Wild Juvenile Salmonid Monitoring Program 2020
Broughton Archipelago, BC

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Summary

Beach seine sampling was conducted on behalf of MOWI Canada West and Cermaq Canada in the Broughton Archipelago, BC in 2020. Sampling was completed to monitor sea lice abundance, prevalence and intensity on juvenile wild salmon and threespine stickleback within the Broughton Archipelago in support of the Aquaculture Stewardship Certification process for finfish aquaculture sites in the area.

Sampling was conducted during three separate sampling events in March, April and May of 2020, selected to roughly coincide with the estimated peak outmigration period of juvenile salmonids. A total of 45 sites were selected for sampling in 2020. Attempts were made to sample at all 45 sites during the first sampling event completed on March 30, 31 and April 1, 2020 but rough conditions and associated safety concerns on March 31, 2020 prevented access to two sites and Covid-19 related access restrictions prevented sampling at one location. Sampling locations were reduced to 18 sites for the remaining sampling events in 2020.

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 sites during the sampling events. Total catch numbers of each species were recorded. Surface water temperature and salinity were recorded at each site during each sampling event.

Collected sample fish were frozen and delivered to the Center for Aquatic Health Sciences (CAHS) for laboratory analysis. Sea lice infestation data was tabulated by CAHS and provided to Mainstream Biological Consulting for reporting. Sea lice observed on the individual fish specimens during laboratory analysis were identified as either *Lepeophtheirus spp.* or *Caligus sp*. These lice are assumed to be *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 the Broughton Archipelago in 2020. A total of 904 individual samples underwent lab analysis for sea lice infestation including 497 chum salmon (*Oncorhynchus keta*), 402 pink salmon (*Oncorhynchus gorbuscha*) and five coho salmon (*Oncorhynchus kisutch*). A single sockeye salmon (*Oncorhynchus nerka*) was captured during beach seine sampling in the Broughton Archipelago in 2020 and was not retained for lab analysis. No chinook salmon (*Oncorhynchus tshawytscha*), Atlantic salmon (*Salmo salar*) or threespine stickleback (*Gasterosteus aculeatus*) were captured during sampling in 2020.

From the total sample population 206 individuals were infested with 307 sea lice. The calculated sea lice prevalence for the total sample population was 22.8 % and the sea lice abundance was 0.34 for the sample population collected in the Broughton Archipelago in 2020.

A total of 959 chum salmon were captured, representing 42.3 % of all captured samples. Of the 959 chum captured, 497 were kept for lab analysis for sea lice infestation. A total of 114 chum smolts were found to be infested with 183 lice resulting in a calculated sea lice prevalence of 22.9 % and an abundance of 0.37 for the chum salmon sample population.

A total of 1,303 pink salmon were captured, representing 57.4 % of all captured samples. Of the 1,303 pinks captured, 402 were kept for lab analysis for sea lice infestation. A total of 90 pink salmon were found to be infested with 120 lice resulting in a calculated sea lice prevalence of 22.4 % and an abundance of 0.30 for the pink salmon sample population.

A total of six coho salmon were captured and five individuals were retained and analyzed for sea lice infestation. Of the five samples, two coho salmon were found to be infested by four lice resulting in a calculated sea lice prevalence of 40.0 % and an abundance of 0.80 for the coho salmon sample population.

A single sockeye salmon was captured during beach seine sampling in the Broughton Archipelago in 2020 and was not retained for lab analysis. No chinook salmon, Atlantic salmon or threespine stickleback were captured during sampling in 2020.

A total of 92 *Lepeophtheirus salmonis* sea lice of various life stages were identified on 72 individuals and 215 *Caligus clemensi* sea lice were found on 156 of the samples analyzed in the lab. There were 22 samples that were infested with both *L. salmonis* and *C. clemensi* sea lice.

For the chum salmon sample population, a total of 49 *Lepeophtheirus salmonis* sea lice of various life stages were identified on 37 juvenile chum salmon and 134 *Caligus clemensi* sea lice were found on 90 of the juvenile chum salmon analyzed in the lab. There were 13 juvenile chum salmon that were infested with both *L. salmonis* and *C. clemensi* sea lice.

For the pink salmon sample population, a total of 43 *Lepeophtheirus salmonis* sea lice of various life stages were identified on 35 juvenile pink salmon and 77 *Caligus clemensi* sea lice were found on 64 of the juvenile pink salmon analyzed in the lab. There were nine juvenile pink salmon that were infested with both *L. salmonis* and *C. clemensi* sea lice.

A total of four sea lice were identified on two coho salmon samples collected in the Broughton Archipelago in 2020. The coho salmon with sea lice were both infested with two *Caligus clemensi* lice.

The 2020 sampling represents the fifth year of monitoring in this area for ASC certification purposes. A comparison of the prevalence, abundance and average intensity of sea lice infestation by sea lice species found on chum and pink salmon was completed for sample data collected in the Broughton Archipelago between 2016 and 2020. This data is presented in the following summary tables with additional yearly comparisons of juvenile wild salmon monitoring results presented in Appendix IV.

Chum by Year	*Caligus clemensi*			*Lepeophtheirus salmonis*		
	Prevalence	Abundance	Average Intensity	Prevalence	Abundance	Average Intensity
2016 (n=512)	20.3 %	0.32	1.6	13.3 %	0.19	1.4
2017 (n=562)	17.4 %	0.31	1.8	11.0 %	0.14	1.3
2018 (n=281)	12.5 %	0.16	1.3	10.3 %	0.11	1.1
2019 (n=246)	16.3 %	0.28	1.7	14.2 %	0.22	1.5
2020 (n=497)	18.1 %	0.27	1.5	7.4 %	0.10	1.3

Pink by Year	*Caligus clemensi*			*Lepeophtheirus salmonis*		
	Prevalence	Abundance	Average Intensity	Prevalence	Abundance	Average Intensity
2016 (n=430)	24.4 %	0.33	1.3	15.3 %	0.24	1.5
2017 (n=411)	15.1 %	0.23	1.5	6.6 %	0.09	1.4
2018 (n=356)	11.5 %	0.16	1.4	5.6 %	0.06	1.1
2019 (n=230)	13.5 %	0.20	1.5	11.7 %	0.24	2.1
2020 (n=402)	15.9 %	0.19	1.2	8.7 %	0.11	1.2

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1.0 Introduction

During the spring of 2020, Mainstream Biological Consulting conducted beach seine sampling at sites in the Broughton Archipelago, BC to capture wild juvenile salmon and threespine stickleback (Figure 1). Sampling was completed on behalf of MOWI Canada West and Cermaq Canada in support of the Aquaculture Stewardship Council certification process for their aquaculture sites in the Broughton Archipelago. Sample collection occurred on March 30, 31, April 1, 17, 18 and May 14, 15, 2020. These dates were selected to roughly coincide with estimated peak outmigration period of juvenile salmonids. Attempts were made to sample at all 45 sites during the first sampling event completed on March 30, 31 and April 1, 2020 but rough conditions and associated safety concerns on March 31, 2020 prevented access to two sites and Covid-19 related access restrictions prevented sampling at one location. Sampling locations were reduced to 18 sites for the remaining sampling events in 2020.

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). *Caligus 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. *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 these 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. At this point, the sea lice attach to their host and develop through four chalimus stages. The chalimus are non-motile and attach to their host by a frontal filament. The final chalimus stage terminates as the sea lice become motile and detach from their host. The sea lice move freely on the fish as they develop through a pre-adult stage before becoming reproductively viable adults.

Water temperature and salinity are two environmental variables that influence sea lice development, growth, survival and reproductive rate. In British Columbia, surface seawater temperatures 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).

MOWI Canada West and Cermaq Canada requested monitoring of sea lice abundance, prevalence and intensity on juvenile wild salmon within the Broughton Archipelago 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 retained juvenile salmonids collected in the Broughton Archipelago in 2020.

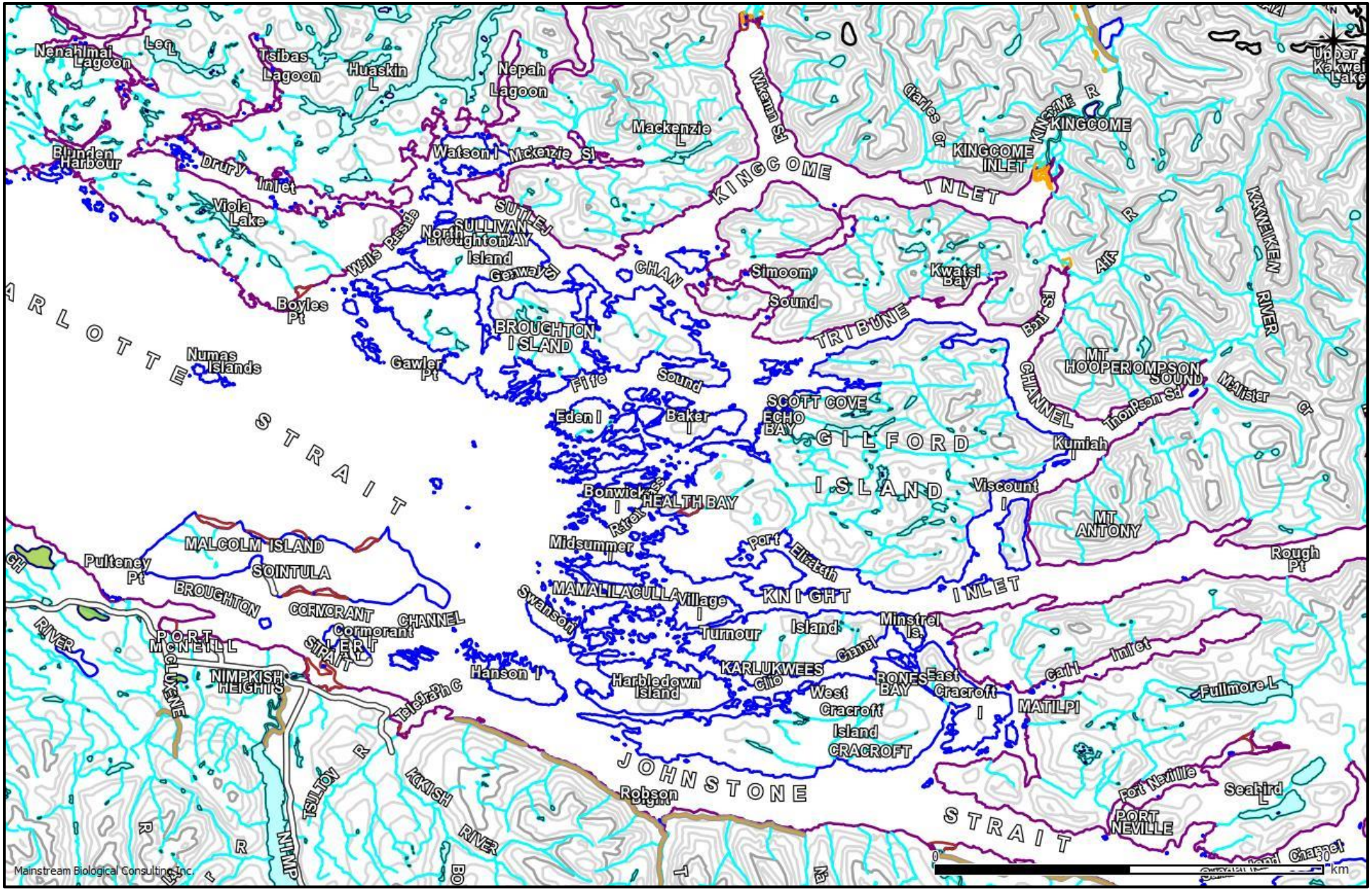


Figure 1: An overview map showing the location of the Broughton Archipelago northeast of Port McNeill, BC.

2.0 Methods

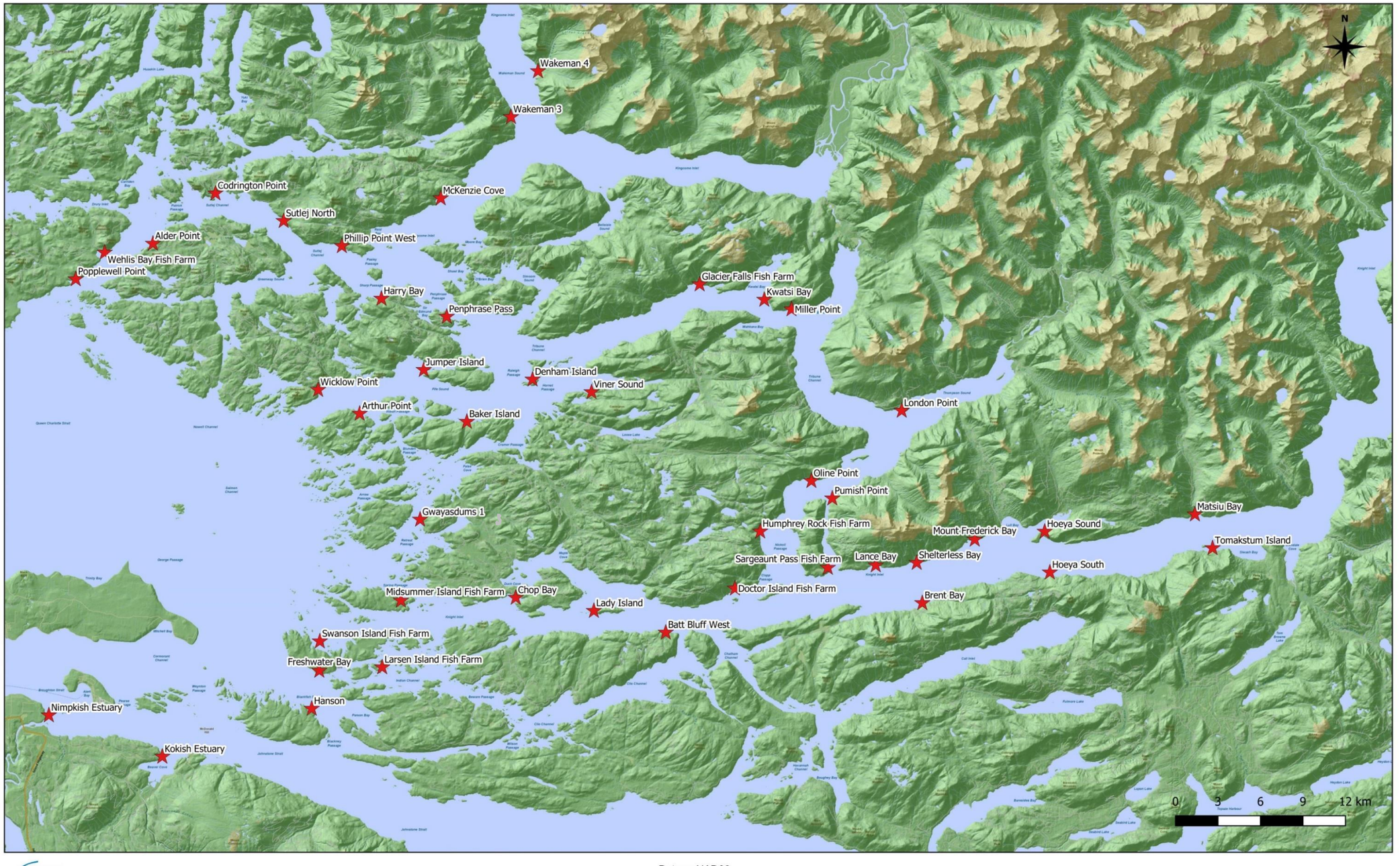
The fish inspected for sea lice infestation were collected from sampling sites in the Broughton Archipelago, BC adapted from a series of sites originally sampled in 2010-2012 (Figure 2). For the 2020 sampling year, sites were chosen based on their locations relative to existing aquaculture sites in the area operated by MOWI Canada West and Cermaq Canada, as well as on consultation with local First Nations. Sampling at a total of 45 sites was attempted during the first sampling event on March 30, 31 and April 1, 2020. Rough conditions and associated safety concerns on March 31, 2020 prevented access to sampling at Tomakstum Island and Matsui Bay. Covid-19 related access restrictions prevented sampling at Gwayasdums 1. Sampling sites were reduced to 18 sites for sampling events on April 17/18 and May 14/15, 2020.

2.1 Site Locations

The approximate locations of the sampling sites are shown in Figure 2. GPS coordinates collected in the field for the sites are presented in Table 1 as well as the dates when sampling was completed at each site.

Table 1: The name and location of the beach seine sampling sites where fish were collected for sea lice analysis in the Broughton Archipelago in 2020.

Site Name	Sampled March 30/31, April 1	Sampled April 17/18 May 14/15	Latitude	Longitude
Hanson	✓	✓	50 34.620	126 43.249
Freshwater Bay	✓	✓	50 36.255	126 42.642
Larsen Island Fish Farm	✓	-	50 36.341	126 38.400
Swanson Island Fish Farm	✓	-	50 37.304	126 42.148
Midsummer Island Fish Farm (Potts Bay)	✓	✓	50 38.881	126 37.313
Chop Bay	✓	✓	50 39.026	126 30.435
Lady Island	✓	✓	50 38.547	126 25.745
Doctor Island Fish Farm	✓	-	50 39.426	126 17.297
Humphrey Rock Fish Farm	✓	✓	50 41.596	126 15.797
Oline Point	✓	-	50 43.522	126 12.736
Pumish Point	✓	-	50 42.861	126 11.477
Sargeaunt Pass Fish Farm	✓	-	50 40.223	126 11.732
Lance Bay	✓	-	50 40.323	126 08.861
Batt Bluff West	✓	-	50 37.738	126 21.432
Brent Bay	✓	-	50 38.890	126 06.067
Hoeya South	✓	-	50 39.864	125 58.870
Tomakstum Island	-	-	50 40.920	125 48.719
Matsiu Bay	-	-	50 42.256	125 49.716
Hoeya Sound	✓	✓	50 41.608	125 58.729
Mount Frederick Bay	✓	-	50 41.305	126 02.926
Shelterless Bay	✓	-	50 40.418	126 06.405
London Point	✓	-	50 46.201	126 07.319
Miller Point	✓	-	50 50.045	126 13.963
Kwatsi Bay	✓	✓	50 50.404	126 15.602
Glacier Falls Fish Farm	✓	✓	50 50.978	126 19.498
Viner Sound	✓	✓	50 46.861	126 25.964
Jumper Island	✓	✓	50 47.658	126 36.063
Wicklow Point	✓	-	50 46.862	126 42.401
Arthur Point	✓	-	50 45.973	126 39.889
Baker Island	✓	✓	50 45.701	126 33.446
Denham Island	✓	✓	50 47.326	126 29.516
Penphrase Pass	✓	✓	50 49.687	126 34.707
Harry Bay	✓	-	50 50.351	126 38.646
Wakeman 4	✓	-	50 59.045	126 29.316
Wakeman 3	✓	-	50 57.294	126 30.926
McKenzie Cove	✓	-	50 54.184	126 35.126
Phillip Point West	✓	✓	50 52.336	126 41.057
Sutlej North	✓	-	50 53.268	126 44.579
Codrington Point	✓	-	50 54.288	126 48.707
Wehlis Bay Fish Farm	✓	✓	50 51.988	126 55.336
Popplewell Point	✓	-	50 50.961	126 57.060
Alder Point	✓	✓	50 52.348	126 52.437
Gwayasdums 1	-	-	50 41.674	126 36.098
Nimpkish Estuary	✓	✓	50 34.371	126 58.316
Kokish Estuary	✓	-	50 32.855	126 51.498



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Projection: BC Albers
Map Base: British Columbia Base Cache

Map created:
07/22/2019

Figure 2: The approximate locations of beach seine sites (red stars) in the Broughton Archipelago.

2.2 Field Procedures

Procedures used by Mainstream Biological Consulting during 2020 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 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 section 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 retrieved, the probe of an Oakton Salt 6+ meter was placed just below the water surface at the stern end of the boat to collect salinity and water temperature data. The meter was calibrated weekly with de-ionized water while traveling to the sample sites.

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 scooped into an appropriately sized whirlpac bag. Handling of fish was kept to a minimum.

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

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

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

The retained fish from each site were packaged separately in re-sealable bags and labelled with the site name and the date. Site sample bags were stored in a portable freezer connected to the boat's battery. The specimens were transferred to a freezer immediately upon return from the field.

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 sample site.

2.3 Laboratory Procedures

Collected sample fish were frozen and delivered to the Center for Aquatic Health Sciences (CAHS) for laboratory analysis. Sea lice observed on the individual fish specimens during laboratory analysis were identified as either non-motile chalimus, or motile pre-adults and adults. Lice were identified as one of 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. Sea lice infestation data was tabulated by CAHS and provided to Mainstream Biological Consulting for reporting.

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

2.4 Data Analysis

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

Beach seine fish sample composition was summarized by species and site for each sampling period. The recorded fork lengths and weights of the juvenile chum and pink salmon sample populations were summarized to present minimum and maximum values as well as calculated averages. This analysis was not completed for coho salmon as there were insufficient capture totals to warrant analysis. Sea lice infestation rates, including the number of infested fish and the number of sea lice identified, were determined for the sample population. Prevalence, as defined as the number of host fish found to have one or more sea lice compared to the total number of host fish examined, was determined for the sample population and for chum, pink and coho salmon. Abundance, as defined as the total number of sea lice observed compared to the total number of host fish examined, was also determined for the sample population and chum, pink and coho salmon. The intensity of sea lice infestation, as described by the number

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

Statistical analysis of the spatial and temporal distribution of sea lice was not conducted. Spatial and temporal analysis has been limited to the 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 results of beach seine collection and subsequent sea lice infestation analysis of juvenile salmonids collected from the Broughton Archipelago, BC, in 2020. Water quality field data is presented in Appendix I, beach seine fish capture data is included in Appendix II and data on the sample population including sea lice lab analysis results provided by CAHS are located in Appendix III.

3.1 Water Quality Parameters

Surface measurements of water temperature and salinity collected during 2020 beach seining activities are presented in Table 2. The field data recorded at each site is included in Appendix I.

