

Juvenile Pacific Salmon (*Oncorhynchus* spp.) Trawl Survey on the Coast of British Columbia and the Southern Coast of Alaska, October 2 to November 6, 2011

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JUVENILE PACIFIC SALMON (*ONCORHYNCHUS* SPP.) TRAWL SURVEY ON THE COAST OF
BRITISH COLUMBIA AND THE SOUTHERN COAST OF ALASKA, OCTOBER 2 TO
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by

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ABSTRACT

Jung, Y., Tabata, A.T., Flynn, K.L., Zubkowski, T.B., and King, J.R. 2025. Juvenile Pacific Salmon (*Oncorhynchus* spp.) Trawl Survey on the Coast of British Columbia and the Southern Coast of Alaska, October 2 to November 6, 2011. Can. Data Rep. Fish. Aquat. Sci. 1425: vi + 61 p.

Fisheries and Oceans Canada (DFO) conducted a surface trawl survey from October 2 - November 6, 2011 on the CCGS *W.E. Ricker*. This study targeted juvenile Pacific Salmon (*Oncorhynchus* spp.) in British Columbia (BC) and southern Alaska. There were 35,499 individuals caught from 37 species in 152 tows. Pacific Herring was the most abundant species with 72% of the total catch. Juvenile salmon species caught in decreasing abundance by count were: Pink Salmon, Chum Salmon, Chinook Salmon, Coho Salmon and Sockeye Salmon, with catch distribution varied based on species. Biological samples for genetic stock composition, otoliths, and coded wire tags were returned to the Pacific Biological Station (DFO, Nanaimo, BC). Associated information on the physical oceanography (154 locations), water samples for chemistry and chlorophyll *a* along with zooplankton samples (150 locations) were returned to the Institute of Ocean Sciences (DFO, Sidney, BC).

RÉSUMÉ

Jung, Y., Tabata, A.T., Flynn, K.L., Zubkowski, T.B., and King, J.R. 2025. Juvenile Pacific Salmon (*Oncorhynchus* spp.) Trawl Survey on the Coast of British Columbia and the Southern Coast of Alaska, October 2 to November 6, 2011. Can. Data Rep. Fish. Aquat. Sci. 1425: vi + 61 p.

Pêches et Océans Canada a effectué un relevé au chalut de surface entre octobre 2 to novembre 6, 2011 sur le CCGS *W.E. Ricker*. Cette étude ciblait le saumon du Pacifique juvénile (*Oncorhynchus* spp.) en Colombie-Britannique (C.-B.) et dans le sud de l'Alaska. 35,184 individus de 37 espèces ont été capturés au cours de 152 traits. Le hareng du Pacifique était l'espèce la plus abondante avec 72% de la prise totale. Les espèces de saumon juvénile capturées par ordre décroissant d'abondance par comptage étaient les suivantes: saumon rose, saumon kéta, saumon quinnat, saumon coho et saumon rouge, avec la répartition des prises variait selon les espèces. Les échantillons biologiques pour la composition génétique des stocks, les otolithes, et les micromarques magnétisées codées ont été retournés à la Station biologique du Pacifique (MPO, Nanaimo, C.-B.). Les informations associées sur l'océanographie physique (154 sites) les échantillons d'eau pour la chimie et la chlorophylle *a* ainsi que les échantillons de zooplancton (150 sites) ont été retournés à l'Institut des sciences de la mer (MPO, Sidney, C.-B.).

1 INTRODUCTION

Fisheries and Oceans Canada (DFO) conducted a trawl survey, targeting juvenile Pacific Salmon (*Oncorhynchus* spp.) from October 02 to November 06, 2011 on the CCGS *W.E. Ricker*. The main objectives of this survey were:

1. to determine the abundance, condition, distribution, and genetic stock composition of juvenile Pacific Salmon (*Oncorhynchus* spp.) present off the coast of British Columbia and southeast Alaska;
2. the associated physical oceanography; and
3. the distribution and biomass of zooplankton.

This survey was part of an ongoing suite of surveys (1997-2016) which was led by the High Seas Salmon Program at the Pacific Biological Station, Nanaimo, British Columbia (BC) in support of research on Pacific Salmon ocean ecology. These surveys were conducted annually since 1997 (Welch et al. 2002), initially from the Gulf of Alaska to the southern continental shelf of BC, albeit with differences in location, survey area and timing each year. The survey is focused on juvenile Pacific Salmon, specifically Chum Salmon (*O. keta*), Chinook Salmon (*O. tshawytscha*), Coho Salmon (*O. kitsutch*), Pink Salmon (*O. gorbuscha*) and Sockeye Salmon (*O. nerka*). This data report documents the biological, oceanographic, and zooplankton data and samples collected.

2 METHODS

2.1 SURVEY LOCATIONS

Fishing, oceanographic, and zooplankton sampling occurred off the coast of British Columbia and southeast Alaska, including Johnstone Strait, Queen Charlotte Strait, Queen Charlotte Sound, north coast of British Columbia, north coast of Haida Gwaii, west coast of Vancouver Island, Juan de Fuca Strait and Southern Alaska (Figure 1).

2.2 FISHING OPERATIONS

The CCGS *W.E. Ricker* deployed a Cantrawl model 250 midwater trawl net (approximately 90 m long x 30 m wide x 15 m high; (Cantrawl Nets Ltd., Richmond, Canada; Appendix Table A and Appendix Figure B). This three-bridle midwater net had a codend liner with 12.7 mm mesh (stretched) to retain smaller species. On this survey, the mean trawl net opening was 32 m wide by 14 m high, or an area of 448 m².

Tow speed averaged 8.9 km/hr, and varied between 3.7 to 18.3 km/hr speed over ground, depending on the wind, tide, and current. The target headrope depths were 0 m, 15 m, and 30 m. Warp length ranged from 150 m to 150 m (Appendix C). Tow duration was 14 - 52 minutes, with the time starting when the Jet 5 m² trawls doors were locked and the net started fishing.

2.3 CATCH PROCESSING

All fish were sorted to species and counted. If the catch of a species was too large to effectively count within a reasonable timeframe, the species' catch was weighed (kg) and a subsample was counted and weighed to extrapolate an estimated catch count. The catch (count) of juvenile Pacific Salmon by species was divided by swept volume (km^3) to calculate catch per unit effort (CPUE).

2.4 BIOLOGICAL SAMPLING

All Pacific Salmon specimens were measured for fork length (mm) and weight (g), sex determined, and presence of sea lice recorded. Pacific Salmon were divided into juveniles and adults based on their fork lengths. All Pacific Salmon species that were < 320 mm in length were considered juveniles, except for Coho Salmon whose length threshold as juveniles was < 400 mm. Additional collections included: fin clips for genetic stock identification (GSI), additional salmon tissues for molecular identification of pathogens, muscle tissue for energy density estimation, stable isotope analyses or proximate analyses, otoliths, adipose fin status (i.e. clipped vs. non-clipped), and coded wire tags (CWTs). Other fish species were measured for length (mm) and weight (g) as time permitted.

2.5 OCEANOGRAPHY

A Sea-Bird 911plus CTD (conductivity-temperature-depth; Sea-Bird Scientific, Bellevue, WA) was used for oceanographic profiles at 154 locations (Figure 1, Appendix D). A Niskin bottle at 10 m from the surface was used for nutrient and chlorophyll (chl *a*) collections. Seawater samples for nitrate, phosphate, and silicate were placed in acid-washed glass test tubes and frozen. Seawater samples for chl *a* estimation were filtered with 25 mm GF/F (glass fibre filter) disks under vacuum, not exceeding 5 inHg (inch of mercury). Filter disks were then placed in polypropylene scintillation vials and frozen. Both the nutrient and chl *a* samples were frozen and maintained at -18°C . Nutrient and chl *a* samples were sent for analyses at the Institute of Ocean Sciences (DFO, Sidney, BC).

2.6 ZOOPLANKTON

At 150 locations (Figure 1, Appendix D), vertical tows to sample zooplankton were conducted to approximately 250 m or within 10 m of the bottom with two 60 cm diameter, 253 micrometer mesh nets mounted in a bongo-drum style frame, one of which was equipped with a flow meter. Zooplankton collected from one bongo net were preserved in 10% formalin and sent to the zooplankton laboratory at the Institute of Ocean Sciences (DFO, Sidney, BC) for species enumeration. The zooplankton sample from the other bongo net was sorted into four size fractions by successively sieving through 8.0, 1.7, 1.0, and 0.25 mm screens. Individual size fractions were frozen for future stable isotope, energy density, or proximate analyses and sent to the Pacific Biological Station (DFO, Nanaimo, BC) for processing or archiving.

3 RESULTS

3.1 FISHING OPERATIONS

This survey conducted 152 trawl net tows off the coast of British Columbia and southeast Alaska (Figure 1, Appendix C) with 152 trawls completed successfully. There was 0 unusable tows due to problems with equipment deployment.

3.2 CATCH COMPOSITION

Total catch for the survey from usable tows was 35,499 fish, with 6,574 (or 19%) juvenile Pacific Salmon. Detailed catch composition for each tow is included in Appendix E. For each species captured during the survey, the number of tows in which the species was present, total catch count, maximum tow catch count, and mean tow catch count in usable tows is presented in Table 1. The top three abundant species caught by count were Pacific Herring ($n=25,733$), juvenile Pink Salmon ($n=2,606$), then juvenile Chum Salmon ($n=2,416$; Table 1). Juvenile Pacific Salmon species caught, in order of abundance by count, were: Pink Salmon, Chum Salmon, Chinook Salmon, Coho Salmon and Sockeye Salmon. The survey targeted juvenile Pacific Salmon so the catches of adult Pacific Salmon should be interpreted with care.

The location and catch per unit effort (CPUE, count/km³) of juvenile Pacific Salmon is shown in Figure 2. Juvenile Chinook Salmon were caught throughout the survey area but were most abundant in the inlets of the west coast of Vancouver Island. Juvenile Chum Salmon were almost absent in southeast Alaska, but were very abundant in Queen Charlotte Strait and the west coast of Vancouver Island. Juvenile Coho Salmon were found throughout the survey area. Juvenile Pink Salmon were caught primarily in Queen Charlotte Strait. Juvenile Sockeye Salmon (*O. nerka*) were localized within the migratory corridor through Johnstone Strait, Queen Charlotte Sound and Southern Alaska.

3.3 BIOLOGICAL SAMPLES

Samples were collected for GSI ($n=1,428$), otoliths ($n=1,085$), pathogen analyses ($n=103$), energy density and stable isotope analyses ($n=2,129$). CWTs ($n=41$) when present and detected were retained. These biological samples were analysed or archived at the Pacific Biological Station, DFO (Nanaimo, BC).

3.4 LENGTH AND WEIGHT

Length frequencies and length-weight relationships are presented for juvenile Pacific Salmon species in Figures 3 to 7. Double log transformed length-weight regressions coefficients were similar in Chinook Salmon, Chum Salmon, and Coho Salmon. Juvenile Pink Salmon and Sockeye Salmon had a slightly smaller coefficients, with juvenile Sockeye Salmon had slightly

larger than Pink Salmon. A larger coefficient typically represents better condition, whereas a smaller coefficient typically represents worse condition. Lengths and weights of 31 species were recorded from all tows (Table 2). The length frequencies for species with greater than 50 length measurements (Pacific Herring, Rockfishes, Pacific Sand Lance, Smelts, Opalescent Inshore Squid and Threespine Stickleback) are presented in Figure 8.

Within juvenile Pacific Salmon, Coho Salmon had the largest maximum length (259 mm) and weight (235 g), whereas Sockeye Salmon had the smallest maximum length (171 mm) and weight (55 g).

3.5 OCEANOGRAPHY

CTD casts and water samples were completed at 154 sites with cast depths ranging from 30 m to 250 m (Appendix D). Oceanographic data from the CTD casts and nutrient analysis of the water samples are archived online within the Water Properties Data Inventory (Institute of Ocean Sciences, DFO, Sidney, BC) under cruise number 201145.

3.6 ZOOPLANKTON

Vertical bongo tows were conducted at 150 stations to depths ranging from 27 m to 150 m (Appendix D). Zooplankton enumeration data are archived in the zooplankton database (Institute of Ocean Sciences, DFO, Sidney, BC) under cruise number 201145.

4 DISCUSSION

This juvenile Pacific Salmon trawl survey collected valuable information on distribution, abundance, condition, and genetic stock composition for juvenile Pacific Salmon off the coast of British Columbia and southeast Alaska. Overall, juvenile Pink Salmon and juvenile Chum Salmon were most abundant, whereas juvenile Sockeye Salmon were least abundant. Distributions varied by species and life stage. This survey data supplements historic juvenile Pacific Salmon surveys that have been reported in Fisheries and Oceans Canada's State of the Pacific Ocean, and are being incorporated into longer term and broader scope research projects.

5 REFERENCES

Welch, D.W., Morris, J.F.T., and Demers, E. 2002. CCGS *W.E. Ricker* Gulf of Alaska salmon survey, March - April, 1997. Can. Data Rep. Fish. Aquat. Sci. 1101: 19 p.

6 ACKNOWLEDGEMENTS

We would like to thank the Captain, Scott Doan, and crew of the CCGS *W.E. Ricker*. Marc Trudel was the High Seas Salmon Program Lead in 2011, and John Morris was Chief Scientist on this survey. We appreciate the expertise of additional science staff who participated in the survey, in particular Hugh Maclean who conducted oceanographic sampling.

7 TABLES

Table 1. All captured species (or taxonomic group), ordered by total catch count, showing number of tows in which the species occurred, total catch count, maximum catch count, and mean catch count per tow for usable tows during the juvenile Pacific Salmon trawl survey aboard the CCGS *W.E. Ricker*, October 02 to November 06, 2011.

