93.7 % of all captured fish. Of the 1042 pink captured, 302 were retained for lab analysis. A total of 90 pink salmon smolts were found to be infested with 97 *L. salmonis* lice and 38 *C. clemensi* lice of various life stages resulting in a calculated prevalence of 29.8 %, abundance of 0.45 and an average intensity of 1.5 for the pink salmon sample population.

A total of 149 *L. salmonis* sea lice of various life stages were identified on 91 juvenile salmon and 67 *C. clemensi* sea lice were found on 51 juvenile salmon analyzed in the lab. There were 18 juvenile salmon that were infested with both species of lice.

A comparison of the prevalence and abundance of sea lice species found on juvenile salmon was completed for sample data from 2019 to 2021 collected in Clio Channel and Chatham Channel, BC. This data is presented in a summary table in Appendix IV.

## Table of Contents

<b>Summary.....</b>	<b>ii</b>
<b>Table of Contents.....</b>	<b>iv</b>
<b>List of Figures .....</b>	<b>v</b>
<b>List of Tables.....</b>	<b>vi</b>
<b>1.0 Introduction.....</b>	<b>1</b>
<b>2.0 Methods.....</b>	<b>3</b>
2.1 Site Locations .....	3
2.2 Field Procedures.....	5
2.3 Laboratory Procedures .....	6
2.4 Data Analysis.....	7
<b>3.0 Results .....</b>	<b>9</b>
3.1 Water Quality Parameters.....	9
3.2 Fish Sample Composition .....	9
3.3 Fish Sample Size Statistics.....	10
<i>Chum Salmon</i> .....	11
<i>Pink Salmon</i> .....	11
3.4 Sea Lice Infestation Rates .....	12
<i>Infestation Rates on Chum Salmon</i> .....	12
<i>Infestation Rates on Pink Salmon</i> .....	15
3.5 Infestation by Sea Lice Species .....	18
<i>Infestation by Life Stage on Chum Salmon</i> .....	18
<i>Infestation by Life Stage on Pink Salmon</i> .....	20
<b>4.0 Conclusions .....</b>	<b>22</b>
<b>5.0 References .....</b>	<b>23</b>
<b>Appendix I – Field Data.....</b>	<b>I</b>
<b>Appendix II – Capture and Collection Sample Totals .....</b>	<b>II</b>
<b>Appendix III – Sea Lice Analysis Data .....</b>	<b>IV</b>
<b>Appendix IV – Historical Comparison (2019-2021).....</b>	<b>XIII</b>

## List of Figures

Figure 1:	An overview map showing the location of Clio Channel and Chatham Channel north of Vancouver Island, BC.....	2
Figure 2:	The locations of the ten Clio Channel and Chatham Channel, BC beach seine sites sampled in 2021. ....	4
Figure 3:	The number of sea lice per chum salmon specimen graphed as a percentage of the total chum sample population collected in Clio Channel and Chatham Channel in 2021. ....	13
Figure 4:	The number of sea lice per pink salmon specimen graphed as a percentage of the total pink sample population collected in Clio Channel and Chatham Channel in 2021. ....	16

## List of Tables

Table 1:	The site number and location of the ten beach seine sites where fish were collected for sea lice analysis in Clio Channel and Chatham Channel, BC in 2021.....	3
Table 2:	Water quality parameters collected at Clio Channel and Chatham Channel, BC beach seine sites in 2021. ....	9
Table 3:	The total of collected individuals of each fish species captured in Clio Channel and Chatham Channel, BC between April 12 and May 28, 2021, and the percentage of the total capture population that they represent. ....	10
Table 4:	The number of captured fish (Capture Total) and the number of individual fish collected (Sample Total) from each of the ten sample sites in Clio Channel and Chatham Channel, BC in 2021. ....	10
Table 5:	Average lengths of chum and pink salmon captured in Clio Channel and Chatham Channel, BC in 2021 summarized by sampling event. ....	11
Table 6:	Average weights of chum and pink salmon captured in Clio Channel and Chatham Channel, BC in 2021 summarized by sampling event. ....	11
Table 7:	Results of analysis for sea lice infestation on the sample population collected from Clio Channel and Chatham Channel, BC beach seine sites in 2021....	12
Table 8:	Total number of sea lice on chum salmon collected in Clio Channel and Chatham Channel, BC in 2021 summarized by sampling site. ....	14
Table 9:	The calculated sea lice prevalence, abundance and intensity by site and week as determine for chum salmon collected in Clio Channel and Chatham Channel, BC in 2021. ....	14
Table 10:	Total number of sea lice on pink salmon collected in Clio Channel and Chatham Channel, BC in 2021 summarized by sampling site. ....	17
Table 11:	The calculated sea lice prevalence, abundance and intensity by site and week as determine for pink salmon collected in Clio Channel and Chatham Channel, BC in 2021. ....	17
Table 12:	The number of <i>Lepeophtheirus salmonis</i> and <i>Caligus clemensi</i> in each life stage identified on the chum salmon sample population from Clio Channel and Chatham Channel, BC in 2021. LEP = <i>Lepeophtheirus salmonis</i> CAL= <i>Caligus clemensi</i> .....	18
Table 13:	The number of sea lice found on chum salmon collected in Clio Channel and Chatham Channel, BC in 2021 summarized by sampling site and lice species. LEP = <i>Lepeophtheirus salmonis</i> CAL = <i>Caligus clemensi</i> .....	19

Table 14:	The number of <i>Lepeophtheirus salmonis</i> and <i>Caligus clemensi</i> in each life stage identified on the pink salmon sample population from Clio Channel and Chatham Channel, BC in 2021. LEP = <i>Lepeophtheirus salmonis</i> CAL= <i>Caligus clemensi</i> .....	20
Table 15:	The number of sea lice found on pink salmon collected in Clio Channel and Chatham Channel, BC in 2021 summarized by sampling site and lice species. LEP = <i>Lepeophtheirus salmonis</i> CAL = <i>Caligus clemensi</i> .....	21

## 1.0 Introduction

In April and May 2021, beach seine sampling was conducted at ten sites in Clio Channel and Chatham Channel, BC to capture wild juvenile salmon on behalf of Grieg Seafood Ltd. (Figure 1). Captured fish were analyzed in the lab for sea lice infestation. Four sampling events were completed, with sampling dates selected to coincide with the estimated peak outmigration period of juvenile salmonids.

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 a wide range of natural salmonid and non-salmonid hosts in the marine environment, 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). The 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 detach from the host and become motile. The sea lice can then 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 seasonal 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 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).

Grieg Seafood Ltd. requested monitoring of sea lice abundance, prevalence and intensity on juvenile wild salmon in Clio Channel and Chatham Channel, BC as part of preliminary data collection for existing and potential aquaculture sites within the area. Existing finfish aquaculture sites within or near the sampling area included Noo-la, Wakwa and Tsa-ya fish farms near the eastern end of Clio Channel (Figure 2). This data summary report documents the observed sea lice infestation rates on retained juvenile salmonids collected at the ten sample sites in Clio Channel and Chatham Channel in 2021. This is the third year of wild juvenile salmonid monitoring conducted at this location by Grieg Seafood Ltd.





Figure 1: An overview map showing the location of Clio Channel and Chatham Channel north of Vancouver Island, BC.

## 2.0 Methods

The fish inspected for sea lice infestation were collected from ten sites in Clio Channel and Chatham Channel, BC. These sites were chosen based on their locations relative to active and potential new Grieg Seafood finfish aquaculture tenures (Figure 2). The ten sites were each sampled four times in 2021 on April 12/14, April 29/30, May 13, and May 27/28.

### 2.1 Site Locations

The approximate locations of the ten beach seine sites are shown in Figure 2, with existing aquaculture sites shown for reference. GPS coordinates collected in the field for the sites are presented in Table 1.

Table 1: The site number and location of the ten beach seine sites where fish were collected for sea lice analysis in Clio Channel and Chatham Channel, BC in 2021.

Site #	Latitude North (DDM)	Longitude West (DDM)
1	50 35.422	126 27.088
2	50 34.352	126 26.025
3	50 35.312	126 21.501
4	50 36.542	126 22.111
5	50 36.114	126 20.614
6	50 36.797	126 19.553
7	50 37.493	126 17.565
8	50 36.321	126 16.158
9	50 33.799	126 12.584
10	50 33.550	126 11.218