Recorded surface water temperatures ranged from a low of 5.8 °C recorded at Wakeman 3 on April 1, 2020, to a high of 16.8 °C recorded at Phillip Point West on May 14, 2020 (Table 2; Appendix I). Calculated average surface water temperatures increased from 8.1 ° C for March 30-April 1, 2020, to 10.7 °C for April 17/18, 2020 and to a high of 12.9 °C for May 14/15, 2020.

Recorded surface water salinity ranged from a low of 4.4 ppt recorded at Nimpkish Estuary on April 1, 2020, to a high of 33.7 ppt recorded at Chop Bay on April 17, 2020 (Table 2; Appendix I). The calculated weekly average surface water salinity was variable during the sampling period ranging from 25.9 ppt for March 30-April 1, 2020, increasing to 29.3 ppt for April 17/18, 2020 and then dropping to 26.3 ppt for May 14/15, 2020.

Table 2: Surface water quality parameters collected at beach seine sites in the Broughton Archipelago in 2020.

Site Name	March 30-April 1, 2020		April 17-18, 2020		May 14-15, 2020	
	Temp. (°C)	Salinity (ppt)	Temp. (°C)	Salinity (ppt)	Temp (°C)	Salinity (ppt)
Alder Point	7.5	30.5	9.1	31.8	13.6	28.6
Arthur Point	11.6	31.2				
Baker Island	8.8	22.8	10.8	32.1	14.2	26.2
Batt Bluff West	7.8	14.8				
Brent Bay	7.2	32.4				
Chop Bay	9.0	15.9	9.8	33.7	12.4	29.3
Codrington Point	7.0	26.3				
Denham Island	8.6	24.2	11.0	31.6	16.3	23.0
Doctor Island Fish Farm	9.5	28.7				
Freshwater Bay	8.3	32.1	10.6	32.8	9.7	32.5
Glacier Falls Fish Farm	9.4	32.1	11.6	31.6	13.5	27.2
Hanson	7.7	33.3	12.2	32.1	9.9	33.1
Harry Bay	6.8	24.8				
Hoeya Sound	6.7	25.5	9.2	27.9	10.4	20.9
Hoeya South	7.5	26.1				
Humphrey Rock Fish Farm	8.5	32.5	9.3	33.0	11.5	27.9
Jumper Island	9.6	15.6	10.3	25.6	13.3	28.5
Kokish Estuary	9.3	31.0				
Kwatsi Bay	8.4	31.6	12.0	32.1	15.1	26.1
Lady Island	9.0	32.5	10.9	33.5	11.8	27.5
Lance Bay	7.8	23.7				
Larsen Island Fish Farm	8.4	16.2				
London Point	7.6	29.3				
McKenzie Cove	7.2	23.7				
Midsummer Island Fish Farm	7.7	32.1	9.8	32.7	10.4	32.8
Miller Point	9.2	29.5				
Mount Frederick Bay	8.1	31.2				
Nimpkish Estuary	13.0	4.4	10.8	20.2	10.8	22.8
Oline Point	8.0	16.0				
Penphrase Pass	6.9	25.9	12.9	25.8	15.0	16.7
Phillip Point West	6.5	18.7	11.1	15.2	16.8	11.9
Popplewell Point	7.2	30.8				
Pumish Point	7.7	32.0				
Sargeaunt Pass Fish Farm	7.5	26.9				
Shelterless Bay	8.6	31.5				
Sutlej North	7.0	12.3				
Swanson Island Fish Farm	8.2	33.3				
Viner Sound	8.5	27.4	11.8	22.4	14.2	29.9
Wakeman 3	5.8	15.4				
Wakeman 4	6.5	21.5				
Wehlis Bay Fish Farm	7.2	30.5	9.2	32.6	13.2	29.1
Wicklow Point	8.4	32.2				
Average	**8.1**	**25.9**	**10.7**	**29.3**	**12.9**	**26.3**

3.2 Fish Sample Composition

A total of 2,269 fish were captured during beach seine sampling conducted in the Broughton Archipelago in 2020. Of those, 904 individual fish (39.8 %) were collected as sample specimens and underwent analysis for sea lice infestation (Table 3). The collection totals and percentage for each species are presented in Table 3. Chum salmon and pink salmon were the most common species captured during sampling in 2020. Of the 1,303 pink salmon captured, 402 individuals (30.9 %) were retained and underwent lab analysis. Of the 959 chum salmon captured, 497 individuals (51.8 %) were retained and underwent lab analysis. Five of the six coho salmon captured were retained and analyzed for sea lice infestation (Table 3). The single sockeye salmon captured during beach seine sampling in the Broughton Archipelago in 2020 was not retained for lab analysis. No chinook salmon, Atlantic salmon or threespine stickleback were captured during sampling in 2020.

A summary of the total number of fish captured and collected as specimens at each site over the collection period can be found in Table 4. Totals of fish captured and collected specimens at each site over the entire collection period can be found in Appendix II. There were 15 sites where no fish were captured during 2020 sampling (Table 4). Of the sites where no fish were captured, 14 were only sampled on March 30-April 1, 2020 and one site (Alder Point) was sampled during all three periods in 2020.

Table 3: The total of collected individuals of each fish species captured in the Broughton Archipelago, BC during sampling periods in 2020, and the percentage of the total capture population that they represent.

Common Name	Capture Totals (% of total capture population)	Collection Totals	Collection %
chum salmon	959 (42.3 %)	497	51.8
pink salmon	1303 (57.4 %)	402	30.9
coho salmon	6 (0.3 %)	5	83.3
chinook salmon	0	0	-
sockeye salmon	1 (0.04 %)	0	-
threespine stickleback	0	0	-
All species	**2269**	**904**	**39.8**

Table 4: The number of captured fish (Capture Total) and the number of individual fish collected (Sample Total) from sample sites in the Broughton Archipelago, BC in 2020.

Site Name	Pink		Chum		Coho		Sockeye		Chinook		Total	
	Capture Total	Sample Total	Capture Total	Sample Total	Capture Total	Sample Total	Capture Total	Sample Total	Capture Total	Sample Total	Capture Total	Sample Total
Hanson	184	32	9	9	1	1	0	0	0	0	**194**	**42**
Freshwater Bay	548	61	26	26	0	0	0	0	0	0	**574**	**87**
Larsen Island Fish Farm	0	0	0	0	0	0	0	0	0	0	**0**	**0**
Swanson Island Fish Farm	0	0	0	0	0	0	0	0	0	0	**0**	**0**
Midsummer Island Fish Farm (Potts Bay)	22	22	9	9	0	0	0	0	0	0	**31**	**31**
Chop Bay	243	29	19	19	0	0	0	0	0	0	**262**	**48**
Lady Island	96	64	73	59	0	0	0	0	0	0	**169**	**123**
Doctor Island Fish Farm	1	1	3	3	0	0	0	0	0	0	**4**	**4**
Humphrey Rock Fish Farm	0	0	8	8	0	0	0	0	0	0	**8**	**8**
Oline Point	3	3	8	8	0	0	0	0	0	0	**11**	**11**
Pumish Point	0	0	0	0	0	0	0	0	0	0	**0**	**0**
Sargeaunt Pass Fish Farm	0	0	5	5	0	0	0	0	0	0	**5**	**5**
Lance Bay	1	1	1	1	0	0	0	0	0	0	**2**	**2**
Batt Bluff West	2	2	3	3	0	0	0	0	0	0	**5**	**5**
Brent Bay	5	5	2	2	0	0	0	0	0	0	**7**	**7**
Hoeya South	0	0	0	0	0	0	0	0	0	0	**0**	**0**
Tomakstum Island	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	**-**	**-**
Matsiu Bay	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	**-**	**-**
Hoeya Sound	7	7	297	90	0	0	0	0	0	0	**304**	**97**
Mount Frederick Bay	0	0	0	0	0	0	0	0	0	0	**0**	**0**
Shelterless Bay	1	1	8	8	0	0	0	0	0	0	**9**	**9**
London Point	0	0	0	0	0	0	0	0	0	0	**0**	**0**
Miller Point	0	0	0	0	0	0	0	0	0	0	**0**	**0**
Kwatsi Bay	0	0	0	0	1	1	0	0	0	0	**1**	**1**
Glacier Falls Fish Farm	11	11	10	10	0	0	0	0	0	0	**21**	**21**
Viner Sound	9	9	53	36	2	1	0	0	0	0	**64**	**46**
Jumper Island	27	27	22	22	0	0	0	0	0	0	**49**	**49**
Wicklow Point	0	0	0	0	0	0	0	0	0	0	**0**	**0**
Arthur Point	6	6	3	3	0	0	0	0	0	0	**9**	**9**
Baker Island	47	47	230	72	0	0	1	0	0	0	**278**	**119**
Denham Island	12	12	42	42	0	0	0	0	0	0	**54**	**54**
Penphrase Pass	24	24	101	35	1	1	0	0	0	0	**126**	**60**
Harry Bay	0	0	0	0	0	0	0	0	0	0	**0**	**0**
Wakeman 3	0	0	0	0	0	0	0	0	0	0	**0**	**0**
Wakeman 4	0	0	0	0	0	0	0	0	0	0	**0**	**0**
McKenzie Cove	0	0	0	0	0	0	0	0	0	0	**0**	**0**
Phillip Point West	1	1	9	9	0	0	0	0	0	0	**10**	**10**
Sutlej North	0	0	2	2	0	0	0	0	0	0	**2**	**2**
Codrington Point	3	3	2	2	0	0	0	0	0	0	**5**	**5**
Wehlis Bay Fish Farm	0	0	4	4	0	0	0	0	0	0	**4**	**4**
Popplewell Point	0	0	0	0	0	0	0	0	0	0	**0**	**0**
Alder Point	0	0	0	0	0	0	0	0	0	0	**0**	**0**
Gwayasdums 1	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	**-**	**-**
Nimpkish Estuary	50	34	10	10	1	1	0	0	0	0	**61**	**45**
Kokish Estuary	0	0	0	0	0	0	0	0	0	0	**0**	**0**
TOTAL	**1303**	**402**	**959**	**497**	**6**	**5**	**1**	**0**	**0**	**0**	**2269**	**904**

NS = Not Sampled

3.3 Fish Sample Size Statistics

Summary statistics for the sample population of juvenile salmonids were completed for weight and fork length. This was completed for chum and pink salmon only as there were only five coho salmon samples and the small sample size would not provide meaningful analysis.

3.3.1 Chum Salmon

The weight of 497 chum smolts collected during the three sampling events in the Broughton Archipelago in 2020 ranged from 0.25 g to 7.30 g and averaged 1.03 g (SD = 1.00). The fork length of the chum smolts ranged from 30 mm to 90 mm and averaged 44 mm (SD = 11). Chum salmon weight and length data was summarized by sampling period which shows an increase in both parameters in the sample population from March to May, 2020 (Table 5).

3.3.2 Pink Salmon

The weight of 402 pink smolts collected during the three sampling events in the Broughton Archipelago in 2020 ranged from 0.21 g to 4.21 g and averaged 0.80 g (SD = 0.73). The fork length of the pink smolts ranged from 24 mm to 80 mm and averaged 41 mm (SD = 11). Pink salmon weight and length data was summarized by sampling period which shows the increase in both parameters in the sample population from March to May, 2020 (Table 5).

Table 5: Average weights and lengths summarized by month of chum, pink and coho salmon collected in the Broughton Archipelago in 2020.

Species	Average Weight (g)			Average Length (mm)		
	March 30 April1	April 17-18	May 14-15	March 30 April1	April 17-18	May 14-15
chum	0.52 (n=172)	0.89 (n=173)	1.76 (n=152)	38	43	52
pink	0.35 (n=89)	0.50 (n=174)	1.48 (n=139)	34	37	52

3.4 Sea Lice Infestation Rates

The results of the laboratory analysis for the presence of sea lice on the sample population collected in the Broughton Archipelago in 2020 are presented in Table 6. The data recorded for each fish in the sample population during lab analysis is included in Appendix III. A total of 904 samples were collected during sampling in the Broughton Archipelago in 2020. A total of 206 individuals in the sample population were found to be infested with 307 sea lice (Table 6). A total of 114 chum, 90 pink, and two coho salmon were found to be infested with sea lice. This data reflects the identification of sea lice of either species (*L. salmonis and C. clemensi*) on inspected juvenile salmon.

Prevalence was defined as the number of fish found to be infested with one or more sea louse compared to the total number of fish. Abundance was defined as the total number of sea lice observed compared to the total number of fish. The sea lice prevalence in the sample population collected in the Broughton Archipelago in 2020 was 22.8 % and the

abundance was 0.34 (Table 6). Sea lice counts of both species observed (*L. salmonis and C. clemensi*) were added together for the prevalence and abundance calculations.

The intensity of sea lice infestation, as defined as the number of sea lice on a single infested salmon, ranged from one louse found on 139 individuals to a maximum of nine lice found on one individual. There were 45 salmon infested with two lice, 15 salmon infested by three lice and six samples were found to have four lice. The average intensity (1.5) was calculated by dividing the total number of sea lice by the number of infested fish of each species (Table 6).

Table 6: Results of analysis for sea lice infestation on salmonid smolts collected by beach seine in the Broughton Archipelago, BC in 2020.

Species	Sample size (n)	Total number of lice observed	Total number of fish infested	Prevalence (%)	Abundance	Average Intensity
chum	497	183	114	22.9	0.37	1.6
pink	402	120	90	22.4	0.30	1.3
coho	5	4	2	40.0	0.80	2.0
Total	**904**	**307**	**206**	**22.8**	**0.34**	**1.5**

3.4.1 Infestation Rates on Chum Salmon

A total of 114 chum salmon were found to be infested with 183 sea lice (Table 6). The results of the laboratory analysis for sea lice infestation for the chum salmon sample population are presented by site in Table 7. Individual sites with a total capture of more than 10 chum salmon are shown separately in Table 7, while sites with a capture total of less than 10 chum salmon are lumped together and presented at the bottom of the table.

Sea lice counts of both sea lice species observed (*L. salmonis and C. clemensi*) were added together for the presentation of sea lice infestation, prevalence and abundance on the chum salmon sample population (Table 6 and 7). For the chum salmon sample population (n=497), the number of samples collected in each sampling period were similar and the highest sea lice infestation prevalence and intensity was observed in chum salmon collected on May 14/15, 2020 (Table 7).

A total of 114 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=497) collected in the Broughton Archipelago in 2020 was 22.9 %. The highest sea lice prevalence at an individual site (70.0 %) was at Baker Island on April 17, 2020. Sea lice prevalence calculated by site for the total chum sample population was highly variable ranging from 0 % at Nimpkish Estuary to a high of 68.4 % at Chop Bay (Table 7) and up to 70.0 % at Baker Island.

A total of 183 sea lice were identified during laboratory analysis of retained chum salmon. The abundance of sea lice on the chum salmon sample population (n=497) collected in the Broughton Archipelago in 2020 was 0.37. Sea lice abundance was calculated by week and by site and is presented in Table 7. Sea lice abundance on chum salmon was highest during the May 14/15, 2020 sampling period (0.68). The highest sea lice abundance at an individual site (1.55) was at Viner Sound on May 14, 2020. Sea lice abundance calculated by site for the total chum sample population was

also highly variable ranging from 0 at Nimpkish Estuary to a high of 1.33 at Viner Sound (Table 7).

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 the graph, 77.1 % of the chum sample population were not infested with sea lice. For the chum salmon sample population infested with sea lice, 14.7 % were infested with one louse and 8.0 % of the chum salmon sample population were infested with two, three or four sea lice (Figure 3).

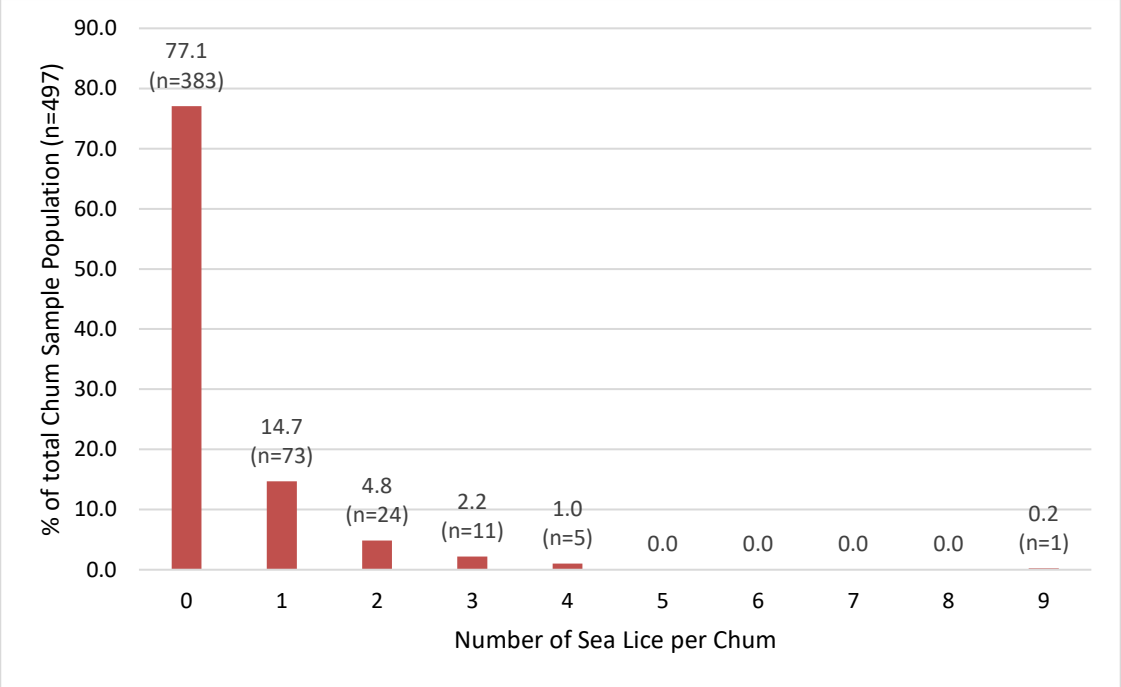

Figure 3: The number of sea lice per chum salmon specimen graphed as a percentage of the total chum sample population collected in the Broughton Archipelago in 2020.

Table 7: The number of sea lice, prevalence, abundance, and intensity of infestation on chum salmon collected in the Broughton Archipelago in 2020 summarized by site. Sites with a capture total of 10 chum salmon or more are shown and sites with capture totals of less than 10 chum salmon are lumped together.

Site	Sample Week (2020)																				Total Chum Sample Population		
	March 30-April 1							April 17-18							May 14-15								
	# of Chum Analyzed	# of Infested Chum	Average Weight of Infested Chum (g)	# of Lice	Prevalence (%)	Abundance	Average Intensity	# of Chum Analyzed	# of Infested Chum	Average Weight of Infested Chum (g)	# of Lice	Prevalence (%)	Abundance	Average Intensity	# of Chum Analyzed	# of Infested Chum	Average Weight of Infested Chum (g)	# of Lice	Prevalence (%)	Abundance	Average Intensity	Prevalence (%)	Abundance	Average Intensity
Baker Island	30	4	0.49	6	13.3	0.20	1.5	30	21	0.82	36	70.0	1.20	1.7	12	5	1.01	9	41.7	0.75	1.8	**41.7**	**0.71**	**1.7**
Chop Bay	0	-	-	-	-	-	-	0	-	-	-	-	-	-	19	13	2.63	22	68.4	1.16	1.7	**68.4**	**1.16**	**1.7**
Denham Island	13	0	-	0	0.0	0.00	0.0	21	7	0.80	10	33.3	0.48	1.4	8	3	1.01	3	37.5	0.38	1.0	**23.8**	**0.31**	**1.3**
Freshwater Bay	1	0	-	0	0.0	0.00	0.0	11	2	0.91	2	18.2	0.18	1.0	14	3	1.10	3	21.4	0.21	1.0	**19.2**	**0.19**	**1.0**
Glacier Falls Fish Farm	0	-	-	-	-	-	-	0	-	-	-	-	-	-	10	6	2.80	8	60.0	0.80	1.3	**60.0**	**0.80**	**1.3**
Hoeya Sound	30	1	0.51	1	3.3	0.03	1.0	30	1	0.84	2	3.3	0.07	2.0	30	0		0	0.0	0.00		**2.2**	**0.03**	**1.5**
Jumper Island	1	0	-	0	0.0	0.00	0.0	15	2	0.84	2	13.3	0.13	1.0	6	4	0.92	5	66.7	0.83	1.3	**27.3**	**0.32**	**1.2**
Lady Island	27	1	0.55	1	3.7	0.04	1.0	25	6	0.64	9	24.0	0.36	1.5	7	2	3.54	2	28.6	0.29	1.0	**15.3**	**0.20**	**1.3**
Nimpkish Estuary	10	0	-	0	0.0	0.00	0.0	0	-	-	-	-	-	-	0	-	-	-	-	-	-	**0.0**	**0.00**	**-**
Penphrase Pass	0	-	-	-	-	-	-	30	7	2.09	7	23.3	0.23	1.0	5	1	1.32	1	20.0	0.20	1.0	**22.9**	**0.23**	**1.0**
Viner Sound	5	0	-	0	0.0	0.00	0.0	0	-	-	-	-	-	-	31	21	1.87	48	67.7	1.55	2.3	**58.3**	**1.33**	**2.3**
Lumped Sites[1]	55	2	0.60	2	3.6	0.04	1.0	11	1	0.61	1	9.1	0.09	1.0	10	1	5.33	3	10.0	0.30	3.0	**5.3**	**0.08**	**1.5**
Total	**172**	**8**	**0.53**	**10**	**4.7**	**0.06**	**1.3**	**173**	**47**	**0.98**	**69**	**27.2**	**0.40**	**1.5**	**152**	**59**	**2.02**	**104**	**38.8**	**0.68**	**1.8**	**22.9**	**0.37**	**1.6**

[1]Lumped sites (n=31) include: Alder Point*, Arthur Point, Batt Bluff West, Brent Bay, Codrington Point, Doctor Island Fish Farm, Hanson, Harry Bay*, Hoeya South*, Humphrey Rock Fish Farm, Kokish Estuary*, Kwatsi Bay*, Lance Bay, Larsen Island Fish Farm*, London Point*, McKenzie Cove*, Midsummer Island Fish Farm, Miller Point*, Mount Frederick Bay*, Oline Point, Phillip Point West, Popplewell Point*, Pumish Point*, Sargeaunt Pass Fish Farm, Shelterless Bay, Sutlej North, Swanson Island Fish Farm*, Wakeman 3*, Wakeman 4*, Wehlis Bay Fish Farm and Wicklow Point*. Sites where no chum salmon were captured are indicated with an asterisk.