Common Name	Scientific Name	Tows	Count	Max	Mean
Pacific Herring	<i>Clupea pallasii</i>	47	25,733	9,520	548
Pink Salmon (Juveniles)	<i>Oncorhynchus gorbuscha</i>	65	2,606	612	40
Chum Salmon (Juveniles)	<i>Oncorhynchus keta</i>	55	2,416	737	44
Chinook Salmon (Juveniles)	<i>Oncorhynchus tshawytscha</i>	71	1,199	120	17
Smelts	<i>Osmeridae</i>	7	632	390	90
Threespine Stickleback	<i>Gasterosteus aculeatus</i>	5	610	600	122
Pacific Sand Lance	<i>Ammodytes personatus</i>	6	454	150	76
Opalescent Inshore Squid	<i>Doryteuthis opalescens</i>	11	360	220	33
Pacific Sandfish	<i>Trichodon trichodon</i>	2	311	310	156
Sea Nettle	<i>Chrysaora fuscescens</i>	23	297	113	20
Coho Salmon (Juveniles)	<i>Oncorhynchus kisutch</i>	56	218	23	4
Rockfishes	<i>Sebastes</i>	5	186	73	37
Northern Anchovy	<i>Engraulis mordax</i>	1	160	160	160
Sockeye Salmon (Juveniles)	<i>Oncorhynchus nerka</i>	30	135	25	4
Chum Salmon (Adults)	<i>Oncorhynchus keta</i>	25	57	8	2
Chinook Salmon (Adults)	<i>Oncorhynchus tshawytscha</i>	12	23	9	2
Jellyfish	<i>Scyphozoa</i>	71	17	12	3
Smooth Lumpsucker	<i>Aptocyclus ventricosus</i>	8	10	2	1
Lanternfishes	<i>Myctophidae</i>	1	10	10	10
Starry Flounder	<i>Platichthys stellatus</i>	4	9	4	2
Soft Sculpin	<i>Psychrolutes sigalutes</i>	1	7	7	7
Walleye Pollock	<i>Gadus chalcogrammus</i>	5	6	2	1
Sablefish	<i>Anoplopoma fimbria</i>	2	6	5	3
Coho Salmon (Adults)	<i>Oncorhynchus kisutch</i>	4	5	2	1
Flatfishes	<i>Pleuronectiformes</i>	3	5	3	2
Pacific Spiny Lumpsucker	<i>Eumicrotremus orbis</i>	4	4	1	1
Pacific Sardine	<i>Sardinops sagax</i>	3	4	2	1
Sturgeon Poacher	<i>Podothecus accipenserinus</i>	2	3	2	2
Prowfish	<i>Zaprora silenus</i>	2	2	1	1
Wolf Eel	<i>Anarrhichthys ocellatus</i>	2	2	1	1
Yellowtail Rockfish	<i>Sebastes flavidus</i>	2	2	1	1
Ocean Sunfish	<i>Mola mola</i>	1	2	2	2
Remoras	<i>Echeneidae</i>	1	2	2	2
Bay Pipefish	<i>Syngnathus leptorhynchus</i>	1	1	1	1
Big Skate	<i>Beringraja binoculata</i>	1	1	1	1
Eels	<i>Anguilliformes</i>	1	1	1	1
Eulachon	<i>Thaleichthys pacificus</i>	1	1	1	1
Pacific Hake	<i>Merluccius productus</i>	1	1	1	1
Silverspotted Sculpin	<i>Blepsias cirrhosus</i>	1	1	1	1
Euphausiids	<i>Euphausiacea</i>	2			

Table 2. Lengths and weights for each species (arranged descending by the number of length measurements for each by species) sampled during the juvenile Pacific Salmon trawl survey aboard the CCGS *W.E. Ricker*, October 02 to November 06, 2011. Tows = number of tows. Type = Type of length measurement (FL = Fork Length, TL = Total Length, SL = Standard Length, ML = Mantle Length, BD = Bell Diameter). Measured = number of length measurements. Weighed = number of weight measurements.

Common Name	Tows	Length (mm)					Weight (g)			
		Type	Measured	Min	Max	Mean	Weighed	Min	Max	Mean
Pink Salmon	65	FL	1,573	117	253	183	585	17	189	71
Chum Salmon	65	FL	1,491	123	792	233	492	33	4,700	343
Chinook Salmon	71	FL	1,223	92	620	183	763	8	3,380	127
Pacific Herring	50	FL	1,171	66	263	137				
Coho Salmon	58	FL	223	110	755	268	223	12	4,620	293
Rockfishes	5	TL	196	12	44	24				
Pacific Sand Lance	6	FL	143	45	83	64				
Sockeye Salmon	30	FL	135	119	236	171	135	12	140	55
Smelts	7	FL	82	63	220	100				
Opalescent Inshore Squid	10	ML	70	20	190	48				
Threespine Stickleback	5	TL	60	45	88	69				
Northern Anchovy	1	FL	40	132	154	144				
Pacific Sandfish	1	FL	35	81	140	103				
Lanternfishes	1	FL	10	61	85	71				
Smooth Lumpsucker	8	TL	10	110	210	166				
Starry Flounder	4	TL	9	275	490	337				
Soft Sculpin	1	TL	7	25	35	29				
Sablefish	2	FL	6	236	266	246				
Walleye Pollock	5	TL	6	182	615	393				
Flatfishes	3	TL	5	35	74	46				
Pacific Sardine	3	FL	4	233	254	242				
Pacific Spiny Lumpsucker	4	TL	4	45	80	63				
Sturgeon Poacher	2	TL	3	39	53	47				
Ocean Sunfish	1	FL	2	43	109	76				
Prowfish	2	TL	2	61	215	138				
Remoras	1	FL	2	245	280	262				
Yellowtail Rockfish	2	TL	2	270	460	365				
Big Skate	1	TL	1	200	200	200				
Pacific Hake	1	TL	1	492	492	492				
Pipefishes	1	TL	1	133	133	133				
Wolf Eel	1	TL	1	500	500	500				

8 FIGURES

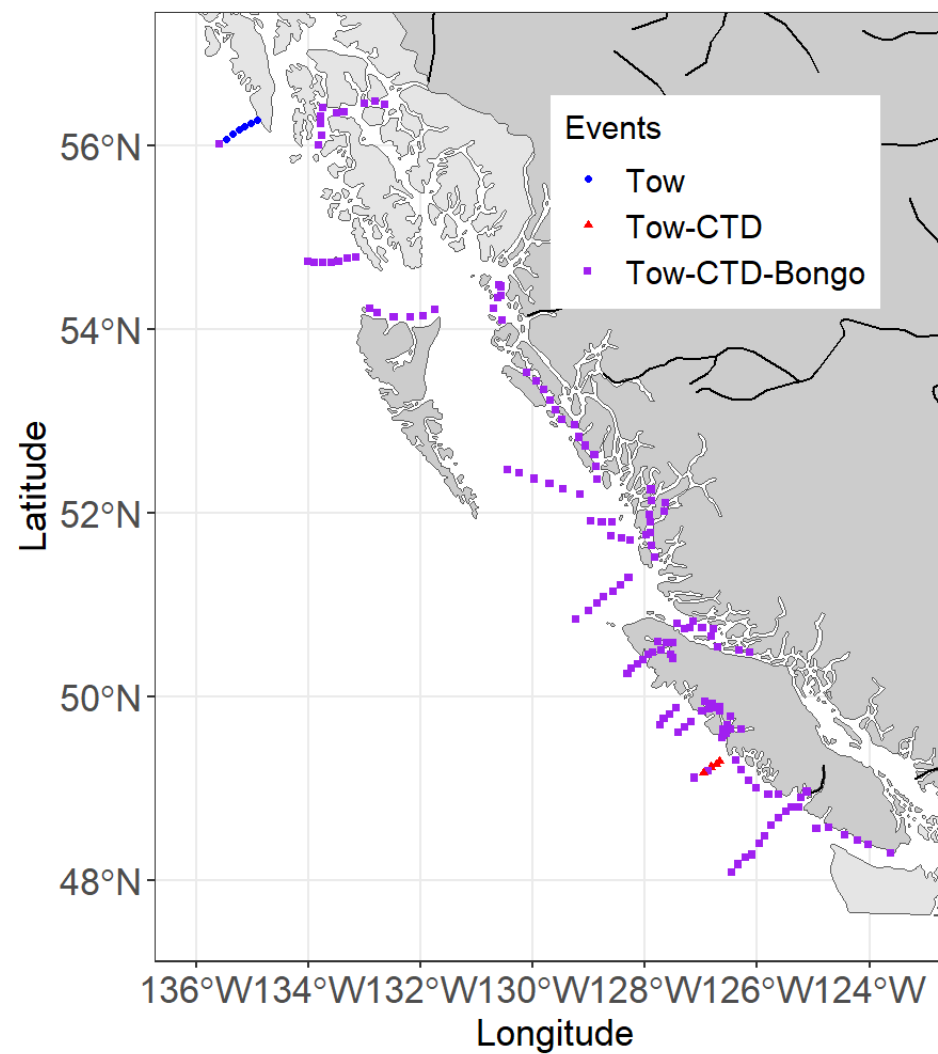


Figure 1. Location of survey events (fishing tows, CTD casts and zooplankton bongo casts) during the juvenile Pacific Salmon trawl survey from October 02 to November 06, 2011 on the CCGS *W.E. Ricker*.

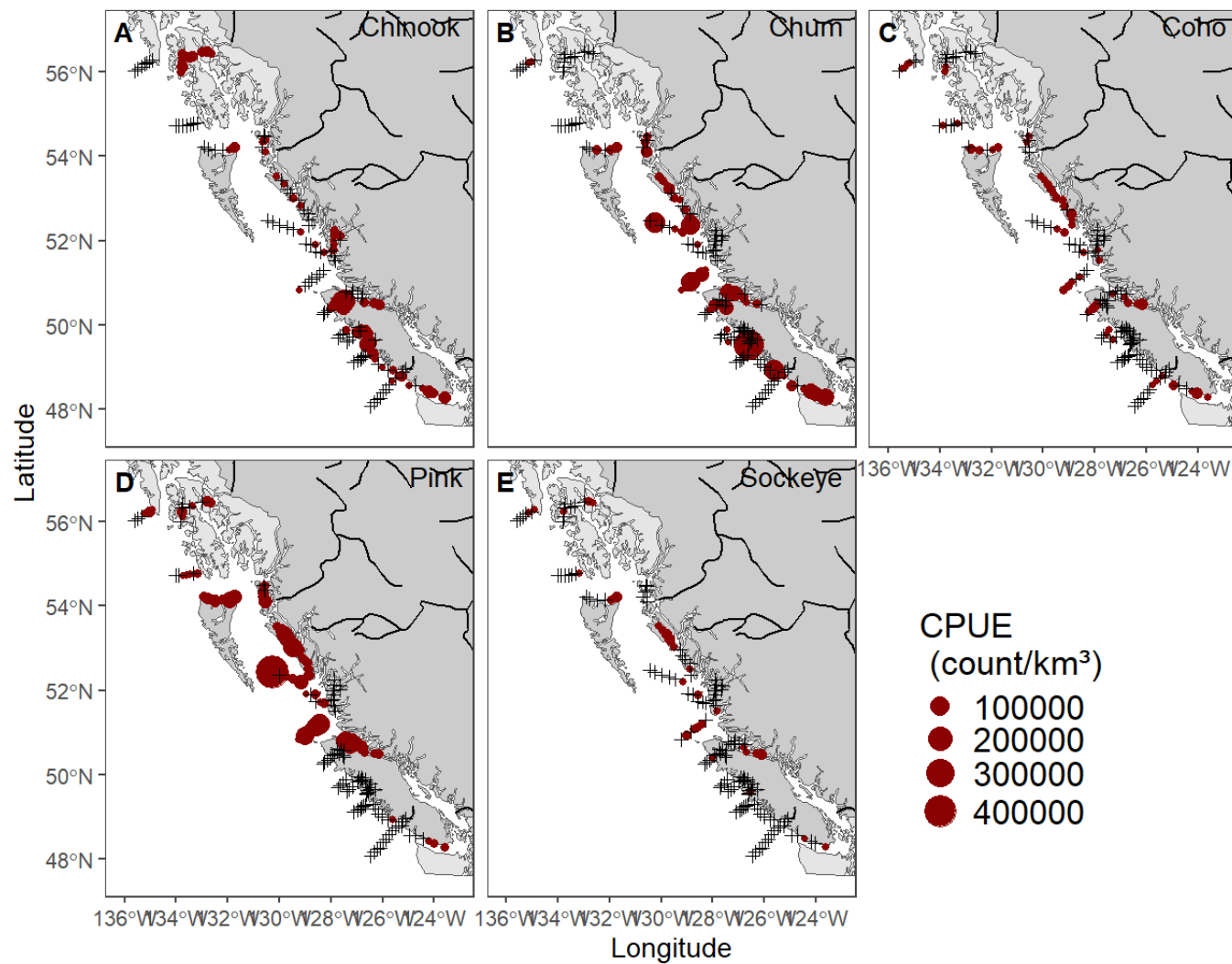


Figure 2. Juvenile Pacific Salmon (*Oncorhynchus* spp.) catch (count) per unit effort (CPUE; count/km³) for each tow. Circles are proportional to maximum abundance, and zero catches are shown with a cross (+).

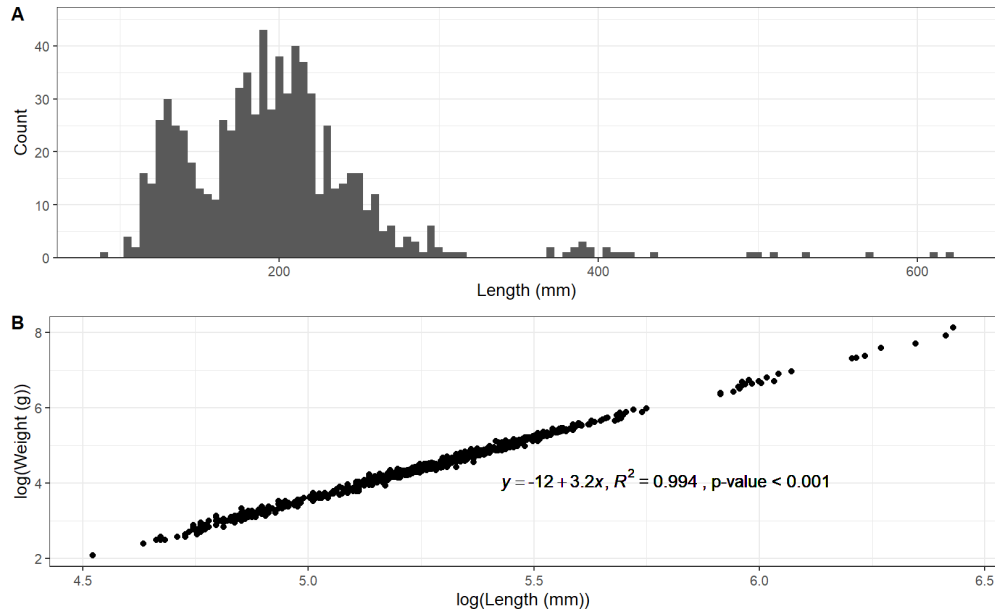


Figure 3. **A.** Chinook Salmon (*Oncorhynchus tshawytscha*) length frequency plot as sampled during the juvenile Pacific Salmon trawl survey aboard the CCGS *W.E. Ricker*, October 02 to November 06, 2011. **B.** Double log-transformed length-weight regression with outliers removed, using a Bonferroni outlier test.

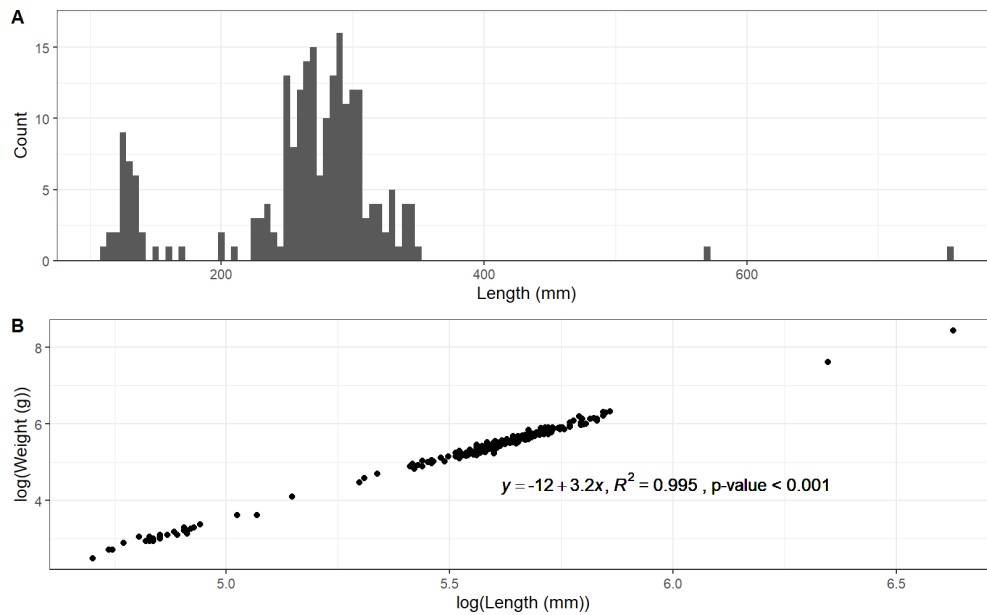


Figure 4. **A.** Coho Salmon (*Oncorhynchus kisutch*) length frequency plot as sampled during the juvenile Pacific Salmon trawl survey aboard the CCGS *W.E. Ricker*, October 02 to November 06, 2011. **B.** Double log-transformed length-weight regression with outliers removed, using a Bonferroni outlier test.