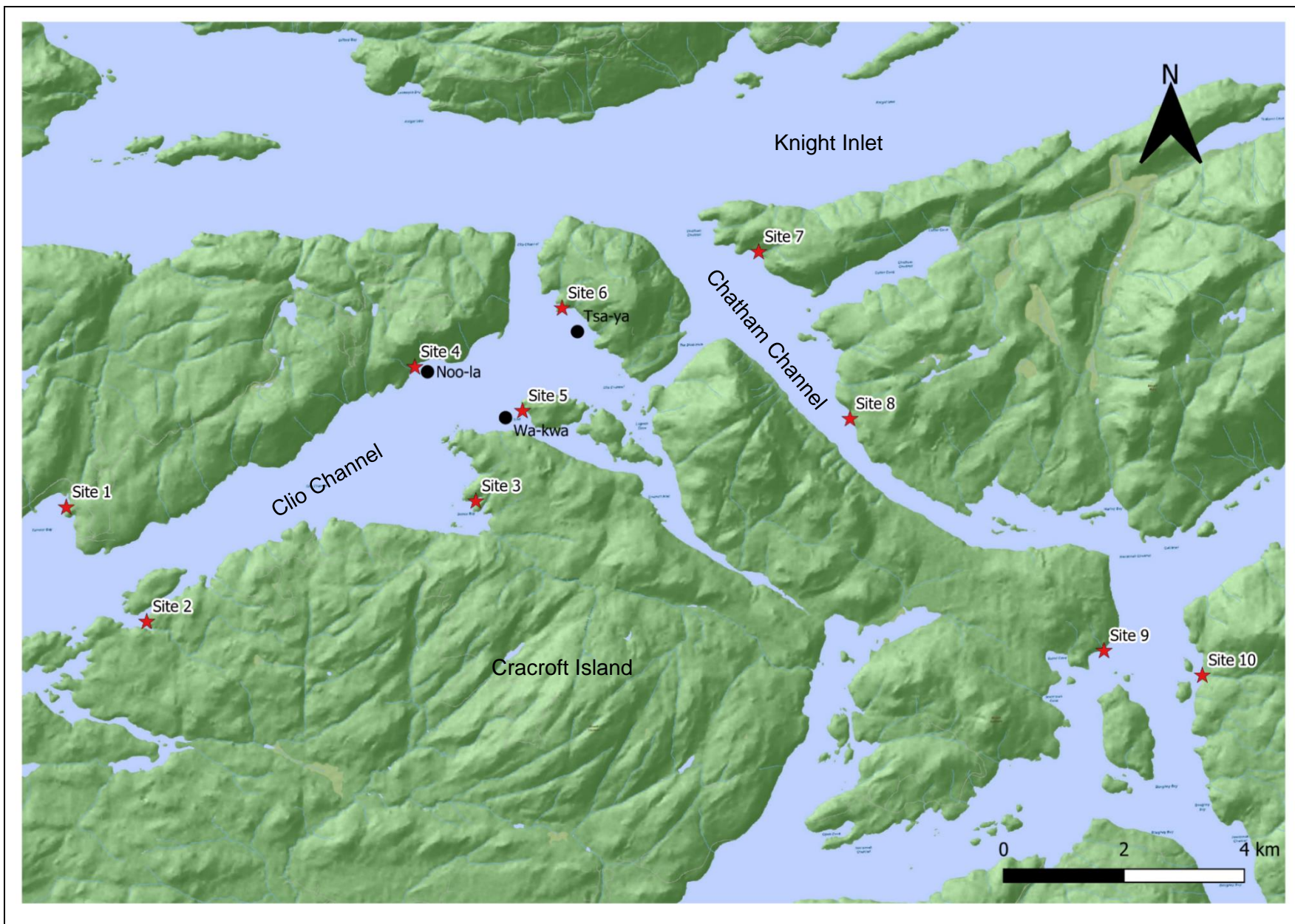


Figure 2: The locations of the ten Clio Channel and Chatham Channel, BC beach seine sites sampled in 2021.

## 2.2 Field Procedures

Procedures used for beach seining, fish collection and field data recording were adapted from those utilized by Fisheries and Oceans Canada.

An 18 ft Boston Whaler powered by a 60 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, 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 sample sites 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 retrieved, the probe of an Oakton Salt 6+ meter was used to collect surface salinity and water temperature data.

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 pulled 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 scooped into an appropriately sized Whirl-pak 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 500 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 number;
- Date;
- Time at the end of the individual fish collection;
- Comments on weather and oceanic conditions;
- Total capture and retention fish numbers for each species; and
- Water temperature (°C) and salinity (ppt) to one decimal place.

Retained fish from each site were packaged separately in re-sealable bags and labelled with the site number and the date. Sample bags were stored on ice in a cooler while on board the boat and transferred to a portable freezer immediately upon return to shore.

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. Sampling procedures were repeated at each of the ten 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 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 lab analysis, and individual fish were identified to species and counted. Results 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 from each site. The site and week number, sample date and number of fish were recorded. The date and time of the start of the analysis was also noted on the data sheet. Data from individual fish was recorded as the analysis proceeded.

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 chronologically with an individual identification number (1 – 263). 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, and magnification was increased to up to 40X during individual sea lice identification.

Microscopic analysis of each 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. 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 Whirl-pak bag was inspected after the removal of the fish for any pre-adult or adult sea lice that may have become dislodged during handling. 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 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 *Lepeophtheirus salmonis* or *Caligus clemensi* and the sex of the louse was determined.

Chalimus were identified to species primarily by characteristics of the frontal filament. 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 clemensi* 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).

Following microscopic analysis, individual fish specimens were measured (fork length for salmonids, total length for non-salmonids) 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 labelled vials 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 water temperature and salinity measure at each site was summarized to report the minimum and maximum values as well as the calculated averages for each sample week.

Beach seine fish sample composition was summarized by species and site for each week. 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 samples found to have one or more sea lice compared to the total number of samples examined, while abundance was defined as the total number of sea lice observed compared to the total number of samples examined. The intensity of sea lice infestation, as described by the number of sea lice found on a single sample was summarized. Average intensity was calculated by dividing the total number of sea lice identified by the number of infested samples.

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 samples 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 from Clio Channel and Chatham Channel, BC in 2021. Water quality field data is presented in Appendix I, beach seine fish capture data is included in Appendix II and data on the juvenile salmon sample population including sea lice lab analysis results are located in Appendix III.

### 3.1 Water Quality Parameters

Surface measurements of water temperature and salinity taken during beach seining at each of the ten sites during the four sampling events are presented in Table 2 and the complete dataset is included in Appendix I.

Recorded surface water temperatures ranged from a low of 6.4 °C recorded at Site 1 on April 14, 2021, to a high of 13.7 °C recorded at Site 6 on April 12, 2021 (Table 2; Appendix I). Calculated weekly average surface water temperatures were variable throughout the sampling period (Table 2).

Recorded surface water salinity ranged from a low of 14.1 ppt recorded at Site 5 on May 13, 2021, to a high of 31.6 ppt recorded at Site 9 on April 12, 2021 (Table 2; Appendix I). The weekly average surface water salinity was relatively stable during sampling in 2021 ranging between 26.0 ppt and 29.0 ppt (Table 2).

Table 2: Water quality parameters collected at Clio Channel and Chatham Channel, BC beach seine sites in 2021.

Site	April 12/14, 2021		April 29/30, 2021		May 13, 2021		May 27/28, 2021	
	Temp. (°C)	Salinity (ppt)	Temp. (°C)	Salinity (ppt)	Temp. (°C)	Salinity (ppt)	Temp. (°C)	Salinity (ppt)
1	6.4	14.2	9.6	28.8	10.7	15.1	9.1	27.9
2	6.8	14.8	9.2	28.1	11.6	28.3	9.2	25.0
3	8.1	29.8	9.4	29.9	12.7	27.6	9.5	24.4
4	10.1	31.5	9.4	28.3	11.5	28.8	10.3	27.3
5	10.2	31.4	9.2	29.3	12.4	14.1	10.7	26.0
6	13.7	29.1	9.1	29.5	13.1	28.5	10.9	26.7
7	11.4	31.0	9.3	29.0	12.6	29.4	11.0	25.9
8	10.2	31.5	9.0	29.1	12.8	29.2	10.6	24.7
9	10.1	31.6	9.9	29.5	10.7	29.4	10.5	29.5
10	10.1	31.2	10.4	28.4	11.8	29.9	12.4	29.2
<b>Average</b>	<b>9.7</b>	<b>27.6</b>	<b>9.5</b>	<b>29.0</b>	<b>12.0</b>	<b>26.0</b>	<b>10.4</b>	<b>26.7</b>

### 3.2 Fish Sample Composition

A total of 1112 fish were captured during 2021 beach seine sampling at Clio Channel and Chatham Channel with 357 individuals (32.1 %) retained for sea lice analysis (Table 3). Pink salmon were the most common species captured. A total of 1042 pink salmon were captured, representing 93.7 % of the captured fish. Of the 1042 captured pink salmon, 302 individuals (84.6 %) were retained and underwent lab analysis (Table 3). A total of 55 chum salmon were captured, representing 4.9 % of the captured fish; of these, a total of 55 individuals (15.4 %) were retained and analyzed in the lab. Five



threespine stickleback and ten coho salmon were captured and released during 2021 sampling. No other Pacific salmon species and no Atlantic salmon were captured during sampling events in 2021.

A summary of the total number of fish samples captured and collected at each site during the four sampling events can be found in Table 4. Total fish captured and collected at each site over the entire collection period can be found in Appendix II.

Table 3: The total of collected individuals of each fish species captured in Clio Channel and Chatham Channel, BC between April 12 and May 28, 2021, and the percentage of the total capture population that they represent.

Common Name	Capture Total (% of total capture population)	Collection Totals	Collection %
Chum salmon	55 (4.9 %)	55	15.4 %
Pink salmon	1042 (93.7 %)	302	84.6 %
Coho salmon	10 (0.9 %)	0	0.0 %
Threespine Stickleback	5 (0.4 %)	0	0.0 %
Atlantic salmon	0 (0.0 %)	0	0.0 %
<b>All species</b>	<b>1112</b>	<b>357</b>	<b>32.1 %</b>

Table 4: The number of captured fish (Capture Total) and the number of individual fish collected (Sample Total) from each of the ten sample sites in Clio Channel and Chatham Channel, BC in 2021.

Site	Chum		Pink		Coho		Threespine Stickleback		Capture Totals	Sample Totals
	Capture Total	Sample Total	Capture Total	Sample Total	Capture Total	Sample Total	Capture Total	Sample Total		
1	0	0	0	0	2	0	0	0	2	0
2	2	2	82	79	0	0	0	0	84	81
3	0	0	26	26	0	0	0	0	26	26
4	1	1	3	3	0	0	0	0	4	4
5	7	7	130	35	0	0	2	0	139	42
6	28	28	182	32	6	0	3	0	219	60
7	2	2	92	31	1	0	0	0	95	33
8	4	4	56	32	1	0	0	0	61	36
9	0	0	2	2	0	0	0	0	2	2
10	11	11	469	62	0	0	0	0	480	73
<b>Total</b>	<b>55</b>	<b>55</b>	<b>1042</b>	<b>302</b>	<b>10</b>	<b>0</b>	<b>5</b>	<b>0</b>	<b>1112</b>	<b>357</b>

### 3.3 Fish Sample Size Statistics

Summary statistics for the sample populations of chum and pink salmon were completed for length (Table 5) and weight (Table 6).