3.4.2 Infestation Rates on Pink Salmon

A total of 90 pink salmon were found to be infested with 120 sea lice (Table 6). The results of the laboratory analysis for sea lice infestation for the pink salmon sample population are presented by site in Table 8. Individual sites with a total capture of more than 10 pink salmon are shown in Table 8, while sites with a capture total of less than 10 pink salmon are lumped together and presented at the bottom of the table.

Sea lice counts of both sea lice species observed (*L. salmonis and C. clemensi*) were added together for the presentation of sea lice infestation, prevalence and abundance on the pink salmon sample population (Table 6 and 8). For the pink salmon sample population (n=402) the highest number infested samples (50 pinks) and the most sea lice (71 lice) were found on pink salmon collected on May 14/15, 2020 (Table 8).

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=402) collected in the Broughton Archipelago in 2020 was 22.4 %. Sea lice prevalence on pink salmon was highest on May 14/15 during the 2020 sampling period. The highest sea lice prevalence at an individual site (64.3 %) was at Baker Island on May 14, 2020 (Table 8). Sea lice prevalence calculated by site for the total pink sample population was highly variable ranging from 5.9 % at Nimpkish Estuary to a high of 55.2 % at Chop Bay (Table 8) and up to 64.3 % at Baker Island.

A total of 120 sea lice were identified during laboratory analysis of retained pink salmon. The abundance of sea lice on the pink salmon sample population (n=402) collected in the Broughton Archipelago in 2020 was 0.30. Sea lice abundance was calculated by week and by site and is presented in Table 8. Sea lice abundance on pink salmon was highest (0.51) on May 14/15 in 2020. The highest sea lice abundance at an individual site (0.86) was Baker Island on May 14, 2020. Sea lice abundance calculated by site for the total pink sample population was also highly variable ranging from 0.09 at Nimpkish Estuary to a high of 0.79 at Chop Bay (Table 8).

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 show in the graph, 77.6 % of the pink salmon sample population were not infested with sea lice. For the pink salmon infested with sea lice, 16.4 % were infested with one louse and 6.0 % of the sample population were infested with two, three or four lice (Figure 4).

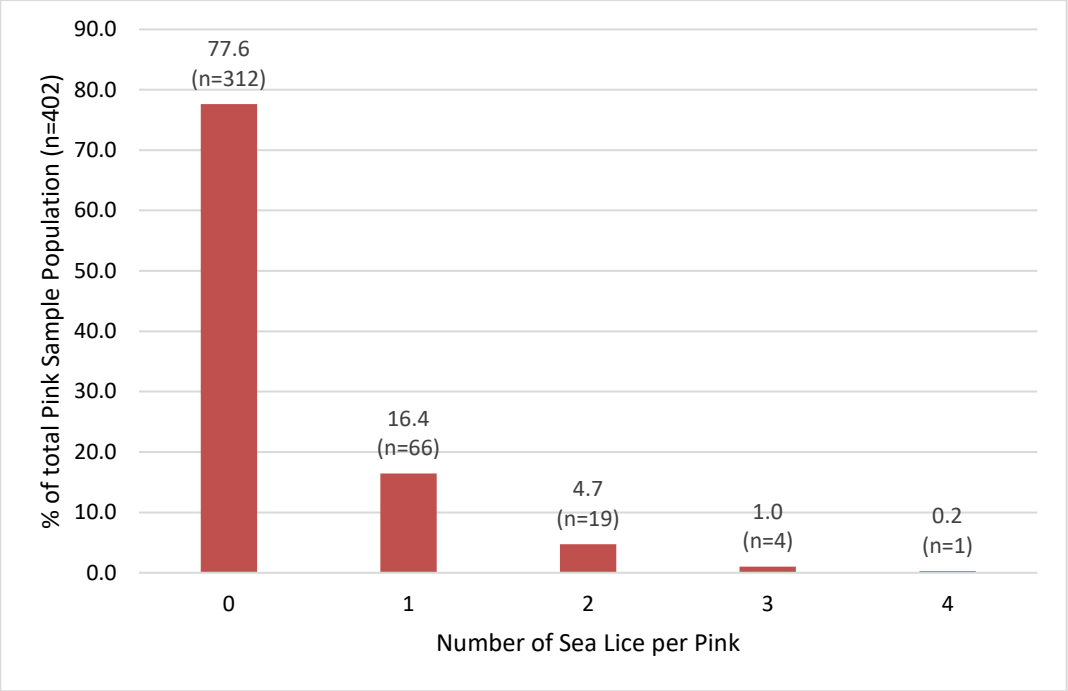

Figure 4: The number of sea lice per pink salmon specimen graphed as a percentage of the total pink salmon sample population collected in the Broughton Archipelago in 2020.

Table 8: The number of sea lice, prevalence, abundance, and intensity of infestation on pink salmon collected in the Broughton Archipelago in 2020 summarized by site. Sites with a capture total of 10 pink salmon or more are shown and sites with capture totals of less than 10 pink salmon are lumped together.

Site	Sample Week (2020)																			Total Pink Sample Population		
	March 30-April 1							April 17-18							May 14-15							
	# of Pink Analyzed	# of Infested Pink	Average Weight of Infested Pink (g)	# of Lice	Prevalence (%)	Abundance	Average Intensity	# of Pink Analyzed	# of Infested Pink	Average Weight of Infested Pink (g)	# of Lice	Prevalence (%)	Abundance	Average Intensity	# of Pink Analyzed	# of Infested Pink	Average Weight of Infested Pink (g)	# of Lice	Prevalence (%)	Abundance	Average Intensity	Prevalence (%)	Abundance	Average Intensity
Baker Island	9	3	0.86	3	33.3	0.33	1.0	24	8	0.68	13	33.3	0.54	1.6	14	9	1.21	12	64.3	0.86	1.3	**42.6**	**0.60**	**1.4**
Chop Bay	0	-	-	-	-	-	-	0	-	-	-	-	-	-	29	16	1.93	23	55.2	0.79	1.4	**55.2**	**0.79**	**1.4**
Denham Island	0	-	-	-	-	-	-	5	3	0.53	4	60.0	0.80	1.3	7	2	0.56	3	28.6	0.43	1.5	**41.7**	**0.58**	**1.4**
Freshwater Bay	8	0	-	0	0.0	0.00	0.0	28	1	0.42	1	3.6	0.04	1.0	25	9	1.04	10	36.0	0.40	1.1	**16.4**	**0.18**	**1.1**
Glacier Falls Fish Farm	0	-	-	-	-	-	-	0	-	-	-	-	-	-	11	3	2.44	3	27.3	0.27	1.0	**27.3**	**0.27**	**1.0**
Hanson	0	-	-	-	-	-	-	30	3	0.33	3	10.0	0.10	1.0	2	0			0.0	0.00		**9.4**	**0.09**	**1.0**
Jumper Island	1	0	-	0	0.0	0.00	0.0	16	3	0.63	3	18.8	0.19	1.0	10	3	0.62	4	30.0	0.40	1.3	**22.2**	**0.26**	**1.2**
Lady Island	15	1	0.24	1	6.7	0.07	1.0	31	8	0.49	9	25.8	0.29	1.1	18	3	3.46	7	16.7	0.39	2.3	**18.8**	**0.27**	**1.4**
Midsummer Island Fish Farm	4	1	0.86	2	25.0	0.50	2.0	16	2	0.41	2	12.5	0.13	1.0	2	0	-	0	0.0	0.00	0.0	**13.6**	**0.18**	**1.3**
Nimpkish Estuary	29	2	0.38	3	6.9	0.10	1.5	5	0	-	0	0.0	0.00	0.0	0	-	-	-	-	-	-	**5.9**	**0.09**	**1.5**
Penphrase Pass	0	-	-	-	-	-	-	13	3	1.29	3	23.1	0.23	1.0	11	0	-	0	0.0	0.00	0.0	**12.5**	**0.13**	**1.0**
Lumped Sites[1]	23	2	0.60	2	8.7	0.09	1.0	6	0	-	0	0.0	0.00	0.0	10	5	1.48	9	50.0	0.90	1.8	**17.9**	**0.28**	**1.6**
Total	**89**	**9**	**0.43**	**11**	**10.1**	**0.12**	**1.2**	**174**	**31**	**0.61**	**38**	**17.8**	**0.22**	**1.2**	**139**	**50**	**1.58**	**71**	**36.0**	**0.51**	**1.4**	**22.4**	**0.30**	**1.3**

[1]Lumped sites (n=31) include: Arthur Point, Batt Bluff West, Brent Bay, Codrington Point, Doctor Island Fish Farm, Hoeya Sound, Lance Bay, Oline Point, Phillip Point West, Shelterless Bay, Viner Sound, Alder Point*, Harry Bay*, Hoeya South*, Humphrey Rock Fish Farm*, Kokish Estuary*, Kwatsi Bay*, Larsen Island Fish Farm*, London Point*, McKenzie Cove*, Miller Point*, Mount Frederick Bay*, Popplewell Point*, Pumish Point*, Sargeaunt Pass Fish Farm*, Sutlej North*, Swanson Island Fish Farm*, Wakeman 3*, Wakeman 4*, Wehlis Bay Fish Farm* and Wicklow Point*. Sites where no pink salmon were captured are indicated with an asterisk.

3.4.3 Infestation Rates on Coho Salmon

Coho salmon were the third most abundant species collected during beach seine sampling in the Broughton Archipelago in 2020 (n= 5). A total of two coho salmon were found to be infested with four sea lice resulting in a species prevalence of 40.0 % and an abundance of 0.80 (Table 6). One infested coho salmon was collected at Viner Sound on May 14, 2020 and the other infested coho salmon was collected at Kwatsi Bay on May 14, 2020.

3.5 Infestation Rates by Sea Lice Species

A total of 92 *Lepeophtheirus salmonis* sea lice of various life stages were identified on 72 individuals and 215 *Caligus clemensi* sea lice were found on 156 of the samples analyzed in the lab (Appendix III). There were 22 samples that were infested with both *L. salmonis* and *C. clemensi* sea lice.

3.5.1 Infestation Rates by Sea Lice Species on Chum Salmon

An analysis of the species of sea lice identified on the 497 chum salmon collected in the Broughton Archipelago is presented in Table 9. A total of 49 *Lepeophtheirus salmonis* sea lice of various life stages were identified on 37 juvenile chum salmon and 134 *Caligus clemensi* sea lice were found on 90 of the juvenile chum salmon analyzed in the lab (Appendix III). There were 13 juvenile chum salmon that were infested with both *L. salmonis* and *C. clemensi* sea lice. The sea lice species identified on chum salmon are also presented by site by week in Table 10. Individual sites with a total capture of more than 10 chum salmon are shown in Table 10. Sites with a capture total of less than 10 chum salmon are lumped together and presented at the bottom of the table.

For the chum salmon sample population infested with *Caligus clemensi* sea lice (n=90) there were 60 samples infested with one louse, 22 samples infested with two sea lice, six samples each with three lice, one chum with four sea lice, and a single individual with eight sea lice. For the chum salmon sample population infested with *Lepeophtheirus salmonis* sea lice (n=37) there were 26 samples infested with one louse, ten with two lice and one chum infested with three lice.

Table 9: The number of sea lice in each life stage by species identified on the chum salmon sample population from the Broughton Archipelago in 2020. LEP = *Lepeophtheirus salmonis* CAL = *Caligus clemensi*

Life Stage[1]	March 30 - April 1	April 17 - 18	May 14 - 15	Total
LEP Co	2	5	15	**22**
LEP C1	3	3	1	**7**
LEP C2	0	3	11	**14**
LEP PAM	0	0	2	**2**
LEP PAF	0	2	1	**3**
LEP AM	0	0	1	**1**
LEP AF	0	0	0	**0**
TOTAL LEP	**5**	**13**	**31**	**49**
CAL Co	0	7	8	**15**
CAL C1	5	30	39	**74**
CAL C2	0	8	10	**18**
CAL C3	0	8	7	**15**
CAL C4	0	1	1	**2**
CAL PAM	0	0	1	**1**
CAL PAF	0	0	0	**0**
CAL AM	0	2	6	**8**
CAL AF	0	0	1	**1**
TOTAL CAL	**5**	**56**	**73**	**134**

[1] 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 10: The species of sea lice found on chum salmon collected in the Broughton Archipelago in 2020 summarized by site. Sites with a total capture of more than 10 chum salmon are shown. Sites with a capture total of less than 10 chum salmon are lumped. LEP = *Lepeophtheirus salmonis* CAL = *Caligus clemensi*

Site	Sample Week (2020)												**TOTAL**		
	March 30 - April 1				April 17 - 18				May 14 - 15						
	# 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 Lice**
Baker Island	30	4	1	5	30	21	3	33	12	5	5	4	72	30	51
Chop Bay	0	-	-	-	0	-	-	-	19	13	6	16	19	13	22
Denham Island	13	0	0	0	21	7	5	5	8	3	1	2	42	10	13
Freshwater Bay	1	0	0	0	11	2	1	1	14	3	2	1	26	5	5
Glacier Falls Fish Farm	0	-	-	-	0	-	-	-	10	6	2	6	10	6	8
Hoeya Sound	30	1	1	0	30	1	0	2	30	0	0	0	90	2	3
Jumper Island	1	0	0	0	15	2	1	1	6	4	1	4	22	6	7
Lady Island	27	1	1	0	25	6	1	8	7	2	2	0	59	9	12
Nimpkish Estuary	10	0	0	0	0	-	-	-	0	-	-	-	10	0	0
Penphrase Pass	0	-	-	-	30	7	2	5	5	1	0	1	35	8	8
Viner Sound	5	0	0	0	0	-	-	-	31	21	10	38	36	21	48
Lumped Sites[1]	55	2	2	0	11	1	0	1	10	1	2	1	76	4	6
Total	**172**	**8**	**5**	**5**	**173**	**47**	**13**	**56**	**152**	**59**	**31**	**73**	497	114	183

[1]Lumped sites (n=31) include: Alder Point*, Arthur Point, Batt Bluff West, Brent Bay, Codrington Point, Doctor Island Fish Farm, Hanson, Harry Bay*, Hoeya South*, Humphrey Rock Fish Farm, Kokish Estuary*, Kwatsi Bay*, Lance Bay, Larsen Island Fish Farm*, London Point*, McKenzie Cove*, Midsummer Island Fish Farm, Miller Point*, Mount Frederick Bay*, Oline Point, Phillip Point West, Popplewell Point*, Pumish Point*, Sargeaunt Pass Fish Farm, Shelterless Bay, Sutlej North, Swanson Island Fish Farm*, Wakeman 3*, Wakeman 4*, Wehlis Bay Fish Farm and Wicklow Point*. Sites where no chum salmon were captured are indicated with an asterisk.

3.5.2 Infestation Rates by Sea Lice Species on Pink Salmon

An analysis of the species of sea lice identified on the 402 pink salmon collected in the Broughton Archipelago is presented in Table 11. A total of 43 *Lepeophtheirus salmonis* sea lice of various life stages were identified on 35 juvenile pink salmon and 77 *Caligus clemensi* sea lice were found on 64 of the juvenile pink salmon analyzed in the lab (Appendix III). There were nine juvenile pink salmon that were infested with both *L. salmonis* and *C. clemensi* sea lice. The sea lice species identified on pink salmon are also presented by site and week in Table 12. Individual sites with a total capture of more than 10 pink salmon are shown in Table 12. Sites with a capture total of less than 10 pink salmon are lumped together and shown at the bottom of the table.

For the pink salmon sample population infested with *Caligus clemensi* sea lice (n=64) there were 53 samples infested with one louse, nine pink with two lice and two samples infested with three lice. For the pink salmon sample population infested with *Lepeophtheirus salmonis* sea lice (n=35) there were 29 samples infested with one louse, five with two lice and one pink infested with four lice.

Table 11: The number of sea lice in each life stage by species identified on the pink salmon sample population from the Broughton Archipelago in 2020. LEP = *Lepeophtheirus salmonis* CAL = *Caligus clemensi*

Life Stage[1]	March 30 - April 1	April 17 - 18	May 14 - 15	Total
LEP Co	3	8	5	16
LEP C1	4	2	3	9
LEP C2	0	4	2	6
LEP PAM	0	0	4	4
LEP PAF	0	0	4	4
LEP AM	0	0	2	2
LEP AF	0	0	2	2
TOTAL LEP	**7**	**14**	**22**	**43**
CAL Co	0	6	10	16
CAL C1	4	12	20	36
CAL C2	0	2	4	6
CAL C3	0	4	4	8
CAL C4	0	0	3	3
CAL PAM	0	0	1	1
CAL PAF	0	0	3	3
CAL AM	0	0	3	3
CAL AF	0	0	1	1
TOTAL CAL	**4**	**24**	**49**	**77**

[1] 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 species of sea lice found on pink salmon collected in the Broughton Archipelago in 2020 summarized by site. Sites with a total capture of more than 10 pink salmon are shown. Sites with a capture total of less than 10 pink salmon are lumped.
LEP = *Lepeophtheirus salmonis* CAL = *Caligus clemensi*

Site	Sample Week (2020)												**TOTAL**		
	March 30 - April 1				April 17 - 18				May 14 - 15						
	# 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 Lice**
Baker Island	9	3	1	2	24	8	3	10	14	9	3	9	**47**	**20**	**28**
Chop Bay	0	-	-	-	0	-	-	-	29	16	5	18	**29**	**16**	**23**
Denham Island	0	-	-	-	5	3	3	1	7	2	0	3	**12**	**5**	**7**
Freshwater Bay	8	0	0	0	28	1	0	1	25	9	5	5	**61**	**10**	**11**
Glacier Falls Fish Farm	0	-	-	-	0	-	-	-	11	3	1	2	**11**	**3**	**3**
Hanson	0	-	-	-	30	3	1	2	2	0	0	0	**32**	**3**	**3**
Jumper Island	1	0	0	0	16	3	2	1	10	3	1	3	**27**	**6**	**7**
Lady Island	15	1	1	0	31	8	2	7	18	3	4	3	**64**	**12**	**17**
Midsummer Island Fish Farm	4	1	1	1	16	2	2	0	2	0	0	0	**22**	**3**	**4**
Nimpkish Estuary	29	2	3	0	5	0	0	0	0	-	-	-	**34**	**2**	**3**
Penphrase Pass	0	-	-	-	13	3	1	2	11	0	0	0	**24**	**3**	**3**
Lumped Sites[1]	23	2	1	1	6	0	0	0	10	5	3	6	**39**	**7**	**11**
Total	**89**	**9**	**7**	**4**	**174**	**31**	**14**	**24**	**139**	**50**	**22**	**49**	**402**	**90**	**120**

[1]Lumped sites (n=31) include: Arthur Point, Batt Bluff West, Brent Bay, Codrington Point, Doctor Island Fish Farm, Hoeya Sound, Lance Bay, Oline Point, Phillip Point West, Shelterless Bay, Viner Sound, Alder Point*, Harry Bay*, Hoeya South*, Humphrey Rock Fish Farm*, Kokish Estuary*, Kwatsi Bay*, Larsen Island Fish Farm*, London Point*, McKenzie Cove*, Miller Point*, Mount Frederick Bay*, Popplewell Point*, Pumish Point*, Sargeaunt Pass Fish Farm*, Sutlej North*, Swanson Island Fish Farm*, Wakeman 3*, Wakeman 4*, Wehlis Bay Fish Farm* and Wicklow Point*. Sites where no pink salmon were captured are indicated with an asterisk..

3.5.3 Infestation Rates by Sea Lice Species on Coho Salmon

A total of four lice were identified on two coho salmon samples collected in the Broughton Archipelago in 2020. The coho salmon with sea lice were both infested with two *Caligus clemensi* lice (Appendix III). The coho sample collected at Viner Sound on May 14, 2020 was infested with one chalimus III stage louse and one adult male louse. The coho sample collected at Kwatsi Bay on May 14, 2020 was infested with two chalimus I stage lice.

4.0 Conclusions

This report presents the data from the fifth year of wild juvenile salmonid beach seining and sea lice analysis conducted for ASC certification purposes in the Broughton Archipelago, BC. This report is limited to the summary and presentation of the data collected in 2020 on behalf of MOWI Canada West and Cermaq Canada. A tabular comparison of water quality data and sea lice infestation data for chum and pink salmon for 2016 through 2020 is presented in Appendix IV.

In 2020, a total of 904 individual samples underwent lab analysis for sea lice infestation including 497 chum salmon, 402 pink salmon and five coho salmon. From the total sample population 206 individuals were infested with 307 sea lice. The calculated sea lice prevalence for the total sample population was 22.8 % and the sea lice abundance was 0.34 for the sample population collected in the Broughton Archipelago in 2020.

A total of 959 chum salmon were captured, representing 42.3 % of all captured samples. Of the 959 chum captured, 497 were kept for lab analysis for sea lice infestation. A total of 114 chum smolts were found to be infested with 183 lice resulting in a calculated sea lice prevalence of 22.9 % and an abundance of 0.37 for the chum salmon sample population.

A total of 1,303 pink salmon were captured, representing 57.4 % of all captured samples. Of the 1,303 pinks captured, 402 were kept for lab analysis for sea lice infestation. A total of 90 pink salmon were found to be infested with 120 lice resulting in a calculated sea lice prevalence of 22.4 % and an abundance of 0.30 for the pink salmon sample population.

A total of six coho salmon were captured and five individuals were retained and analyzed for sea lice infestation. Of the five samples, two coho salmon were found to be infested by four lice resulting in a calculated sea lice prevalence of 40.0 % and an abundance of 0.80 for the coho salmon sample population.

A single sockeye salmon was captured during beach seine sampling in the Broughton Archipelago in 2020 and was not retained for lab analysis. No chinook salmon, Atlantic salmon or threespine stickleback were captured during sampling in 2020.