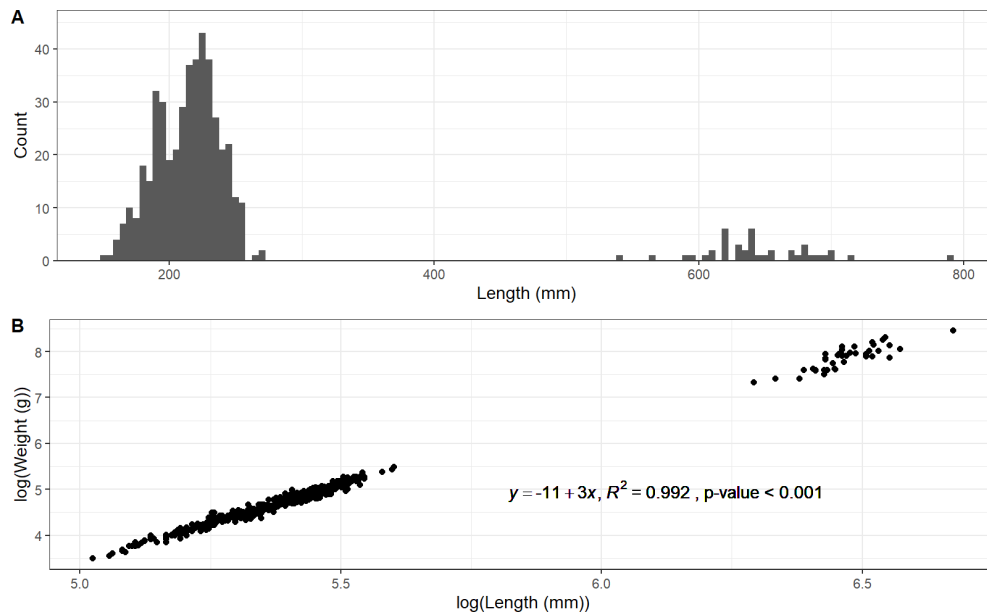


Figure 5. **A.** Chum Salmon (*Oncorhynchus keta*) length frequency plot as sampled during the juvenile Pacific Salmon trawl survey aboard the CCGS *W.E. Ricker*, October 02 to November 06, 2011. **B.** Double log-transformed length-weight regression with outliers removed, using a Bonferroni outlier test.

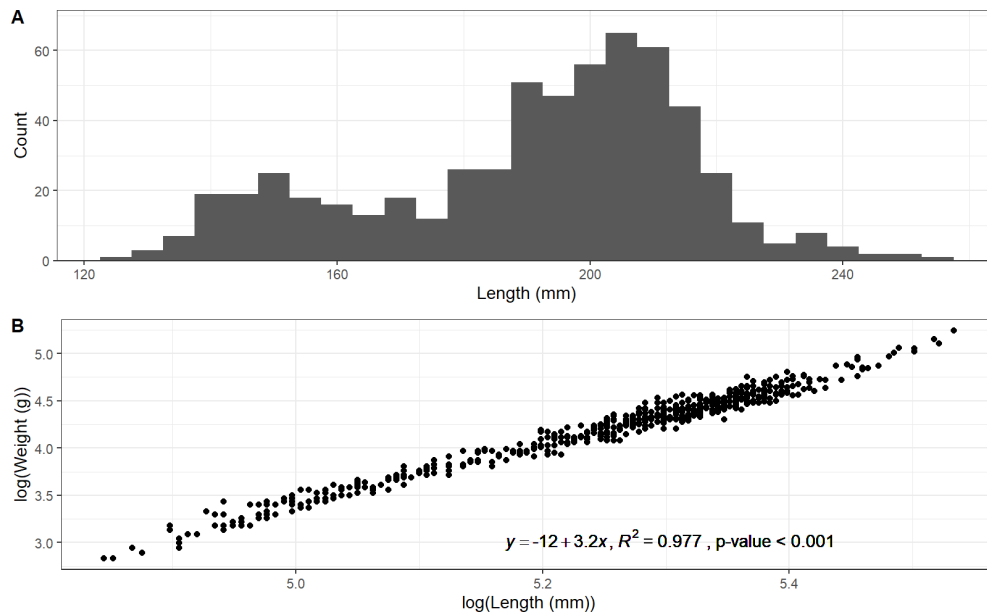


Figure 6. **A.** Pink Salmon (*Oncorhynchus gorbusha*) length frequency plot as sampled during the juvenile Pacific Salmon trawl survey aboard the CCGS *W.E. Ricker*, October 02 to November 06, 2011. **B.** Double log-transformed length-weight regression with outliers removed, using a Bonferroni outlier test.

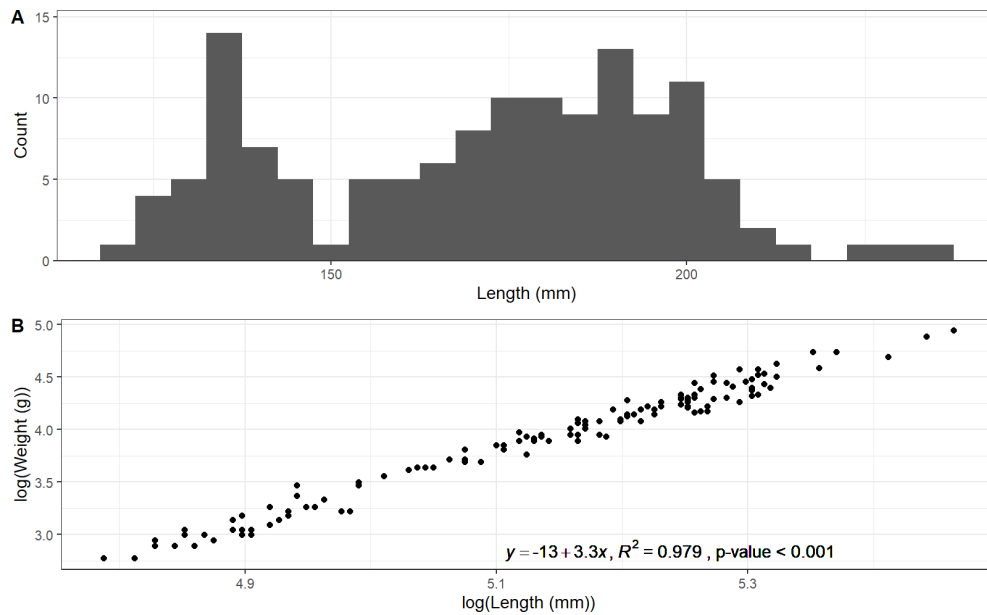


Figure 7. **A.** Sockeye Salmon (*Oncorhynchus nerka*) length frequency plot as sampled during the juvenile Pacific Salmon trawl survey aboard the CCGS *W.E. Ricker*, October 02 to November 06, 2011. **B.** Double log-transformed length-weight regression with outliers removed, using a Bonferroni outlier test.

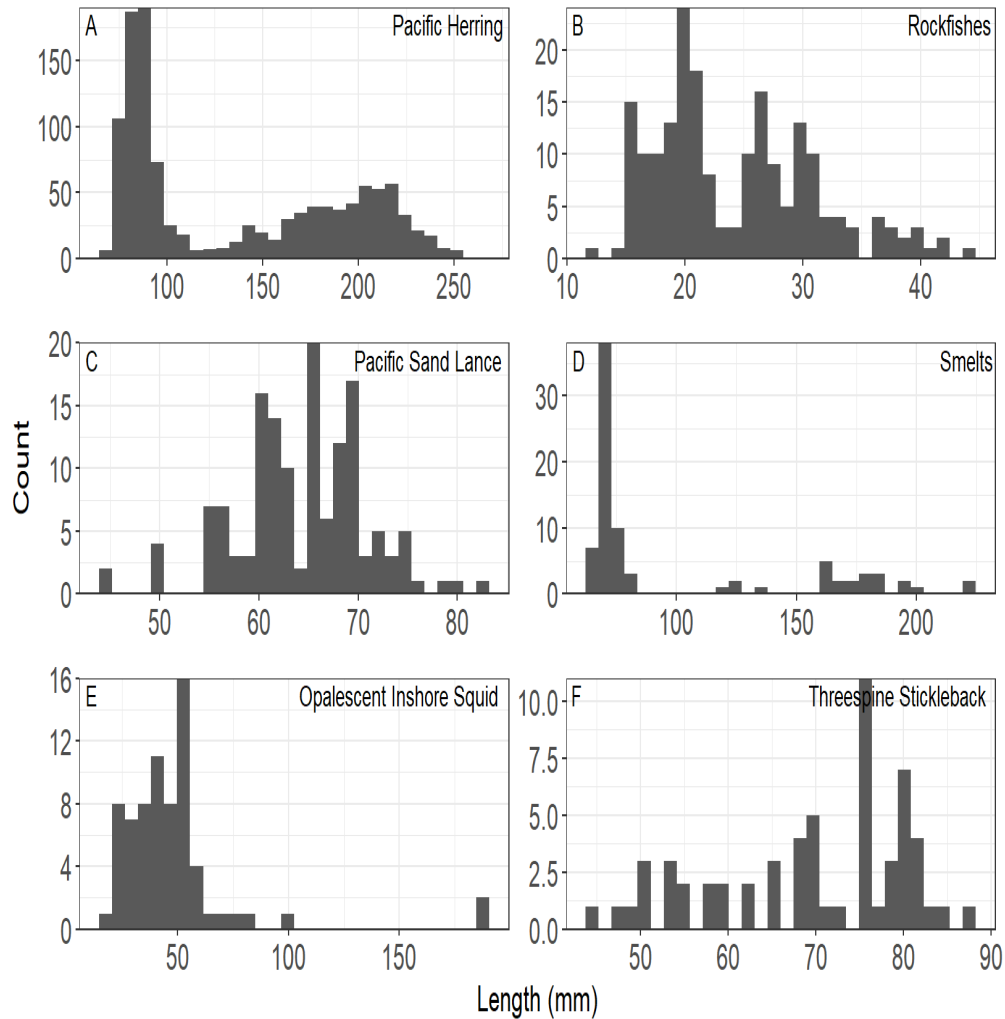


Figure 8. Length (mm) frequency plots for common species sampled ($n > 50$ samples) during the juvenile Pacific Salmon trawl survey aboard the CCGS *W.E. Ricker*, October 02 to November 06, 2011. **A.** Pacific Herring (*Clupea pallasii*), length = Fork Length, **B.** Rockfishes (*Sebastes*), length = Total Length, **C.** Pacific Sand Lance (*Ammodytes personatus*), length = Fork Length, **D.** Smelts (*Osmeridae*), length = Fork Length, **E.** Opalescent Inshore Squid (*Doryteuthis opalescens*), length = Mantle Length, **F.** Threespine Stickleback (*Gasterosteus aculeatus*), length = Total Length.

APPENDIX A CANTRAWL 250 NET SPECIFICATIONS

Table A.1. Net specifications for the CanTrawl 250 net used during the juvenile Pacific Salmon trawl survey aboard the CCGS *W.E. Ricker*, October 02 to November 06, 2011.

Part	Size	Material
Doors	2 m ²	Jet
Door Legs	12.2 m (6.67 fm)	1 inch Spectra rope
Bridles	45.72 m (25 fm)	5/8 Wire Rope
Head Line	76.2 m (41.7 fm)	1 1/8 inch Tenex
Foot Rope	76.2 (41.7 fm)	1/2 chain
Mesh incl. Codend	3.8 cm (1.5 inch)	Knotted nylon
Codend Liner	12.7 mm (0.5 inch)	210/20 knotless liner

[illegible]

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APPENDIX C TRAWL BRIDGE LOG DATA

Table C.1. Bridge log information for trawl tows during the juvenile Pacific Salmon trawl survey aboard the CCGS *W.E. Ricker*, October 02 to November 06, 2011.

Station Name	JS01	JS02	JS04	QCST01	QCST02	QCST03
Tow	1	2	3	4	5	6
Date (Pacific)	2011-10-02	2011-10-02	2011-10-02	2011-10-02	2011-10-02	2011-10-03
Start Time (Pacific)	09:06:00	10:36:00	13:33:00	15:31:00	16:27:00	07:38:00
Net	CanTrawl 250	CanTrawl 250	CanTrawl 250	CanTrawl 250	CanTrawl 250	CanTrawl 250
Duration (min)	21	30	30	31	30	30
Start Latitude	50° 28' 41" N	50° 30' 07" N	50° 32' 06" N	50° 39' 32" N	50° 43' 55" N	50° 45' 00" N
Start Longitude	126° 08' 17" W	126° 19' 12" W	126° 42' 07" W	126° 49' 05" W	126° 46' 48" W	126° 58' 48" W
End Latitude	50° 29' 02" N	50° 30' 29" N	50° 33' 11" N	50° 41' 13" N	50° 45' 36" N	50° 46' 30" N
End Longitude	126° 11' 28" W	126° 23' 38" W	126° 45' 54" W	126° 46' 55" W	126° 49' 30" W	127° 02' 13" W
Direction of Tow (deg)	280	277	294	39	313	305
Vessel Speed (km/h)	11.5	10.6	9.6	8.0	8.7	9.6
Distance Towed (km)	3.82	5.28	4.89	4.02	4.37	4.87
Net Opening Height (m)	12	12	12	15	12	12
Net Opening Width (m)	28	29	28	30	28	28
Warp Length (m)	150	150	150	150	150	150
Target Headrope Depth (m)	0	0	0	15	0	0
Start Bottom Depth (m)	306	299	476	177	115	141
End Bottom Depth (m)		313	451	149	169	225
Usable	Y	Y	Y	Y	Y	Y

Station Name	QCST04	QCST05	QCST06	QCST07	IVI01	IVI02
Tow	7	8	9	10	11	12
Date (Pacific)	2011-10-03	2011-10-03	2011-10-03	2011-10-03	2011-10-04	2011-10-04
Start Time (Pacific)	12:19:00	13:58:00	15:23:00	17:03:00	09:45:00	11:00:00
Net	CanTrawl 250	CanTrawl 250	CanTrawl 250	CanTrawl 250	CanTrawl 250	CanTrawl 250
Duration (min)	30	30	30	30	15	30
Start Latitude	50° 49' 19" N	50° 44' 49" N	50° 43' 55" N	50° 47' 31" N	50° 35' 56" N	50° 35' 10" N
Start Longitude	127° 08' 42" W	127° 11' 24" W	127° 17' 17" W	127° 25' 16" W	127° 45' 47" W	127° 37' 08" W
End Latitude	50° 47' 28" N	50° 43' 34" N	50° 45' 32" N	50° 47' 28" N	50° 35' 38" N	50° 34' 52" N
End Longitude	127° 10' 08" W	127° 14' 28" W	127° 19' 30" W	127° 28' 59" W	127° 43' 59" W	127° 35' 38" W
Direction of Tow (deg)	206	236	320	269	105	107
Vessel Speed (km/h)	7.6	8.3	7.8	8.7	8.7	3.7
Distance Towed (km)	3.83	4.22	3.93	4.35	2.19	1.85
Net Opening Height (m)	12	13	14	12	14	15
Net Opening Width (m)	28	30	28	28	25	27
Warp Length (m)	150	150	150	150	150	150
Target Headrope Depth (m)	0	0	15	0	0	15
Start Bottom Depth (m)	153	191	224	298	43	122
End Bottom Depth (m)	181	220	283	345	68	130
Usable	Y	Y	Y	Y	Y	Y