### ***Chum Salmon***

The length of the 55 chum smolts collected during the four sampling events in 2021 ranged from 33 mm to 83 mm and averaged 64 mm (SD = 13). The weight of chum salmon smolts collected in 2021 ranged from 0.3 g to 7.3 g and averaged 3.8 g (SD = 1.9). Chum salmon length data (Table 5) and weight data (Table 6) were summarized by sampling event.

### ***Pink Salmon***

The length of the 302 pink salmon smolts collected during the four sampling events in 2021 ranged from 28 mm to 80 mm and averaged 55 mm (SD = 13). The weight of pink salmon smolts collected in 2021 ranged from 0.2 g to 4.8 g and averaged 2.2 g (SD = 1.4). Pink salmon length data (Table 5) and weight data (Table 6) were summarized by sampling event.

Table 5: Average lengths of chum and pink salmon captured in Clio Channel and Chatham Channel, BC in 2021 summarized by sampling event.

Species	Length (mm)			
	April 12/14	April 29/30	May 13	May 27/28
Chum	37 (n=3)	- (n=0)	49 (n=9)	70 (n=43)
Pink	34 (n=56)	40 (n=5)	53 (n=65)	62 (n=176)

Table 6: Average weights of chum and pink salmon captured in Clio Channel and Chatham Channel, BC in 2021 summarized by sampling event.

Species	Weight (g)			
	April 12/14	April 29/30	May 13	May 27/28
Chum	0.5 (n=3)	- (n=0)	1.5 (n=9)	4.5 (n=43)
Pink	0.4 (n=56)	0.7 (n=5)	1.9 (n=65)	3.0 (n=176)

### 3.4 Sea Lice Infestation Rates

The results of the laboratory analysis for the presence of sea lice on the sample population collected in Clio Channel and Chatham Channel in 2021 are presented in Table 7. A complete dataset is included in Appendix III. A total of 357 samples were collected at ten sites and were inspected for sea lice infestation. A total of 124 individuals in the sample population were found to be infested with 216 sea lice (Table 7). This data reflects the identification of sea lice of either species (*L. salmonis* and *C. clemensi*) on all retained species.

The sea lice prevalence in the sample population collected at the Clio Channel and Chatham Channel sites in 2021 was 34.7 % and the abundance was 0.61 (Table 7). Sea lice counts of both species observed (*L. salmonis* and *C. clemensi*) were added together for the prevalence and abundance calculations for the sample population.

The intensity of sea lice infestation, as defined as the number of sea lice on a single sample, ranged from no lice found on 18 individuals to a maximum of four lice found on one individual. The average intensity was 1.7 for the sample population collected in Clio Channel and Chatham Channel in 2021 (Table 7).

Table 7: Results of analysis for sea lice infestation on the sample population collected from Clio Channel and Chatham Channel, BC beach seine sites in 2021.

Species	Sample size (n)	Total number of lice observed	Total number of fish infested	Prevalence (%)	Abundance	Average Intensity
Chum	55	81	34	61.8	1.47	2.4
Pink	302	135	90	29.8	0.45	1.5
<b>Total</b>	<b>357</b>	<b>216</b>	<b>124</b>	<b>34.7</b>	<b>0.61</b>	<b>1.7</b>

#### **Infestation Rates on Chum Salmon**

The results of the laboratory analysis for sea lice infestation on the chum salmon sample population are presented by site in Table 8 and Table 9. A total of 34 chum salmon were found to be infested with 81 sea lice. The largest number of chum salmon samples infested with sea lice (28 chum) were collected at Site 6 and the greatest number of sea lice per site (50 lice) were on samples collected at Site 6 (Table 8). No chum salmon samples were captured at Sites 1, 3 and 9 and no chum salmon were captured during the sampling period on April 29/30, 2021.

Sea lice counts of both sea lice species observed (*L. salmonis* and *C. clemensi*) were added together for the presentation of sea lice infestation by site (Table 8) as well as for the calculation of sea lice prevalence, abundance and intensity by site for the chum salmon sample population (Table 9).

A total of 34 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=55) collected from Clio Channel and Chatham Channel in 2021 was 61.8 %. Sea lice prevalence calculated by site for chum salmon is presented in Table 9. No infested chum salmon were captured at Site 4 and 7. The highest sea lice prevalence (100.0 %) was at Site 5 on May 13 and May 27, 2021, Sites 6 and 7 on May 27, 2021 and at Site 6 on May 27, 2021. Sea lice prevalence calculated by site

for the total chum sample population was highly variable ranging from 0 % at Site 4 to a high of 100 % at Site 2 (Table 9). Sea lice prevalence summarized by sample week was highest on 29 chum salmon collected on May 28 and May 29, 2021 (67.4 %).

A total of 81 sea lice were identified during laboratory analysis of retained chum salmon. The abundance of sea lice on the chum salmon sample population (n=81) collected from Clio Channel and Chatham Channel in 2021 was 1.47 (Table 9). Sea lice abundance was calculated by week and by site and is presented in Table 9. The highest sea lice abundance (2.00) was at Sites 5 and 10 on May 27, 2021. Sea lice abundance calculated by site for the total chum sample population was also variable ranging from 0.00 at Site 4 to a high of 2.29 at Site 5.

The average intensity for the chum salmon sample population in Clio Channel and Chatham Channel in 2021 was 2.4. The highest sea lice intensity (4.0) was at Site 5 on May 13, 2021. Sea lice intensity calculated by site for the total chum sample population ranged from 0.0 at Site 4 to 3.2 at Site 5. Sea lice intensity summarized by sample week was highest on chum salmon collected on May 27/28, 2021 (2.5).

The percentage of the chum salmon sample population with the number of sea lice per sample was graphed and is presented in Figure 3. As shown in this graph, 38.2 % of the chum sample population were not infested with sea lice. A total of 23.6 % of the chum salmon sample population were infested with one louse, 18.2 % were infested with two sea lice, 9.1 % were infested with three sea lice, 5.5 % were infested with four sea lice and 5.5 % were infested with five or more sea lice.

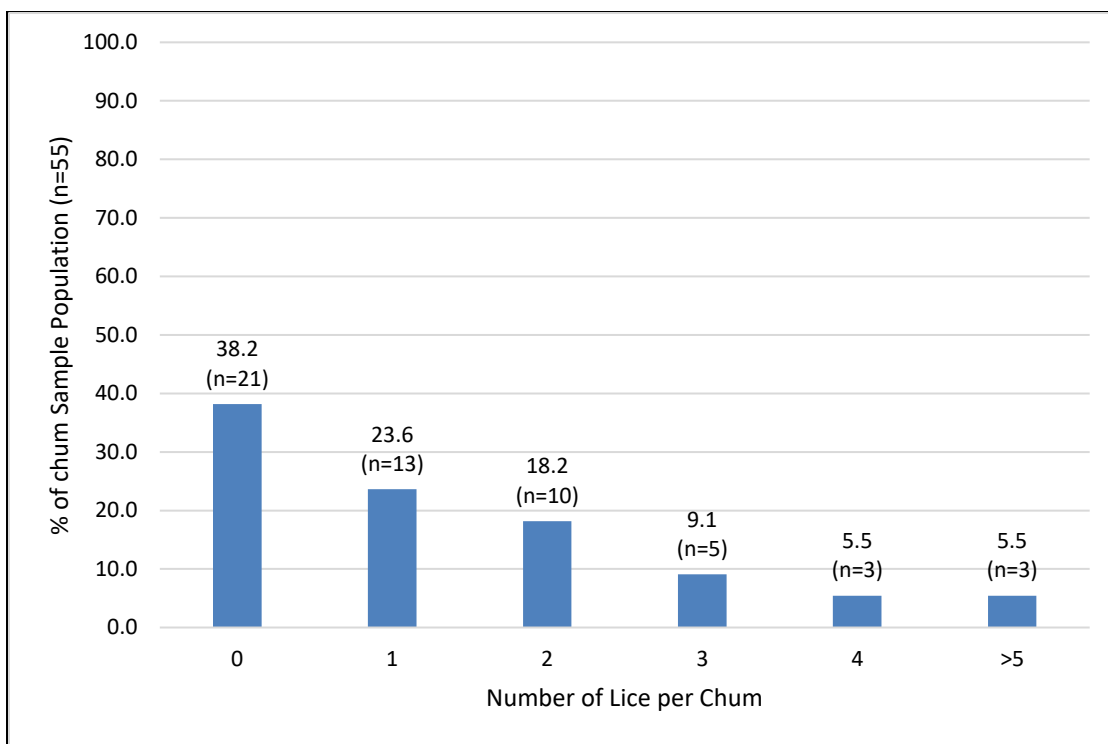


Figure 3: The number of sea lice per chum salmon specimen graphed as a percentage of the total chum sample population collected in Clio Channel and Chatham Channel in 2021.

Table 8: Total number of sea lice on chum salmon collected in Clio Channel and Chatham Channel, BC in 2021 summarized by sampling site.

Site	Sample Week												TOTAL		
	April 12/14			April 29/30			May 13			May 27/28					
	# of Chum Analyzed	# of Infested Chum	# of Lice	# of Chum Analyzed	# of Infested Chum	# of Lice	# of Chum Analyzed	# of Infested Chum	# of Lice	# of Chum Analyzed	# of Infested Chum	# of Lice	# of Chum Analyzed	# of Infested Chum	# of Lice
1	0	-	-	0	-	-	0	-	-	0	-	-	0	-	-
2	0	-	-	0	-	-	0	-	-	2	2	3	2	2	3
3	0	-	-	0	-	-	0	-	-	0	-	-	0	-	-
4	1	0	0	0	-	-	0	-	-	0	-	-	1	0	0
5	0	-	-	0	-	-	1	1	4	6	4	12	7	5	16
6	0	-	-	0	-	-	0	-	-	28	20	50	28	20	50
7	2	0	0	0	-	-	0	-	-	0	-	-	2	0	0
8	0	-	-	0	-	-	0	-	-	4	1	1	4	1	1
9	0	-	-	0	-	-	0	-	-	0	-	-	0	-	-
10	0	-	-	0	-	-	8	4	5	3	2	6	11	6	11
TOTAL	3	0	0	0	-	-	9	5	9	43	29	72	55	34	81

Table 9: The calculated sea lice prevalence, abundance and intensity by site and week as determine for chum salmon collected in Clio Channel and Chatham Channel, BC in 2021.