A total of 92 *Lepeophtheirus salmonis* sea lice of various life stages were identified on 72 individuals and 215 *Caligus clemensi* sea lice were found on 156 of the samples analyzed in the lab. There were 22 samples that were infested with both *L. salmonis* and *C. clemensi* sea lice.

For the chum salmon sample population, a total of 49 *Lepeophtheirus salmonis* sea lice of various life stages were identified on 37 juvenile chum salmon and 134 *Caligus clemensi* sea lice were found on 90 of the juvenile chum salmon analyzed in the lab. There were 13 juvenile chum salmon that were infested with both *L. salmonis* and *C. clemensi* sea lice.

For the pink salmon sample population, a total of 43 *Lepeophtheirus salmonis* sea lice of various life stages were identified on 35 juvenile pink salmon and 77 *Caligus clemensi* sea lice were found on 64 of the juvenile pink salmon analyzed in the lab. There were nine juvenile pink salmon that were infested with both *L. salmonis* and *C. clemensi* sea lice.

A total of four sea lice were identified on two coho salmon samples collected in the Broughton Archipelago in 2020. The coho salmon with sea lice were both infested with two *Caligus clemensi* lice.

A comparison of the prevalence, abundance and average intensity of sea lice infestation by sea lice species found on chum and pink salmon was completed for 2016 – 2020 sample data collected in the Broughton Archipelago. This data is presented in the following summary tables with additional yearly comparisons of juvenile wild salmon monitoring results presented in Appendix IV.

Chum by Year	*Caligus clemensi*			*Lepeophtheirus salmonis*		
	Prevalence	Abundance	Average Intensity	Prevalence	Abundance	Average Intensity
2016 (n=512)	20.3 %	0.32	1.6	13.3 %	0.19	1.4
2017 (n=562)	17.4 %	0.31	1.8	11.0 %	0.14	1.3
2018 (n=281)	12.5 %	0.16	1.3	10.3 %	0.11	1.1
2019 (n=246)	16.3 %	0.28	1.7	14.2 %	0.22	1.5
2020 (n=497)	18.1 %	0.27	1.5	7.4 %	0.10	1.3

Pink by Year	*Caligus clemensi*			*Lepeophtheirus salmonis*		
	Prevalence	Abundance	Average Intensity	Prevalence	Abundance	Average Intensity
2016 (n=430)	24.4 %	0.33	1.3	15.3 %	0.24	1.5
2017 (n=411)	15.1 %	0.23	1.5	6.6 %	0.09	1.4
2018 (n=356)	11.5 %	0.16	1.4	5.6 %	0.06	1.1
2019 (n=230)	13.5 %	0.20	1.5	11.7 %	0.24	2.1
2020 (n=402)	15.9 %	0.19	1.2	8.7 %	0.11	1.2

5.0 References

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Appendix I – Field Data

Date	Site Name	Salinity (ppt) 0.2m	Temperature (°C) 0.2m
03/30/2020	Hanson	33.3	7.7
03/30/2020	Freshwater Bay	32.1	8.3
03/30/2020	Swanson Island Fish Farm	33.3	8.2
03/30/2020	Larsen Island Fish Farm	16.2	8.4
03/30/2020	Midsummer Island Fish Farm	32.1	7.7
03/30/2020	Chop Bay	15.9	9.0
03/30/2020	Lady Island	32.5	9.0
03/30/2020	Batt Bluff West	14.8	7.8
03/30/2020	Doctor Island Fish Farm	28.7	9.5
03/30/2020	Humphrey Rock Fish Farm	32.5	8.5
03/30/2020	Oline Point	16.0	8.0
03/30/2020	Pumish Point	32.0	7.7
03/30/2020	Sargeaunt Pass Fish Farm	26.9	7.5
03/31/2020	Brent Bay	32.4	7.2
03/31/2020	Hoeya South	26.1	7.5
03/31/2020	Hoeya Sound	25.5	6.7
03/31/2020	Mount Frederick Bay	31.2	8.1
03/31/2020	Shelterless Bay	31.5	8.6
03/31/2020	Lance Bay	23.7	7.8
03/31/2020	London Point	29.3	7.6
03/31/2020	Miller Point	29.5	9.2
03/31/2020	Kwatsi Bay	31.6	8.4
03/31/2020	Glacier Falls Fish Farm	32.1	9.4
03/31/2020	Viner Sound	27.4	8.5
03/31/2020	Denham Island	24.2	8.6
03/31/2020	Jumper Island	15.6	9.6
03/31/2020	Wicklow Point	32.2	8.4
03/31/2020	Arthur Point	31.2	11.6
03/31/2020	Baker Island	22.8	8.8
04/01/2020	Penphrase Pass	25.9	6.9
04/01/2020	Harry Bay	24.8	6.8
04/01/2020	Wakeman 4	21.5	6.5
04/01/2020	Wakeman 3	15.4	5.8
04/01/2020	McKenzie Cove	23.7	7.2
04/01/2020	Phillip Point West	18.7	6.5
04/01/2020	Sutlej North	12.3	7.0
04/01/2020	Codrington Point	26.3	7.0
04/01/2020	Wehlis Bay Fish Farm	30.5	7.2
04/01/2020	Popplewell Point	30.8	7.2
04/01/2020	Alder Point	30.5	7.5
04/01/2020	Nimpkish Estuary	4.4	13.0

Date	Site Name	Salinity (ppt) 0.2m	Temperature (°C) 0.2m
04/01/2020	Kokish Estuary	31.0	9.3
04/17/2020	Hoeya Sound	27.9	9.2
04/17/2020	Humphrey Rock Fish Farm	33.0	9.3
04/17/2020	Lady Island	33.5	10.9
04/17/2020	Chop Bay	33.7	9.8
04/17/2020	Midsummer Island Fish Farm	32.7	9.8
04/17/2020	Jumper Island	25.6	10.3
04/17/2020	Baker Island	32.1	10.8
04/17/2020	Denham Island	31.6	11.0
04/17/2020	Viner Sound	22.4	11.8
04/17/2020	Kwatsi Bay	32.1	12.0
04/17/2020	Glacier Falls Fish Farm	31.6	11.6
04/18/2020	Phillip Point West	15.2	11.1
04/18/2020	Wehlis Bay Fish Farm	32.6	9.2
04/18/2020	Alder Point	31.8	9.1
04/18/2020	Penphrase Pass	25.8	12.9
04/18/2020	Freshwater Bay	32.8	10.6
04/18/2020	Hanson	32.1	12.2
04/18/2020	Nimpkish Estuary	20.2	10.8
05/14/2020	Hoeya Sound	20.9	10.4
05/14/2020	Humphrey Rock Fish Farm	27.9	11.5
05/14/2020	Lady Island	27.5	11.8
05/14/2020	Chop Bay	29.3	12.4
05/14/2020	Midsummer Island Fish Farm	32.8	10.4
05/14/2020	Jumper Island	28.5	13.3
05/14/2020	Baker Island	26.2	14.2
05/14/2020	Penphrase Pass	16.7	15.0
05/14/2020	Wehlis Bay Fish Farm	29.1	13.2
05/14/2020	Alder Point	28.6	13.6
05/14/2020	Phillip Point West	11.9	16.8
05/14/2020	Kwatsi Bay	26.1	15.1
05/14/2020	Glacier Falls Fish Farm	27.2	13.5
05/14/2020	Viner Sound	29.9	14.2
05/14/2020	Denham Island	23.0	16.3
05/15/2020	Hanson	33.1	9.9
05/15/2020	Freshwater Bay	32.5	9.7
05/15/2020	Nimpkish Estuary	22.8	10.8

Appendix II – Capture and Collection Sample Totals

Date	Site Name	Weather Comments	Tide Stage	Pink Captured	Pink Retained	Chum Captured	Chum Retained	Coho Captured	Coho Retained	Sockeye Captured	Sockeye Retained	Comments
03/30/2020	Hanson	Calm, sunny	low	0	0	0	0	0	0	0	0	
03/30/2020	Freshwater Bay	Calm, sunny	low	8	8	1	1	0	0	0	0	1 flounder, 1 sculpin
03/30/2020	Swanson Island Fish Farm	Calm	low	0	0	0	0	0	0	0	0	Seals at site
03/30/2020	Larsen Island Fish Farm	Slight chop	low	0	0	0	0	0	0	0	0	
03/30/2020	Midsummer Island Fish Farm	Calm, overcast	low	4	4	7	7	0	0	0	0	Sculpin
03/30/2020	Chop Bay	Slight chop	low	0	0	0	0	0	0	0	0	
03/30/2020	Lady Island	Calm	low	15	15	41	27	0	0	0	0	
03/30/2020	Batt Bluff West	Choppy	low	2	2	3	3	0	0	0	0	
03/30/2020	Doctor Island Fish Farm	Calm	low	1	1	3	3	0	0	0	0	Sculpin, 9 mergansers at site
03/30/2020	Humphrey Rock Fish Farm	Slight chop	low	0	0	8	8	0	0	0	0	
03/30/2020	Oline Point	Calm	mid	3	3	8	8	0	0	0	0	
03/30/2020	Pumish Point	Calm, rain	mid	0	0	0	0	0	0	0	0	
03/30/2020	Sargeaunt Pass Fish Farm	Calm, rain	mid	0	0	5	5	0	0	0	0	
03/31/2020	Brent Bay	Slight chop	high	5	5	2	2	0	0	0	0	
03/31/2020	Hoeya South	Choppy	high	0	0	0	0	0	0	0	0	
03/31/2020	Hoeya Sound	Calm	high	1	1	51	30	0	0	0	0	5 sculpin
03/31/2020	Mount Frederick Bay	Choppy	mid	0	0	0	0	0	0	0	0	Set was moved into the bay as a log booming area was present at old site
03/31/2020	Shelterless Bay	Choppy	mid	1	1	8	8	0	0	0	0	
03/31/2020	Lance Bay	Choppy	mid	1	1	1	1	0	0	0	0	
03/31/2020	London Point	Calm	mid	0	0	0	0	0	0	0	0	
03/31/2020	Miller Point	Calm	mid	0	0	0	0	0	0	0	0	1 sculpin
03/31/2020	Kwatsi Bay	Calm	low	0	0	0	0	0	0	0	0	
03/31/2020	Glacier Falls Fish Farm	Light chop, sunny	low	0	0	0	0	0	0	0	0	
03/31/2020	Viner Sound	Calm	low	0	0	5	5	0	0	0	0	
03/31/2020	Denham Island	Slight chop	low	0	0	13	13	0	0	0	0	Narrow beach between rock bluffs
03/31/2020	Jumper Island	Calm, very low tide	low	1	1	1	1	0	0	0	0	Abundant seaweed
03/31/2020	Wicklow Point	Choppy	low	0	0	0	0	0	0	0	0	
03/31/2020	Arthur Point	Windy, calm on beach	low	6	6	3	3	0	0	0	0	Set on small beach past site out of wind
03/31/2020	Baker Island	Choppy	low	9	9	46	30	0	0	1	0	12 sculpin, 1 juvenile ling cod, 3 flounder
04/01/2020	Penphrase Pass	Calm	high	0	0	0	0	0	0	0	0	
04/01/2020	Harry Bay	Calm, overcast	high	0	0	0	0	0	0	0	0	
04/01/2020	Wakeman 4	Slight chop	high	0	0	0	0	0	0	0	0	
04/01/2020	Wakeman 3	Calm in lee of point	high	0	0	0	0	0	0	0	0	
04/01/2020	McKenzie Cove	Choppy	high	0	0	0	0	0	0	0	0	
04/01/2020	Phillip Point West	Calm, snowing	high	0	0	3	3	0	0	0	0	
04/01/2020	Sutlej North	Slight chop	high	0	0	2	2	0	0	0	0	
04/01/2020	Codrington Point	Calm	mid	3	3	2	2	0	0	0	0	
04/01/2020	Wehlis Bay Fish Farm	Light chop	mid	0	0	0	0	0	0	0	0	
04/01/2020	Popplewell Point	Light chop	mid	0	0	0	0	0	0	0	0	3 pipefish
04/01/2020	Alder Point	Calm	mid	0	0	0	0	0	0	0	0	
04/01/2020	Nimpkish Estuary	Calm	low	45	29	10	10	0	0	0	0	200 sculpin, 15 flounders
04/01/2020	Kokish Estuary	Slight Chop	low	0	0	0	0	0	0	0	0	
04/17/2020	Hoeya Sound	Clear, calm	high	6	6	41	30	0	0	0	0	Searched both sides of set for 100 m. Good visibility. Approximately 20 fish observed. 100 dungeness, flounder, 2 sculpin
04/17/2020	Humphrey Rock Fish Farm	Sunny, calm	high	0	0	0	0	0	0	0	0	Searched 100 m from site. No fish observed.
04/17/2020	Lady Island	Cloud, light wind	high	63	31	25	25	0	0	0	0	Searched both sides of set. Ripples caused poor visibility. No fish observed.
04/17/2020	Chop Bay	Cloud, light wind	high	0	0	0	0	0	0	0	0	Searched both side of site for 100 m. Ripples, no fish observed.

Date	Site Name	Weather Comments	Tide Stage	Pink Captured	Pink Retained	Chum Captured	Chum Retained	Coho Captured	Coho Retained	Sockeye Captured	Sockeye Retained	Comments
04/17/2020	Midsummer Island Fish Farm	Cloud, light wind	high	16	16	0	0	0	0	0	0	Searched both sides for 100 m, one side searched twice. No fish observed. Rocks in set.
04/17/2020	Jumper Island	Cloud, breeze	mid	16	16	15	15	0	0	0	0	Searched both sides. Poor visibility. Sculpins, midshipman, sandabs
04/17/2020	Baker Island	Cloud, calm	mid	24	24	172	30	0	0	0	0	Fish observed coming into site. Sculpin, juvenile ling cod, dungeness
04/17/2020	Denham Island	Cloud, calm	low	5	5	21	21	0	0	0	0	Searched 100 m on both sides of site. Good visibility. No fish observed. Sculpins, red rock crab
04/17/2020	Viner Sound	Cloud, calm	low	0	0	0	0	0	0	0	0	Searched 100 m on both sides of site. Good visibility. No fish observed.
04/17/2020	Kwatsi Bay	Sunny, windy	low	0	0	0	0	0	0	0	0	Searched for 8 min. 1 foot chop. No fish observed. Set in lee of point.
04/17/2020	Glacier Falls Fish Farm	Sunny, windy	low	0	0	0	0	0	0	0	0	Searched site and other side. 1 foot chop. No fish observed. Sculpins, perch
04/18/2020	Phillip Point West	Cloud, calm	mid	0	0	5	5	0	0	0	0	Searched entire bay. No fish observed. Murky water.
04/18/2020	Wehlis Bay Fish Farm	Cloud, calm	mid	0	0	0	0	0	0	0	0	Searched 100 m towards set. No fish observed.
04/18/2020	Alder Point	Cloud, calm	mid	0	0	0	0	0	0	0	0	Searched entire area. No fish observed.
04/18/2020	Penphrase Pass	Cloud, calm	mid	13	13	96	30	0	0	0	0	Fish seen flipping on site.
04/18/2020	Freshwater Bay	Sun, calm	mid	515	28	11	11	0	0	0	0	Fish seen offshore in bay nest to site. Set on site. Sculpin.
04/18/2020	Hanson	Sun, calm	mid	182	30	6	6	1	1	0	0	Fish observed too far out from site. Perch, sculpin.
04/18/2020	Nimpkish Estuary	Sun, calm	mid	5	5	0	0	1	1	0	0	Fish seen flipping on site. 6 sculpins
05/14/2020	Hoeya Sound	Calm	high	0	0	205	30	0	0	0	0	Fish observed at site. 4 perch, gunnel, flounder
05/14/2020	Humphrey Rock Fish Farm	Calm, sunny	high	0	0	0	0	0	0	0	0	No fish observed
05/14/2020	Lady Island	Calm, sunny	high	18	18	7	7	0	0	0	0	Fish jumping at site
05/14/2020	Chop Bay	Calm, sunny	high	243	29	19	19	0	0	0	0	No fish observed
05/14/2020	Midsummer Island Fish Farm	Calm, sunny	mid	2	2	2	2	0	0	0	0	No fish observed
05/14/2020	Jumper Island	Calm, sunny	low	10	10	6	6	0	0	0	0	Searched whole area. No fish observed. Gunnels, sculpin and 3 perch.
05/14/2020	Baker Island	Calm, partially overcast	low	14	14	12	12	0	0	0	0	Several small scattered groups of 10 or less fish observed
05/14/2020	Penphrase Pass	Calm, overcast	low	11	11	5	5	1	1	0	0	No fish observed
05/14/2020	Wehlis Bay Fish Farm	Slight ripple, sunny	low	0	0	4	4	0	0	0	0	No fish observed
05/14/2020	Alder Point	Slight ripple, sunny	low	0	0	0	0	0	0	0	0	No fish observed. Sculpins, gunnel, juvenile sandlance
05/14/2020	Phillip Point West	Calm, sunny	low	1	1	1	1	0	0	0	0	No fish observed in the entire bay.
05/14/2020	Kwatsi Bay	Slight chop	low	0	0	0	0	1	1	0	0	No fish observed
05/14/2020	Glacier Falls Fish Farm	Calm	low	11	11	10	10	0	0	0	0	3 fish observed along vertical rock bluff.
05/14/2020	Viner Sound	Choppy	low	9	9	48	31	2	1	0	0	No fish observed. Very poor visibility due to chop.
05/14/2020	Denham Island	Calm at site	low	7	7	8	8	0	0	0	0	No fish observed.
05/15/2020	Hanson	Calm sunny	mid	2	2	3	3	0	0	0	0	Fish observed in bay, far from shore.
05/15/2020	Freshwater Bay	Calm, sunny	high	25	25	14	14	0	0	0	0	1 small group of 10 fish seen.
05/15/2020	Nimpkish Estuary	Calm at site	high	0	0	0	0	0	0	0	0	

Appendix III – Sea Lice Analysis Data

Date of seine	Site Name	Fish Species	Length (mm)	Weight (g)	LEP Co	LEP C1	LEP C2	LEP PAM	LEP PAF	LEP AM	LEP AF	LEP Total	Cal Co	Cal C1	Cal C2	Cal C3	Cal C4	CAL PAM	CAL PAF	CAL AM	CAL AF	CAL Total
31-Mar-20	Shelterless Bay	Chum	33	0.39								0										0
31-Mar-20	Shelterless Bay	Chum	37	0.57								0										0
31-Mar-20	Shelterless Bay	Chum	38	0.60								0										0
31-Mar-20	Shelterless Bay	Chum	32	0.37								0										0
31-Mar-20	Shelterless Bay	Chum	41	0.58								0										0
31-Mar-20	Shelterless Bay	Chum	33	0.44								0										0
31-Mar-20	Shelterless Bay	Chum	36	0.45								0										0
31-Mar-20	Shelterless Bay	Chum	40	0.57								0										0
31-Mar-20	Shelterless Bay	Pink	33	0.35								0										0
30-Mar-20	Humphrey Rock Fish Farm	Chum	39	0.50								0										0
30-Mar-20	Humphrey Rock Fish Farm	Chum	43	0.62								0										0
30-Mar-20	Humphrey Rock Fish Farm	Chum	38	0.62								0										0
30-Mar-20	Humphrey Rock Fish Farm	Chum	42	0.71								0										0
30-Mar-20	Humphrey Rock Fish Farm	Chum	38	0.50								0										0
30-Mar-20	Humphrey Rock Fish Farm	Chum	47	1.07								0										0
30-Mar-20	Humphrey Rock Fish Farm	Chum	38	0.53								0										0
30-Mar-20	Humphrey Rock Fish Farm	Chum	40	0.65								0										0
30-Mar-20	Lady Island	Pink	35	0.36								0										0
30-Mar-20	Lady Island	Chum	38	0.55								0										0
30-Mar-20	Lady Island	Pink	31	0.25								0										0
30-Mar-20	Lady Island	Chum	37	0.52								0										0
30-Mar-20	Lady Island	Chum	43	0.73								0										0
30-Mar-20	Lady Island	Chum	37	0.57								0										0
30-Mar-20	Lady Island	Chum	38	0.49								0										0
30-Mar-20	Lady Island	Chum	36	0.45								0										0
30-Mar-20	Lady Island	Chum	45	0.86								0										0
30-Mar-20	Lady Island	Chum	36	0.42								0										0
30-Mar-20	Lady Island	Chum	32	0.49								0										0
30-Mar-20	Lady Island	Chum	39	0.46								0										0
30-Mar-20	Lady Island	Chum	44	0.81								0										0
30-Mar-20	Lady Island	Chum	39	0.63								0										0
30-Mar-20	Lady Island	Chum	42	0.53								0										0
30-Mar-20	Lady Island	Chum	36	0.47								0										0
30-Mar-20	Lady Island	Chum	40	0.59								0										0
30-Mar-20	Lady Island	Chum	35	0.41								0										0
30-Mar-20	Lady Island	Chum	37	0.47								0										0
30-Mar-20	Lady Island	Pink	36	0.46								0										0
30-Mar-20	Lady Island	Chum	43	0.77								0										0
30-Mar-20	Lady Island	Chum	37	0.55	1							1										0
30-Mar-20	Lady Island	Pink	32	0.26								0										0
30-Mar-20	Lady Island	Chum	37	0.47								0										0