Station Name	IVI03	IVI04	IVI05	IVI06	IVI07	IVI08
Tow	13	14	15	16	17	18
Date (Pacific)	2011-10-04	2011-10-04	2011-10-04	2011-10-05	2011-10-05	2011-10-05
Start Time (Pacific)	12:29:00	15:07:00	16:33:00	07:32:00	09:06:00	10:30:00
Net	CanTrawl 250	CanTrawl 250	CanTrawl 250	CanTrawl 250	CanTrawl 250	CanTrawl 250
Duration (min)	30	30	30	30	30	30
Start Latitude	50°34' 52" N	50°27' 40" N	50°25' 01" N	50°30' 11" N	50°28' 41" N	50°27' 22" N
Start Longitude	127°29' 53" W	127°32' 10" W	127°30' 07" W	127°42' 14" W	127°52' 12" W	127°56' 42" W
End Latitude	50°34' 26" N	50°25' 41" N	50°27' 14" N	50°29' 42" N	50°28' 16" N	50°25' 12" N
End Longitude	127°31' 37" W	127°30' 36" W	127°31' 44" W	127°45' 58" W	127°55' 34" W	127°57' 40" W
Direction of Tow (deg)	249	153	349	259	259	196
Vessel Speed (km/h)	4.3	8.1	8.3	8.9	8.0	8.1
Distance Towed (km)	2.19	4.11	4.19	4.48	4.04	4.17
Net Opening Height (m)	13	15	12	12	15	13
Net Opening Width (m)	27	30	28	27	30	27
Warp Length (m)	150	150	150	150	150	150
Target Headrope Depth (m)	0	15	0	0	15	0
Start Bottom Depth (m)	78	174	155	122	175	126
End Bottom Depth (m)	105	155	195	174	195	117
Usable	Y	Y	Y	Y	Y	Y

Station Name	IVI09	VI01	VI02	VI03	T07	T06
Tow	19	20	21	22	23	24
Date (Pacific)	2011-10-05	2011-10-05	2011-10-05	2011-10-05	2011-10-06	2011-10-06
Start Time (Pacific)	12:36:00	13:55:00	15:24:00	16:24:00	07:31:00	09:28:00
Net	CanTrawl 250	CanTrawl 250	CanTrawl 250	CanTrawl 250	CanTrawl 250	CanTrawl 250
Duration (min)	30	30	30	30	30	30
Start Latitude	50° 23' 53" N	50° 21' 04" N	50° 18' 11" N	50° 15' 07" N	50° 50' 35" N	50° 56' 20" N
Start Longitude	128° 01' 44" W	128° 07' 23" W	128° 14' 35" W	128° 18' 40" W	129° 13' 59" W	129° 00' 40" W
End Latitude	50° 22' 12" N	50° 19' 52" N	50° 17' 13" N	50° 13' 55" N	50° 53' 20" N	50° 57' 43" N
End Longitude	128° 04' 26" W	128° 10' 59" W	128° 16' 52" W	128° 21' 29" W	129° 13' 26" W	128° 57' 47" W
Direction of Tow (deg)	226	242	237	236	7	53
Vessel Speed (km/h)	8.9	9.4	6.3	8.0	10.2	8.3
Distance Towed (km)	4.46	4.80	3.24	4.02	5.15	4.22
Net Opening Height (m)	13	12	14	14	15	14
Net Opening Width (m)	30	28	30	36	30	28
Warp Length (m)	150	150	150	150	150	150
Target Headrope Depth (m)	15	0	15	15	15	0
Start Bottom Depth (m)	131	114	211	973	94	70
End Bottom Depth (m)	83	166	668	1000	84	79
Usable	Y	Y	Y	Y	Y	Y

Station Name	T05	T04	T03	T02	T01	H01
Tow	25	26	27	28	29	30
Date (Pacific)	2011-10-06	2011-10-06	2011-10-06	2011-10-06	2011-10-06	2011-10-07
Start Time (Pacific)	11:03:00	12:37:00	14:17:00	16:07:00	17:38:00	07:35:00
Net	CanTrawl 250	CanTrawl 250	CanTrawl 250	CanTrawl 250	CanTrawl 250	CanTrawl 250
Duration (min)	30	30	30	30	30	30
Start Latitude	51° 01' 05" N	51° 05' 02" N	51° 08' 31" N	51° 12' 47" N	51° 17' 49" N	52° 12' 18" N
Start Longitude	128° 51' 29" W	128° 43' 55" W	128° 34' 34" W	128° 26' 17" W	128° 17' 35" W	129° 09' 36" W
End Latitude	51° 02' 17" N	51° 06' 14" N	51° 09' 47" N	51° 14' 17" N	51° 16' 26" N	52° 12' 32" N
End Longitude	128° 49' 16" W	128° 40' 37" W	128° 32' 35" W	128° 24' 07" W	128° 19' 44" W	129° 13' 55" W
Direction of Tow (deg)	49	60	45	42	224	275
Vessel Speed (km/h)	6.7	8.7	6.5	7.4	7.0	9.8
Distance Towed (km)	3.41	4.44	3.28	3.74	3.57	4.93
Net Opening Height (m)	15	12	15	12	12	12
Net Opening Width (m)	30	28	30	28	28	28
Warp Length (m)	150	150	150	150	150	150
Target Headrope Depth (m)	15	0	15	0	15	0
Start Bottom Depth (m)	66	67	152	189	65	169
End Bottom Depth (m)	66	78	180	97	79	161
Usable	Y	Y	Y	Y	Y	Y

Station Name	H02	H03	H04	H05	H06	IBC01
Tow	31	32	33	34	35	36
Date (Pacific)	2011-10-07	2011-10-07	2011-10-07	2011-10-07	2011-10-07	2011-10-08
Start Time (Pacific)	09:32:00	11:22:00	13:36:00	15:44:00	16:57:00	07:30:00
Net	CanTrawl 250	CanTrawl 250	CanTrawl 250	CanTrawl 250	CanTrawl 250	CanTrawl 250
Duration (min)	30	30	30	30	30	30
Start Latitude	52° 15' 47" N	52° 19' 08" N	52° 22' 19" N	52° 25' 55" N	52° 28' 23" N	53° 01' 01" N
Start Longitude	129° 27' 43" W	129° 42' 04" W	129° 58' 59" W	130° 15' 00" W	130° 26' 42" W	129° 29' 06" W
End Latitude	52° 16' 34" N	52° 18' 58" N	52° 23' 06" N	52° 26' 35" N	52° 27' 04" N	53° 03' 32" N
End Longitude	129° 31' 52" W	129° 45' 40" W	130° 02' 24" W	130° 18' 32" W	130° 30' 04" W	129° 32' 02" W
Direction of Tow (deg)	287	265	291	287	237	325
Vessel Speed (km/h)	9.8	8.1	8.1	8.3	8.9	11.3
Distance Towed (km)	4.91	4.09	4.13	4.19	4.52	5.70
Net Opening Height (m)	15	12	15	12	15	12
Net Opening Width (m)	30	28	30	28	30	28
Warp Length (m)	150	150	150	150	150	150
Target Headrope Depth (m)	15	0	15	0	15	0
Start Bottom Depth (m)	195	216	228	333	153	122
End Bottom Depth (m)	204	212	269	306	183	125
Usable	Y	Y	Y	Y	Y	Y

Station Name	IBC02	IBC03	IBC04	IBC05	IBC06	IBC07
Tow	37	38	39	40	41	42
Date (Pacific)	2011-10-08	2011-10-08	2011-10-08	2011-10-08	2011-10-08	2011-10-09
Start Time (Pacific)	09:00:00	10:34:00	12:23:00	14:03:00	15:40:00	07:29:00
Net	CanTrawl 250	CanTrawl 250	CanTrawl 250	CanTrawl 250	CanTrawl 250	CanTrawl 250
Duration (min)	30	30	30	30	30	30
Start Latitude	53° 07' 08" N	53° 13' 55" N	53° 20' 24" N	53° 26' 20" N	53° 31' 34" N	54° 06' 04" N
Start Longitude	129° 35' 31" W	129° 41' 49" W	129° 48' 29" W	129° 56' 13" W	130° 06' 14" W	130° 32' 24" W
End Latitude	53° 09' 07" N	53° 16' 23" N	53° 22' 30" N	53° 28' 16" N	53° 32' 28" N	54° 08' 31" N
End Longitude	129° 37' 37" W	129° 44' 17" W	129° 51' 29" W	130° 00' 11" W	130° 09' 22" W	130° 35' 24" W
Direction of Tow (deg)	328	329	320	309	296	324
Vessel Speed (km/h)	8.7	10.6	10.2	11.1	7.6	11.1
Distance Towed (km)	4.35	5.32	5.11	5.63	3.82	5.61
Net Opening Height (m)	15	12	15	12	15	12
Net Opening Width (m)	30	28	30	28	30	28
Warp Length (m)	150	150	150	150	150	150
Target Headrope Depth (m)	15	0	15	0	15	0
Start Bottom Depth (m)	156	148	177	267	225	103
End Bottom Depth (m)	165	132	238	288	166	80
Usable	Y	Y	Y	Y	Y	Y

Station Name	IBC08	IBC09	IBC10	IBC11	IBC12	DE01
Tow	43	44	45	46	47	48
Date (Pacific)	2011-10-09	2011-10-09	2011-10-09	2011-10-09	2011-10-09	2011-10-12
Start Time (Pacific)	09:15:00	10:59:00	12:35:00	14:15:00	15:57:00	07:49:00
Net	CanTrawl 250	CanTrawl 250	CanTrawl 250	CanTrawl 250	CanTrawl 250	CanTrawl 250
Duration (min)	30	30	30	30	30	30
Start Latitude	54° 13' 26" N	54° 20' 42" N	54° 29' 13" N	54° 28' 05" N	54° 22' 19" N	54° 13' 08" N
Start Longitude	130° 41' 38" W	130° 37' 34" W	130° 36' 04" W	130° 33' 32" W	130° 33' 40" W	131° 44' 42" W
End Latitude	54° 15' 22" N	54° 23' 31" N	54° 31' 52" N	54° 26' 02" N	54° 20' 35" N	54° 11' 53" N
End Longitude	130° 40' 55" W	130° 37' 34" W	130° 36' 25" W	130° 32' 56" W	130° 33' 47" W	131° 47' 49" W
Direction of Tow (deg)	12	0	355	170	182	235
Vessel Speed (km/h)	7.2	10.4	9.8	7.6	6.3	8.1
Distance Towed (km)	3.65	5.22	4.91	3.83	3.22	4.11
Net Opening Height (m)	15	12	15	12	15	12
Net Opening Width (m)	30	28	30	28	30	28
Warp Length (m)	150	150	150	150	150	150
Target Headrope Depth (m)	15	0	15	0	15	0
Start Bottom Depth (m)	110	168	117	107	117	118
End Bottom Depth (m)	89	78	126	137	114	95
Usable	Y	Y	Y	Y	Y	Y

Station Name	DE02	DE03	DE04	DE05	DE06	FI01
Tow	49	50	51	52	53	54
Date (Pacific)	2011-10-12	2011-10-12	2011-10-12	2011-10-12	2011-10-12	2011-10-13
Start Time (Pacific)	09:32:00	11:40:00	14:04:00	15:58:00	17:00:00	07:52:00
Net	CanTrawl 250	CanTrawl 250	CanTrawl 250	CanTrawl 250	CanTrawl 250	CanTrawl 250
Duration (min)	30	30	30	30	30	30
Start Latitude	54° 08' 53" N	54° 08' 28" N	54° 08' 13" N	54° 10' 48" N	54° 13' 41" N	54° 47' 10" N
Start Longitude	131° 56' 49" W	132° 10' 48" W	132° 28' 44" W	132° 46' 30" W	132° 54' 25" W	133° 09' 40" W
End Latitude	54° 09' 11" N	54° 09' 58" N	54° 09' 14" N	54° 11' 56" N	54° 15' 58" N	54° 47' 06" N
End Longitude	132° 02' 24" W	132° 14' 24" W	132° 32' 56" W	132° 50' 53" W	132° 58' 19" W	133° 14' 13" W
Direction of Tow (deg)	275	305	292	294	315	269
Vessel Speed (km/h)	12.0	9.4	9.8	10.4	11.9	9.6
Distance Towed (km)	6.07	4.80	4.93	5.20	5.98	4.87
Net Opening Height (m)	12	14	12	12	12	12
Net Opening Width (m)	28	28	28	28	28	28
Warp Length (m)	150	150	150	150	150	150
Target Headrope Depth (m)	0	0	0	0	0	0
Start Bottom Depth (m)	51	47	64	75	127	209
End Bottom Depth (m)	28		79	139	403	177
Usable	Y	Y	Y	Y	Y	Y

Station Name	FI02	FI03	FI04	FI05	FI06	FI07
Tow	55	56	57	58	59	60
Date (Pacific)	2011-10-13	2011-10-13	2011-10-13	2011-10-13	2011-10-13	2011-10-13
Start Time (Pacific)	09:29:00	11:12:00	13:03:00	14:44:00	16:10:00	18:00:00
Net	CanTrawl 250	CanTrawl 250	CanTrawl 250	CanTrawl 250	CanTrawl 250	CanTrawl 250
Duration (min)	30	30	30	30	30	30
Start Latitude	54° 46' 37" N	54° 44' 31" N	54° 43' 52" N	54° 43' 41" N	54° 43' 30" N	54° 44' 13" N
Start Longitude	133° 18' 50" W	133° 27' 29" W	133° 35' 06" W	133° 44' 46" W	133° 53' 28" W	134° 00' 50" W
End Latitude	54° 45' 47" N	54° 42' 22" N	54° 43' 19" N	54° 43' 41" N	54° 43' 23" N	54° 46' 05" N
End Longitude	133° 22' 01" W	133° 29' 38" W	133° 38' 53" W	133° 49' 44" W	133° 57' 40" W	134° 03' 36" W
Direction of Tow (deg)	245	210	256	270	267	319
Vessel Speed (km/h)	7.4	9.1	8.3	10.6	8.9	9.1
Distance Towed (km)	3.74	4.63	4.17	5.33	4.50	4.54
Net Opening Height (m)	14	12	14	14	14	12
Net Opening Width (m)	30	32	32	32	32	29
Warp Length (m)	150	150	150	150	150	150
Target Headrope Depth (m)	15	0	15	0	15	0
Start Bottom Depth (m)	134	154	208	198	223	203
End Bottom Depth (m)	122	225	241	219	217	204
Usable	Y	Y	Y	Y	Y	Y

