

Juvenile Salmon Survey, 1996, Discovery  
Harbour Marine and Surrounding Nearshore  
Area, Campbell River, B.C.

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**JUVENILE SALMON SURVEY, 1996,  
DISCOVERY HARBOUR MARINA AND SURROUNDING  
NEARSHORE AREA, CAMPBELL RIVER, B.C.**

by

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## ABSTRACT

Bravender, B. A., S. S. Anderson, and J. Van Tine. 1997. Juvenile salmon survey, 1996, Discovery Harbour Marina and surrounding nearshore area, Campbell River, B.C. Can. Data Rep. Fish. Aquat. Sci. 1023: 45 p.

During the 1996 survey of juvenile salmonid distribution, 19 sites inside the Campbell River estuary, within the Discovery Harbour Marina and immediately outside the marina on the foreshore, were sampled with either a beach seine or a purse seine. Eight trips were completed between May 2 and July 17. Temperature, salinity, and oxygen levels were recorded at each site. A dive survey of the marina was undertaken in May and a video recording of the subtidal region was done. The juvenile chinook captured were subsampled, weighed and measured in the field and scale samples collected for ageing purposes. A total of 45,825 juvenile salmonids was captured. The catches were dominated by pink and chum juveniles, followed by chinook.

## RÉSUMÉ

Bravender, B. A., S. S. Anderson, and J. Van Tine. 1997. Juvenile salmon survey, 1996, Discovery Harbour Marina and surrounding nearshore area, Campbell River, B.C. Can. Data Rep. Fish. Aquat. Sci. 1023: 45 p.

Pendant le relevé 1996 de la distribution des salmonidés juvéniles, nous avons échantillonné à la senne de plage ou à la senne à poche 19 sites se trouvant dans l'estuaire de la Campbell, dans la marina de Discovery Harbour et juste à l'extérieur de la marina, sur l'estran. Huit missions ont été réalisées entre le 2 mai et le 17 juillet. À chaque site, nous avons enregistré la température, la salinité et la teneur en oxygène. Un relevé en plongée a été organisé en mai, et nous avons effectué un enregistrement vidéo de la zone infratidale. Les jeunes quinnats capturés ont été sous-échantillonnés, pesés et mesurés sur la terrain, et nous avons prélevé des échantillons d'écailles pour déterminer l'âge des poissons. Au total, 45 825 salmonidés juvéniles ont été capturés. Les jeunes saumons roses et kétas dominaient dans les prises, suivis par les quinnats.

## INTRODUCTION

During the summer of 1996 a field program was carried out to assess the distribution and abundance of juvenile salmonids both within and immediately outside of the Discovery Harbour Marina on the marine foreshore of Discovery Passage in Campbell River (Fig. 1). Construction of this marina began in 1988 in an area which had previously comprised a small shallow bay with a large eelgrass bed. Surveys carried out by the Salmon Habitat Section, Fisheries and Oceans between 1982 and 1986, prior to the construction of the marina, had found juvenile salmonids to be rearing in this area during early spring and summer (Brown et al., 1983, 1984a, b, 1985, 1986, 1987). At the present time the marina encompasses approximately 35 hectares of foreshore, including a fill area of 17 hectares and a rubble mound breakwater which encloses a dredged basin of approximately 18 hectares (Public Works Canada, 1984). Recent escapement data for chinook to the Quinsam and Campbell Rivers has shown that this stock has declined significantly since the late 1980's. It has been asked whether the construction of the marina may have had an adverse effect on the juvenile chinook from these rivers as they migrate along the marine foreshore.

Discovery Passage is an area of swift currents and large tidal fluctuations. The marina breakwater protrudes into the passage and forces any migrating fish away from shore and into areas where the currents may exceed  $2 \text{ m s}^{-1}$ . It is unknown whether situations such as this present a significant barrier to the migration of juvenile salmon.

The Quinsam River Hatchery had moored two seapens within the marina in April and 533,000 juvenile chinook were held and fed until their release inside the marina on May 3, 1996. Over 25,300 of these fish were marked with a coded wire tag (CWT) and were adipose fin clipped.

Selected sites were also sampled within the Campbell River estuary to assess the size of the young salmonids, especially chinook, in comparison to the catches at the Discovery Passage and marina sites and to ascertain whether the deeper water habitats within the estuary were being occupied by rearing salmonid juveniles. Here we present the raw data collected during this survey. A more extensive analysis of this information will be available in a report which is presently in preparation.

## MATERIALS AND METHODS

A total of nineteen sites inside the Discovery Harbour Marina, outside the marina on the foreshore of Discovery Passage and within the Campbell River estuary were sampled on eight trips between May 2 and July 17, 1996 (Table 1). Nine sites were sampled with a purse seine including two sites in the estuary, four sites in Discovery Passage and three sites inside the marina (Fig. 1). Single sets were done at each site. The total length of this net was 61.5 m, consisting of a 24.6 m section of 1.8 cm stretched mesh, a 24.6 m section of 1.25 cm stretched mesh and a 12.3 m bunt section



of 0.6 cm stretched mesh. The depth of the net was a uniform 6.2 m and the lead line was 2 pounds/fathom. A sea anchor was attached to the bunt section and a purse line of 1.25 cm nylon rope along the leadline allowed the entire length of the net to be pursed. The net was set from a 5.5 m aluminum craft powered by a V8 engine equipped with a Hamilton jet drive. The seine was stacked on a table on the stern of the boat, the sea anchor tossed over and the net slowly set in a circle. The net was pursed by hand and the mesh was then pulled on board the boat to concentrate the catch in the bunt section.