Site	Sample Week												TOTAL		
	April 12/14			April 29/30			May 13			May 27/28					
	Sea Lice Prevalence (%)	Sea Lice Abundance	Sea Lice Intensity	Sea Lice Prevalence (%)	Sea Lice Abundance	Sea Lice Intensity	Sea Lice Prevalence (%)	Sea Lice Abundance	Sea Lice Intensity	Sea Lice Prevalence (%)	Sea Lice Abundance	Sea Lice Intensity	Sea Lice Prevalence (%)	Sea Lice Abundance	Sea Lice Intensity
1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2	-	-	-	-	-	-	-	-	-	100.0	1.50	1.5	100	1.50	1.5
3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4	0.0	0.00	0.0	-	-	-	-	-	-	-	-	-	0.0	0.00	0.0
5	-	-	-	-	-	-	100.0	4.00	4.0	100.0	2.00	2.0	71.4	2.29	3.2
6	-	-	-	-	-	-	-	-	-	71.4	1.79	2.5	71.4	1.79	2.5
7	0.0	0.00	0.0	-	-	-	-	-	-	-	-	-	-	-	-
8	-	-	-	-	-	-	-	-	-	25.0	0.25	1.0	25.0	0.25	1.0
9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10	-	-	-	-	-	-	50.0	0.63	1.3	100.0	2.00	2.0	54.5	1.00	1.8
TOTAL	0.0	0.00	0.0	-	-	-	55.6	1.00	1.8	67.4	1.67	2.5	61.8	1.47	2.4

### ***Infestation Rates on Pink Salmon***

The results of the laboratory analysis for sea lice infestation on the pink salmon sample population are presented by site in Table 10. A total of 90 pink salmon were found to be infested with 135 sea lice. The largest number of pink salmon infested with sea lice (27 pink) and the greatest number of sea lice (48 lice) were on samples collected at Site 10. No pink salmon were captured at Site 1 (Table 10).

Sea lice counts of both sea lice species observed (*L. salmonis* and *C. clemensi*) were added together for the presentation of sea lice infestation by site (Table 10) as well as for the calculation of sea lice prevalence and abundance by site for the pink salmon sample population (Table 11).

A total of 90 pink salmon were found to be infested with at least one sea louse. The prevalence of sea lice on the pink salmon sample population (n=302) collected from Clio Channel and Chatham Channel in 2021 was 29.8 %. Sea lice prevalence calculated by site for pink salmon is presented in Table 11. The highest sea lice prevalence (66.7 %) was at Site 5 on April 30, 2021. Sea lice prevalence calculated by site for the total pink sample population was highly variable ranging from 0.0 % at Sites 4 and 9 to a high of 45.7 % at Site 5 (Table 11). Sea lice prevalence summarized by sample week was highest on pink salmon collected on April 29/30, 2021 (40.0 %).

A total of 135 sea lice were identified during laboratory analysis of retained pink salmon. The abundance of sea lice on the pink salmon sample population (n=302) collected from Clio Channel and Chatham Channel in 2021 was 0.45. The highest sea lice abundance (1.13) was at Site 10 on May 27, 2021 (Table 11). Sea lice abundance calculated by site for the total pink sample population was variable ranging from 0.0 at Sites 4 and 9 to a high of 0.77 at Site 10. Sea lice abundance summarized by sample week was highest on pink salmon collected on April 29/30 (0.60).

The average intensity for the pink salmon sample population in Clio Channel and Chatham Channel in 2021 was 1.5. The highest sea lice intensity (1.9) was at Site 2 on May 28, 2021 (Table 11). Sea lice intensity calculated by site for the total pink sample population ranged from 0.0 at Sites 4 and 9 to 1.8 at Site 10. Sea lice intensity summarized by sample week was highest on pink salmon collected on May 27 and 28, 2021 (1.6).

The percentage of the pink salmon sample population with the number of sea lice per sample was graphed and is presented in Figure 4. As shown in this graph, 70.9 % of the pink sample population were not infested with sea lice. A total of 19.5 % of the pink salmon sample population were infested with one louse, 7.3 % were infested with two sea lice, 1.3 % were infested with three sea lice, 0.7 % were infested with four sea lice and 0.3 % were infested with five or more sea lice.

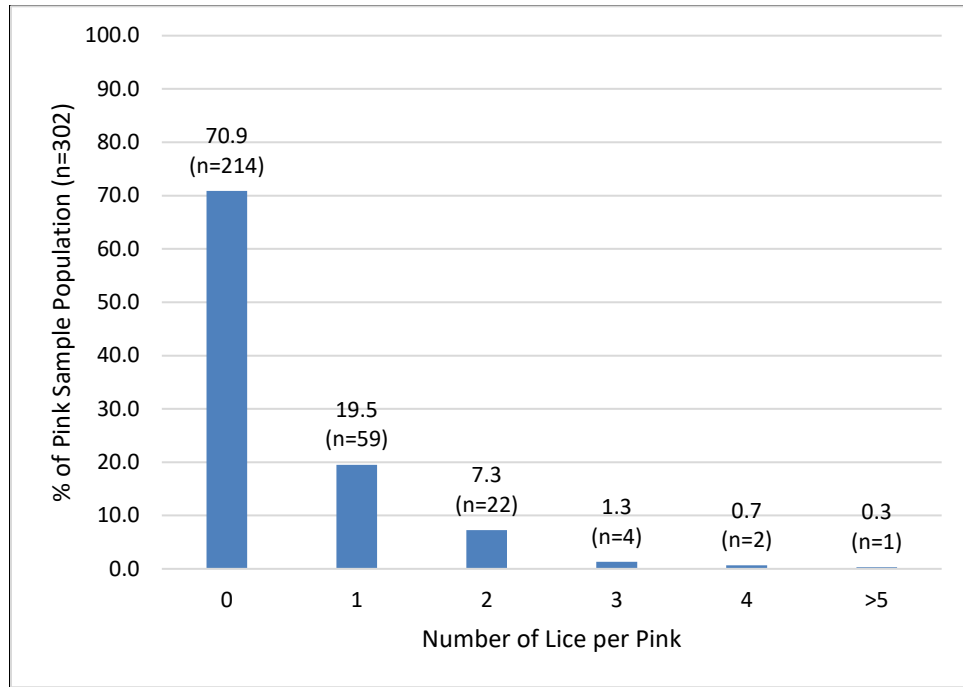


Figure 4: The number of sea lice per pink salmon specimen graphed as a percentage of the total pink sample population collected in Clio Channel and Chatham Channel in 2021.

Table 10: Total number of sea lice on pink salmon collected in Clio Channel and Chatham Channel, BC in 2021 summarized by sampling site.

Site	Sample Week												TOTAL		
	April 12/14			April 29/30			May 13			May 27/28					
	# of Pink Analyzed	# of Infested Pink	# of Lice	# of Pink Analyzed	# of Infested Pink	# of Lice	# of Pink Analyzed	# of Infested Pink	# of Lice	# of Pink Analyzed	# of Infested Pink	# of Lice	# of Pink Analyzed	# of Infested Pink	# of Lice
1	-	-	-	-	-	-	-	-	-	-	-	-	0	0	0
2	18	0	0	1	0	0	30	10	12	30	12	23	79	22	35
3	-	-	-	-	-	-	-	-	-	26	10	12	26	10	12
4	2	0	0	1	0	0	-	-	-	-	-	-	3	0	0
5	-	-	-	3	2	3	2	1	1	30	13	17	35	16	21
6	2	1	1	-	-	-	-	-	-	30	10	12	32	11	13
7	31	1	1	-	-	-	-	-	-	-	-	-	31	1	1
8	-	-	-	-	-	-	3	0	0	29	3	5	32	3	5
9	2	0	0	-	-	-	-	-	-	-	-	-	2	0	0
10	1	0	0	-	-	-	30	8	13	31	19	35	62	27	48
TOTAL	56	2	2	5	2	3	65	19	26	176	67	104	302	90	135

Table 11: The calculated sea lice prevalence, abundance and intensity by site and week as determine for pink salmon collected in Clio Channel and Chatham Channel, BC in 2021.

Site	Sample Week												TOTAL		
	April 12/14			April 29/30			May 13			May 27/28					
	Sea Lice Prevalence (%)	Sea Lice Abundance	Sea Lice Intensity	Sea Lice Prevalence (%)	Sea Lice Abundance	Sea Lice Intensity	Sea Lice Prevalence (%)	Sea Lice Abundance	Sea Lice Intensity	Sea Lice Prevalence (%)	Sea Lice Abundance	Sea Lice Intensity	Sea Lice Prevalence (%)	Sea Lice Abundance	Sea Lice Intensity
1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2	0.0	0.00	0.0	0.0	0.00	0.0	33.3	0.40	1.2	40.0	0.77	1.9	27.8	0.44	1.6
3	-	-	-	-	-	-	-	-	-	38.5	0.46	1.2	38.5	0.46	1.2
4	0.0	0.00	0.0	0.0	0.00	0.0	-	-	-	-	-	-	0.0	0.00	0.0
5	-	-	-	66.7	1.00	1.5	50.0	0.50	1.0	43.3	0.57	1.3	45.7	0.60	1.3
6	50.0	0.50	1.0	-	-	-	-	-	-	33.3	0.46	1.2	34.4	0.41	1.2
7	3.2	0.03	1.0	-	-	-	-	-	-	-	-	-	3.2	0.03	1.0
8	-	-	-	-	-	-	0.0	0.00	0.0	10.3	0.17	1.7	9.4	0.16	1.7
9	0.0	0.00	0.0	-	-	-	-	-	-	-	-	-	0.0	0.00	0.0
10	0.0	0.00	0.0	-	-	-	26.7	0.43	1.6	61.3	1.13	1.8	43.5	0.77	1.8
TOTAL	3.6	0.04	1.0	40.0	0.60	1.5	29.2	0.40	1.4	38.1	0.59	1.6	29.8	0.45	1.5



### 3.5 Infestation by Sea Lice Species

A total of 150 *Lepeophtheirus salmonis* sea lice of various life stages were identified on 92 samples (chum and pink salmon) and 66 *Caligus clemensi* were identified on 50 samples (Appendix III). Eighteen samples were found to be infested with sea lice of both species.