Station Name	B07	B06	B05	B04	B03	B02
Tow	61	62	63	64	65	66
Date (Pacific)	2011-10-14	2011-10-14	2011-10-14	2011-10-14	2011-10-14	2011-10-14
Start Time (Pacific)	07:39:00	09:17:00	10:57:00	12:46:00	14:16:00	15:50:00
Net	CanTrawl 250	CanTrawl 250	CanTrawl 250	CanTrawl 250	CanTrawl 250	CanTrawl 250
Duration (min)	30	30	30	30	30	30
Start Latitude	56° 01' 05" N	56° 04' 12" N	56° 07' 41" N	56° 11' 02" N	56° 12' 29" N	56° 14' 38" N
Start Longitude	135° 35' 38" W	135° 28' 16" W	135° 21' 04" W	135° 13' 55" W	135° 08' 53" W	135° 01' 26" W
End Latitude	56° 02' 38" N	56° 05' 56" N	56° 09' 36" N	56° 12' 50" N	56° 14' 02" N	56° 16' 23" N
End Longitude	135° 32' 31" W	135° 25' 48" W	135° 17' 10" W	135° 11' 10" W	135° 05' 31" W	134° 58' 52" W
Direction of Tow (deg)	48	38	49	40	50	39
Vessel Speed (km/h)	8.5	8.1	10.7	8.7	8.9	8.3
Distance Towed (km)	4.33	4.11	5.37	4.39	4.52	4.19
Net Opening Height (m)	14	15	15	15	15	15
Net Opening Width (m)	32	30	30	32	30	32
Warp Length (m)	150	150	150	150	150	150
Target Headrope Depth (m)	0	15	0	15	0	15
Start Bottom Depth (m)	652	450	312	251	190	156
End Bottom Depth (m)	964	301	297	200	160	145
Usable	Y	Y	Y	Y	Y	Y

Station Name	B01	ISEA01	ISEA02	ISEA03	ISEA04	ISEA05
Tow	67	68	69	70	71	72
Date (Pacific)	2011-10-14	2011-10-15	2011-10-15	2011-10-15	2011-10-15	2011-10-15
Start Time (Pacific)	17:19:00	08:28:00	10:13:00	12:05:00	13:39:00	15:30:00
Net	CanTrawl 250	CanTrawl 250	CanTrawl 250	CanTrawl 250	CanTrawl 250	CanTrawl 250
Duration (min)	30	30	30	30	30	30
Start Latitude	56° 16' 41" N	56° 00' 25" N	56° 07' 01" N	56° 14' 17" N	56° 19' 05" N	56° 25' 16" N
Start Longitude	134° 55' 23" W	133° 48' 58" W	133° 45' 43" W	133° 46' 48" W	133° 47' 17" W	133° 44' 13" W
End Latitude	56° 15' 00" N	56° 02' 28" N	56° 09' 25" N	56° 16' 44" N	56° 21' 14" N	56° 24' 29" N
End Longitude	134° 52' 44" W	133° 48' 18" W	133° 45' 50" W	133° 47' 31" W	133° 45' 36" W	133° 39' 25" W
Direction of Tow (deg)	139	10	358	351	23	106
Vessel Speed (km/h)	8.1	7.6	8.9	9.1	8.7	10.2
Distance Towed (km)	4.13	3.83	4.44	4.61	4.35	5.13
Net Opening Height (m)	15	15	15	15	14	14
Net Opening Width (m)	32	32	32	32	32	32
Warp Length (m)	150	150	150	150	150	150
Target Headrope Depth (m)	0	0	15	0	15	0
Start Bottom Depth (m)	151	336	111	115	338	280
End Bottom Depth (m)	145	355	382	303	245	245
Usable	Y	Y	Y	Y	Y	Y

Station Name	ISEA06	ISEA07	ISEA08	ISEA09	ISEA10	IBC13
Tow	73	74	75	76	77	78
Date (Pacific)	2011-10-15	2011-10-16	2011-10-16	2011-10-16	2011-10-16	2011-10-17
Start Time (Pacific)	18:09:00	07:37:00	10:32:00	12:35:00	14:05:00	08:19:00
Net	CanTrawl 250	CanTrawl 250	CanTrawl 250	CanTrawl 250	CanTrawl 250	CanTrawl 250
Duration (min)	30	30	30	30	33	30
Start Latitude	56° 21' 36" N	56° 21' 58" N	56° 27' 40" N	56° 29' 13" N	56° 27' 07" N	52° 57' 36" N
Start Longitude	133° 29' 42" W	133° 21' 58" W	132° 59' 42" W	132° 48' 58" W	132° 38' 06" W	129° 15' 25" W
End Latitude	56° 21' 36" N	56° 22' 05" N	56° 28' 41" N	56° 28' 34" N	56° 25' 16" N	52° 55' 16" N
End Longitude	133° 26' 46" W	133° 18' 47" W	132° 56' 24" W	132° 45' 04" W	132° 36' 54" W	129° 15' 04" W
Direction of Tow (deg)	90	86	61	107	160	175
Vessel Speed (km/h)	5.9	6.5	7.6	8.3	7.2	8.7
Distance Towed (km)	3.02	3.28	3.87	4.17	3.67	4.35
Net Opening Height (m)	14	14	14	14	14	14
Net Opening Width (m)	32	32	32	32	32	36
Warp Length (m)	150	150	150	150	150	150
Target Headrope Depth (m)	15	0	15	0	0	0
Start Bottom Depth (m)	90	381	180	120	120	233
End Bottom Depth (m)	103	264	130	170	250	236
Usable	Y	Y	Y	Y	Y	Y

Station Name	IBC14	IBC15	IBC16	IBC17	IBC18	QCSD01
Tow	79	80	81	82	83	84
Date (Pacific)	2011-10-17	2011-10-17	2011-10-17	2011-10-17	2011-10-17	2011-10-19
Start Time (Pacific)	10:07:00	11:54:00	13:57:00	15:52:00	18:17:00	07:32:00
Net	CanTrawl 250	CanTrawl 250	CanTrawl 250	CanTrawl 250	CanTrawl 250	CanTrawl 250
Duration (min)	30	30	30	30	30	30
Start Latitude	52° 49' 34" N	52° 43' 59" N	52° 38' 02" N	52° 30' 07" N	52° 22' 16" N	51° 54' 58" N
Start Longitude	129° 10' 30" W	129° 04' 01" W	128° 54' 04" W	128° 52' 34" W	128° 51' 40" W	128° 58' 16" W
End Latitude	52° 47' 24" N	52° 42' 14" N	52° 36' 04" N	52° 27' 14" N	52° 20' 17" N	51° 54' 47" N
End Longitude	129° 08' 28" W	129° 01' 30" W	128° 52' 55" W	128° 51' 25" W	128° 50' 10" W	128° 52' 44" W
Direction of Tow (deg)	150	139	161	166	155	93
Vessel Speed (km/h)	9.1	8.5	7.8	10.9	8.0	12.6
Distance Towed (km)	4.61	4.30	3.89	5.48	4.04	6.32
Net Opening Height (m)	14	14	14	14	14	14
Net Opening Width (m)	32	32	32	32	32	32
Warp Length (m)	150	150	150	150	150	150
Target Headrope Depth (m)	15	0	15	0	15	0
Start Bottom Depth (m)	97	257	184	249	216	98
End Bottom Depth (m)	180	244	214		199	77
Usable	Y	Y	Y	Y	Y	Y

Station Name	QCSD02	QCSD03	QCSD04	QCSD05	QCSD06	IBC19
Tow	85	86	87	88	89	90
Date (Pacific)	2011-10-19	2011-10-19	2011-10-19	2011-10-19	2011-10-19	2011-10-19
Start Time (Pacific)	09:15:00	11:00:00	13:03:00	15:00:00	16:32:00	19:01:00
Net	CanTrawl 250	CanTrawl 250	CanTrawl 250	CanTrawl 250	CanTrawl 250	CanTrawl 250
Duration (min)	30	30	30	30	30	30
Start Latitude	51° 54' 22" N	51° 54' 00" N	51° 44' 56" N	51° 43' 37" N	51° 42' 14" N	51° 45' 47" N
Start Longitude	128° 46' 01" W	128° 35' 13" W	128° 36' 04" W	128° 24' 43" W	128° 16' 12" W	127° 58' 26" W
End Latitude	51° 54' 25" N	51° 51' 43" N	51° 44' 35" N	51° 42' 43" N	51° 42' 36" N	51° 47' 46" N
End Longitude	128° 42' 14" W	128° 35' 17" W	128° 32' 49" W	128° 21' 00" W	128° 12' 58" W	127° 57' 14" W
Direction of Tow (deg)	89	181	100	111	80	21
Vessel Speed (km/h)	8.5	8.3	7.4	9.1	7.4	7.8
Distance Towed (km)	4.32	4.22	3.78	4.59	3.78	3.93
Net Opening Height (m)	14	14	14	14	14	14
Net Opening Width (m)	32	32	32	32	32	32
Warp Length (m)	150	150	150	150	150	150
Target Headrope Depth (m)	15	0	15	0	15	0
Start Bottom Depth (m)	137	128	134	148	140	415
End Bottom Depth (m)	147	137	153	146	140	327
Usable	Y	Y	Y	Y	Y	Y

Station Name	IBC20	IBC21	IBC22	IBC23	IBC24	IBC25
Tow	91	92	93	94	95	96
Date (Pacific)	2011-10-20	2011-10-20	2011-10-20	2011-10-20	2011-10-20	2011-10-20
Start Time (Pacific)	07:38:00	09:27:00	11:19:00	12:57:00	15:11:00	17:09:00
Net	CanTrawl 250	CanTrawl 250	CanTrawl 250	CanTrawl 250	CanTrawl 250	CanTrawl 250
Duration (min)	30	30	30	30	30	30
Start Latitude	52° 15' 22" N	52° 07' 44" N	51° 59' 10" N	51° 54' 22" N	52° 01' 12" N	52° 06' 40" N
Start Longitude	127° 53' 35" W	127° 52' 41" W	127° 55' 37" W	127° 53' 42" W	127° 39' 40" W	127° 38' 02" W
End Latitude	52° 11' 56" N	52° 05' 24" N	51° 56' 13" N	51° 55' 44" N	52° 01' 48" N	52° 08' 35" N
End Longitude	127° 53' 35" W	127° 54' 04" W	127° 56' 31" W	127° 50' 49" W	127° 40' 01" W	127° 34' 30" W
Direction of Tow (deg)	186	200	191	52	294	49
Vessel Speed (km/h)	12.6	9.1	10.9	8.3	5.4	10.7
Distance Towed (km)	6.37	4.61	5.54	4.17	2.70	5.37
Net Opening Height (m)	14	14	14	14	14	14
Net Opening Width (m)	32	34	34	34	32	34
Warp Length (m)	150	150	150	150	150	150
Target Headrope Depth (m)	0	15	0	15	0	15
Start Bottom Depth (m)	449	527	338	150	243	366
End Bottom Depth (m)	451	269	351	135	290	449
Usable	Y	Y	Y	Y	Y	Y

Station Name	IBC26	IBC27	IBC28	JF01	IVI10	IVI11
Tow	97	98	99	100	101	102
Date (Pacific)	2011-10-21	2011-10-21	2011-10-21	2011-10-28	2011-10-29	2011-10-29
Start Time (Pacific)	07:47:00	09:36:00	11:29:00	18:02:00	07:30:00	08:56:00
Net	CanTrawl 250	CanTrawl 250	CanTrawl 250	CanTrawl 250	CanTrawl 250	CanTrawl 250
Duration (min)	32	30	30	28	30	33
Start Latitude	51° 47' 06" N	51° 38' 46" N	51° 31' 08" N	48° 17' 31" N	48° 57' 43" N	48° 54' 00" N
Start Longitude	127° 54' 14" W	127° 53' 06" W	127° 49' 30" W	123° 36' 47" W	125° 06' 54" W	125° 13' 19" W
End Latitude	51° 44' 24" N	51° 33' 47" N	51° 29' 02" N	48° 17' 42" N		
End Longitude	127° 54' 36" W	127° 53' 10" W	127° 49' 23" W	123° 40' 12" W		
Direction of Tow (deg)	185	180	178	275		
Vessel Speed (km/h)	10.0	18.3	7.8	8.3		
Distance Towed (km)	5.02	9.22	3.89	4.22		
Net Opening Height (m)	14	14	14	14	14	14
Net Opening Width (m)	32	34	32	36	36	36
Warp Length (m)	150	150	150	150	150	150
Target Headrope Depth (m)	0	15	0	0	0	15
Start Bottom Depth (m)	292	257	166	140	97	100
End Bottom Depth (m)	393	255	138	165		
Usable	Y	Y	Y	Y	Y	Y

Station Name	IVI12	VI04	VI05	VI06	VI07	VI08
Tow	103	104	105	106	107	108
Date (Pacific)	2011-10-29	2011-10-29	2011-10-29	2011-10-29	2011-10-29	2011-10-30
Start Time (Pacific)	10:38:00	12:18:00	13:49:00	15:34:00	17:32:00	08:08:00
Net	CanTrawl 250	CanTrawl 250	CanTrawl 250	CanTrawl 250	CanTrawl 250	CanTrawl 250
Duration (min)	31	30	28	30	30	30
Start Latitude	48° 47' 42" N	48° 47' 28" N	48° 44' 28" N	48° 40' 19" N	48° 35' 31" N	48° 28' 55" N
Start Longitude	125° 15' 47" W	125° 23' 17" W	125° 28' 37" W	125° 37' 26" W	125° 45' 25" W	125° 51' 54" W
End Latitude	48° 45' 22" N	48° 45' 36" N		48° 39' 40" N	48° 34' 48" N	48° 28' 44" N
End Longitude	125° 17' 06" W	125° 26' 13" W		125° 41' 28" W	125° 49' 01" W	125° 54' 54" W
Direction of Tow (deg)	200	226		256	253	265
Vessel Speed (km/h)	9.3	9.8		10.0	9.1	7.4
Distance Towed (km)	4.63	4.98		5.07	4.61	3.70
Net Opening Height (m)	14	14	14	14	14	14
Net Opening Width (m)	36	36	36	36	36	36
Warp Length (m)	150	150	150	150	150	150
Target Headrope Depth (m)	0	30	0	15	0	0
Start Bottom Depth (m)	103	98	114	108	64	121
End Bottom Depth (m)	92	110	122	68	76	129
Usable	Y	Y	Y	Y	Y	Y

Station Name	VI09	VI10	VI11	VI12	VI13	EP07
Tow	109	110	111	112	113	114
Date (Pacific)	2011-10-30	2011-10-30	2011-10-30	2011-10-30	2011-10-30	2011-10-31
Start Time (Pacific)	10:11:00	12:24:00	14:04:00	15:55:00	18:04:00	08:15:00
Net	CanTrawl 250	CanTrawl 250	CanTrawl 250	CanTrawl 250	CanTrawl 250	CanTrawl 250
Duration (min)	30	30	29	30	27	30
Start Latitude	48° 23' 49" N	48° 16' 26" N	48° 14' 42" N	48° 10' 12" N	48° 05' 06" N	49° 06' 47" N
Start Longitude	125° 58' 08" W	126° 05' 42" W	126° 12' 43" W	126° 20' 28" W	126° 27' 32" W	127° 07' 05" W
End Latitude	48° 23' 02" N	48° 15' 50" N	48° 14' 10" N	48° 09' 29" N	48° 04' 19" N	49° 08' 13" N
End Longitude	126° 01' 12" W	126° 10' 16" W	126° 17' 13" W	126° 23' 42" W	126° 30' 14" W	127° 03' 04" W
Direction of Tow (deg)	249	259	260	252	247	61
Vessel Speed (km/h)	8.0	11.3	11.1	8.3	7.2	11.1
Distance Towed (km)	4.04	5.74	5.65	4.22	3.65	5.56
Net Opening Height (m)	14	14	14	14	14	14
Net Opening Width (m)	36	36	36	36	36	36
Warp Length (m)	150	150	150	150	150	150
Target Headrope Depth (m)	15	21	10	30	0	10
Start Bottom Depth (m)	369	1270	1567	1132	2200	1000
End Bottom Depth (m)	258	1068	928	1870	2387	706
Usable	Y	Y	Y	Y	Y	Y