Date of seine	Site Name	Fish Species	Length (mm)	Weight (g)	LEP Co	LEP C1	LEP C2	LEP PAM	LEP PAF	LEP AM	LEP AF	LEP Total	Cal Co	Cal C1	Cal C2	Cal C3	Cal C4	CAL PAM	CAL PAF	CAL AM	CAL AF	CAL Total
30-Mar-20	Lady Island	Chum	47	1.06								0										0
30-Mar-20	Lady Island	Chum	34	0.33								0										0
30-Mar-20	Lady Island	Chum	39	0.53								0										0
30-Mar-20	Lady Island	Chum	37	0.66								0										0
30-Mar-20	Lady Island	Chum	39	0.56								0										0
30-Mar-20	Lady Island	Chum	44	0.57								0										0
30-Mar-20	Lady Island	Chum	41	0.70								0										0
30-Mar-20	Lady Island	Pink	31	0.29								0										0
30-Mar-20	Lady Island	Pink	32	0.26								0										0
30-Mar-20	Lady Island	Pink	34	0.32								0										0
30-Mar-20	Lady Island	Pink	34	0.33								0										0
30-Mar-20	Lady Island	Pink	29	0.24								0										0
30-Mar-20	Lady Island	Pink	38	0.54								0										0
30-Mar-20	Lady Island	Pink	34	0.25								0										0
30-Mar-20	Lady Island	Pink	34	0.26								0										0
30-Mar-20	Lady Island	Pink	32	0.23								0										0
30-Mar-20	Lady Island	Pink	31	0.24	1							1										0
30-Mar-20	Lady Island	Pink	31	0.25								0										0
31-Mar-20	Denham Island	Chum	37	0.43								0										0
31-Mar-20	Denham Island	Chum	35	0.36								0										0
31-Mar-20	Denham Island	Chum	37	0.38								0										0
31-Mar-20	Denham Island	Chum	37	0.44								0										0
31-Mar-20	Denham Island	Chum	34	0.31								0										0
31-Mar-20	Denham Island	Chum	38	0.37								0										0
31-Mar-20	Denham Island	Chum	35	0.32								0										0
31-Mar-20	Denham Island	Chum	35	0.34								0										0
31-Mar-20	Denham Island	Chum	34	0.40								0										0
31-Mar-20	Denham Island	Chum	33	0.36								0										0
31-Mar-20	Denham Island	Chum	36	0.40								0										0
31-Mar-20	Denham Island	Chum	34	0.41								0										0
31-Mar-20	Denham Island	Chum	34	0.34								0										0
30-Mar-20	Midsummer Island Fish Farm	Chum	39	0.62		1						1										0
30-Mar-20	Midsummer Island Fish Farm	Chum	40	0.70								0										0
30-Mar-20	Midsummer Island Fish Farm	Chum	38	0.51								0										0
30-Mar-20	Midsummer Island Fish Farm	Chum	41	0.70								0										0
30-Mar-20	Midsummer Island Fish Farm	Chum	45	0.87								0										0
30-Mar-20	Midsummer Island Fish Farm	Chum	39	0.58		1						1										0
30-Mar-20	Midsummer Island Fish Farm	Pink	33	0.27								0										0
30-Mar-20	Midsummer Island Fish Farm	Pink	32	0.27								0										0
30-Mar-20	Midsummer Island Fish Farm	Pink	44	0.86		1						1		1								1
30-Mar-20	Midsummer Island Fish Farm	Pink	34	0.37								0										0
30-Mar-20	Midsummer Island Fish Farm	Chum	38	0.43								0										0

Date of seine	Site Name	Fish Species	Length (mm)	Weight (g)	LEP Co	LEP C1	LEP C2	LEP PAM	LEP PAF	LEP AM	LEP AF	LEP Total	Cal Co	Cal C1	Cal C2	Cal C3	Cal C4	CAL PAM	CAL PAF	CAL AM	CAL AF	CAL Total
30-Mar-20	Sargeaunt Pass Fish Farm	Chum	34	0.30								0										0
30-Mar-20	Sargeaunt Pass Fish Farm	Chum	33	0.38								0										0
30-Mar-20	Sargeaunt Pass Fish Farm	Chum	44	0.56								0										0
30-Mar-20	Sargeaunt Pass Fish Farm	Chum	38	0.38								0										0
30-Mar-20	Sargeaunt Pass Fish Farm	Chum	37	0.40								0										0
31-Mar-20	Hoeya Sound	Chum	37	0.51	1							1										0
31-Mar-20	Hoeya Sound	Chum	35	0.45								0										0
31-Mar-20	Hoeya Sound	Chum	33	0.52								0										0
31-Mar-20	Hoeya Sound	Chum	42	0.51								0										0
31-Mar-20	Hoeya Sound	Chum	40	0.73								0										0
31-Mar-20	Hoeya Sound	Chum	32	0.50								0										0
31-Mar-20	Hoeya Sound	Chum	36	0.48								0										0
31-Mar-20	Hoeya Sound	Chum	39	0.51								0										0
31-Mar-20	Hoeya Sound	Chum	36	0.46								0										0
31-Mar-20	Hoeya Sound	Chum	38	0.49								0										0
31-Mar-20	Hoeya Sound	Chum	44	0.53								0										0
31-Mar-20	Hoeya Sound	Chum	37	0.44								0										0
31-Mar-20	Hoeya Sound	Chum	41	0.68								0										0
31-Mar-20	Hoeya Sound	Chum	40	0.58								0										0
31-Mar-20	Hoeya Sound	Chum	40	0.53								0										0
31-Mar-20	Hoeya Sound	Chum	42	0.50								0										0
31-Mar-20	Hoeya Sound	Chum	40	0.53								0										0
31-Mar-20	Hoeya Sound	Chum	42	0.50								0										0
31-Mar-20	Hoeya Sound	Chum	35	0.50								0										0
31-Mar-20	Hoeya Sound	Chum	38	0.47								0										0
31-Mar-20	Hoeya Sound	Chum	42	0.60								0										0
31-Mar-20	Hoeya Sound	Chum	36	0.38								0										0
31-Mar-20	Hoeya Sound	Chum	36	0.45								0										0
31-Mar-20	Hoeya Sound	Chum	38	0.38								0										0
31-Mar-20	Hoeya Sound	Chum	37	0.37								0										0
31-Mar-20	Hoeya Sound	Chum	41	0.58								0										0
31-Mar-20	Hoeya Sound	Chum	38	0.48								0										0
31-Mar-20	Hoeya Sound	Chum	37	0.51								0										0
31-Mar-20	Hoeya Sound	Chum	32	0.40								0										0
31-Mar-20	Hoeya Sound	Chum	40	0.75								0										0
31-Mar-20	Hoeya Sound	Chum	38	0.55								0										0
31-Mar-20	Hoeya Sound	Chum	39	0.55								0										0
31-Mar-20	Hoeya Sound	Pink	31	0.31								0										0
30-Mar-20	Batt Bluff West	Chum	31	0.36								0										0
30-Mar-20	Batt Bluff West	Chum	35	0.36								0										0
30-Mar-20	Batt Bluff West	Chum	68	2.90								0										0
30-Mar-20	Batt Bluff West	Pink	32	0.37								0										0
30-Mar-20	Batt Bluff West	Pink	30	0.24								0										0
31-Mar-20	Brent Bay	Pink	31	0.21								0										0
31-Mar-20	Brent Bay	Pink	31	0.27								0										0
31-Mar-20	Brent Bay	Pink	33	0.27								0										0
31-Mar-20	Brent Bay	Pink	33	0.30								0										0
31-Mar-20	Brent Bay	Pink	29	0.23								0										0

Date of seine	Site Name	Fish Species	Length (mm)	Weight (g)	LEP Co	LEP C1	LEP C2	LEP PAM	LEP PAF	LEP AM	LEP AF	LEP Total	Cal Co	Cal C1	Cal C2	Cal C3	Cal C4	CAL PAM	CAL PAF	CAL AM	CAL AF	CAL Total
31-Mar-20	Brent Bay	Chum	38	0.42								0										0
31-Mar-20	Brent Bay	Chum	40	0.46								0										0
31-Mar-20	Baker Island	Chum	36	0.58								0										0
31-Mar-20	Baker Island	Chum	38	0.60								0										0
31-Mar-20	Baker Island	Chum	37	0.37								0										0
31-Mar-20	Baker Island	Chum	34	0.35								0										0
31-Mar-20	Baker Island	Chum	37	0.48								0										0
31-Mar-20	Baker Island	Chum	39	0.33								0										0
31-Mar-20	Baker Island	Chum	39	0.54								0										0
31-Mar-20	Baker Island	Chum	33	0.38								0										0
31-Mar-20	Baker Island	Chum	38	0.46								0										0
31-Mar-20	Baker Island	Chum	35	0.36								0										0
31-Mar-20	Baker Island	Chum	38	0.45								0										0
31-Mar-20	Baker Island	Chum	38	0.63								0										0
31-Mar-20	Baker Island	Chum	34	0.36								0										0
31-Mar-20	Baker Island	Chum	38	0.48								0		1								1
31-Mar-20	Baker Island	Chum	36	0.42								0										0
31-Mar-20	Baker Island	Chum	36	0.40								0										0
31-Mar-20	Baker Island	Chum	35	0.39								0										0
31-Mar-20	Baker Island	Chum	38	0.44								0										0
31-Mar-20	Baker Island	Chum	33	0.40								0										0
31-Mar-20	Baker Island	Chum	35	0.46								0										0
31-Mar-20	Baker Island	Chum	35	0.40		1						1										0
31-Mar-20	Baker Island	Chum	40	0.68								0		3								3
31-Mar-20	Baker Island	Chum	38	0.49								0										0
31-Mar-20	Baker Island	Chum	38	0.49								0										0
31-Mar-20	Baker Island	Chum	35	0.38								0										0
31-Mar-20	Baker Island	Chum	34	0.39								0		1								1
31-Mar-20	Baker Island	Chum	34	0.30								0										0
31-Mar-20	Baker Island	Chum	35	0.38								0										0
31-Mar-20	Baker Island	Chum	39	0.50								0										0
31-Mar-20	Baker Island	Chum	37	0.44								0										0
31-Mar-20	Baker Island	Chum	31	0.31								0										0
31-Mar-20	Baker Island	Pink	34	0.33								0		1								1
31-Mar-20	Baker Island	Pink	33	0.26								0										0
31-Mar-20	Baker Island	Pink	31	0.27								0										0
31-Mar-20	Baker Island	Pink	32	0.25								0										0
31-Mar-20	Baker Island	Pink	29	0.25								0		1								1
31-Mar-20	Baker Island	Pink	38	0.52								0										0
31-Mar-20	Baker Island	Pink	32	0.28	1							1										0
31-Mar-20	Baker Island	Pink	32	0.24								0										0
31-Mar-20	Baker Island	Pink	42	0.67								0										0
31-Mar-20	Lance Bay	Chum	40	0.45								0										0
31-Mar-20	Lance Bay	Pink	31	0.25								0										0
30-Mar-20	Doctor Island Fish Farm	Chum	32	0.27								0										0
30-Mar-20	Doctor Island Fish Farm	Chum	37	0.39								0										0
30-Mar-20	Doctor Island Fish Farm	Pink	31	0.25								0										0
30-Mar-20	Doctor Island Fish Farm	Chum	34	0.27								0										0

Date of seine	Site Name	Fish Species	Length (mm)	Weight (g)	LEP Co	LEP C1	LEP C2	LEP PAM	LEP PAF	LEP AM	LEP AF	LEP Total	Cal Co	Cal C1	Cal C2	Cal C3	Cal C4	CAL PAM	CAL PAF	CAL AM	CAL AF	CAL Total
1-Apr-20	Codrington Point	Chum	31	0.45								0										0
1-Apr-20	Codrington Point	Chum	38	0.51								0										0
1-Apr-20	Codrington Point	Pink	33	0.29								0										0
1-Apr-20	Codrington Point	Pink	33	0.28								0										0
1-Apr-20	Codrington Point	Pink	34	0.31								0										0
1-Apr-20	Nimpkish Estuary	Pink	31	0.29								0										0
1-Apr-20	Nimpkish Estuary	Pink	35	0.31								0										0
1-Apr-20	Nimpkish Estuary	Pink	34	0.34								0										0
1-Apr-20	Nimpkish Estuary	Pink	34	0.33								0										0
1-Apr-20	Nimpkish Estuary	Pink	31	0.34								0										0
1-Apr-20	Nimpkish Estuary	Pink	35	0.42		2						2										0
1-Apr-20	Nimpkish Estuary	Pink	41	0.58								0										0
1-Apr-20	Nimpkish Estuary	Pink	36	0.52								0										0
1-Apr-20	Nimpkish Estuary	Pink	34	0.35								0										0
1-Apr-20	Nimpkish Estuary	Pink	30	0.25								0										0
1-Apr-20	Nimpkish Estuary	Chum	30	0.30								0										0
1-Apr-20	Nimpkish Estuary	Pink	30	0.27								0										0
1-Apr-20	Nimpkish Estuary	Pink	32	0.34	1							1										0
1-Apr-20	Nimpkish Estuary	Pink	34	0.29								0										0
1-Apr-20	Nimpkish Estuary	Pink	34	0.33								0										0
1-Apr-20	Nimpkish Estuary	Chum	33	0.28								0										0
1-Apr-20	Nimpkish Estuary	Pink	37	0.51								0										0
1-Apr-20	Nimpkish Estuary	Pink	30	0.23								0										0
1-Apr-20	Nimpkish Estuary	Pink	33	0.35								0										0
1-Apr-20	Nimpkish Estuary	Pink	35	0.43								0										0
1-Apr-20	Nimpkish Estuary	Pink	33	0.35								0										0
1-Apr-20	Nimpkish Estuary	Pink	35	0.43								0										0
1-Apr-20	Nimpkish Estuary	Pink	29	0.21								0										0
1-Apr-20	Nimpkish Estuary	Pink	31	0.29								0										0
1-Apr-20	Nimpkish Estuary	Pink	33	0.31								0										0
1-Apr-20	Nimpkish Estuary	Pink	40	0.63								0										0
1-Apr-20	Nimpkish Estuary	Pink	41	0.70								0										0
1-Apr-20	Nimpkish Estuary	Pink	31	0.29								0										0
1-Apr-20	Nimpkish Estuary	Chum	32	0.34								0										0
1-Apr-20	Nimpkish Estuary	Pink	34	0.35								0										0
1-Apr-20	Nimpkish Estuary	Pink	34	0.36								0										0
1-Apr-20	Nimpkish Estuary	Pink	33	0.30								0										0
1-Apr-20	Nimpkish Estuary	Pink	36	0.45								0										0
1-Apr-20	Nimpkish Estuary	Pink	34	0.37								0										0
1-Apr-20	Nimpkish Estuary	Chum	39	0.74								0										0
1-Apr-20	Nimpkish Estuary	Chum	31	0.32								0										0
1-Apr-20	Nimpkish Estuary	Chum	36	0.47								0										0
1-Apr-20	Nimpkish Estuary	Chum	43	0.78								0										0
1-Apr-20	Nimpkish Estuary	Chum	54	1.46								0										0
1-Apr-20	Nimpkish Estuary	Chum	41	0.69								0										0
1-Apr-20	Nimpkish Estuary	Chum	40	0.76								0										0
30-Mar-20	Oline Point	Chum	38	0.55								0										0
30-Mar-20	Oline Point	Chum	44	0.80								0										0
30-Mar-20	Oline Point	Chum	38	0.55								0										0
30-Mar-20	Oline Point	Chum	42	0.58								0										0
30-Mar-20	Oline Point	Chum	39	0.52								0										0
30-Mar-20	Oline Point	Chum	40	0.54								0										0

Date of seine	Site Name	Fish Species	Length (mm)	Weight (g)	LEP Co	LEP C1	LEP C2	LEP PAM	LEP PAF	LEP AM	LEP AF	LEP Total	Cal Co	Cal C1	Cal C2	Cal C3	Cal C4	CAL PAM	CAL PAF	CAL AM	CAL AF	CAL Total
30-Mar-20	Oline Point	Chum	36	0.48								0										0
30-Mar-20	Oline Point	Pink	33	0.32								0										0
30-Mar-20	Oline Point	Pink	34	0.35								0		1								1
30-Mar-20	Oline Point	Pink	37	0.40								0										0
30-Mar-20	Oline Point	Chum	38	0.52								0										0
31-Mar-20	Arthur Point	Chum	37	0.53								0										0
31-Mar-20	Arthur Point	Chum	38	0.54								0										0
31-Mar-20	Arthur Point	Chum	33	0.35								0										0
31-Mar-20	Arthur Point	Pink	34	0.40								0										0
31-Mar-20	Arthur Point	Pink	43	0.84		1						1										0
31-Mar-20	Arthur Point	Pink	36	0.47								0										0
31-Mar-20	Arthur Point	Pink	34	0.31								0										0
31-Mar-20	Arthur Point	Pink	34	0.32								0										0
31-Mar-20	Arthur Point	Pink	39	0.60								0										0
30-Mar-20	Freshwater Bay	Chum	36	0.42								0										0
30-Mar-20	Freshwater Bay	Pink	34	0.29								0										0
30-Mar-20	Freshwater Bay	Pink	30	0.22								0										0
30-Mar-20	Freshwater Bay	Pink	31	0.25								0										0
30-Mar-20	Freshwater Bay	Pink	35	0.40								0										0
30-Mar-20	Freshwater Bay	Pink	37	0.47								0										0
30-Mar-20	Freshwater Bay	Pink	33	0.32								0										0
30-Mar-20	Freshwater Bay	Pink	33	0.25								0										0
30-Mar-20	Freshwater Bay	Pink	35	0.37								0										0
31-Mar-20	Jumper Island	Pink	33	0.26								0										0
31-Mar-20	Jumper Island	Chum	36	0.44								0										0
31-Mar-20	Jumper Island	Pink	33	0.26								0										0
31-Mar-20	Jumper Island	Chum	36	0.44								0										0
1-Apr-20	Sutlej North	Chum	37	0.40								0										0
1-Apr-20	Sutlej North	Chum	38	0.51								0										0
31-Mar-20	Viner Sound	Chum	38	0.43								0										0
31-Mar-20	Viner Sound	Chum	35	0.37								0										0
31-Mar-20	Viner Sound	Chum	34	0.33								0										0
31-Mar-20	Viner Sound	Chum	38	0.44								0										0
31-Mar-20	Viner Sound	Chum	41	0.59								0										0
1-Apr-20	Phillip Point West	Chum	38	0.43								0										0
1-Apr-20	Phillip Point West	Chum	34	0.42								0										0
1-Apr-20	Phillip Point West	Chum	37	0.46								0										0
18-Apr-20	Freshwater Bay	Pink	34	0.35								0										0
18-Apr-20	Freshwater Bay	Pink	36	0.40								0										0
18-Apr-20	Freshwater Bay	Pink	35	0.43								0										0
18-Apr-20	Freshwater Bay	Pink	38	0.61								0										0
18-Apr-20	Freshwater Bay	Pink	35	0.35								0										0
18-Apr-20	Freshwater Bay	Pink	33	0.37								0										0
18-Apr-20	Freshwater Bay	Pink	37	0.47								0										0
18-Apr-20	Freshwater Bay	Pink	35	0.37								0										0
18-Apr-20	Freshwater Bay	Pink	36	0.41								0										0
18-Apr-20	Freshwater Bay	Pink	33	0.34								0										0
18-Apr-20	Freshwater Bay	Pink	36	0.45								0										0
18-Apr-20	Freshwater Bay	Pink	37	0.41								0										0
18-Apr-20	Freshwater Bay	Pink	36	0.56								0										0
18-Apr-20	Freshwater Bay	Pink	36	0.45								0										0
18-Apr-20	Freshwater Bay	Pink	35	0.38								0										0

Date of seine	Site Name	Fish Species	Length (mm)	Weight (g)	LEP Co	LEP C1	LEP C2	LEP PAM	LEP PAF	LEP AM	LEP AF	LEP Total	Cal Co	Cal C1	Cal C2	Cal C3	Cal C4	CAL PAM	CAL PAF	CAL AM	CAL AF	CAL Total
18-Apr-20	Freshwater Bay	Pink	35	0.40								0										0
18-Apr-20	Freshwater Bay	Pink	30	0.24								0										0
18-Apr-20	Freshwater Bay	Pink	50	1.11								0										0
18-Apr-20	Freshwater Bay	Pink	36	0.38								0										0
18-Apr-20	Freshwater Bay	Pink	35	0.36								0										0
18-Apr-20	Freshwater Bay	Pink	35	0.34								0										0
18-Apr-20	Freshwater Bay	Pink	35	0.35								0										0
18-Apr-20	Freshwater Bay	Pink	34	0.35								0										0
18-Apr-20	Freshwater Bay	Pink	34	0.35								0										0
18-Apr-20	Freshwater Bay	Pink	36	0.42								0	1									1
18-Apr-20	Freshwater Bay	Pink	34	0.34								0										0
18-Apr-20	Freshwater Bay	Pink	35	0.36								0										0
18-Apr-20	Freshwater Bay	Pink	35	0.42								0										0
18-Apr-20	Freshwater Bay	Chum	51	1.50								0										0
18-Apr-20	Freshwater Bay	Chum	40	0.74	1							1										0
18-Apr-20	Freshwater Bay	Chum	49	1.43								0										0
18-Apr-20	Freshwater Bay	Chum	48	1.08								0		1								1
18-Apr-20	Freshwater Bay	Chum	48	1.05								0										0
18-Apr-20	Freshwater Bay	Chum	53	1.56								0										0
18-Apr-20	Freshwater Bay	Chum	58	1.85								0										0
18-Apr-20	Freshwater Bay	Chum	64	2.63								0										0
18-Apr-20	Freshwater Bay	Chum	58	1.27								0										0
18-Apr-20	Freshwater Bay	Chum	50	1.15								0										0
18-Apr-20	Freshwater Bay	Chum	48	1.13								0										0
17-Apr-20	Hoeya Sound	Pink	33	0.32								0										0
18-Apr-20	Freshwater Bay	Chum	48	1.13								0										0
17-Apr-20	Hoeya Sound	Pink	33	0.32								0										0
17-Apr-20	Hoeya Sound	Pink	35	0.39								0										0
17-Apr-20	Hoeya Sound	Pink	31	0.21								0										0
17-Apr-20	Hoeya Sound	Pink	32	0.26								0										0
17-Apr-20	Hoeya Sound	Pink	33	0.32								0										0
17-Apr-20	Hoeya Sound	Pink	34	0.31								0										0
17-Apr-20	Hoeya Sound	Chum	37	0.47								0										0
17-Apr-20	Hoeya Sound	Chum	34	0.43								0										0
17-Apr-20	Hoeya Sound	Chum	33	0.43								0										0
17-Apr-20	Hoeya Sound	Chum	43	0.74								0										0
17-Apr-20	Hoeya Sound	Chum	42	0.71								0										0
17-Apr-20	Hoeya Sound	Chum	34	0.32								0										0
17-Apr-20	Hoeya Sound	Chum	54	1.50								0										0
17-Apr-20	Hoeya Sound	Chum	48	1.02								0										0
17-Apr-20	Hoeya Sound	Chum	42	0.69								0										0
17-Apr-20	Hoeya Sound	Chum	35	0.44								0										0
17-Apr-20	Hoeya Sound	Chum	39	0.47								0										0
17-Apr-20	Hoeya Sound	Chum	44	0.79								0										0
17-Apr-20	Hoeya Sound	Chum	36	0.52								0										0
17-Apr-20	Hoeya Sound	Chum	46	0.81								0										0
17-Apr-20	Hoeya Sound	Chum	50	1.26								0										0
17-Apr-20	Hoeya Sound	Chum	40	0.65								0										0
17-Apr-20	Hoeya Sound	Chum	45	1.02								0										0
17-Apr-20	Hoeya Sound	Chum	44	1.03								0										0
17-Apr-20	Hoeya Sound	Chum	40	0.70								0										0
17-Apr-20	Hoeya Sound	Chum	31	0.34								0										0