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

A total of 52 *Lepeophtheirus salmonis* sea lice of various life stages were identified on 25 chum salmon and 29 *Caligus clemensi* sea lice were found on 19 chum salmon (Appendix III). Ten chum salmon samples were infested with both *L. salmonis* and *C. clemensi* sea lice.

An analysis of the species of sea lice identified on the 34 infested chum salmon collected from Clio Channel and Chatham Channel is presented in Table 12. The sea lice species identified on chum salmon are presented by site in Table 13.

Table 12: The number of *Lepeophtheirus salmonis* and *Caligus clemensi* in each life stage identified on the chum salmon sample population from Clio Channel and Chatham Channel, BC in 2021. LEP = *Lepeophtheirus salmonis* CAL = *Caligus clemensi*

Life Stage <sup>1</sup>	April 12/14	April 29/30	May 13	May 27/28
LEP Co	0	0	1	7
LEP C1	0	0	1	21
LEP C2	0	0	0	8
LEP PAM	0	0	0	5
LEP PAF	0	0	2	3
LEP AM	0	0	0	4
LEP AF	0	0	0	0
<b>TOTAL LEP</b>	<b>0</b>	<b>0</b>	<b>4</b>	<b>48</b>
CAL Co	0	0	0	0
CAL C1	0	0	0	0
CAL C2	0	0	0	1
CAL C3	0	0	1	2
CAL C4	0	0	1	2
CAL PAM	0	0	2	8
CAL PAF	0	0	1	2
CAL AM	0	0	0	4
CAL AF	0	0	0	5
<b>TOTAL CAL</b>	<b>0</b>	<b>0</b>	<b>5</b>	<b>24</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 13: The number of sea lice found on chum salmon collected in Clio Channel and Chatham Channel, BC in 2021 summarized by sampling site and lice species. LEP = *Lepeophtheirus salmonis* CAL = *Caligus clemensi*

Site	Sample Week																TOTAL		
	April 12/14				April 29/30				13-May				May 27/28				# 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	-	-	-	0	-	-
2	0	-	-	-	0	-	-	-	0	-	-	-	2	2	3	0	2	2	3
3	0	-	-	-	0	-	-	-	0	-	-	-	0	-	-	-	0	-	-
4	1	0	0	0	0	-	-	-	0	-	-	-	0	-	-	-	1	0	0
5	0	-	-	-	0	-	-	-	1	1	0	4	6	4	6	6	7	5	16
6	0	-	-	-	0	-	-	-	0	-	-	-	28	20	33	17	28	20	50
7	2	0	0	0	0	-	-	-	0	-	-	-	0	-	-	-	2	0	0
8	0	-	-	-	0	-	-	-	0	-	-	-	4	1	1	0	4	1	1
9	0	-	-	-	0	-	-	-	0	-	-	-	0	-	-	-	0	-	-
10	0	-	-	-	0	-	-	-	8	4	4	1	3	2	5	1	11	6	11
TOTAL	3	0	0	0	0	0	0	0	9	5	4	5	43	29	48	24	55	34	81

### ***Infestation by Life Stage on Pink Salmon***

A total of 97 *Lepeophtheirus salmonis* sea lice of various life stages were identified on 66 pink salmon and 38 *Caligus clemensi* sea lice were found on 32 pink salmon (Appendix III). Eight pink salmon sample was infested with both *L. salmonis* and *C. clemensi*.

An analysis of the species of sea lice identified on the 90 infested pink salmon collected from Clio Channel and Chatham Channel in 2021 is presented in Table 14. The sea lice species identified on pink salmon are also presented by site in Table 15.

Table 14: The number of *Lepeophtheirus salmonis* and *Caligus clemensi* in each life stage identified on the pink salmon sample population from Clio Channel and Chatham Channel, BC in 2021. LEP = *Lepeophtheirus salmonis* CAL= *Caligus clemensi*

Life Stage <sup>1</sup>	April 12/14	April 29/30	May 13	May 27/28
LEP Co	0	1	5	18
LEP C1	2	0	2	19
LEP C2	0	0	4	3
LEP PAM	0	0	0	1
LEP PAF	0	0	1	8
LEP AM	0	1	2	18
LEP AF	0	0	0	12
<b>TOTAL LEP</b>	<b>2</b>	<b>2</b>	<b>14</b>	<b>79</b>
CAL Co	0	0	0	0
CAL C1	0	0	1	0
CAL C2	0	0	1	2
CAL C3	0	0	0	0
CAL C4	0	1	3	0
CAL PAM	0	0	1	7
CAL PAF	0	0	4	4
CAL AM	0	0	0	5
CAL AF	0	0	2	7
<b>TOTAL CAL</b>	<b>0</b>	<b>1</b>	<b>12</b>	<b>25</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 15: The number of sea lice found on pink salmon collected in Clio Channel and Chatham Channel, BC in 2021 summarized by sampling site and lice species. LEP = *Lepeophtheirus salmonis* CAL = *Caligus clemensi*

Site	Sample Week																TOTAL		
	April 12/14				April 29/30				May 13				May 27/28				# of Pink Analyzed	# of Infested Pink	# of Lice
	# of Pink Analyzed	# of Infested Pink	# of LEP	# of CAL	# of Pink Analyzed	# of Infested Pink	# of LEP	# of CAL	# of Pink Analyzed	# of Infested Pink	# of LEP	# of CAL	# of Pink Analyzed	# of Infested Pink	# of LEP	# of CAL			
1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	0	0
2	18	0	0	0	1	0	0	0	30	10	5	7	30	12	19	4	79	22	35
3	-	-	-	-	-	-	-	-	-	-	-	-	26	10	5	7	26	10	12
4	2	0	0	0	1	0	0	0	-	-	-	-	-	-	-	-	3	0	0
5	-	-	-	-	3	2	2	1	2	1	0	1	30	13	13	4	35	16	21
6	2	1	1	0	-	-	-	-	-	-	-	-	30	10	8	4	32	11	13
7	31	1	1	0	-	-	-	-	-	-	-	-	-	-	-	-	31	1	1
8	-	-	-	-	-	-	-	-	3	0	0	0	29	3	4	1	32	3	5
9	2	0	0	0	-	-	-	-	-	-	-	-	-	-	-	-	2	0	0
10	1	0	0	0	-	-	-	-	30	8	9	4	31	19	30	5	62	27	48
TOTAL	56	2	2	0	5	2	2	1	65	19	14	12	176	67	79	25	302	90	135

## 4.0 Conclusions

This report presents the data from the third year of beach seining and sea lice analysis conducted for wild juvenile salmonid monitoring in Clio Channel and Chatham Channel, BC by Grieg Seafood Ltd. Reporting is limited to the summary and presentation of the 2021 collected data.

A total of 357 fish samples underwent lab analysis for sea lice infestation in 2021 including 55 chum salmon and 302 pink salmon. A total of 124 individuals were found to be infested with sea lice in the total sample population, resulting in a calculated sea lice prevalence of 34.7 % in 2021. A total of 216 sea lice were found during laboratory analysis resulting in an abundance of 0.61 and an average intensity of 1.7 for the sample population.

Chum salmon and pink salmon smolts were the only salmonids retained during 2021 sampling. A total of 55 chum salmon were captured, representing 4.9 % of all captured fish samples. Of the 55 chum salmon captured, 55 were retained for lab analysis. A total of 34 chum smolts were found to be infested with a total of 52 *Lepeophtheirus salmonis* and 29 *Caligus clemensi* lice of various life stages resulting in a calculated prevalence of 61.8 %, abundance of 1.47 and an average intensity of 2.4 for the chum salmon sample population.

Pink salmon were the most abundant species captured during the 2021 sampling. A total of 1042 pink salmon were captured, representing 93.7 % of the capture total. Of the 1042 pink salmon captured, 302 were retained for lab analysis for sea lice infestation. A total of 90 pink salmon smolts were infested with 97 *Lepeophtheirus salmonis* and 38 *Caligus clemensi* lice of various life stages resulting in a calculated prevalence of 29.8 %, abundance of 0.45 and an average intensity of 1.5 for the pink salmon sample population.

A comparison of the prevalence and abundance of sea lice species found on juvenile salmon was completed for sample data from 2019 to 2021 collected in Clio Channel and Chatham Channel, BC. This data is presented in a summary table in Appendix IV.