Station Name	EP06	EP05	EP04	EP03	EP02	IVI13
Tow	115	116	117	118	119	120
Date (Pacific)	2011-10-31	2011-10-31	2011-10-31	2011-10-31	2011-10-31	2011-10-31
Start Time (Pacific)	09:47:00	11:16:00	12:29:00	14:06:00	15:22:00	18:08:00
Net	CanTrawl 250	CanTrawl 250	CanTrawl 250	CanTrawl 250	CanTrawl 250	CanTrawl 250
Duration (min)	30	29	30	52	29	28
Start Latitude	49° 09' 50" N	49° 11' 35" N	49° 13' 44" N	49° 15' 36" N	49° 17' 35" N	49° 34' 08" N
Start Longitude	126° 57' 18" W	126° 52' 01" W	126° 49' 19" W	126° 43' 55" W	126° 40' 05" W	126° 36' 47" W
End Latitude	49° 10' 55" N	49° 12' 25" N	49° 14' 53" N	49° 16' 55" N	49° 18' 47" N	49° 36' 11" N
End Longitude	126° 53' 56" W	126° 48' 40" W	126° 51' 50" W	126° 39' 54" W	126° 42' 07" W	126° 35' 53" W
Direction of Tow (deg)	64	69	305	63	312	16
Vessel Speed (km/h)	9.1	8.7	7.4	10.7	6.5	7.8
Distance Towed (km)	4.54	4.35	3.70	5.44	3.32	3.93
Net Opening Height (m)	14	14	14	14	14	12
Net Opening Width (m)	36	36	36	36	36	38
Warp Length (m)	150	150	150	150	150	150
Target Headrope Depth (m)	10	10	20	10	10	0
Start Bottom Depth (m)	254	157	143	117	107	88
End Bottom Depth (m)	181	140	148	109	106	127
Usable	Y	Y	Y	Y	Y	Y

APPENDIX D CTD CASTS AND ZOOPLANKTON TOWS

Table D.1. CTD casts and vertical bongo tow times and depths during the juvenile Pacific Salmon trawl survey from October 02 to November 06, 2011 on the CCGS *W.E. Ricker*.

Date	Station	Latitude	Longitude	CTD			BONGO		
				Start Time (PDT)	Bottom Depth (m)	Gear Depth (m)	Start Time (PDT)	Bottom Depth (m)	Gear Depth (m)
2011-10-14	B01	56° 17' 24" N	134° 55' 59" W	16:47	147	140	17:00	146	136
2011-10-14	B02	56° 14' 35" N	135° 03' 00" W	15:10	147	140	15:23	155	145
2011-10-14	B03	56° 12' 11" N	135° 09' 29" W	13:43	198	190	13:54	199	150
2011-10-14	B04	56° 09' 40" N	135° 15' 25" W	12:05	293	250	12:20	290	150
2011-10-14	B05	56° 07' 16" N	135° 21' 54" W	10:20	305	250	10:34	305	150
2011-10-14	B06	56° 03' 40" N	135° 28' 41" W	08:39	315	250	08:52	317	150
2011-10-14	B07	56° 00' 47" N	135° 36' 07" W	06:56	850	250	07:14	837	150
2011-10-12	DE01	54° 13' 37" N	131° 43' 41" W	07:13	116	105	07:27	112	102
2011-10-12	DE02	54° 08' 53" N	131° 57' 07" W	09:15	53	45	09:24	58	48
2011-10-12	DE03	54° 08' 13" N	132° 10' 34" W	11:15	38	30	11:24	37	27
2011-10-12	DE04	54° 08' 13" N	132° 27' 29" W	13:37	58	50	13:46	61	51
2011-10-12	DE05	54° 10' 44" N	132° 43' 41" W	15:28	65	55	15:37	60	50
2011-10-12	DE06	54° 15' 54" N	132° 58' 37" W	17:44	177	135	17:56	110	100
2011-10-31	EP02	49° 17' 17" N	126° 39' 29" W	15:07	107	95			
2011-10-31	EP03	49° 15' 25" N	126° 44' 10" W	13:55	117	105			
2011-10-31	EP04	49° 13' 23" N	126° 48' 36" W	12:10	134	125			
2011-10-31	EP05	49° 10' 59" N	126° 53' 13" W	10:36	167	155	10:54	165	150
2011-10-31	EP06	49° 09' 22" N	126° 57' 50" W	09:24	294	250			
2011-10-31	EP07	49° 06' 40" N	127° 06' 32" W	07:32	1,158	250	07:53	1,200	150
2011-10-13	FI01	54° 47' 17" N	133° 10' 55" W	07:00	208	200	07:13	211	150
2011-10-13	FI02	54° 46' 05" N	133° 17' 42" W	08:55	100	95	09:07	125	115
2011-10-13	FI03	54° 45' 07" N	133° 26' 42" W	10:40	144	135	10:50	144	134
2011-10-13	FI04	54° 44' 10" N	133° 34' 19" W	12:28	198	190	12:41	200	150
2011-10-13	FI05	54° 43' 44" N	133° 42' 47" W	14:02	222	210	14:19	220	150
2011-10-13	FI06	54° 43' 30" N	133° 51' 18" W	15:33	224	215	15:47	225	150
2011-10-13	FI07	54° 43' 30" N	133° 59' 17" W	17:25	211	200	17:37	205	150
2011-10-07	H01	52° 12' 04" N	129° 08' 38" W	06:59	160	150	07:13	160	150
2011-10-07	H02	52° 15' 36" N	129° 25' 52" W	09:04	174	165	09:14	181	150

Date	Station	Latitude	Longitude	CTD	Bottom Depth (m)	Gear Depth (m)	BONGO	Bottom Depth (m)	Gear Depth (m)
				Start Time (PDT)			Start Time (PDT)		
2011-10-07	H03	52° 19' 08" N	129° 40' 52" W	10:52	210	200	11:03	212	150
2011-10-07	H04	52° 21' 54" N	129° 57' 40" W	12:58	184	175	13:12	184	150
2011-10-07	H05	52° 25' 34" N	130° 13' 48" W	15:05	326	250	15:20	325	150
2011-10-07	H06	52° 28' 55" N	130° 29' 10" W	17:49	171	160	18:00	172	150
2011-10-08	IBC01	53° 00' 14" N	129° 28' 44" W	07:00	113	100	07:11	103	93
2011-10-08	IBC02	53° 06' 32" N	129° 34' 52" W	08:29	157	145	08:38	157	147
2011-10-08	IBC03	53° 13' 08" N	129° 41' 31" W	10:04	149	140	10:14	153	143
2011-10-08	IBC04	53° 19' 48" N	129° 47' 35" W	11:44	172	160	12:00	170	150
2011-10-08	IBC05	53° 25' 59" N	129° 55' 05" W	13:28	266	250	13:42	267	150
2011-10-08	IBC06	53° 31' 16" N	130° 05' 17" W	15:08	197	185	15:20	192	150
2011-10-09	IBC07	54° 06' 14" N	130° 31' 55" W	07:00	119	110	07:10	119	109
2011-10-09	IBC08	54° 12' 47" N	130° 42' 11" W	08:47	153	145	08:56	160	150
2011-10-09	IBC09	54° 20' 17" N	130° 37' 34" W	10:28	197	185	10:39	199	150
2011-10-09	IBC10	54° 28' 19" N	130° 35' 49" W	12:09	105	95	12:17	104	94
2011-10-09	IBC11	54° 28' 26" N	130° 33' 47" W	13:50	93	80	13:57	93	83
2011-10-09	IBC12	54° 22' 26" N	130° 33' 43" W	15:26	119	110	15:36	119	109
2011-10-18	IBC13	52° 58' 30" N	129° 15' 32" W	07:37	258	245	07:54	253	150
2011-10-18	IBC14	52° 50' 35" N	129° 11' 35" W	09:41	103	95	09:49	102	92
2011-10-18	IBC15	52° 44' 24" N	129° 04' 48" W	11:20	238	225	11:32	237	150
2011-10-18	IBC16	52° 38' 38" N	128° 55' 12" W	13:22	155	145	13:33	155	145
2011-10-18	IBC17	52° 31' 05" N	128° 52' 37" W	15:16	236	225	15:31	234	150
2011-10-18	IBC18	52° 23' 24" N	128° 50' 56" W	17:34	244	235	17:51	150	140
2011-10-19	IBC19	51° 45' 14" N	127° 58' 37" W	18:26	424	250	18:40	427	150
2011-10-20	IBC20	52° 15' 58" N	127° 46' 12" W	07:00	368	250	07:14	330	150
2011-10-20	IBC21	52° 08' 46" N	127° 52' 16" W	08:51	675	250	09:05	600	150
2011-10-20	IBC22	52° 00' 14" N	127° 55' 30" W	10:42	431	250	10:56	322	150
2011-10-20	IBC23	51° 54' 00" N	127° 53' 46" W	12:21	178	170	12:33	160	150
2011-10-20	IBC24	51° 58' 34" N	127° 41' 02" W	14:34	238	225	14:49	237	150

Date	Station	Latitude	Longitude	CTD			BONGO		
				Start Time (PDT)	Bottom Depth (m)	Gear Depth (m)	Start Time (PDT)	Bottom Depth (m)	Gear Depth (m)
2011-10-20	IBC25	52° 06' 22" N	127° 39' 00" W	16:30	345	250	16:48	349	150
2011-10-21	IBC26	51° 48' 00" N	127° 54' 32" W	07:07	301	250	07:25	305	150
2011-10-21	IBC27	51° 39' 54" N	127° 53' 28" W	09:02	227	215	09:14	233	150
2011-10-21	IBC28	51° 31' 48" N	127° 49' 55" W	10:56	183	175	11:08	183	150
2011-10-15	ISEA01	56° 00' 07" N	133° 49' 12" W	07:51	332	250	08:06	322	150
2011-10-15	ISEA02	56° 06' 07" N	133° 45' 54" W	09:39	165	160	09:49	170	150
2011-10-15	ISEA03	56° 13' 37" N	133° 46' 19" W	11:25	332	250	11:42	337	150
2011-10-15	ISEA04	56° 18' 18" N	133° 48' 25" W	13:03	314	250	13:16	300	150
2011-10-15	ISEA05	56° 25' 16" N	133° 44' 17" W	14:53	311	250	15:07	306	150
2011-10-15	ISEA06	56° 21' 40" N	133° 30' 50" W	17:34	279	250	17:47	270	150
2011-10-16	ISEA07	56° 21' 58" N	133° 22' 23" W	06:54	396	250	07:11	399	150
2011-10-16	ISEA08	56° 27' 18" N	133° 00' 29" W	09:57	166	155	10:08	161	150
2011-10-16	ISEA09	56° 29' 20" N	132° 51' 11" W	12:02	134	125	12:12	135	125
2011-10-16	ISEA10	56° 27' 43" N	132° 39' 14" W	13:47	61	50	13:55	63	53
2011-10-04	IVI01	50° 36' 07" N	127° 46' 55" W	09:22	57	50	09:30	57	47
2011-10-04	IVI02	50° 35' 24" N	127° 38' 10" W	10:36	110	100	10:43	109	99
2011-10-04	IVI03	50° 34' 55" N	127° 28' 48" W	12:05	67	60	12:12	67	57
2011-10-04	IVI04	50° 28' 01" N	127° 32' 42" W	14:33	180	170	14:46	180	150
2011-10-04	IVI05	50° 24' 14" N	127° 29' 24" W	16:04	129	120	16:14	135	125
2011-10-05	IVI06	50° 30' 22" N	127° 41' 20" W	07:02	126	115	07:11	121	111
2011-10-05	IVI07	50° 29' 02" N	127° 51' 04" W	08:33	169	160	08:46	171	150
2011-10-05	IVI08	50° 28' 12" N	127° 57' 18" W	09:57	139	130	10:08	135	125
2011-10-05	IVI09	50° 24' 36" N	128° 00' 47" W	11:55	169	160	12:10	170	150
2011-10-29	IVI10	48° 57' 43" N	125° 06' 54" W	07:00	93	85	07:07	93	83
2011-10-29	IVI11	48° 54' 04" N	125° 13' 12" W	08:31	102	90	08:43	98	88
2011-10-29	IVI12	48° 48' 18" N	125° 15' 25" W	10:13	57	50	10:19	57	47
2011-10-31	IVI13	49° 36' 22" N	126° 35' 42" W	18:54	122	110	19:01	120	110
2011-11-02	IVI14	49° 50' 17" N	126° 59' 49" W	07:13	50	40	07:21	49	39

Date	Station	Latitude	Longitude	CTD			BONGO		
				Start Time (PDT)	Bottom Depth (m)	Gear Depth (m)	Start Time (PDT)	Bottom Depth (m)	Gear Depth (m)
2011-11-02	IVI15	49° 57' 18" N	126° 56' 06" W	08:54	203	190	09:06	190	150
2011-11-02	IVI16	49° 51' 43" N	126° 52' 19" W	10:39	227	215	10:51	207	150
2011-11-02	IVI17	49° 56' 35" N	126° 48' 29" W	12:58	187	175	13:10	207	150
2011-11-02	IVI18	49° 52' 19" N	126° 45' 25" W	14:15	256	245	14:26	255	150
2011-11-02	IVI19	49° 53' 46" N	126° 39' 32" W	16:13	183	170	16:23	183	150
2011-11-02	IVI20	49° 50' 56" N	126° 39' 40" W	17:35	184	170	17:48	170	150
2011-11-03	IVI21	49° 38' 53" N	126° 15' 25" W	07:10	352	250	07:28	343	150
2011-11-03	IVI22	49° 41' 13" N	126° 32' 20" W	09:17	254	245	09:30	238	150
2011-11-03	IVI23	49° 47' 02" N	126° 28' 34" W	11:00	100	90	11:07	107	97
2011-11-03	IVI24	49° 39' 18" N	126° 28' 26" W	12:45	191	180	12:54	199	150
2011-11-03	IVI25	49° 35' 53" N	126° 32' 06" W	13:53	137	125	14:00	136	126
2011-11-03	IVI26	49° 37' 48" N	126° 36' 11" W	15:07	157	145	15:15	157	147
2011-11-03	IVI27	49° 33' 32" N	126° 37' 05" W	16:43	77	70	16:50	70	60
2011-10-28	JF01	48° 17' 53" N	123° 41' 06" W	18:46	164	155	17:40	156	146
2011-11-05	JF03	48° 23' 02" N	124° 02' 42" W	16:14	100	90	16:21	99	89
2011-11-05	JF04	48° 26' 13" N	124° 13' 55" W	14:33	67	55	14:38	64	54
2011-11-05	JF05	48° 29' 35" N	124° 28' 23" W	12:39	160	150	12:51	159	150
2011-11-05	JF06	48° 34' 48" N	124° 44' 56" W	10:42	54	45	10:47	54	44
2011-10-02	JS01	50° 28' 30" N	126° 06' 36" W	08:14	286	250	08:33	292	150
2011-10-02	JS02	50° 29' 53" N	126° 17' 10" W	10:00	305	250	10:14	293	150
2011-10-02	JS03	50° 30' 32" N	126° 30' 36" W	11:48	389	250	12:06	395	150
2011-10-02	JS04	50° 31' 44" N	126° 40' 16" W	12:57	471	250	13:10	474	150
2011-10-19	QCSD01	51° 55' 01" N	128° 59' 24" W	07:01	99	90	07:12	99	89
2011-10-19	QCSD02	51° 54' 18" N	128° 47' 20" W	08:45	118	110	08:53	117	107
2011-10-19	QCSD03	51° 54' 43" N	128° 35' 02" W	10:26	129	120	10:37	130	120
2011-10-19	QCSD04	51° 45' 14" N	128° 36' 54" W	12:35	99	90	12:42	97	87
2011-10-19	QCSD05	51° 43' 55" N	128° 25' 37" W	14:19	145	135	14:40	143	133
2011-10-19	QCSD06	51° 42' 00" N	128° 17' 20" W	16:00	134	125	16:10	135	125