Date of seine	Site Name	Fish Species	Length (mm)	Weight (g)	LEP Co	LEP C1	LEP C2	LEP PAM	LEP PAF	LEP AM	LEP AF	LEP Total	Cal Co	Cal C1	Cal C2	Cal C3	Cal C4	CAL PAM	CAL PAF	CAL AM	CAL AF	CAL Total
17-Apr-20	Hoeya Sound	Chum	41	0.73								0										0
17-Apr-20	Hoeya Sound	Chum	41	0.71								0										0
17-Apr-20	Hoeya Sound	Chum	42	0.73								0										0
17-Apr-20	Hoeya Sound	Chum	44	0.40								0										0
17-Apr-20	Hoeya Sound	Chum	40	0.75								0										0
17-Apr-20	Hoeya Sound	Chum	33	0.28								0										0
17-Apr-20	Hoeya Sound	Chum	43	0.84								0		1		1						2
17-Apr-20	Hoeya Sound	Chum	35	0.34								0										0
17-Apr-20	Hoeya Sound	Chum	33	0.40								0										0
17-Apr-20	Hoeya Sound	Chum	50	1.13								0										0
17-Apr-20	Denham Island	Chum	39	0.56								0										0
17-Apr-20	Denham Island	Chum	38	0.70								0										0
17-Apr-20	Denham Island	Chum	39	0.59		2						2										0
17-Apr-20	Denham Island	Chum	38	0.51								0										0
17-Apr-20	Denham Island	Chum	43	0.90								0		1	1	1						3
17-Apr-20	Denham Island	Chum	40	0.67								0										0
17-Apr-20	Denham Island	Chum	38	0.60								0										0
17-Apr-20	Denham Island	Chum	34	0.36								0										0
17-Apr-20	Denham Island	Chum	41	0.72								0				1						1
17-Apr-20	Denham Island	Chum	38	0.50								0										0
17-Apr-20	Denham Island	Chum	43	0.85	1							1										0
17-Apr-20	Denham Island	Chum	42	0.79	1							1										0
17-Apr-20	Denham Island	Chum	38	0.51								0										0
17-Apr-20	Denham Island	Chum	35	0.45								0										0
17-Apr-20	Denham Island	Chum	42	0.83								0										0
17-Apr-20	Denham Island	Chum	35	0.45								0										0
17-Apr-20	Denham Island	Chum	42	0.83								0										0
17-Apr-20	Denham Island	Chum	39	0.65								0										0
17-Apr-20	Denham Island	Chum	44	0.92								0			1							1
17-Apr-20	Denham Island	Chum	41	0.82	1							1										0
17-Apr-20	Denham Island	Chum	35	0.44								0										0
17-Apr-20	Denham Island	Chum	37	0.51								0										0
17-Apr-20	Denham Island	Pink	35	0.36								0										0
17-Apr-20	Denham Island	Pink	42	0.74			2					2										0
17-Apr-20	Denham Island	Pink	42	0.67								0										0
17-Apr-20	Denham Island	Pink	37	0.53	1							1										0
17-Apr-20	Denham Island	Pink	33	0.31								0	1									1
17-Apr-20	Denham Island	Chum	39	0.50								0										0
17-Apr-20	Jumper Island	Chum	36	0.32								0										0
17-Apr-20	Jumper Island	Chum	44	1.08								0										0
17-Apr-20	Jumper Island	Chum	35	0.35								0										0
17-Apr-20	Jumper Island	Chum	46	0.99								0										0
17-Apr-20	Jumper Island	Chum	40	0.51								0										0
17-Apr-20	Jumper Island	Chum	40	0.64								0										0
17-Apr-20	Jumper Island	Chum	43	0.85					1			1										0
17-Apr-20	Jumper Island	Chum	43	0.83								0				1						1
17-Apr-20	Jumper Island	Chum	40	0.73								0										0
17-Apr-20	Jumper Island	Chum	34	0.36								0										0
17-Apr-20	Jumper Island	Chum	46	1.13								0										0
17-Apr-20	Jumper Island	Chum	38	0.52								0										0
17-Apr-20	Jumper Island	Chum	59	2.01								0										0
17-Apr-20	Jumper Island	Chum	42	0.83								0										0

Date of seine	Site Name	Fish Species	Length (mm)	Weight (g)	LEP Co	LEP C1	LEP C2	LEP PAM	LEP PAF	LEP AM	LEP AF	LEP Total	Cal Co	Cal C1	Cal C2	Cal C3	Cal C4	CAL PAM	CAL PAF	CAL AM	CAL AF	CAL Total
17-Apr-20	Jumper Island	Chum	38	0.48								0										0
17-Apr-20	Jumper Island	Pink	33	0.36								0										0
17-Apr-20	Jumper Island	Pink	39	0.53								0										0
17-Apr-20	Jumper Island	Pink	42	0.79								0										0
17-Apr-20	Jumper Island	Pink	40	0.58								0										0
17-Apr-20	Jumper Island	Pink	43	0.77								0										0
17-Apr-20	Jumper Island	Pink	34	0.37								0										0
17-Apr-20	Jumper Island	Pink	46	1.15								0										0
17-Apr-20	Jumper Island	Pink	33	0.36								0										0
17-Apr-20	Jumper Island	Pink	54	1.64								0										0
17-Apr-20	Jumper Island	Pink	37	0.46			1					1										0
17-Apr-20	Jumper Island	Pink	46	0.98								0										0
17-Apr-20	Jumper Island	Pink	40	0.64								0										0
17-Apr-20	Jumper Island	Pink	38	0.54								0										0
17-Apr-20	Jumper Island	Pink	41	0.75								0										0
17-Apr-20	Jumper Island	Pink	40	0.66			1					1										0
17-Apr-20	Jumper Island	Pink	41	0.77								0		1								1
18-Apr-20	Penphrase Pass	Chum	44	0.93								0										0
18-Apr-20	Penphrase Pass	Chum	72	3.47					1			1										0
18-Apr-20	Penphrase Pass	Chum	54	1.70								0										0
18-Apr-20	Penphrase Pass	Chum	67	3.54								0										0
18-Apr-20	Penphrase Pass	Chum	53	1.47								0										0
18-Apr-20	Penphrase Pass	Chum	51	1.18								0		1								1
18-Apr-20	Penphrase Pass	Chum	70	3.45								0					1					1
18-Apr-20	Penphrase Pass	Chum	53	1.75								0										0
18-Apr-20	Penphrase Pass	Chum	49	1.29								0										0
18-Apr-20	Penphrase Pass	Chum	45	0.93			1					1										0
18-Apr-20	Penphrase Pass	Chum	58	1.97								0		1								1
18-Apr-20	Penphrase Pass	Chum	55	1.53								0										0
18-Apr-20	Penphrase Pass	Chum	59	1.17								0										0
18-Apr-20	Penphrase Pass	Chum	60	2.25								0										0
18-Apr-20	Penphrase Pass	Chum	52	1.50								0										0
18-Apr-20	Penphrase Pass	Chum	51	1.47								0	1									1
18-Apr-20	Penphrase Pass	Chum	55	1.72								0										0
18-Apr-20	Penphrase Pass	Chum	52	1.48								0										0
18-Apr-20	Penphrase Pass	Chum	46	0.99								0										0
18-Apr-20	Penphrase Pass	Chum	50	1.37								0										0
18-Apr-20	Penphrase Pass	Chum	54	1.65								0										0
18-Apr-20	Penphrase Pass	Chum	48	1.15								0										0
18-Apr-20	Penphrase Pass	Chum	54	1.43								0										0
18-Apr-20	Penphrase Pass	Chum	58	1.82								0										0
18-Apr-20	Penphrase Pass	Chum	46	1.13								0										0
18-Apr-20	Penphrase Pass	Chum	55	1.63								0										0
18-Apr-20	Penphrase Pass	Chum	50	1.45								0										0
18-Apr-20	Penphrase Pass	Chum	54	1.61								0										0
18-Apr-20	Penphrase Pass	Chum	58	2.14								0		1								1
18-Apr-20	Penphrase Pass	Chum	49	1.12								0										0
18-Apr-20	Penphrase Pass	Pink	34	0.43								0										0
18-Apr-20	Penphrase Pass	Pink	51	1.37								0			1							1
18-Apr-20	Penphrase Pass	Pink	52	1.27								0				1						1

Date of seine	Site Name	Fish Species	Length (mm)	Weight (g)	LEP Co	LEP C1	LEP C2	LEP PAM	LEP PAF	LEP AM	LEP AF	LEP Total	Cal Co	Cal C1	Cal C2	Cal C3	Cal C4	CAL PAM	CAL PAF	CAL AM	CAL AF	CAL Total
18-Apr-20	Penphrase Pass	Pink	48	1.04								0										0
18-Apr-20	Penphrase Pass	Pink	46	1.06								0										0
18-Apr-20	Penphrase Pass	Pink	34	0.42								0										0
18-Apr-20	Penphrase Pass	Pink	34	0.33								0										0
18-Apr-20	Penphrase Pass	Pink	45	0.86								0										0
18-Apr-20	Penphrase Pass	Pink	34	0.44								0										0
18-Apr-20	Penphrase Pass	Pink	48	1.01								0										0
18-Apr-20	Penphrase Pass	Pink	44	0.76								0										0
18-Apr-20	Penphrase Pass	Pink	59	1.24								0										0
18-Apr-20	Penphrase Pass	Pink	48	1.22		1						1										0
17-Apr-20	Baker Island	Pink	42	0.78								0		1								1
17-Apr-20	Baker Island	Pink	38	0.55								0										0
17-Apr-20	Baker Island	Pink	35	0.40								0										0
17-Apr-20	Baker Island	Pink	35	0.38								0										0
17-Apr-20	Baker Island	Pink	38	0.49								0										0
17-Apr-20	Baker Island	Pink	41	0.69								0										0
17-Apr-20	Baker Island	Pink	38	0.61								0										0
17-Apr-20	Baker Island	Pink	48	1.08								0										0
17-Apr-20	Baker Island	Pink	41	0.70								0		1								1
17-Apr-20	Baker Island	Pink	45	0.71								0										0
17-Apr-20	Baker Island	Pink	39	0.47								0										0
17-Apr-20	Baker Island	Pink	42	0.74	1							1		1								1
17-Apr-20	Baker Island	Pink	43	0.75								0			1							1
17-Apr-20	Baker Island	Pink	41	0.67								0										0
17-Apr-20	Baker Island	Pink	55	1.51								0										0
17-Apr-20	Baker Island	Pink	41	0.67								0										0
17-Apr-20	Baker Island	Pink	55	1.51								0										0
17-Apr-20	Baker Island	Pink	39	0.62								0										0
17-Apr-20	Baker Island	Pink	45	0.80								0										0
17-Apr-20	Baker Island	Pink	36	0.38								0	1									1
17-Apr-20	Baker Island	Pink	43	0.72								0	1	1								2
17-Apr-20	Baker Island	Pink	40	0.59	1	1						2				1						1
17-Apr-20	Baker Island	Pink	46	0.36								0										0
17-Apr-20	Baker Island	Pink	35	0.64								0										0
17-Apr-20	Baker Island	Pink	38	0.79								0		2								2
17-Apr-20	Baker Island	Pink	36	0.38								0										0
17-Apr-20	Baker Island	Chum	40	0.54								0	1									1
17-Apr-20	Baker Island	Chum	35	0.44								0										0
17-Apr-20	Baker Island	Chum	38	0.60								0		1								1
17-Apr-20	Baker Island	Chum	44	0.37								0										0
17-Apr-20	Baker Island	Chum	43	0.53								0		2								2
17-Apr-20	Baker Island	Chum	44	0.92								0			1	1						2
17-Apr-20	Baker Island	Chum	43	0.90								0				1						1
17-Apr-20	Baker Island	Chum	44	0.97								0										0
17-Apr-20	Baker Island	Chum	42	0.85								0		1								1
17-Apr-20	Baker Island	Chum	37	0.57								0										0
17-Apr-20	Baker Island	Chum	38	0.61								0	1	1								2
17-Apr-20	Baker Island	Chum	34	0.33								0										0
17-Apr-20	Baker Island	Chum	40	0.68								0			1							1
17-Apr-20	Baker Island	Chum	43	1.00								0		1								1
17-Apr-20	Baker Island	Chum	43	0.95								0		1								1
17-Apr-20	Baker Island	Chum	38	0.51								0										0

Date of seine	Site Name	Fish Species	Length (mm)	Weight (g)	LEP Co	LEP C1	LEP C2	LEP PAM	LEP PAF	LEP AM	LEP AF	LEP Total	Cal Co	Cal C1	Cal C2	Cal C3	Cal C4	CAL PAM	CAL PAF	CAL AM	CAL AF	CAL Total
17-Apr-20	Baker Island	Chum	37	0.58								0			1							1
17-Apr-20	Baker Island	Chum	43	0.97			1					1		2		1						3
17-Apr-20	Baker Island	Chum	34	0.32								0										0
17-Apr-20	Baker Island	Chum	38	0.64								0		1								2
17-Apr-20	Baker Island	Chum	44	0.93								0		1						1		1
17-Apr-20	Baker Island	Chum	40	0.87		1	1					2			1	1						2
17-Apr-20	Baker Island	Chum	39	0.76								0		2								2
17-Apr-20	Baker Island	Chum	45	1.02								0										0
17-Apr-20	Baker Island	Chum	38	0.90								0		1								1
17-Apr-20	Baker Island	Chum	40	0.80								0		1								1
17-Apr-20	Baker Island	Chum	35	0.34								0										0
17-Apr-20	Baker Island	Chum	37	0.42								0		3								3
17-Apr-20	Baker Island	Chum	59	2.10								0		2								2
17-Apr-20	Baker Island	Chum	38	0.60								0	1		1							2
17-Apr-20	Lady Island	Pink	38	0.60								0										0
17-Apr-20	Lady Island	Pink	42	0.68								0										0
17-Apr-20	Lady Island	Pink	35	0.44								0										0
17-Apr-20	Lady Island	Pink	35	0.48								0				2						2
17-Apr-20	Lady Island	Pink	35	0.50								0										0
17-Apr-20	Lady Island	Pink	33	0.35								0										0
17-Apr-20	Lady Island	Pink	36	0.43								0										0
17-Apr-20	Lady Island	Pink	36	0.42								0										0
17-Apr-20	Lady Island	Pink	33	0.36								0										0
17-Apr-20	Lady Island	Pink	31	0.33								0										0
17-Apr-20	Lady Island	Pink	35	0.50								0										0
17-Apr-20	Lady Island	Pink	31	0.33								0										0
17-Apr-20	Lady Island	Pink	35	0.50								0										0
17-Apr-20	Lady Island	Pink	32	0.31								0										0
17-Apr-20	Lady Island	Pink	34	0.43								0										0
17-Apr-20	Lady Island	Pink	35	0.38								0										0
17-Apr-20	Lady Island	Pink	31	0.33								0										0
17-Apr-20	Lady Island	Pink	33	0.30								0										0
17-Apr-20	Lady Island	Pink	35	0.46	1							1										0
17-Apr-20	Lady Island	Pink	38	0.60								0		1								1
17-Apr-20	Lady Island	Pink	38	0.47								0										0
17-Apr-20	Lady Island	Pink	38	0.58								0										0
17-Apr-20	Lady Island	Pink	40	0.62								0										0
17-Apr-20	Lady Island	Pink	44	0.54								0	1									1
17-Apr-20	Lady Island	Pink	35	0.44								0		1								1
17-Apr-20	Lady Island	Pink	31	0.30	1							1										0
17-Apr-20	Lady Island	Pink	30	0.24								0										0
17-Apr-20	Lady Island	Pink	40	0.67								0		1								1
17-Apr-20	Lady Island	Pink	33	0.34								0										0
17-Apr-20	Lady Island	Pink	34	0.44								0										0
17-Apr-20	Lady Island	Pink	33	0.29								0										0
17-Apr-20	Lady Island	Pink	34	0.36								0										0
17-Apr-20	Lady Island	Pink	35	0.40								0	1									1
17-Apr-20	Lady Island	Chum	31	0.25								0										0
17-Apr-20	Lady Island	Chum	50	1.28								0										0
17-Apr-20	Lady Island	Chum	38	0.48								0										0
17-Apr-20	Lady Island	Chum	38	0.58	1							1										0
17-Apr-20	Lady Island	Chum	38	0.54								0										0

Date of seine	Site Name	Fish Species	Length (mm)	Weight (g)	LEP Co	LEP C1	LEP C2	LEP PAM	LEP PAF	LEP AM	LEP AF	LEP Total	Cal Co	Cal C1	Cal C2	Cal C3	Cal C4	CAL PAM	CAL PAF	CAL AM	CAL AF	CAL Total
17-Apr-20	Lady Island	Chum	35	0.44								0										0
17-Apr-20	Lady Island	Chum	38	0.45								0										0
17-Apr-20	Lady Island	Chum	38	0.44								0										0
17-Apr-20	Lady Island	Chum	35	0.42								0										0
17-Apr-20	Lady Island	Chum	38	0.56								0										0
17-Apr-20	Lady Island	Chum	41	0.73								0										0
17-Apr-20	Lady Island	Chum	38	0.51								0		1								1
17-Apr-20	Lady Island	Chum	37	0.48								0										0
17-Apr-20	Lady Island	Chum	36	0.50								0	3									3
17-Apr-20	Lady Island	Chum	35	0.52								0										0
17-Apr-20	Lady Island	Chum	40	0.58								0										0
17-Apr-20	Lady Island	Chum	42	0.76								0		1						1		2
17-Apr-20	Lady Island	Chum	37	0.50								0										0
17-Apr-20	Lady Island	Chum	35	0.48								0										0
17-Apr-20	Lady Island	Chum	38	0.55								0										0
17-Apr-20	Lady Island	Chum	43	0.74								0		1								1
17-Apr-20	Lady Island	Chum	45	0.76								0			1							1
17-Apr-20	Lady Island	Chum	40	0.58								0										0
17-Apr-20	Lady Island	Chum	33	0.29								0										0
17-Apr-20	Lady Island	Chum	39	0.56								0										0
18-Apr-20	Phillip Point West	Chum	39	0.49								0										0
18-Apr-20	Phillip Point West	Chum	36	0.57								0										0
18-Apr-20	Phillip Point West	Chum	40	0.61								0										0
18-Apr-20	Phillip Point West	Chum	39	0.50								0										0
18-Apr-20	Phillip Point West	Chum	38	0.48								0										0
18-Apr-20	Phillip Point West	Chum	39	0.50								0										0
18-Apr-20	Phillip Point West	Chum	38	0.48								0										0
17-Apr-20	Midsummer Island Fish Farm	Pink	35	0.37								0										0
17-Apr-20	Midsummer Island Fish Farm	Pink	33	0.28								0										0
17-Apr-20	Midsummer Island Fish Farm	Pink	35	0.37								0										0
17-Apr-20	Midsummer Island Fish Farm	Pink	34	0.36								0										0
17-Apr-20	Midsummer Island Fish Farm	Pink	34	0.38	1							1										0
17-Apr-20	Midsummer Island Fish Farm	Pink	34	0.35								0										0
17-Apr-20	Midsummer Island Fish Farm	Pink	36	0.43								0										0
17-Apr-20	Midsummer Island Fish Farm	Pink	34	0.34								0										0
17-Apr-20	Midsummer Island Fish Farm	Pink	35	0.37								0										0
17-Apr-20	Midsummer Island Fish Farm	Pink	36	0.44	1							1										0
17-Apr-20	Midsummer Island Fish Farm	Pink	37	0.40								0										0
17-Apr-20	Midsummer Island Fish Farm	Pink	34	0.26								0										0
17-Apr-20	Midsummer Island Fish Farm	Pink	35	0.48								0										0
17-Apr-20	Midsummer Island Fish Farm	Pink	34	0.35								0										0