## 5.0 References

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## Appendix I – Field Data

Date	Time	Site Number	Salinity (ppt)	Temperature (°C)
			0.2m	0.2m
14-Apr-21	7:50	1	14.2	6.4
14-Apr-21	8:10	2	14.8	6.8
14-Apr-21	8:36	3	29.8	8.1
12-Apr-21	14:45	4	31.5	10.1
12-Apr-21	15:02	5	31.4	10.2
12-Apr-21	14:25	6	29.1	13.7
12-Apr-21	13:50	7	31.0	11.4
12-Apr-21	13:25	8	31.5	10.2
12-Apr-21	11:41	9	31.6	10.1
12-Apr-21	12:07	10	31.2	10.1
29-Apr-21	10:41	1	28.8	9.6
29-Apr-21	11:07	2	28.1	9.2
29-Apr-21	11:37	3	29.9	9.4
30-Apr-21	8:50	4	28.3	9.4
30-Apr-21	8:35	5	29.3	9.2
30-Apr-21	8:16	6	29.5	9.1
30-Apr-21	8:00	7	29.0	9.3
30-Apr-21	7:46	8	29.1	9.0
29-Apr-21	12:30	9	29.5	9.9
29-Apr-21	15:20	10	28.4	10.4
13-May-21	10:01	1	15.1	10.7
13-May-21	10:20	2	28.3	11.6
13-May-21	11:00	3	27.6	12.7
13-May-21	11:18	4	28.8	11.5
13-May-21	11:37	5	14.1	12.4
13-May-21	15:57	6	29.2	12.8
13-May-21	16:04	7	29.4	12.6
13-May-21	16:26	8	28.5	13.1
13-May-21	12:22	9	29.4	10.7
13-May-21	14:50	10	29.9	11.8
28-May-21	6:49	1	27.9	9.1
28-May-21	7:04	2	25.0	9.2
28-May-21	7:36	3	24.4	9.5
27-May-21	16:08	4	27.3	10.3
27-May-21	16:22	5	26.0	10.7
27-May-21	15:40	6	26.7	10.9
27-May-21	15:18	7	25.9	11.0
27-May-21	14:57	8	24.7	10.6
27-May-21	11:46	9	29.5	10.5
27-May-21	13:50	10	29.2	12.4



Appendix II – Capture and Collection Sample Totals

Date	Time	Site Number	Weather Comments	Tide Stage	Pink Capture d	Pink Retaine d	Chum Capture d	Chum Retained	Coho Capture d	Coho Retaine d	Sticklebac k Captured	Sticklebac k Retained	Salmonid Mortalities	Comments
14-Apr-21	7:50	1	Clear, Calm	Low	0	0	0	0	0	0	0	0	0	Very shallow set in bay
14-Apr-21	8:10	2	Clear, Calm	Low	18	18	0	0	0	0	0	0	0	Lots of weed in set. 6 pipefish
14-Apr-21	8:36	3	Clear, Calm	Low	0	0	0	0	0	0	0	0	0	
12-Apr-21	14:45	4	Clear, Calm	High	2	2	1	1	0	0	0	0	0	
12-Apr-21	15:02	5	Clear, Calm	High	0	0	0	0	0	0	0	0	0	
12-Apr-21	14:25	6	Clear, Calm	High	2	2	0	0	0	0	0	0	0	
12-Apr-21	13:50	7	Slight Chop	High	92	31	2	2	0	0	0	0	0	
12-Apr-21	13:25	8	Clear, Calm	Mid	0	0	0	0	0	0	0	0	0	
12-Apr-21	11:41	9	Clear, Calm	Low	2	2	0	0	0	0	0	0	0	*Havannah Site 8
12-Apr-21	12:07	10	Clear, Calm	Low	1	1	0	0	0	0	0	0	0	*Havannah Site 9
29-Apr-21	10:41	1	Overcast, Light Winds	Low	0	0	0	0	0	0	0	0	0	Pulled in abundant kelp. Flounder, pipefish, sculpin
29-Apr-21	11:07	2	Overcast, Light Winds	Low	1	1	0	0	0	0	0	0	0	Cutthroat, flounders, ling, sculpin
29-Apr-21	11:37	3	Calm, Overcast	Low	0	0	0	0	0	0	0	0	0	Cutthroat, sculpin, needlefish, red rock crab
30-Apr-21	8:50	4	Clear, Calm	Low	1	1	0	0	0	0	0	0	0	2 kelp greenlin, several perch and gunnels
30-Apr-21	8:35	5	Clear, Calm	Low	3	3	0	0	0	0	2	0	0	
30-Apr-21	8:16	6	Clear, Calm	Mid	0	0	0	0	0	0	0	0	0	2 juvenile rockfish, and 1 gunnel
30-Apr-21	8:00	7	Clear, Calm	Mid	0	0	0	0	0	0	0	0	0	Good set off bluff
30-Apr-21	7:46	8	Clear, Calm	Mid	0	0	0	0	0	0	0	0	0	Good Set
29-Apr-21	12:30	9	Slight chop, Overcast	Low	0	0	0	0	0	0	0	0	0	Flounders, gunnels, juvenile ling, and sculpins. *Havannah Site 8
29-Apr-21	15:20	10	Calm	High	0	0	0	0	0	0	0	0	0	Set in lee of island. All "normal" beaches have trees. * Havannah Site 9
13-May-21	10:01	1	Calm, Overcast	Low	0	0	0	0	2	0	0	0	0	Perch, 2 Herring
13-May-21	10:20	2	Calm, Overcast	Low	33	30	0	0	0	0	0	0	0	600 Herring
13-May-21	11:00	3	Calm, Overcast	Low	0	0	0	0	0	0	0	0	0	Abundant bycatch: perch, gunnels, sculpin, greenlings
13-May-21	11:18	4	Overcast, Light Winds	Low	0	0	0	0	0	0	0	0	0	Abundant bycatch: perch, greenlings, herring
13-May-21	11:37	5	Calm, Overcast	Mid	2	2	1	1	0	0	0	0	0	perch, gunnels
13-May-21	15:57	8	Clear, Calm	High	3	3	0	0	1	0	0	0	0	
13-May-21	16:04	7	Choppy, Sunny	High	0	0	0	0	0	0	0	0	0	1 foot chop @ site
13-May-21	16:26	6	Choppy, Sunny	High	0	0	0	0	0	0	0	0	0	1 foot chop @ site
13-May-21	12:22	9	Calm, Overcast	Mid	0	0	0	0	0	0	0	0	0	Shiners, gunnels, sculpins, tubesnouts. *Havannah Site 8
13-May-21	14:50	10	Clear, Calm	High	258	30	8	8	0	0	0	0	0	1 gunnel. *Havannah Site 9
28-May-21	6:49	1	Calm, Overcast	Mid	0	0	0	0	0	0	0	0	0	12 Shiiner Perch, 2 juvenile rockfish, 1 surf perch
28-May-21	7:04	2	Calm, Overcast	Low	30	30	2	2	0	0	0	0	0	200 herring, perch, 1 CT, 2 snake pricklebacks, juv rockfish, sculpins

Date	Time	Site Number	Weather Comments	Tide Stage	Pink Capture d	Pink Retaine d	Chum Capture d	Chum Retained	Coho Capture d	Coho Retaine d	Sticklebac k Captured	Sticklebac k Retained	Salmonid Mortalities	Comments
28-May-21	7:36	3	Calm, Overcast	Low	26	26	0	0	0	0	0	0	0	300 Herring
27-May-21	16:08	4	Pouring Rain, Calm	High	0	0	0	0	0	0	0	0	0	
27-May-21	16:22	5	Rain, Overcast	High	125	30	6	6	0	0	0	0	0	11 Herring
27-May-21	15:40	6	Calm, Overcast	High	180	30	28	28	6	0	3	0	0	Extremely high tide. 3 juvenile greenling
27-May-21	15:18	7	Calm, Overcast	High	0	0	0	0	1	0	0	0	0	
27-May-21	14:57	8	Pouring Rain, Calm	High	53	29	4	4	0	0	0	0	0	3 shiner perch
27-May-21	11:46	9	Calm, Overcast	Low	0	0	0	0	0	0	0	0	0	*Havannah Site 8
27-May-21	13:50	10	Calm, Overcast	High	210	31	3	3	0	0	0	0	0	1 gunnel. *Havannah Site 9

### Appendix III – Sea Lice Analysis Data

SITE	DATE COLLECTED	FISH SPECIES	LENGTH IN MM	WEIGHT IN G	LEP Co	LEP C1	LEP C2	LEP PAM	LEP PAF	LEP AM	LEP AF	CAL Co	CAL C1	CAL C2	CAL C3	CAL C4	CAL PAM	CAL PAF	CAL AM	CAL AF	TOT LICE ID	TOT LEP	TOT CAL
10	27-May-21	pink	52	1.6	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0
10	27-May-21	pink	54	2.0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0
10	27-May-21	pink	55	1.9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10	27-May-21	pink	54	1.7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10	27-May-21	pink	57	2.3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10	27-May-21	pink	46	1.2	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	2	2	0
10	27-May-21	pink	49	1.6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10	27-May-21	pink	48	1.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10	27-May-21	pink	45	1.2	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0
10	27-May-21	pink	43	0.8	0	0	0	0	0	0	0	0	0	1	0	0	1	1	0	0	3	0	3
10	27-May-21	pink	57	2.7	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0
10	27-May-21	pink	51	1.8	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0
10	27-May-21	pink	47	1.3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10	27-May-21	pink	47	1.4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10	27-May-21	pink	51	1.6	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	1
10	27-May-21	pink	52	1.9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10	27-May-21	pink	53	1.9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10	27-May-21	pink	54	2.0	0	2	0	0	1	0	0	0	0	0	0	0	0	0	0	0	3	3	0
10	27-May-21	pink	53	1.9	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0
10	27-May-21	pink	52	2.1	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	3	0
10	27-May-21	pink	44	1.1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	1
10	27-May-21	pink	50	1.5	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0
10	27-May-21	pink	47	1.3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10	27-May-21	pink	51	1.6	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0
10	27-May-21	pink	48	1.4	0	0	0	1	0	2	0	0	0	0	0	0	0	0	0	0	3	3	0
10	27-May-21	pink	45	1.2	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	2	2	0
10	27-May-21	pink	50	1.7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10	27-May-21	pink	47	1.2	1	1	0	0	1	1	0	0	0	0	0	0	0	0	0	0	4	4	0
10	27-May-21	pink	50	2.3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10	27-May-21	pink	45	1.0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	2	2	0
10	27-May-21	pink	50	1.6	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	3	3	0
10	27-May-21	chum	48	1.4	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	1
10	27-May-21	chum	50	1.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10	27-May-21	chum	52	1.6	0	4	0	0	0	1	0	0	0	0	0	0	0	0	0	0	5	5	0
5	27-May-21	pink	63	3.3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5	27-May-21	pink	64	2.9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	1
5	27-May-21	pink	57	2.7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5	27-May-21	pink	60	2.3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