Date	Station	Latitude	Longitude	CTD			BONGO		
				Start Time (PDT)	Bottom Depth (m)	Gear Depth (m)	Start Time (PDT)	Bottom Depth (m)	Gear Depth (m)
2011-10-02	QCST01	50° 38' 53" N	126° 49' 52" W	15:03	104	95	15:12	105	95
2011-10-02	QCST02	50° 45' 54" N	126° 50' 49" W	17:40	174	165	17:52	173	150
2011-10-03	QCST03	50° 44' 31" N	126° 57' 43" W	07:06	142	130	07:15	147	137
2011-10-03	QCST04	50° 49' 23" N	127° 07' 55" W	08:47	146	135	08:59	147	137
2011-10-03	QCST05	50° 44' 49" N	127° 10' 55" W	13:26	183	170	13:37	185	150
2011-10-03	QCST06	50° 42' 18" N	127° 17' 06" W	14:53	105	100	15:03	110	100
2011-10-03	QCST07	50° 47' 24" N	127° 23' 46" W	16:28	327	250	16:41	316	150
2011-10-06	T01	51° 16' 12" N	128° 20' 24" W	18:22	79	70	18:30	79	69
2011-10-06	T02	51° 12' 25" N	128° 27' 07" W	15:30	187	175	15:44	185	150
2011-10-06	T03	51° 08' 10" N	128° 35' 24" W	13:48	139	130	13:57	140	130
2011-10-06	T04	51° 04' 34" N	128° 44' 20" W	12:12	60	50	12:19	60	50
2011-10-06	T05	51° 00' 40" N	128° 52' 37" W	10:39	65	55	10:45	66	56
2011-10-06	T06	50° 56' 02" N	129° 01' 30" W	09:06	65	55	09:11	64	54
2011-10-06	T07	50° 49' 37" N	129° 14' 10" W	06:59	105	95	07:10	105	95
2011-10-05	VI01	50° 21' 25" N	128° 05' 46" W	13:27	81	70	13:34	83	73
2011-10-05	VI02	50° 18' 18" N	128° 12' 22" W	14:48	187	175	14:59	182	150
2011-10-05	VI03	50° 14' 13" N	128° 24' 07" W	17:47	958	240	18:02	954	150
2011-10-29	VI04	48° 47' 53" N	125° 22' 01" W	11:55	87	80	12:02	88	78
2011-10-29	VI05	48° 44' 56" N	125° 27' 25" W	13:19	107	100	13:29	120	110
2011-10-29	VI06	48° 40' 44" N	125° 35' 53" W	14:58	152	140	15:12	144	134
2011-10-29	VI07	48° 36' 00" N	125° 42' 40" W	16:45	60	50	16:51	60	50
2011-10-30	VI08	48° 29' 10" N	125° 51' 07" W	07:39	111	100	07:47	111	101
2011-10-30	VI09	48° 23' 56" N	125° 57' 07" W	09:30	325	250	09:43	325	150
2011-10-30	VI10	48° 16' 41" N	126° 04' 23" W	11:51	1,270	250	12:03	1,000	150
2011-10-30	VI11	48° 14' 38" N	126° 12' 00" W	13:39	1,607	250	13:52	160	150
2011-10-30	VI12	48° 10' 23" N	126° 19' 05" W	15:24	1,132	250	15:36	1,004	150
2011-10-30	VI13	48° 05' 20" N	126° 26' 28" W	17:29	2,200	250	17:41	2,000	150
2011-11-01	VI14	49° 52' 55" N	127° 25' 30" W	07:01	65	60	07:10	66	56

Date	Station	Latitude	Longitude	CTD			BONGO		
				Start Time (PDT)	Bottom Depth (m)	Gear Depth (m)	Start Time (PDT)	Bottom Depth (m)	Gear Depth (m)
2011-11-01	VI15	49° 48' 58" N	127° 32' 38" W	08:37	84	75	08:43	85	75
2011-11-01	VI16	49° 45' 29" N	127° 38' 06" W	10:06	270	250	10:20	243	150
2011-11-01	VI17	49° 41' 49" N	127° 43' 59" W	12:02	985	250	12:14	900	150
2011-11-01	VI18	49° 35' 46" N	127° 25' 26" W	14:38	668	250	14:53	646	150
2011-11-01	VI19	49° 39' 25" N	127° 18' 47" W	16:08	147	140	16:16	147	137
2011-11-01	VI20	49° 42' 58" N	127° 11' 17" W	17:35	110	100	17:42	105	95
2011-11-04	VI21	49° 19' 12" N	126° 22' 59" W	07:00	41	30	07:07	40	30
2011-11-04	VI22	49° 11' 56" N	126° 16' 55" W	08:43	52	40	08:49	55	45
2011-11-04	VI23	49° 05' 02" N	126° 10' 26" W	10:27	60	50	10:33	62	52
2011-11-04	VI24	49° 00' 25" N	126° 01' 01" W	12:11	48	38	12:15	47	37
2011-11-04	VI25	48° 56' 28" N	125° 48' 58" W	14:00	48	40	14:05	47	37
2011-11-04	VI26	48° 56' 17" N	125° 37' 37" W	15:38	89	80	15:46	96	86
2011-11-04	VI27	48° 49' 48" N	125° 28' 01" W	17:31	95	85	17:38	89	79
2011-11-05	VI28	48° 34' 41" N	125° 03' 00" W	07:05	81	70	07:13	80	70

APPENDIX E CATCH DATA

Table E.1. Catch (counts) of species (or taxonomic groups where species identification could not be made with certainty) captured during the juvenile Pacific Salmon trawl survey from October 02 to November 06, 2011 on the CCGS *W.E. Ricker*. "0" catch means present but not counted. The tows with no catch are excluded.

Tow	1	2	3	4	5	6	7	8	9
Station ID	JS01	JS02	JS04	QCST01	QCST02	QCST03	QCST04	QCST05	QCST06
Chinook Salmon (Adults)									
Chinook Salmon (Juveniles)	14	10	8						1
Chum Salmon (Adults)				3	3				1
Chum Salmon (Juveniles)		3	1	12		8	12	64	40
Coho Salmon (Adults)									
Coho Salmon (Juveniles)	20	5	4	2					2
Pink Salmon (Juveniles)	8	3	3	41	4	25	43	3	138
Sockeye Salmon (Juveniles)	10	3	2	1					
Bay Pipefish									
Big Skate									
Eels									
Eulachon									
Euphausiids									
Flatfishes									
Jellyfish		0		0	0		0	0	
Lanternfishes									
Northern Anchovy									
Ocean Sunfish									
Opalescent Inshore Squid									
Pacific Hake									
Pacific Herring					2			7	
Pacific Sand Lance									
Pacific Sandfish									
Pacific Sardine									
Pacific Spiny Lumpsucker									
Prowfish									
Remoras									
Rockfishes									
Sablefish								1	
Sea Nettle									
Silverspotted Sculpin									
Smelts					1				
Smooth Lumpsucker									
Soft Sculpin									
Starry Flounder									
Sturgeon Poacher									
Threespine Stickleback									
Walleye Pollock									
Wolf Eel									
Yellowtail Rockfish									
TOTAL	52	24	18	59	10	33	55	75	182

Tow	10	11	12	13	14	15	16	17	18
Station ID	QCST07	IVI01	IVI02	IVI03	IVI04	IVI05	IVI06	IVI07	IVI08
Chinook Salmon (Adults)									1
Chinook Salmon (Juveniles)		2	61	120	30	73	105	19	1
Chum Salmon (Adults)	1	4	2	1				6	1
Chum Salmon (Juveniles)	79					49	1		22
Coho Salmon (Adults)									
Coho Salmon (Juveniles)								1	8
Pink Salmon (Juveniles)	139								
Sockeye Salmon (Juveniles)									
Bay Pipefish									
Big Skate									
Eels									
Eulachon									
Euphausiids									
Flatfishes									
Jellyfish	0				0		0		
Lanternfishes									
Northern Anchovy									
Ocean Sunfish									
Opalescent Inshore Squid									
Pacific Hake		8720	620	560	600	9520			
Pacific Herring									
Pacific Sand Lance									
Pacific Sandfish									
Pacific Sardine									
Pacific Spiny Lumpsucker									
Prowfish									
Remoras									
Rockfishes									
Sablefish	5								
Sea Nettle									
Silverspotted Sculpin									
Smelts									
Smooth Lumpsucker									
Soft Sculpin									
Starry Flounder									
Sturgeon Poacher									
Threespine Stickleback									
Walleye Pollock		1							
Wolf Eel									
Yellowtail Rockfish									
TOTAL	224	8727	683	681	630	9642	106	26	33

Tow	19	20	21	22	23	24	25	26	27
Station ID	IVI09	VI01	VI02	VI03	T07	T06	T05	T04	T03
Chinook Salmon (Adults)									
Chinook Salmon (Juveniles)	3				1				
Chum Salmon (Adults)		2			8			1	
Chum Salmon (Juveniles)	2	1			1	16	160	2	24
Coho Salmon (Adults)									
Coho Salmon (Juveniles)	12	2	1		6	5	1		1
Pink Salmon (Juveniles)					3	152	29	41	159
Sockeye Salmon (Juveniles)	1					9		3	4
Bay Pipefish									
Big Skate									
Eels									
Eulachon									
Euphausiids									
Flatfishes									
Jellyfish									
Lanternfishes									
Northern Anchovy									
Ocean Sunfish					2				
Opalescent Inshore Squid									
Pacific Hake									
Pacific Herring					810				
Pacific Sand Lance									
Pacific Sandfish									
Pacific Sardine	1								
Pacific Spiny Lumpsucker									
Prowfish									
Remoras					2				
Rockfishes									
Sablefish									
Sea Nettle									
Silverspotted Sculpin									
Smelts									
Smooth Lumpsucker									
Soft Sculpin									
Starry Flounder									
Sturgeon Poacher									
Threespine Stickleback									
Walleye Pollock									
Wolf Eel				1					
Yellowtail Rockfish									
TOTAL	19	5	1	1	833	182	190	47	188

Tow	28	29	30	31	32	33	34	35	36
Station ID	T02	T01	H01	H02	H03	H04	H05	H06	IBC01
Chinook Salmon (Adults)									
Chinook Salmon (Juveniles)			1						5
Chum Salmon (Adults)					2				
Chum Salmon (Juveniles)	51	1	12	2			163		5
Coho Salmon (Adults)									
Coho Salmon (Juveniles)			5	1					4
Pink Salmon (Juveniles)	139	2	60	10	2		612	14	188
Sockeye Salmon (Juveniles)	2		2						2
Bay Pipefish									
Big Skate									
Eels									
Eulachon									
Euphausiids									
Flatfishes									
Jellyfish									
Lanternfishes									
Northern Anchovy									
Ocean Sunfish									
Opalescent Inshore Squid									
Pacific Hake									
Pacific Herring			5		4	2			
Pacific Sand Lance									
Pacific Sandfish									
Pacific Sardine									
Pacific Spiny Lumpsucker									
Prowfish									
Remoras									
Rockfishes									
Sablefish									
Sea Nettle									
Silverspotted Sculpin									
Smelts									
Smooth Lumpsucker									
Soft Sculpin									
Starry Flounder									
Sturgeon Poacher									
Threespine Stickleback									
Walleye Pollock									
Wolf Eel									
Yellowtail Rockfish									
TOTAL	192	3	85	13	8	2	775	14	204

Tow	37	38	39	40	41	42	43	44	46
Station ID	IBC02	IBC03	IBC04	IBC05	IBC06	IBC07	IBC08	IBC09	IBC11
Chinook Salmon (Adults)									
Chinook Salmon (Juveniles)			2		1	2		1	
Chum Salmon (Adults)				1					
Chum Salmon (Juveniles)		31	1	7	5	27		5	2
Coho Salmon (Adults)									
Coho Salmon (Juveniles)	2	3	6	2	1			1	1
Pink Salmon (Juveniles)	7	103	126	36	5	54	1	13	8
Sockeye Salmon (Juveniles)	1	21	25	4	1				
Bay Pipefish									
Big Skate									
Eels									
Eulachon									
Euphausiids									
Flatfishes									
Jellyfish				0			0		0
Lanternfishes									
Northern Anchovy									
Ocean Sunfish									
Opalescent Inshore Squid									
Pacific Hake									
Pacific Herring			2	18	61	78	4		
Pacific Sand Lance									
Pacific Sandfish									
Pacific Sardine									
Pacific Spiny Lumpsucker									
Prowfish									
Remoras									
Rockfishes									
Sablefish									
Sea Nettle									
Silverspotted Sculpin									
Smelts									
Smooth Lumpsucker									
Soft Sculpin									
Starry Flounder								1	
Sturgeon Poacher									
Threespine Stickleback									
Walleye Pollock									
Wolf Eel									
Yellowtail Rockfish									
TOTAL	10	158	162	68	74	161	5	21	11

Tow	47	48	49	50	51	52	53	54	55
Station ID	IBC12	DE01	DE02	DE03	DE04	DE05	DE06	FI01	FI02
Chinook Salmon (Adults)		1							
Chinook Salmon (Juveniles)	8	13	1						
Chum Salmon (Adults)			1	1	1				
Chum Salmon (Juveniles)		11	9		7				
Coho Salmon (Adults)		1				1			
Coho Salmon (Juveniles)		3	1		3	8			2
Pink Salmon (Juveniles)		54	118	9	39	26	9	4	
Sockeye Salmon (Juveniles)		15	6					1	
Bay Pipefish									
Big Skate									
Eels									
Eulachon									
Euphausiids									
Flatfishes									
Jellyfish	0			12			0		0
Lanternfishes									
Northern Anchovy									
Ocean Sunfish									
Opalescent Inshore Squid									
Pacific Hake									
Pacific Herring		64	3		1	1			
Pacific Sand Lance									
Pacific Sandfish									
Pacific Sardine									
Pacific Spiny Lumpsucker									
Prowfish									
Remoras									
Rockfishes									
Sablefish									
Sea Nettle			2					1	
Silverspotted Sculpin									
Smelts									
Smooth Lumpsucker									
Soft Sculpin									
Starry Flounder									
Sturgeon Poacher									
Threespine Stickleback									
Walleye Pollock									
Wolf Eel									
Yellowtail Rockfish									
TOTAL	8	162	141	22	51	36	9	6	2