Date of seine	Site Name	Fish Species	Length (mm)	Weight (g)	LEP Co	LEP C1	LEP C2	LEP PAM	LEP PAF	LEP AM	LEP AF	LEP Total	Cal Co	Cal C1	Cal C2	Cal C3	Cal C4	CAL PAM	CAL PAF	CAL AM	CAL AF	CAL Total
17-Apr-20	Midsummer Island Fish Farm	Pink	36	0.39								0										0
17-Apr-20	Midsummer Island Fish Farm	Pink	36	0.37								0										0
18-Apr-20	Hanson	Pink	33	0.36								0										0
18-Apr-20	Hanson	Pink	34	0.34								0										0
18-Apr-20	Hanson	Pink	33	0.29								0										0
18-Apr-20	Hanson	Pink	36	0.55								0										0
18-Apr-20	Hanson	Pink	34	0.36								0										0
18-Apr-20	Hanson	Pink	35	0.34								0										0
18-Apr-20	Hanson	Pink	33	0.27								0										0
18-Apr-20	Hanson	Pink	34	0.38								0										0
18-Apr-20	Hanson	Pink	35	0.35								0										0
18-Apr-20	Hanson	Pink	34	0.33								0										0
18-Apr-20	Hanson	Pink	36	0.38	1							1										0
18-Apr-20	Hanson	Pink	34	0.33								0										0
18-Apr-20	Hanson	Pink	34	0.33								0										0
18-Apr-20	Hanson	Pink	34	0.42								0										0
18-Apr-20	Hanson	Pink	35	0.39								0										0
18-Apr-20	Hanson	Pink	40	0.55								0										0
18-Apr-20	Hanson	Pink	33	0.31								0										0
18-Apr-20	Hanson	Pink	31	0.25								0										0
18-Apr-20	Hanson	Pink	33	0.26								0										0
18-Apr-20	Hanson	Pink	33	0.30								0										0
18-Apr-20	Hanson	Pink	30	0.28								0		1								1
18-Apr-20	Hanson	Pink	35	0.37								0										0
18-Apr-20	Hanson	Pink	30	0.28								0		1								1
18-Apr-20	Hanson	Pink	35	0.37								0										0
18-Apr-20	Hanson	Pink	34	0.27								0										0
18-Apr-20	Hanson	Pink	36	0.40								0										0
18-Apr-20	Hanson	Pink	33	0.34								0										0
18-Apr-20	Hanson	Pink	35	0.37								0										0
18-Apr-20	Hanson	Pink	33	0.32								0		1								1
18-Apr-20	Hanson	Pink	32	0.33								0										0
18-Apr-20	Hanson	Pink	34	0.33								0										0
18-Apr-20	Hanson	Pink	35	0.37								0										0
18-Apr-20	Hanson	Chum	52	1.40								0										0
18-Apr-20	Hanson	Chum	37	0.48								0										0
18-Apr-20	Hanson	Chum	35	0.40								0										0
18-Apr-20	Hanson	Chum	42	0.61								0		1								1
18-Apr-20	Hanson	Chum	35	0.41								0										0
18-Apr-20	Hanson	Chum	45	0.98								0										0
18-Apr-20	Hanson	Coho	98	7.57								0										0
18-Apr-20	Nimpkish Estuary	Pink	31	0.28								0										0
18-Apr-20	Nimpkish Estuary	Pink	36	0.35								0										0
18-Apr-20	Nimpkish Estuary	Pink	35	0.40								0										0
18-Apr-20	Nimpkish Estuary	Pink	36	0.35								0										0
18-Apr-20	Nimpkish Estuary	Pink	35	0.40								0										0
18-Apr-20	Nimpkish Estuary	Coho	78	4.65								0										0
14-May-20	Baker Island	Pink	52	1.47					1			1										0
14-May-20	Baker Island	Pink	62	2.21								0								1		1
14-May-20	Baker Island	Pink	44	0.95								0		1								1
14-May-20	Baker Island	Pink	55	1.79								0										0

Date of seine	Site Name	Fish Species	Length (mm)	Weight (g)	LEP Co	LEP C1	LEP C2	LEP PAM	LEP PAF	LEP AM	LEP AF	LEP Total	Cal Co	Cal C1	Cal C2	Cal C3	Cal C4	CAL PAM	CAL PAF	CAL AM	CAL AF	CAL Total
14-May-20	Baker Island	Pink	48	1.25								0	1									1
14-May-20	Baker Island	Pink	46	0.97								0		2								2
14-May-20	Baker Island	Pink	51	1.33								0										0
14-May-20	Baker Island	Pink	38	0.51								0		1								1
14-May-20	Baker Island	Pink	53	1.61								0										0
14-May-20	Baker Island	Pink	40	0.73	1		1					2		1								1
14-May-20	Baker Island	Pink	47	0.97								0										0
14-May-20	Baker Island	Pink	55	1.65								0		1								1
14-May-20	Baker Island	Pink	50	1.15								0		1								1
14-May-20	Baker Island	Pink	56	1.74								0										0
14-May-20	Baker Island	Chum	59	2.05								0										0
14-May-20	Baker Island	Chum	66	3.26								0										0
14-May-20	Baker Island	Chum	49	1.37								0										0
14-May-20	Baker Island	Chum	46	1.14			1	1				2										0
14-May-20	Baker Island	Chum	41	0.82								0										0
14-May-20	Baker Island	Chum	38	0.49								0										0
14-May-20	Baker Island	Chum	45	1.07	1							1										0
14-May-20	Baker Island	Chum	45	1.11								0									1	1
14-May-20	Baker Island	Chum	49	1.16								0		2								2
14-May-20	Baker Island	Chum	40	0.57	1		1					2		1								1
14-May-20	Baker Island	Chum	44	0.81								0										0
14-May-20	Baker Island	Chum	47	1.12								0										0
15-May-20	Freshwater Bay	Pink	45	0.86								0										0
15-May-20	Freshwater Bay	Pink	43	0.73								0										0
15-May-20	Freshwater Bay	Pink	42	0.64								0										0
15-May-20	Freshwater Bay	Pink	43	0.76								0										0
15-May-20	Freshwater Bay	Pink	39	0.56								0										0
15-May-20	Freshwater Bay	Pink	34	0.29								0										0
15-May-20	Freshwater Bay	Pink	49	1.04								0										0
15-May-20	Freshwater Bay	Pink	39	0.54								0										0
15-May-20	Freshwater Bay	Pink	51	1.27					1			1										0
15-May-20	Freshwater Bay	Pink	45	0.79								0				1						1
15-May-20	Freshwater Bay	Pink	44	0.74								0										0
15-May-20	Freshwater Bay	Pink	34	0.27								0										0
15-May-20	Freshwater Bay	Pink	44	0.84								0										0
15-May-20	Freshwater Bay	Pink	43	0.71								0										0
15-May-20	Freshwater Bay	Pink	45	0.91		1						1										0
15-May-20	Freshwater Bay	Chum	34	0.34								0										0
15-May-20	Freshwater Bay	Pink	34	0.33	1							1										0
15-May-20	Freshwater Bay	Pink	57	1.74								0					1					1
15-May-20	Freshwater Bay	Pink	44	0.82								0										0
15-May-20	Freshwater Bay	Pink	47	0.96								0										0
15-May-20	Freshwater Bay	Pink	45	1.05				1				1	1									1
15-May-20	Freshwater Bay	Pink	43	0.83								0					1					1
15-May-20	Freshwater Bay	Pink	47	1.01								0										0
15-May-20	Freshwater Bay	Pink	49	1.05								0	1									1
15-May-20	Freshwater Bay	Pink	52	1.39					1			1										0
15-May-20	Freshwater Bay	Pink	48	1.01								0										0
15-May-20	Freshwater Bay	Chum	36	0.49								0										0
15-May-20	Freshwater Bay	Chum	42	0.79								0										0

Date of seine	Site Name	Fish Species	Length (mm)	Weight (g)	LEP Co	LEP C1	LEP C2	LEP PAM	LEP PAF	LEP AM	LEP AF	LEP Total	Cal Co	Cal C1	Cal C2	Cal C3	Cal C4	CAL PAM	CAL PAF	CAL AM	CAL AF	CAL Total
15-May-20	Freshwater Bay	Chum	43	0.96								0										0
15-May-20	Freshwater Bay	Chum	48	1.33								0										0
15-May-20	Freshwater Bay	Chum	39	0.63								0										0
15-May-20	Freshwater Bay	Chum	40	0.68								0										0
15-May-20	Freshwater Bay	Chum	43	0.88								0				1						1
15-May-20	Freshwater Bay	Chum	35	0.48								0										0
15-May-20	Freshwater Bay	Chum	39	0.64								0										0
15-May-20	Freshwater Bay	Chum	37	0.52								0										0
15-May-20	Freshwater Bay	Chum	48	1.14				1				1										0
15-May-20	Freshwater Bay	Chum	49	1.27					1			1										0
15-May-20	Freshwater Bay	Chum	37	0.61								0										0
14-May-20	Hoeya Sound	Chum	38	0.61								0										0
14-May-20	Hoeya Sound	Chum	38	0.59								0										0
14-May-20	Hoeya Sound	Chum	38	0.54								0										0
14-May-20	Hoeya Sound	Chum	38	0.47								0										0
14-May-20	Hoeya Sound	Chum	41	0.68								0										0
14-May-20	Hoeya Sound	Chum	39	0.47								0										0
14-May-20	Hoeya Sound	Chum	36	0.48								0										0
14-May-20	Hoeya Sound	Chum	39	0.57								0										0
14-May-20	Hoeya Sound	Chum	37	0.47								0										0
14-May-20	Hoeya Sound	Chum	36	0.44								0										0
14-May-20	Hoeya Sound	Chum	41	0.60								0										0
14-May-20	Hoeya Sound	Chum	42	0.70								0										0
14-May-20	Hoeya Sound	Chum	44	0.93								0										0
14-May-20	Hoeya Sound	Chum	40	0.61								0										0
14-May-20	Hoeya Sound	Chum	44	0.93								0										0
14-May-20	Hoeya Sound	Chum	40	0.61								0										0
14-May-20	Hoeya Sound	Chum	36	0.36								0										0
14-May-20	Hoeya Sound	Chum	40	0.67								0										0
14-May-20	Hoeya Sound	Chum	41	0.62								0										0
14-May-20	Hoeya Sound	Chum	34	0.36								0										0
14-May-20	Hoeya Sound	Chum	39	0.58								0										0
14-May-20	Hoeya Sound	Chum	40	0.56								0										0
14-May-20	Hoeya Sound	Chum	38	0.57								0										0
14-May-20	Hoeya Sound	Chum	41	0.75								0										0
14-May-20	Hoeya Sound	Chum	38	0.59								0										0
14-May-20	Hoeya Sound	Chum	39	0.64								0										0
14-May-20	Hoeya Sound	Chum	36	0.52								0										0
14-May-20	Hoeya Sound	Chum	38	0.53								0										0
14-May-20	Hoeya Sound	Chum	35	0.59								0										0
14-May-20	Hoeya Sound	Chum	35	0.48								0										0
14-May-20	Hoeya Sound	Chum	49	1.32								0										0
14-May-20	Hoeya Sound	Chum	45	0.96								0										0
14-May-20	Chop Bay	Chum	65	2.80								0								1		1
14-May-20	Chop Bay	Chum	56	1.93								0		1								1
14-May-20	Chop Bay	Chum	59	2.20								0										0
14-May-20	Chop Bay	Chum	59	2.15								0	1									1
14-May-20	Chop Bay	Chum	64	2.77								0		1								1
14-May-20	Chop Bay	Chum	59	2.06		1						1										0
14-May-20	Chop Bay	Chum	63	2.63								0			2					1		3
14-May-20	Chop Bay	Chum	51	1.40	1		1					2		2								2
14-May-20	Chop Bay	Chum	62	2.43	2							2										0

Date of seine	Site Name	Fish Species	Length (mm)	Weight (g)	LEP Co	LEP C1	LEP C2	LEP PAM	LEP PAF	LEP AM	LEP AF	LEP Total	Cal Co	Cal C1	Cal C2	Cal C3	Cal C4	CAL PAM	CAL PAF	CAL AM	CAL AF	CAL Total
14-May-20	Chop Bay	Chum	78	4.95	1							1			1							1
14-May-20	Chop Bay	Chum	55	1.78								0										0
14-May-20	Chop Bay	Chum	65	2.56								0		1								0
14-May-20	Chop Bay	Chum	62	2.47								0								1		2
14-May-20	Chop Bay	Chum	61	2.36								0										0
14-May-20	Chop Bay	Chum	50	1.45								0										0
14-May-20	Chop Bay	Chum	64	2.93								0	1									1
14-May-20	Chop Bay	Chum	77	4.48								0										0
14-May-20	Chop Bay	Chum	73	3.88								0		1	1							2
14-May-20	Chop Bay	Pink	62	2.16				1				1										0
14-May-20	Chop Bay	Pink	56	1.75								0										0
14-May-20	Chop Bay	Pink	54	1.48								0										0
14-May-20	Chop Bay	Pink	60	2.02								0		1								1
14-May-20	Chop Bay	Pink	49	1.15		1						1		1								1
14-May-20	Chop Bay	Pink	61	2.11								0	1								1	2
14-May-20	Chop Bay	Pink	57	1.59								0	1									1
14-May-20	Chop Bay	Pink	65	2.88								0										0
14-May-20	Chop Bay	Pink	55	1.55								0										0
14-May-20	Chop Bay	Pink	54	1.38								0		1								1
14-May-20	Chop Bay	Pink	55	1.55								0	1		1					1		3
14-May-20	Chop Bay	Pink	53	1.32								0		2								2
14-May-20	Chop Bay	Pink	61	2.05								0										0
14-May-20	Chop Bay	Pink	51	1.29								0										0
14-May-20	Chop Bay	Chum	60	2.58								0						1				1
14-May-20	Chop Bay	Pink	54	1.55				1				1										0
14-May-20	Chop Bay	Pink	58	1.97								0										0
14-May-20	Chop Bay	Pink	49	1.21								0			1							1
14-May-20	Chop Bay	Pink	68	3.01								0		2								2
14-May-20	Chop Bay	Pink	60	2.09								0										0
14-May-20	Chop Bay	Pink	55	1.69								0										0
14-May-20	Chop Bay	Pink	71	3.38		1						1							1			1
14-May-20	Chop Bay	Pink	55	1.59								0	1									1
14-May-20	Chop Bay	Pink	57	1.86								0										0
14-May-20	Chop Bay	Pink	55	1.54								0										0
14-May-20	Chop Bay	Pink	65	2.75								0		1								1
14-May-20	Chop Bay	Pink	67	2.83								0		1								1
14-May-20	Chop Bay	Pink	58	1.94								0										0
14-May-20	Chop Bay	Pink	55	1.62								0										0
14-May-20	Chop Bay	Pink	51	1.26						1		1										0
14-May-20	Glacier Falls Fish Farm	Pink	60	1.96								0					1					1
14-May-20	Glacier Falls Fish Farm	Pink	65	2.55								0								1		1
14-May-20	Glacier Falls Fish Farm	Pink	63	1.92								0										0
14-May-20	Glacier Falls Fish Farm	Pink	70	3.20								0										0
14-May-20	Glacier Falls Fish Farm	Pink	66	2.81	1							1										0
14-May-20	Glacier Falls Fish Farm	Pink	61	2.23								0										0

Date of seine	Site Name	Fish Species	Length (mm)	Weight (g)	LEP Co	LEP C1	LEP C2	LEP PAM	LEP PAF	LEP AM	LEP AF	LEP Total	Cal Co	Cal C1	Cal C2	Cal C3	Cal C4	CAL PAM	CAL PAF	CAL AM	CAL AF	CAL Total
14-May-20	Glacier Falls Fish Farm	Pink	60	1.89								0										0
14-May-20	Glacier Falls Fish Farm	Pink	64	2.47								0										0
14-May-20	Glacier Falls Fish Farm	Pink	60	2.21								0										0
14-May-20	Glacier Falls Fish Farm	Pink	62	2.20								0										0
14-May-20	Glacier Falls Fish Farm	Pink	70	3.18								0										0
14-May-20	Glacier Falls Fish Farm	Chum	65	3.11	1		1					2				1						1
14-May-20	Glacier Falls Fish Farm	Chum	66	3.16								0										0
14-May-20	Glacier Falls Fish Farm	Chum	68	3.88								0		1								1
14-May-20	Glacier Falls Fish Farm	Chum	79	4.89								0										0
14-May-20	Glacier Falls Fish Farm	Chum	66	3.05								0										0
14-May-20	Glacier Falls Fish Farm	Chum	79	5.18								0										0
14-May-20	Glacier Falls Fish Farm	Chum	63	2.46								0		1								1
14-May-20	Glacier Falls Fish Farm	Chum	69	3.31								0		1								1
14-May-20	Glacier Falls Fish Farm	Chum	66	3.75								0		1								1
14-May-20	Glacier Falls Fish Farm	Chum	33	0.29								0				1						1
14-May-20	Viner Sound	Pink	56	1.42								0						1				1
14-May-20	Viner Sound	Pink	52	1.31								0	1									1
14-May-20	Viner Sound	Pink	57	1.75	1			1				2										0
14-May-20	Viner Sound	Pink	58	1.75			1					1							1			1
14-May-20	Viner Sound	Pink	47	0.75								0										0
14-May-20	Viner Sound	Pink	54	1.62								0										0
14-May-20	Viner Sound	Pink	45	0.68								0										0
14-May-20	Viner Sound	Pink	49	1.16								0		1	1	1						3
14-May-20	Viner Sound	Pink	62	2.24								0										0
14-May-20	Viner Sound	Chum	54	1.98								0										0
14-May-20	Viner Sound	Chum	48	1.34								0		1								1
14-May-20	Viner Sound	Chum	59	2.44								0	1									1
14-May-20	Viner Sound	Chum	52	1.49								0		2								2
14-May-20	Viner Sound	Chum	67	3.73			1					1	1									1
14-May-20	Viner Sound	Chum	66	2.98								0		1		1						2
14-May-20	Viner Sound	Chum	59	2.30								0		1								1
14-May-20	Viner Sound	Chum	50	1.66								0		1			1					2
14-May-20	Viner Sound	Chum	66	3.10								0		1								1
14-May-20	Viner Sound	Chum	55	1.90								0										0
14-May-20	Viner Sound	Chum	43	0.92								0										0
14-May-20	Viner Sound	Chum	60	2.35						1		1	1	4		1				2		8
14-May-20	Viner Sound	Chum	51	1.66								0										0
14-May-20	Viner Sound	Chum	51	1.37								0		2								2

Date of seine	Site Name	Fish Species	Length (mm)	Weight (g)	LEP Co	LEP C1	LEP C2	LEP PAM	LEP PAF	LEP AM	LEP AF	LEP Total	Cal Co	Cal C1	Cal C2	Cal C3	Cal C4	CAL PAM	CAL PAF	CAL AM	CAL AF	CAL Total
14-May-20	Viner Sound	Chum	47	1.18	1							1			1					1		2
14-May-20	Viner Sound	Chum	56	2.00								0		3		1						4
14-May-20	Viner Sound	Chum	49	1.35								0										0
14-May-20	Viner Sound	Chum	53	1.78								0	1	1								2
14-May-20	Viner Sound	Chum	59	2.17								0										0
14-May-20	Viner Sound	Chum	72	4.80								0										0
14-May-20	Viner Sound	Chum	69	3.79								0										0
14-May-20	Viner Sound	Chum	48	1.27								0										0
14-May-20	Viner Sound	Chum	48	1.39								0		1								1
14-May-20	Viner Sound	Chum	58	2.17								0										0
14-May-20	Viner Sound	Chum	55	2.08	2		1					3										0
14-May-20	Viner Sound	Chum	50	1.29								0		1								1
14-May-20	Viner Sound	Chum	49	1.31	2							2			1							1
14-May-20	Viner Sound	Chum	53	1.65								0			1							1
14-May-20	Viner Sound	Chum	51	1.49								0			1							1
14-May-20	Viner Sound	Chum	50	1.53	2							2	1	1								2
14-May-20	Viner Sound	Chum	40	0.74								0	1		1							2
14-May-20	Viner Sound	Coho	98	14.16								0				1				1		2
14-May-20	Jumper Island	Pink	42	0.65								0										0
14-May-20	Jumper Island	Pink	43	0.96								0										0
14-May-20	Jumper Island	Pink	44	0.69								0										0
14-May-20	Jumper Island	Pink	24	0.46								0										0
14-May-20	Jumper Island	Pink	43	0.68								0										0
14-May-20	Jumper Island	Pink	40	0.69								0		1								1
14-May-20	Jumper Island	Pink	50	1.36								0										0
14-May-20	Jumper Island	Pink	40	0.69								0		1								1
14-May-20	Jumper Island	Pink	50	1.36								0										0
14-May-20	Jumper Island	Pink	46	1.07								0										0
14-May-20	Jumper Island	Pink	30	0.25								0		1								1
14-May-20	Jumper Island	Pink	46	0.92					1			1			1							1
14-May-20	Jumper Island	Chum	40	0.78								0			1							1
14-May-20	Jumper Island	Chum	58	1.14	1							1		1								1
14-May-20	Jumper Island	Chum	43	0.94								0		1								1
14-May-20	Jumper Island	Chum	41	0.80								0		1								1
14-May-20	Jumper Island	Chum	45	0.91								0										0
14-May-20	Jumper Island	Chum	38	0.55								0										0
15-May-20	Hanson	Chum	45	0.85								0										0
15-May-20	Hanson	Chum	40	0.55								0										0
15-May-20	Hanson	Chum	45	0.70								0										0
15-May-20	Hanson	Pink	35	0.40								0										0
15-May-20	Hanson	Pink	42	0.59								0										0
14-May-20	Midsummer Island Fish Farm	Chum	40	0.59								0										0
14-May-20	Midsummer Island Fish Farm	Chum	42	0.69								0										0
14-May-20	Midsummer Island Fish Farm	Pink	34	0.38								0										0
14-May-20	Midsummer Island Fish Farm	Pink	36	0.42								0										0
14-May-20	Phillip Point West	Pink	64	2.20								0										0
14-May-20	Phillip Point West	Chum	58	1.77								0										0
14-May-20	Kwatsi Bay	Coho	98	12.60								0		2								2