SITE	DATE COLLECTED	FISH SPECIES	LENGTH IN MM	WEIGHT IN G	LEP Co	LEP C1	LEP C2	LEP PAM	LEP PAF	LEP AM	LEP AF	CAL Co	CAL C1	CAL C2	CAL C3	CAL C4	CAL PAM	CAL PAF	CAL AM	CAL AF	TOT LICE ID	TOT LEP	TOT CAL
5	27-May-21	pink	69	3.9	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	1	0
5	27-May-21	pink	65	3.2	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	1	0
5	27-May-21	pink	62	3.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5	27-May-21	pink	63	1.9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5	27-May-21	pink	62	1.8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5	27-May-21	pink	58	2.6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5	27-May-21	pink	60	2.6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5	27-May-21	pink	57	2.2	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	1	0
5	27-May-21	pink	60	2.6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5	27-May-21	pink	58	2.4	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	0
5	27-May-21	pink	71	4.4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5	27-May-21	pink	65	3.6	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	1
5	27-May-21	pink	63	2.8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5	27-May-21	pink	60	2.4	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	3	3	0
5	27-May-21	pink	61	2.9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5	27-May-21	pink	61	2.9	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	0
5	27-May-21	pink	66	3.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5	27-May-21	pink	70	4.6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5	27-May-21	pink	55	2.1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	1	0
5	27-May-21	pink	51	1.7	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	1
5	27-May-21	pink	74	4.7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5	27-May-21	pink	67	3.9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5	27-May-21	pink	55	2.3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1
5	27-May-21	pink	63	3.4	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	1	0
5	27-May-21	pink	65	3.9	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	1	0
5	27-May-21	pink	62	3.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5	27-May-21	chum	67	3.6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5	27-May-21	chum	58	2.6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5	27-May-21	chum	69	4.0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0
5	27-May-21	chum	55	2.1	0	0	0	1	0	1	0	0	0	0	0	0	1	0	0	0	3	2	1
5	27-May-21	chum	64	3.3	0	0	1	0	0	1	0	0	0	1	0	0	1	0	0	1	5	2	3
5	27-May-21	chum	73	4.4	1	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	3	1	2
2	28-May-21	pink	74	4.0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	1	0	4	3	1
2	28-May-21	pink	56	1.9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2	28-May-21	pink	61	3.3	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0
2	28-May-21	pink	61	2.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2	28-May-21	pink	62	2.4	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0
2	28-May-21	pink	64	2.9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2	28-May-21	pink	58	1.8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2	28-May-21	pink	66	2.6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2	28-May-21	pink	48	1.5	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0

SITE	DATE COLLECTED	FISH SPECIES	LENGTH IN MM	WEIGHT IN G	LEP Co	LEP C1	LEP C2	LEP PAM	LEP PAF	LEP AM	LEP AF	CAL Co	CAL C1	CAL C2	CAL C3	CAL C4	CAL PAM	CAL PAF	CAL AM	CAL AF	TOT LICE ID	TOT LEP	TOT CAL
2	28-May-21	pink	51	1.5	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0
2	28-May-21	pink	63	2.6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2	28-May-21	pink	60	2.4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2	28-May-21	pink	67	3.6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2	28-May-21	pink	68	3.3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2	28-May-21	pink	70	4.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2	28-May-21	pink	58	2.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2	28-May-21	pink	64	2.8	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	1	0
2	28-May-21	pink	59	2.2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2	28-May-21	pink	60	2.7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2	28-May-21	pink	63	2.9	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	1	0
2	28-May-21	pink	64	3.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2	28-May-21	pink	66	3.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2	28-May-21	pink	64	3.1	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	2	2	0
2	28-May-21	pink	57	2.4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2	28-May-21	pink	60	2.4	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	2	2	0
2	28-May-21	pink	68	2.2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2	28-May-21	pink	67	3.4	1	1	0	0	0	2	1	0	0	0	0	0	0	0	1	0	6	5	1
2	28-May-21	pink	60	3.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	2	0	2
2	28-May-21	pink	57	2.2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0
2	28-May-21	pink	47	1.6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2	28-May-21	chum	69	4.2	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	2	2	0
2	28-May-21	chum	83	6.8	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0
6	12-Apr-21	pink	35	0.4	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0
6	12-Apr-21	pink	34	0.4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10	12-Apr-21	pink	30	0.2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4	30-Apr-21	pink	45	1.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8	27-May-21	pink	61	2.6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8	27-May-21	pink	65	3.4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8	27-May-21	pink	70	3.9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8	27-May-21	pink	65	3.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8	27-May-21	pink	68	3.7	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	2	2	0
8	27-May-21	pink	64	3.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8	27-May-21	pink	58	2.4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8	27-May-21	pink	62	2.9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8	27-May-21	pink	67	3.8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8	27-May-21	pink	66	3.6	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	2	1	1
8	27-May-21	pink	64	3.4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8	27-May-21	pink	76	4.9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8	27-May-21	pink	59	2.4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8	27-May-21	pink	60	2.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

SITE	DATE COLLECTED	FISH SPECIES	LENGTH IN MM	WEIGHT IN G	LEP Co	LEP C1	LEP C2	LEP PAM	LEP PAF	LEP AM	LEP AF	CAL Co	CAL C1	CAL C2	CAL C3	CAL C4	CAL PAM	CAL PAF	CAL AM	CAL AF	TOT LICE ID	TOT LEP	TOT CAL
8	27-May-21	pink	60	3.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8	27-May-21	pink	68	4.4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8	27-May-21	pink	56	2.2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8	27-May-21	pink	60	2.5	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0
8	27-May-21	pink	65	3.8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8	27-May-21	pink	66	3.7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8	27-May-21	pink	59	2.8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8	27-May-21	pink	56	2.4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8	27-May-21	pink	55	2.2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8	27-May-21	pink	62	2.7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8	27-May-21	pink	62	2.7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8	27-May-21	pink	56	2.3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8	27-May-21	pink	59	2.9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8	27-May-21	pink	59	2.4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8	27-May-21	pink	63	3.3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8	27-May-21	chum	56	2.8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8	27-May-21	chum	58	3.2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8	27-May-21	chum	66	4.3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8	27-May-21	chum	79	7.3	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0
10	13-May-21	pink	43	0.8	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0
10	13-May-21	pink	45	1.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10	13-May-21	pink	49	1.2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10	13-May-21	pink	45	0.9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10	13-May-21	pink	55	1.8	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	2	2	0
10	13-May-21	pink	48	1.2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10	13-May-21	pink	35	0.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10	13-May-21	pink	51	1.5	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0
10	13-May-21	pink	46	1.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10	13-May-21	pink	46	1.1	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	2	0	2
10	13-May-21	pink	45	1.0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	2	1	1
10	13-May-21	pink	42	0.9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10	13-May-21	pink	48	1.1	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	2	1	1
10	13-May-21	pink	51	1.6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10	13-May-21	pink	54	1.7	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0
10	13-May-21	pink	51	1.6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10	13-May-21	pink	45	1.2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10	13-May-21	pink	45	1.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10	13-May-21	pink	39	0.7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10	13-May-21	pink	47	1.3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10	13-May-21	pink	45	1.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10	13-May-21	pink	42	0.9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

SITE	DATE COLLECTED	FISH SPECIES	LENGTH IN MM	WEIGHT IN G	LEP Co	LEP C1	LEP C2	LEP PAM	LEP PAF	LEP AM	LEP AF	CAL Co	CAL C1	CAL C2	CAL C3	CAL C4	CAL PAM	CAL PAF	CAL AM	CAL AF	TOT LICE ID	TOT LEP	TOT CAL
10	13-May-21	pink	45	1.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10	13-May-21	pink	44	1.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10	13-May-21	pink	47	1.3	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	0
10	13-May-21	pink	54	1.7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10	13-May-21	pink	48	1.3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10	13-May-21	pink	49	1.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10	13-May-21	pink	45	1.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10	13-May-21	pink	49	1.4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10	13-May-21	chum	48	1.4	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	2	2	0
10	13-May-21	chum	46	1.2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10	13-May-21	chum	54	1.8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10	13-May-21	chum	47	1.4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10	13-May-21	chum	51	1.8	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	1	0
10	13-May-21	chum	49	1.2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0
10	13-May-21	chum	48	1.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10	13-May-21	chum	43	1.1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	1
5	30-Apr-21	pink	42	0.9	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	1	0
5	30-Apr-21	pink	34	0.4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5	30-Apr-21	pink	37	0.6	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	2	1	1
5	13-May-21	chum	51	2.2	0	0	0	0	0	0	0	0	0	0	1	1	1	1	0	0	4	0	4
5	13-May-21	pink	45	1.1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	1
5	13-May-21	pink	61	2.9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2	13-May-21	pink	63	2.3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2	13-May-21	pink	55	1.6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2	13-May-21	pink	55	2.3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2	13-May-21	pink	65	3.7	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0
2	13-May-21	pink	55	2.1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	1
2	13-May-21	pink	55	2.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2	13-May-21	pink	59	2.3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2	13-May-21	pink	54	1.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2	13-May-21	pink	63	2.7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2	13-May-21	pink	74	5.2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1
2	13-May-21	pink	65	3.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2	13-May-21	pink	63	2.9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2	13-May-21	pink	59	2.1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	1	0
2	13-May-21	pink	63	2.7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2	13-May-21	pink	55	1.7	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	1
2	13-May-21	pink	58	1.9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2	13-May-21	pink	55	1.9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2	13-May-21	pink	55	1.9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2	13-May-21	pink	63	2.7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