Tow	56	57	58	59	60	61	62	63	64
Station ID	FI03	FI04	FI05	FI06	FI07	B07	B06	B05	B04
Chinook Salmon (Adults)									
Chinook Salmon (Juveniles)									
Chum Salmon (Adults)				1					
Chum Salmon (Juveniles)									
Coho Salmon (Adults)									
Coho Salmon (Juveniles)				3			2	1	1
Pink Salmon (Juveniles)	1	2	1						3
Sockeye Salmon (Juveniles)									
Bay Pipefish									
Big Skate									
Eels									
Eulachon									
Euphausiids									
Flatfishes									
Jellyfish	0	0	0		0	0	1	1	1
Lanternfishes						10			
Northern Anchovy									
Ocean Sunfish									
Opalescent Inshore Squid						1			
Pacific Hake									
Pacific Herring									
Pacific Sand Lance									
Pacific Sandfish									
Pacific Sardine									
Pacific Spiny Lumpsucker									
Prowfish									
Remoras									
Rockfishes									
Sablefish									
Sea Nettle									
Silverspotted Sculpin									
Smelts									
Smooth Lumpsucker	1				1				
Soft Sculpin									
Starry Flounder									
Sturgeon Poacher									
Threespine Stickleback									
Walleye Pollock									
Wolf Eel									
Yellowtail Rockfish									
TOTAL	2	2	1	4	1	11	3	2	5

Tow	65	66	67	68	69	70	71	72	73
Station ID	B03	B02	B01	ISEA01	ISEA02	ISEA03	ISEA04	ISEA05	ISEA06
Chinook Salmon (Adults)					1	1	1	1	1
Chinook Salmon (Juveniles)				3	31	5	6	11	14
Chum Salmon (Adults)									
Chum Salmon (Juveniles)	2	3							
Coho Salmon (Adults)			2			1			
Coho Salmon (Juveniles)	2			1	1				
Pink Salmon (Juveniles)	2	18	1		2	23			
Sockeye Salmon (Juveniles)	2		1			2			
Bay Pipefish									
Big Skate									
Eels									
Eulachon									
Euphausiids									
Flatfishes									
Jellyfish		1	1						
Lanternfishes									
Northern Anchovy									
Ocean Sunfish									
Opalescent Inshore Squid									1
Pacific Hake									
Pacific Herring					1		2	140	7
Pacific Sand Lance								10	130
Pacific Sandfish									1
Pacific Sardine									
Pacific Spiny Lumpsucker					1		1	1	
Prowfish									
Remoras									
Rockfishes									
Sablefish									
Sea Nettle									
Silverspotted Sculpin									
Smelts						1		2	
Smooth Lumpsucker	1					1		2	
Soft Sculpin					7				
Starry Flounder									
Sturgeon Poacher									
Threespine Stickleback									
Walleye Pollock						1	2		1
Wolf Eel									
Yellowtail Rockfish									
TOTAL	9	22	5	4	44	35	12	167	155

Tow	74	75	76	77	78	79	80	81	82
Station ID	ISEA07	ISEA08	ISEA09	ISEA10	IBC13	IBC14	IBC15	IBC16	IBC17
Chinook Salmon (Adults)			1						
Chinook Salmon (Juveniles)	17	9	21	6		1			
Chum Salmon (Adults)									
Chum Salmon (Juveniles)					2		3		30
Coho Salmon (Adults)									
Coho Salmon (Juveniles)					6	4		14	2
Pink Salmon (Juveniles)	1		15	8	17	3	12	8	15
Sockeye Salmon (Juveniles)			3	2					3
Bay Pipefish									
Big Skate									
Eels									
Eulachon									
Euphausiids	0								
Flatfishes									
Jellyfish									
Lanternfishes									
Northern Anchovy									
Ocean Sunfish									
Opalescent Inshore Squid	1								
Pacific Hake									
Pacific Herring	6	380	200	4					
Pacific Sand Lance				15					
Pacific Sandfish		310							
Pacific Sardine									
Pacific Spiny Lumpsucker		1							
Prowfish									
Remoras									
Rockfishes									
Sablefish									
Sea Nettle									
Silverspotted Sculpin									
Smelts			230	1					
Smooth Lumpsucker	1	1	2						
Soft Sculpin									
Starry Flounder		3	4						
Sturgeon Poacher									
Threespine Stickleback									
Walleye Pollock		1							
Wolf Eel									
Yellowtail Rockfish									
TOTAL	26	705	476	36	25	8	15	22	50

Tow	83	84	86	88	89	90	91	92	93
Station ID	IBC18	QCSD01	QCSD03	QCSD05	QCSD06	IBC19	IBC20	IBC21	IBC22
Chinook Salmon (Adults)									
Chinook Salmon (Juveniles)			1		1		9	4	1
Chum Salmon (Adults)									
Chum Salmon (Juveniles)	189		2						
Coho Salmon (Adults)									
Coho Salmon (Juveniles)	2			1					
Pink Salmon (Juveniles)	16	1	8	1	8				
Sockeye Salmon (Juveniles)			5						
Bay Pipefish									
Big Skate									
Eels									
Eulachon						1			
Euphausiids						0			
Flatfishes									
Jellyfish									
Lanternfishes									
Northern Anchovy									
Ocean Sunfish									
Opalescent Inshore Squid									
Pacific Hake									
Pacific Herring					1	7	30		
Pacific Sand Lance							150		
Pacific Sandfish									
Pacific Sardine									
Pacific Spiny Lumpsucker									
Prowfish									
Remoras									
Rockfishes									
Sablefish									
Sea Nettle									
Silverspotted Sculpin									
Smelts									
Smooth Lumpsucker									
Soft Sculpin									
Starry Flounder									
Sturgeon Poacher									
Threespine Stickleback									
Walleye Pollock									
Wolf Eel									
Yellowtail Rockfish									
TOTAL	207	1	16	2	10	8	189	4	1

Tow	94	95	96	97	98	99	100	101	102
Station ID	IBC23	IBC24	IBC25	IBC26	IBC27	IBC28	JF01	IVI10	IVI11
Chinook Salmon (Adults)				1					
Chinook Salmon (Juveniles)	1		12	6			45	6	3
Chum Salmon (Adults)							1		
Chum Salmon (Juveniles)							164		
Coho Salmon (Adults)									
Coho Salmon (Juveniles)				1		1	2		
Pink Salmon (Juveniles)							5		
Sockeye Salmon (Juveniles)						1	1		
Bay Pipefish								1	
Big Skate									
Eels									
Eulachon									
Euphausiids									
Flatfishes									
Jellyfish								0	0
Lanternfishes									
Northern Anchovy									
Ocean Sunfish									
Opalescent Inshore Squid									
Pacific Hake									
Pacific Herring			202				28		
Pacific Sand Lance			100						
Pacific Sandfish									
Pacific Sardine									
Pacific Spiny Lumpsucker									
Prowfish									
Remoras									
Rockfishes									
Sablefish									
Sea Nettle		1						0	0
Silverspotted Sculpin									
Smelts									
Smooth Lumpsucker									
Soft Sculpin									
Starry Flounder	1								
Sturgeon Poacher									
Threespine Stickleback		600					1		
Walleye Pollock									
Wolf Eel					1				
Yellowtail Rockfish									1
TOTAL	2	601	314	8	1	2	247	7	4

Tow	103	104	105	106	107	108	109	110	111
Station ID	IV112	VI04	VI05	VI06	VI07	VI08	VI09	VI10	VI11
Chinook Salmon (Adults)									
Chinook Salmon (Juveniles)	18	6	1	1					
Chum Salmon (Adults)	1								
Chum Salmon (Juveniles)	1	2							
Coho Salmon (Adults)									
Coho Salmon (Juveniles)		1	1	1	1				
Pink Salmon (Juveniles)									
Sockeye Salmon (Juveniles)									
Bay Pipefish									
Big Skate									
Eels									1
Eulachon									
Euphausiids									
Flatfishes									
Jellyfish	0	0	0	0	0	0	0	0	0
Lanternfishes									
Northern Anchovy									
Ocean Sunfish									
Opalescent Inshore Squid									
Pacific Hake									
Pacific Herring									
Pacific Sand Lance	49								
Pacific Sandfish									
Pacific Sardine						1			
Pacific Spiny Lumpsucker									
Prowfish									
Remoras									
Rockfishes								55	42
Sablefish									
Sea Nettle	0	24	0	13	113	4	0		
Silverspotted Sculpin									
Smelts									
Smooth Lumpsucker									
Soft Sculpin									
Starry Flounder									
Sturgeon Poacher						1			
Threespine Stickleback									
Walleye Pollock									
Wolf Eel									
Yellowtail Rockfish									
TOTAL	69	33	2	15	114	6	0	55	43

Tow	112	113	114	115	116	117	118	119	120
Station ID	VI12	VI13	EP07	EP06	EP05	EP04	EP03	EP02	IVI13
Chinook Salmon (Adults)									
Chinook Salmon (Juveniles)									64
Chum Salmon (Adults)								1	
Chum Salmon (Juveniles)							2		
Coho Salmon (Adults)									
Coho Salmon (Juveniles)									
Pink Salmon (Juveniles)									
Sockeye Salmon (Juveniles)									
Bay Pipefish									
Big Skate									
Eels									
Eulachon									
Euphausiids									
Flatfishes	3					1		1	
Jellyfish	0	0	0	0	0	0		0	0
Lanternfishes									
Northern Anchovy									
Ocean Sunfish									
Opalescent Inshore Squid			1						
Pacific Hake									
Pacific Herring				1					200
Pacific Sand Lance									
Pacific Sandfish									
Pacific Sardine									
Pacific Spiny Lumpsucker									
Prowfish									
Remoras									
Rockfishes	73		2						
Sablefish									
Sea Nettle									
Silverspotted Sculpin									
Smelts									390
Smooth Lumpsucker									
Soft Sculpin									
Starry Flounder									
Sturgeon Poacher									
Threespine Stickleback									
Walleye Pollock									
Wolf Eel									
Yellowtail Rockfish									
TOTAL	76	0	3	1	0	1	2	2	654

Tow	121	122	123	124	125	126	127	128	129
Station ID	VI14	VI15	VI16	VI17	VI18	VI19	VI20	IVI14	IVI15
Chinook Salmon (Adults)									
Chinook Salmon (Juveniles)	5							24	
Chum Salmon (Adults)				3					
Chum Salmon (Juveniles)	1				1				
Coho Salmon (Adults)									
Coho Salmon (Juveniles)	1	1					1		
Pink Salmon (Juveniles)									
Sockeye Salmon (Juveniles)									
Bay Pipefish									
Big Skate									
Eels									
Eulachon									
Euphausiids									
Flatfishes									
Jellyfish	0	0	0	0		0	0	0	0
Lanternfishes									
Northern Anchovy									
Ocean Sunfish									
Opalescent Inshore Squid								13	14
Pacific Hake				1					
Pacific Herring	6						40	780	9
Pacific Sand Lance									
Pacific Sandfish									
Pacific Sardine								2	
Pacific Spiny Lumpsucker									
Prowfish	1								
Remoras									
Rockfishes				14					
Sablefish									
Sea Nettle	15	1							
Silverspotted Sculpin									
Smelts									
Smooth Lumpsucker									
Soft Sculpin									
Starry Flounder									
Sturgeon Poacher									2
Threespine Stickleback									
Walleye Pollock									
Wolf Eel									
Yellowtail Rockfish							1		
TOTAL	29	2	0	18	1	2	40	819	25

Tow	130	131	132	133	134	135	136	137	138
Station ID	IVI16	IVI17	IVI18	IVI19	IVI20	IVI21	IVI22	IVI23	IVI24
Chinook Salmon (Adults)									
Chinook Salmon (Juveniles)		1	2	7	35		2	1	1
Chum Salmon (Adults)									
Chum Salmon (Juveniles)									
Coho Salmon (Adults)									
Coho Salmon (Juveniles)									
Pink Salmon (Juveniles)									
Sockeye Salmon (Juveniles)									
Bay Pipefish									
Big Skate									
Eels									
Eulachon									
Euphausiids									
Flatfishes									
Jellyfish	0	0	0	0	0				0
Lanternfishes									
Northern Anchovy									
Ocean Sunfish									
Opalescent Inshore Squid					7				
Pacific Hake									
Pacific Herring		1		72	1538	870			
Pacific Sand Lance									
Pacific Sandfish									
Pacific Sardine									
Pacific Spiny Lumpsucker									
Prowfish									
Remoras									
Rockfishes									
Sablefish									
Sea Nettle									
Silverspotted Sculpin									1
Smelts									
Smooth Lumpsucker									
Soft Sculpin									
Starry Flounder									
Sturgeon Poacher									
Threespine Stickleback									
Walleye Pollock									
Wolf Eel									
Yellowtail Rockfish									
TOTAL	0	2	2	79	1580	870	2	1	2

Tow	139	140	141	142	143	144	145	146	147
Station ID	IVI25	IVI26	IVI27	VI21	VI22	VI23	VI24	VI25	VI26
Chinook Salmon (Adults)									
Chinook Salmon (Juveniles)	65	1	83	28	2		1		6
Chum Salmon (Adults)									
Chum Salmon (Juveniles)			737	4					238
Coho Salmon (Adults)									
Coho Salmon (Juveniles)									
Pink Salmon (Juveniles)									1
Sockeye Salmon (Juveniles)	1								
Bay Pipefish									
Big Skate									1
Eels									
Eulachon									
Euphausiids									
Flatfishes									
Jellyfish	0	0	0	0	0	0	0	0	0
Lanternfishes									
Northern Anchovy									
Ocean Sunfish									
Opalescent Inshore Squid	1			220	1		100		
Pacific Hake									
Pacific Herring				114	1				
Pacific Sand Lance									
Pacific Sandfish									
Pacific Sardine									
Pacific Spiny Lumpsucker									
Prowfish							1		
Remoras									
Rockfishes									
Sablefish									
Sea Nettle			1	20	50	35	14	3	0
Silverspotted Sculpin									
Smelts				7					
Smooth Lumpsucker									
Soft Sculpin									
Starry Flounder									
Sturgeon Poacher									
Threespine Stickleback									
Walleye Pollock									
Wolf Eel									
Yellowtail Rockfish									
TOTAL	67	1	821	393	54	35	116	3	246

Tow	148	149	150	151	152
Station ID	VI28	JF06	JF05	JF04	JF03
Chinook Salmon (Adults)		1		4	9
Chinook Salmon (Juveniles)	1	91	2	46	10
Chum Salmon (Adults)		5		3	3
Chum Salmon (Juveniles)	22	7	7	95	68
Coho Salmon (Adults)					
Coho Salmon (Juveniles)	15	15		1	23
Pink Salmon (Juveniles)				1	3
Sockeye Salmon (Juveniles)			1		
Bay Pipefish					
Big Skate					
Eels					
Eulachon					
Euphausiids					
Flatfishes					
Jellyfish	0		0	0	0
Lanternfishes					
Northern Anchovy	160				
Ocean Sunfish					
Opalescent Inshore Squid					
Pacific Hake					
Pacific Herring	9			2	
Pacific Sand Lance					
Pacific Sandfish					
Pacific Sardine					
Pacific Spiny Lumpsucker					
Prowfish					
Remoras					
Rockfishes					
Sablefish					
Sea Nettle		0	0		
Silverspotted Sculpin					
Smelts					
Smooth Lumpsucker					
Soft Sculpin					
Starry Flounder					
Sturgeon Poacher					
Threespine Stickleback	7		1		1
Walleye Pollock					
Wolf Eel					
Yellowtail Rockfish					
TOTAL	214	119	11	152	117