Date of seine	Site Name	Fish Species	Length (mm)	Weight (g)	LEP Co	LEP C1	LEP C2	LEP PAM	LEP PAF	LEP AM	LEP AF	LEP Total	Cal Co	Cal C1	Cal C2	Cal C3	Cal C4	CAL PAM	CAL PAF	CAL AM	CAL AF	CAL Total
14-May-20	Wehlis Bay Fish Farm	Chum	90	6.63								0										0
14-May-20	Wehlis Bay Fish Farm	Chum	85	7.30								0										0
14-May-20	Wehlis Bay Fish Farm	Chum	82	5.33			2					2				1						1
14-May-20	Wehlis Bay Fish Farm	Chum	80	6.51								0										0
14-May-20	Denham Island	Pink	61	0.73								0										0
14-May-20	Denham Island	Pink	40	0.59								0				1						1
14-May-20	Denham Island	Pink	39	0.53								0	1	1								2
14-May-20	Denham Island	Pink	45	0.79								0										0
14-May-20	Denham Island	Pink	41	0.63								0										0
14-May-20	Denham Island	Pink	40	0.53								0										0
14-May-20	Denham Island	Pink	40	0.69								0										0
14-May-20	Denham Island	Chum	43	1.00								0										0
14-May-20	Denham Island	Chum	46	1.14								0										0
14-May-20	Denham Island	Chum	43	0.86								0										0
14-May-20	Denham Island	Chum	47	1.26								0		1								1
14-May-20	Denham Island	Chum	41	0.81			1					1										0
14-May-20	Denham Island	Chum	45	0.95								0		1								1
14-May-20	Denham Island	Chum	42	0.81								0										0
14-May-20	Denham Island	Chum	47	1.19								0										0
14-May-20	Lady Island	Pink	45	0.84								0										0
14-May-20	Lady Island	Pink	65	2.69								0										0
14-May-20	Lady Island	Pink	48	1.03								0										0
14-May-20	Lady Island	Pink	45	0.97								0										0
14-May-20	Lady Island	Pink	44	0.90								0										0
14-May-20	Lady Island	Pink	68	3.61								0	1						1			2
14-May-20	Lady Island	Pink	45	0.82								0										0
14-May-20	Lady Island	Pink	80	4.21								0										0
14-May-20	Lady Island	Pink	70	3.08								0										0
14-May-20	Lady Island	Pink	40	0.63								0										0
14-May-20	Lady Island	Pink	40	0.65								0										0
14-May-20	Lady Island	Pink	35	0.51								0										0
14-May-20	Lady Island	Pink	65	2.77								0				1						1
14-May-20	Lady Island	Pink	70	3.06								0										0
14-May-20	Lady Island	Pink	42	0.60								0										0
14-May-20	Lady Island	Pink	65	2.65								0										0
14-May-20	Lady Island	Pink	75	3.56								0										0
14-May-20	Lady Island	Pink	75	4.01	1					1	2	4										0
14-May-20	Lady Island	Chum	75	3.97								0										0
14-May-20	Lady Island	Chum	67	3.04			1					1										0
14-May-20	Lady Island	Chum	42	0.70								0										0
14-May-20	Lady Island	Chum	80	4.24								0										0
14-May-20	Lady Island	Chum	65	2.70								0										0
14-May-20	Lady Island	Chum	72	3.65								0										0
14-May-20	Lady Island	Chum	75	4.03			1					1										0
14-May-20	Penphrase Pass	Pink	65	1.98								0										0
14-May-20	Penphrase Pass	Pink	65	2.40								0										0
14-May-20	Penphrase Pass	Pink	50	0.99								0										0

Date of seine	Site Name	Fish Species	Length (mm)	Weight (g)	LEP Co	LEP C1	LEP C2	LEP PAM	LEP PAF	LEP AM	LEP AF	LEP Total	Cal Co	Cal C1	Cal C2	Cal C3	Cal C4	CAL PAM	CAL PAF	CAL AM	CAL AF	CAL Total
14-May-20	Penphrase Pass	Pink	60	1.77								0										0
14-May-20	Penphrase Pass	Pink	45	0.79								0										0
14-May-20	Penphrase Pass	Pink	62	2.03								0										0
14-May-20	Penphrase Pass	Pink	58	1.76								0										0
14-May-20	Penphrase Pass	Pink	70	3.04								0										0
14-May-20	Penphrase Pass	Pink	55	1.47								0										0
14-May-20	Penphrase Pass	Pink	54	1.23								0										0
14-May-20	Penphrase Pass	Pink	58	1.60								0										0
14-May-20	Penphrase Pass	Coho	80	5.83								0										0
14-May-20	Penphrase Pass	Chum	52	1.32								0		1								1
14-May-20	Penphrase Pass	Chum	65	2.92								0										0
14-May-20	Penphrase Pass	Chum	60	2.05								0										0
14-May-20	Penphrase Pass	Chum	72	3.60								0										0
14-May-20	Penphrase Pass	Chum	70	2.83								0										0

Appendix IV - 2016 – 2020 Comparisons

Surface water temperature comparison between data collected in the Broughton Archipelago between 2016 and 2020. Hoeya Sound, Hoeya South and Mount Frederick Bay sites are not included in the table as there was no historic data for these sites.

Site #	Site Name	March	April					May				June
		Temp. (°C)	Temp. (°C)	Temp. (°C)	Temp. (°C)	Temp. (°C)	Temp. (°C)	Temp. (°C)	Temp. (°C)	Temp. (°C)	Temp. (°C)	Temp. (°C)
		2020	2016	2017	2018	2019	2020	2016	2017	2018	2020	2019
N/A	Hanson Island	7.7	N/A	N/A	N/A	N/A	12.2	N/A	N/A	N/A	9.9	10.8
N/A	Freshwater Bay	8.3	N/A	N/A	N/A	N/A	10.6	N/A	N/A	N/A	9.7	11.2
N/A	Larsen Island Fish Farm	8.4	N/A	N/A	N/A	8.5	N/A	N/A	N/A	N/A	N/A	14.1
1	Swanson Island Fish Farm	8.2	9.1	8.1	8.6	8.2	N/A	9.8	12.6	9.7	N/A	12.1
2	Midsummer Island Fish Farm (Potts Bay)	7.7	9.1	8.1	8.7	8.1	9.8	9.8	12.9	9.3	10.4	12.6
3	Chop Bay	9.0	9.3	8	8.9	8.2	9.8	10.3	14	11.7	12.4	16
4	Lady Island	9.0	9.3	8.3	8.8	8.6	10.9	11.7	15.1	13.1	11.8	12.5
5	Doctor Island Fish Farm	9.5	9.6	8.7	8.6	8.4	N/A	12.4	14.4	16.2	N/A	17.3
6	Brent Bay	7.2	N/A	8.6	N/A	7.4	N/A	12.2	13.3	15.2	N/A	13.1
7	Shelterless Bay	8.6	N/A	9.4	8.5	8.5	N/A	11.8	13.3	15.5	N/A	14.1
8	Lance Bay	7.8	9.7	9.1	9.3	8.2	N/A	11.6	13.4	15.8	N/A	15.9
N/A	Batt Bluff West	7.8	N/A	N/A	N/A	8.5	N/A	N/A	N/A	N/A	N/A	14.6
9	Sargeaunt Pass Fish Farm	7.5	9.8	8.8	8.8	8.3	N/A	11.8	13.8	15.3	N/A	16
10	Humphrey Rock Fish Farm	8.5	10.1	9.1	9	8.3	9.3	11.1	14.5	14.8	11.5	16.1
11	Pumish Point	7.7	9.5	8.6	8.8	8.3	N/A	13	13.9	15.6	N/A	15.7
12	Oline Point	8.0	9.7	8.6	9	8.4	N/A	11.8	14.2	16.2	N/A	15.5
13	London Point	7.6	9.5	8.4	9.1	10.2	N/A	12.7	14.3	11.3	N/A	12.6
14	Miller Point	9.2	9.4	8.2	9.7	10	N/A	13	14.9	13.3	N/A	13.2
15	Kwatsi Bay	8.4	9.5	8.1	9.5	9.7	12.0	13.1	15.6	11.7	15.1	13.7
16	Glacier Falls Fish Farm	9.4	9.4	8.3	10.4	9.8	11.6	12.3	14.1	11.3	13.5	13.4
17	Viner Sound	8.5	10.0	8.4	10.1	10.5	11.8	13.5	14.5	28.0	14.2	15.7
18	Denham Island	8.6	10.2	8.4	9.8	9.0	11.0	13.5	14.6	13.3	16.3	15.9
19	Baker Island	8.8	12.9	8.3	8.9	11.1	10.8	11.9	18.9	10.5	14.2	12.2
20	Jumper Island	9.6	10.6	8.2	8.7	11.2	10.3	10.7	13.1	10.5	13.3	15.8
21	Arthur Point	11.6	10.3	8.4	10.1	9.6	N/A	10.7	15.8	10.0	N/A	13.2
22	Wicklow Point	8.4	9.9	8.3	9.8	10.0	N/A	10.7	13.1	10.2	N/A	14.0
A	Bennett Point Fish Farm (Noo-La)	N/A	9.2	8.4	9.0	N/A	N/A	13.8	13.8	16.1	N/A	N/A
B	Sambo Point	N/A	9.5	8.5	9.1	N/A	N/A	14.0	13.8	15.7	N/A	N/A
C	Penphrase Pass	6.9	10.7	8.8	8.9	9.3	12.9	14.4	15.2	14.8	15.0	13.7
D	Harry Bay	6.8	10.1	8.7	8.3	9.6	N/A	14	15.1	14.8	N/A	14.4
N/A	Wakeman 3	5.8	N/A	N/A	N/A	10.1	N/A	N/A	N/A	N/A	N/A	N/A
N/A	Wakeman 4	6.5	N/A	N/A	N/A	10.2	N/A	N/A	N/A	N/A	N/A	N/A
N/A	McKenzie Cove	7.2	N/A	N/A	N/A	9.8	N/A	N/A	N/A	N/A	N/A	N/A
E	Phillip Point West	6.5	10.7	9.0	8.5	10.3	11.1	13.9	16.0	15.4	16.8	N/A
F	Sutlej North	7.0	10.5	8.6	9.2	9.9	N/A	12.3	14.9	14.9	N/A	N/A
G	Codrington Point	7.0	10.6	8.7	8.7	9.8	N/A	14.3	15.4	15.2	N/A	N/A
H	Wehlis Bay Fish Farm	7.2	9.5	8.5	10.7	9.5	9.2	10.4	14.8	12.0	13.2	N/A
I	Alder Point	7.5	9.6	8.5	8.7	9.6	9.1	11.0	13.8	10.7	13.6	N/A
J	Popplewell Point	7.2	9.6	8.5	8.6	10.3	N/A	10.5	15.4	11.5	N/A	N/A
N/A	Gwayasdums 1	N/A	N/A	N/A	N/A	10.1	N/A	N/A	N/A	N/A	N/A	N/A
N/A	Nimpkish Estuary	13.0	N/A	N/A	N/A	11.7	10.8	N/A	N/A	N/A	10.8	N/A
N/A	Kokish Estuary	9.3	N/A	N/A	N/A	9.1	N/A	N/A	N/A	N/A	N/A	N/A
	Average	**8.2**	**9.9**	**8.5**	**9.2**	**9.2**	**10.8**	**12.1**	**14.5**	**13.7**	**13.0**	**14.1**

Surface water salinity comparison between data collected in the Broughton Archipelago between 2016 and 2020. Hoeya Sound, Hoeya South and Mount Frederick Bay sites are not included in the table as there was no historic data for these sites.

Site	Site Name	March	April					May				June
		Salinity (ppt) 2020	Salinity (ppt) 2016	Salinity (ppt) 2017	Salinity (ppt) 2018	Salinity (ppt) 2019	Salinity (ppt) 2020	Salinity (ppt) 2016	Salinity (ppt) 2017	Salinity (ppt) 2018	Salinity (ppt) 2020	Salinity (ppt) 2019
N/A	Hanson Island	33.3	N/A	N/A	N/A	N/A	32.1	N/A	N/A	N/A	33.1	34.4
N/A	Freshwater Bay	32.1	N/A	N/A	N/A	N/A	32.8	N/A	N/A	N/A	32.5	32.4
N/A	Larsen Island Fish Farm	16.2	N/A	N/A	N/A	33.5	N/A	N/A	N/A	N/A	N/A	32.6
1	Swanson Island Fish Farm	33.3	29.7	31.3	30.3	28.6	N/A	30.4	25.5	33.9	N/A	33.6
2	Midsummer Island Fish Farm (Potts Bay)	32.1	30	31.7	30	33.6	32.7	30.4	26.4	33.8	32.8	33.9
3	Chop Bay	15.9	28.3	31.1	30.2	31.4	33.7	29.5	24.9	32.4	29.3	27.5
4	Lady Island	32.5	27.9	31.2	30.1	27.7	33.5	28.1	22.6	31.9	27.5	10.9
5	Doctor Island Fish Farm	28.7	27.1	28.1	30.6	32.2	N/A	24.9	21	26.1	N/A	22.7
6	Brent Bay	32.4	N/A	30.2	N/A	14.9	N/A	25.7	18.3	23.3	N/A	21.3
7	Shelterless Bay	31.5	N/A	28.7	30.3	32.6	N/A	24.6	20.3	19.4	N/A	14.3
8	Lance Bay	23.7	25.5	28.8	29	32.8	N/A	25.8	21.3	18.8	N/A	18
N/A	Batt Bluff West	14.8	N/A	N/A	N/A	31.5	N/A	N/A	N/A	N/A	N/A	23.8
9	Sargeaunt Pass	26.9	25.6	29.3	30.1	30.4	N/A	26.5	21	21.8	N/A	20.2
10	Humphrey Rock	32.5	26.5	29.8	29.8	32.5	33.0	26.3	20.8	26.5	27.9	22.1
11	Pumish Point	32.0	27.4	30.5	30	27.9	N/A	22.9	20.8	24.7	N/A	25.5
12	Oline Point	16.0	27	30.2	29.8	32.6	N/A	25.4	20.9	22.3	N/A	25.6
13	London Point	29.3	25.9	28.1	26.7	28.5	N/A	17.9	16.6	18.5	N/A	25.5
14	Miller Point	29.5	28.4	29.1	28.4	24.3	N/A	23.7	18.9	23.7	N/A	26.3
15	Kwatsi Point	31.6	28.5	30.8	28.8	31.1	32.1	22	18.4	29	26.1	28.8
16	Glacier Falls Fish Farm	32.1	28.7	30.6	27.6	26.9	31.6	25.1	20.9	29.8	27.2	28.7
17	Viner Sound	27.4	27.8	30.6	28	29.4	22.4	23.7	22	12.2	29.9	26.5
18	Denham Island	24.2	25	29.6	28.3	27.2	31.6	12.5	21	13.8	23.0	19.9
19	Baker Island	22.8	26.6	28.9	26.9	30.7	32.1	19.9	13.2	30.6	26.2	32.1
20	Jumper Island	15.6	27	30.5	29.9	32.9	25.6	28.2	24.7	31.2	28.5	23.6
21	Arthur Point	31.2	28.5	30.8	27.8	32.8	N/A	28.5	21.4	33	N/A	30.2
22	Wicklow Bay	32.2	28.4	30.6	27.1	31.4	N/A	28.3	23.8	32.2	N/A	31.7
A	Bennett Point Fish Farm (Noo-La)	N/A	29	31.3	21.8	N/A	N/A	21	23.4	31	N/A	N/A
B	Sambo Point	N/A	28.8	31.3	25.7	N/A	N/A	21.4	24.4	31	N/A	N/A
C	Penphrase Passage	25.9	22.8	27.9	26.8	12.6	25.8	7.9	10.1	7	16.7	5.6
D	Harry Bay	24.8	23.4	26.5	23.9	15.2	N/A	5.4	8.8	6.9	N/A	5.7
N/A	Wakeman 3	15.4	N/A	N/A	N/A	21	N/A	N/A	N/A	N/A	N/A	N/A
N/A	Wakeman 4	21.5	N/A	N/A	N/A	22.9	N/A	N/A	N/A	N/A	N/A	N/A
N/A	McKenzie Cove	23.7	N/A	N/A	N/A	16.2	N/A	N/A	N/A	N/A	N/A	N/A
E	Phillip Point West	18.7	19.3	26.5	5.3	20.4	15.2	5.6	7.9	6.8	11.9	N/A
F	Sutlej North	12.3	22.8	26.9	25.4	27.1	N/A	23.9	9.7	11.8	N/A	N/A
G	Codrington Point	26.3	23.8	28.5	28.6	14.6	N/A	11.3	11.2	12.8	N/A	N/A
H	Wehlis Bay Fish Farm	30.5	28.3	29.8	26.7	33.1	32.6	29.1	19.9	29.2	29.1	N/A
I	Alder Bay	30.5	27.9	30	30.8	33.1	31.8	27.1	22	32.8	28.6	N/A
J	Popplewell Point	30.8	28.2	29.4	30.6	33.2	N/A	29.1	19.9	33.1	N/A	N/A
N/A	Gwayasdums 1	N/A	N/A	N/A	N/A	33.8	N/A	N/A	N/A	N/A	N/A	N/A
N/A	Nimpkish Estuary	4.4	N/A	N/A	N/A	33.3	20.2	N/A	N/A	N/A	22.8	N/A
N/A	Kokish Estuary	31.0	N/A	N/A	N/A	33.3	N/A	N/A	N/A	N/A	N/A	N/A
	Average	**25.9**	**26.8**	**29.6**	**27.1**	**27.8**	**29.3**	**22.9**	**19.4**	**24.1**	**26.3**	**22.4**

A comparison of the results of analysis for sea lice infestation on samples collected by beach seine in the Broughton Archipelago between 2016 and 2020.

Species	Sample size (n)					Total # of fish infested					Prevalence (%)				
	2016	2017	2018	2019	2020	2016	2017	2018	2019	2020	2016	2017	2018	2019	2020
Chum	512	562	281	246	497	152	131	55	58	114	29.7	23.3	19.6	23.6	22.9
Pink	430	411	356	230	402	146	77	52	49	90	33.9	18.7	14.6	21.3	22.4
Coho	25	19	11	24	5	14	2	3	19	2	56.0	10.5	27.3	79.2	40.0
Chinook	0	2	0	1	0	-	0	-	1	-	-	0	-	100.0	-
Threespine stickleback	2	1	5	3	0	0	1	2	3	-	0	100.0	40.0	100.0	-
Total	**969**	**995**	**653**	**504**	**904**	**312**	**211**	**112**	**130**	**206**	**32.3**	**21.2**	**17.2**	**25.8**	**22.8**

Species	Sample size (n)					Total # of lice observed					Abundance				
	2016	2017	2018	2019	2020	2016	2017	2018	2019	2020	2016	2017	2018	2019	2020
Chum	512	562	281	246	497	262	257	77	122	183	0.5	0.46	0.27	0.50	0.37
Pink	430	411	356	230	402	242	130	80	101	120	0.6	0.32	0.22	0.44	0.30
Coho	25	19	11	24	5	24	8	5	59	4	1.0	0.42	0.45	2.46	0.80
Chinook	0	2	0	1	0	-	0	-	3	-	-	0	-	3.00	-
Threespine stickleback	2	1	5	3	0	0	5	3	42	-	0	5.00	0.60	14.00	-
Total	**969**	**995**	**653**	**504**	**904**	**528**	**400**	**165**	**327**	**307**	**0.54**	**0.40**	**0.25**	**0.65**	**0.34**

Comparisons of prevalence, abundance and sea lice species by month and site was not completed as catch data was variable from year to year and sites with a capture total of less than ten were lumped for data presentation.

The number of sea lice in each life stage by species identified on the chum salmon sample population from the Broughton Archipelago between 2016 and 2020.
LEP = *Lepeophtheirus salmonis* CAL = *Caligus clemensi*

Life Stage[1]	Number of Lice				
	2016	**2017**	**2018**	**2019**	**2020**
LEP Co	16	21	11	5	22
LEP C1	21	28	13	27	7
LEP C2	39	29	8	7	14
LEP PAM	8	2	0	5	2
LEP PAF	4	1	0	1	3
LEP AM	6	0	0	5	1
LEP AF	4	0	0	3	0
TOTAL LEP	**98**	**81**	**32**	**53**	**49**
CAL Co	7	27	9	2	15
CAL C1	111	103	22	50	74
CAL C2	15	33	5	9	18
CAL C3	8	9	4	4	15
CAL C4	11	2	2	2	2
CAL PAM	0	0	0	0	1
CAL PAF	0	0	1	0	0
CAL AM	3	1	1	0	8
CAL AF	9	1	1	2	1
TOTAL CAL	**164**	**176**	**45**	**69**	**134**

[1] 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

The number of sea lice in each life stage by species identified on the pink salmon sample population from the Broughton Archipelago between 2016 and 2020.

LEP = *Lepeophtheirus salmonis* CAL = *Caligus clemensi*

Life Stage[1]	Number of Lice				
	2016	**2017**	**2018**	**2019**	**2020**
LEP Co	11	13	9	9	16
LEP C1	17	11	7	18	9
LEP C2	51	12	5	9	6
LEP PAM	7	0	0	1	4
LEP PAF	2	1	1	2	4
LEP AM	7	0	0	9	2
LEP AF	8	0	0	8	2
TOTAL LEP	**103**	**37**	**22**	**56**	**43**
CAL Co	1	8	4	2	16
CAL C1	74	50	43	35	36
CAL C2	26	21	9	6	6
CAL C3	16	6	2	1	8
CAL C4	6	3	0	0	3
CAL PAM	0	0	0	0	1
CAL PAF	0	2	0	0	3
CAL AM	5	3	0	1	3
CAL AF	12	0	0	0	1
TOTAL CAL	**140**	**93**	**58**	**45**	**77**

[1] 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

A comparison of sea lice infestation rates on chum and pink salmon collected in the Broughton Archipelago between 2016 and 2020.

Chum by Year	*Caligus clemensi*			*Lepeophtheirus salmonis*		
	Prevalence	Abundance	Average Intensity	Prevalence	Abundance	Average Intensity
2016 (n=512)	20.3 %	0.32	1.6	13.3 %	0.19	1.4
2017 (n=562)	17.4 %	0.31	1.8	11.0 %	0.14	1.3
2018 (n=281)	12.5 %	0.16	1.3	10.3 %	0.11	1.1
2019 (n=246)	16.3 %	0.28	1.7	14.2 %	0.21	1.5
2020 (n=497)	18.1 %	0.27	1.5	7.4 %	0.10	1.3

Pink by Year	*Caligus clemensi*			*Lepeophtheirus salmonis*		
	Prevalence	Abundance	Average Intensity	Prevalence	Abundance	Average Intensity
2016 (n=430)	24.4 %	0.33	1.3	15.3 %	0.24	1.5
2017 (n=411)	15.1 %	0.23	1.5	6.6 %	0.09	1.4
2018 (n=356)	11.5 %	0.16	1.4	5.6 %	0.06	1.1
2019 (n=230)	13.5 %	0.20	1.5	11.7 %	0.24	2.1
2020 (n=402)	15.9 %	0.19	1.2	8.7 %	0.11	1.2