SITE	DATE COLLECTED	FISH SPECIES	LENGTH IN MM	WEIGHT IN G	LEP Co	LEP C1	LEP C2	LEP PAM	LEP PAF	LEP AM	LEP AF	CAL Co	CAL C1	CAL C2	CAL C3	CAL C4	CAL PAM	CAL PAF	CAL AM	CAL AF	TOT LICE ID	TOT LEP	TOT CAL
2	13-May-21	pink	63	2.6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1
2	13-May-21	pink	75	5.7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2	13-May-21	pink	56	2.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2	13-May-21	pink	60	2.4	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	1
2	13-May-21	pink	57	2.0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0
2	13-May-21	pink	77	5.9	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	2	0	2
2	13-May-21	pink	62	2.7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2	13-May-21	pink	60	2.9	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	0
2	13-May-21	pink	68	3.9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2	13-May-21	pink	55	2.2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2	13-May-21	pink	55	2.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2	29-Apr-21	pink	41	0.6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6	27-May-21	chum	70	4.8	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	0
6	27-May-21	chum	77	5.7	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	2	1	1
6	27-May-21	chum	80	6.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6	27-May-21	chum	77	5.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6	27-May-21	chum	83	7.3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6	27-May-21	chum	78	5.4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6	27-May-21	chum	73	4.6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	0	2
6	27-May-21	chum	77	6.3	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	0
6	27-May-21	chum	80	5.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6	27-May-21	chum	75	5.7	0	1	0	0	0	0	0	0	0	0	0	1	0	0	1	0	3	1	2
6	27-May-21	chum	74	5.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	1
6	27-May-21	chum	68	4.4	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	2	2	0
6	27-May-21	chum	66	3.6	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	3	2	1
6	27-May-21	chum	75	4.9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6	27-May-21	chum	68	3.7	1	1	0	0	1	0	0	0	0	0	0	0	1	0	0	0	4	3	1
6	27-May-21	chum	69	4.2	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	0
6	27-May-21	chum	74	5.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6	27-May-21	chum	66	3.5	1	2	0	1	0	0	0	0	0	0	0	0	0	0	0	0	4	4	0
6	27-May-21	chum	73	5.2	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	0
6	27-May-21	chum	80	7.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6	27-May-21	chum	76	5.8	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0
6	27-May-21	chum	67	5.4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	1
6	27-May-21	chum	68	3.9	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	1
6	27-May-21	chum	70	4.7	3	2	1	1	1	0	0	0	0	0	0	0	1	1	1	0	11	8	3
6	27-May-21	chum	74	4.6	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	1
6	27-May-21	chum	71	4.6	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	2	1	1
6	27-May-21	chum	75	4.9	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	1
6	27-May-21	chum	69	4.4	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	1	3	2	1
6	27-May-21	pink	74	5.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0



SITE	DATE COLLECTED	FISH SPECIES	LENGTH IN MM	WEIGHT IN G	LEP Co	LEP C1	LEP C2	LEP PAM	LEP PAF	LEP AM	LEP AF	CAL Co	CAL C1	CAL C2	CAL C3	CAL C4	CAL PAM	CAL PAF	CAL AM	CAL AF	TOT LICE ID	TOT LEP	TOT CAL
6	27-May-21	pink	65	3.3	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	1
6	27-May-21	pink	69	3.6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6	27-May-21	pink	70	4.7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6	27-May-21	pink	70	4.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6	27-May-21	pink	57	2.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6	27-May-21	pink	66	3.7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6	27-May-21	pink	62	2.9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6	27-May-21	pink	71	3.9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6	27-May-21	pink	71	4.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6	27-May-21	pink	62	3.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6	27-May-21	pink	57	2.4	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	1	0
6	27-May-21	pink	68	4.0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0
6	27-May-21	pink	69	3.6	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0
6	27-May-21	pink	65	3.4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6	27-May-21	pink	72	4.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6	27-May-21	pink	71	4.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6	27-May-21	pink	65	3.2	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	2	2	0
6	27-May-21	pink	62	3.9	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	1	0
6	27-May-21	pink	68	3.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6	27-May-21	pink	63	2.9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6	27-May-21	pink	69	3.7	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	1
6	27-May-21	pink	67	3.8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6	27-May-21	pink	78	3.4	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	1
6	27-May-21	pink	72	4.2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6	27-May-21	pink	72	4.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6	27-May-21	pink	74	3.3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6	27-May-21	pink	74	5.2	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	2	1	1
6	27-May-21	pink	66	3.7	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0
6	27-May-21	pink	67	3.9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3	28-May-21	pink	74	4.8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3	28-May-21	pink	73	3.5	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	2	1	1
3	28-May-21	pink	65	2.7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1
3	28-May-21	pink	70	3.3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1
3	28-May-21	pink	72	3.6	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	1	0
3	28-May-21	pink	65	2.9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3	28-May-21	pink	74	4.4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3	28-May-21	pink	80	4.8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3	28-May-21	pink	75	4.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3	28-May-21	pink	72	5.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3	28-May-21	pink	73	4.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3	28-May-21	pink	69	3.3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1

SITE	DATE COLLECTED	FISH SPECIES	LENGTH IN MM	WEIGHT IN G	LEP Co	LEP C1	LEP C2	LEP PAM	LEP PAF	LEP AM	LEP AF	CAL Co	CAL C1	CAL C2	CAL C3	CAL C4	CAL PAM	CAL PAF	CAL AM	CAL AF	TOT LICE ID	TOT LEP	TOT CAL
3	28-May-21	pink	75	4.3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3	28-May-21	pink	70	3.4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	1
3	28-May-21	pink	74	3.8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3	28-May-21	pink	74	4.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3	28-May-21	pink	70	3.8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3	28-May-21	pink	74	4.2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3	28-May-21	pink	75	4.2	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	1	0
3	28-May-21	pink	74	4.1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	1	0
3	28-May-21	pink	65	2.9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3	28-May-21	pink	74	4.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3	28-May-21	pink	70	3.6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	0	2
3	28-May-21	pink	67	3.8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3	28-May-21	pink	68	3.3	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	1	0
3	28-May-21	pink	71	4.2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7	12-Apr-21	chum	37	0.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7	12-Apr-21	chum	33	0.3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7	12-Apr-21	pink	34	0.3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7	12-Apr-21	pink	33	0.4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7	12-Apr-21	pink	33	0.3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7	12-Apr-21	pink	36	0.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7	12-Apr-21	pink	34	0.3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7	12-Apr-21	pink	34	0.4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7	12-Apr-21	pink	33	0.3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7	12-Apr-21	pink	33	0.3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7	12-Apr-21	pink	34	0.3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7	12-Apr-21	pink	36	0.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7	12-Apr-21	pink	36	0.4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7	12-Apr-21	pink	34	0.3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7	12-Apr-21	pink	35	0.3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7	12-Apr-21	pink	36	0.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7	12-Apr-21	pink	34	0.3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7	12-Apr-21	pink	36	0.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7	12-Apr-21	pink	35	0.4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7	12-Apr-21	pink	35	0.4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7	12-Apr-21	pink	36	0.4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7	12-Apr-21	pink	32	0.3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7	12-Apr-21	pink	32	0.2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7	12-Apr-21	pink	33	0.3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7	12-Apr-21	pink	35	0.4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7	12-Apr-21	pink	32	0.3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7	12-Apr-21	pink	33	0.3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

SITE	DATE COLLECTED	FISH SPECIES	LENGTH IN MM	WEIGHT IN G	LEP Co	LEP C1	LEP C2	LEP PAM	LEP PAF	LEP AM	LEP AF	CAL Co	CAL C1	CAL C2	CAL C3	CAL C4	CAL PAM	CAL PAF	CAL AM	CAL AF	TOT LICE ID	TOT LEP	TOT CAL
7	12-Apr-21	pink	32	0.3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7	12-Apr-21	pink	34	0.3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7	12-Apr-21	pink	36	0.4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7	12-Apr-21	pink	35	0.4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7	12-Apr-21	pink	34	0.4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7	12-Apr-21	pink	32	0.3	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0
2	14-Apr-21	pink	34	0.3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2	14-Apr-21	pink	33	0.3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2	14-Apr-21	pink	34	0.4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2	14-Apr-21	pink	36	0.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2	14-Apr-21	pink	31	0.3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2	14-Apr-21	pink	36	0.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2	14-Apr-21	pink	36	0.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2	14-Apr-21	pink	33	0.3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2	14-Apr-21	pink	32	0.3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2	14-Apr-21	pink	35	0.3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2	14-Apr-21	pink	35	0.4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2	14-Apr-21	pink	32	0.3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2	14-Apr-21	pink	35	0.4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2	14-Apr-21	pink	34	0.3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2	14-Apr-21	pink	32	0.4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2	14-Apr-21	pink	32	0.4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2	14-Apr-21	pink	34	0.3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2	14-Apr-21	pink	35	0.4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8	13-May-21	pink	44	1.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8	13-May-21	pink	45	1.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8	13-May-21	pink	48	1.3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9	12-Apr-21	pink	28	0.2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9	12-Apr-21	pink	31	0.3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4	12-Apr-21	pink	31	0.3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4	12-Apr-21	pink	37	0.6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4	12-Apr-21	chum	40	0.7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

## Appendix IV – Historical Comparison (2019-2021)

A comparison of the historical results of analysis for sea lice infestation on all retained juvenile salmon collected by beach seine in Clio Channel and Chatham Channel, BC from 2019 to 2021.

Year	Sample size	Total # of fish infested	Total # of lice observed	Prevalence (%)	Abundance	Average Intensity
2019	76	29	97	38.2	1.28	3.3
2020	263	41	48	15.6	0.18	1.2
2021	357	124	216	34.7	0.61	1.7
<b>Total</b>	<b>696</b>	<b>194</b>	<b>361</b>	<b>27.9</b>	<b>0.52</b>	<b>1.9</b>