Ten sites were sampled with a beach seine 13.5 m long and 2.9 m deep with 4.5 m wings of 1 cm stretched mesh and a 4.6 m bunt of 0.6 cm stretched mesh. Rope bridles 15 m in length were fitted to each end of the net. This sampling was done using either a 16' aluminum craft with a 50 hp jet drive or an 18' aluminum boat, powered by an 80 hp jet drive. Duplicate sets were done at all sites except those in the estuary. Four of the sites were located in the Campbell River estuary, three were outside the marina in Discovery Passage and three were located inside the marina breakwater (Fig. 1). The net was pulled offshore to the full length of the rope bridles, set in a circle back to shore and retrieved by hand.

Sites 1, 16, 18 and 19, under different station numbers, had been sampled during previous studies between 1982-86 and in 1994 (Brown et al. 1983, 1984a, b, 1985, 1986, 1987; Anderson and Bravender (in prep.)).

At most sites, the entire catch of salmonids was counted and identified to species. Coho and chinook juveniles were further identified as marked (CWT) or unmarked, which included larger hatchery fish and those of possible "wild" origin. Where necessary, the catch was subsampled using a dipnet. These fish were then identified and counted and the results multiplied by the subsample to estimate the total catch.

Because the project was most concerned with the juvenile chinook in the marina and surrounding area ten or more were selected at random from the catch at most sites and retained. These fish were then anaesthetized with MS222 (25 - 40 mg/l) either on shore at the site or in the boat. The fork length of each fish to the nearest mm was recorded and they were damp dried and weighed to the nearest 0.1 g in water using an Ohaus Model No. C305 portable balance. Scale samples were taken from each fish as smears and read by the Ageing Laboratory at the Pacific Biological Station in Nanaimo. These juvenile chinook were held until they had recovered from the anaesthetic and were then released at the capture site.

Salinity and temperature to depth were recorded at one metre intervals at each site using a YSI Model 33 metre. An Oxyguard Handy Mk 1 metre recorded ambient oxygen levels as percent saturation.

On May 22 a survey of the subtidal areas of the marina in the north and south basin was carried out by divers and videotaped using a Sony Tr 81 Hi 8, 8 mm camera.

## RESULTS

The temperature, salinity and oxygen levels may be found in Table 2. A total of one hundred beach seines were completed, 9 in the estuary, 47 inside the marina and 44 outside the marina. Thirty-five purse seines were done, 14 in the estuary, 16 inside the marina and 5 outside the marina (Table 3). In all the catches combined, there were 23,088 pink, 7,869 chum, 12,899 unmarked chinook, 1,030 marked chinook, 886 unmarked coho, 27 marked coho, 23 cutthroat and 3 steelhead for a total catch of 45,825 juvenile salmonids. The largest catches of pink (22,267 total) and chum (6,190 total) were caught with the beach seine at the six sites outside the marina. Four hundred and forty-four marked and 5,949 unmarked chinook were captured with the beach seine at the six sites within Discovery Harbour Marina.

At the sites within and outside the marina lengths and weights were recorded for 412 chinook, including 276 unmarked and 37 marked chinook from the beach seines and 94 unmarked and 5 marked chinook captured with the purse seine. In the estuary lengths only were recorded for 30 unmarked chinook from the beach seine samples and 12 unmarked and 2 marked chinook from the purse seine samples (Table 4).

From the scale samples taken, ages were derived for 359 juvenile chinook. All were age 00 except for one fish which was classified as age 10. Prominent checks, such as those often seen on newly released hatchery fish, were documented on 101 of the juvenile chinook and the location indicated by the number of circuli on the scale prior to the check (Table 5).

The survey carried out by the divers in May showed the majority of the habitat in the marina to be similar to that seen in other rocky intertidal and subtidal areas. Kelp, *Fucus* spp. and *Sargassum* spp. occurred throughout, interspersed with less productive areas of gravel and sand, mainly in the deeper areas. Small patches of eelgrass were visible in the south basin in the deeper sandy areas, which may have been the result of a transplant carried out in this area in 1994. Most of the docks were covered by thick epiphyton on the bottom. Juvenile salmonids were seen in the shallower areas of the marina near the breakwater with schools of rockfish and perch in the deeper areas. Strong currents were visible in some areas, especially near the north breakwater, and thick zooplankton patches occurred in the shallower areas.

## ACKNOWLEDGMENTS

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Joan Bennett, Pauline Scott and Ed Siu. Angie Pagani assisted in the co-ordination of staff and the purchasing of supplies. Bruce Hillaby of the Habitat and Enhancement Branch, Nanaimo provided field equipment and assisted with the sampling. Kevin Conlin and Gary Taccogna of the Habitat and Enhancement Branch, Vancouver also assisted in the field work. In addition, Kevin Conlin arranged for a portion of the financial support. The Ageing Lab, Science Branch, Nanaimo read the juvenile chinook scales. Rob Russell, Habitat and Enhancement Branch, Nanaimo and Kent Spencer and Brian Hume, Operations Branch, Campbell River carried out the dive survey.

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Table 1. Locations and descriptions of sites sampled during the 1996 survey.

Site No.	Description
1.	Beach seine site in Discovery Passage immediately south of the boat launching ramp on the east side of Tyee Spit. Gravel and cobble substrate, moderate slope, kelp bed.
2.	Beach seine site in Discovery Passage south of the Westmin loading dock. Gravel and cobble substrate, moderate slope, kelp bed close to shore.
3.	Beach seine site in the northeast corner of Discovery Harbour Marina. Gravel and rip rap substrate, steep slope.
4.	Beach seine site in Discovery Harbour Marina inside the north breakwater entrance. Gravel and rip rap substrate, moderate to steep slope.
5.	Beach seine site in Discovery Harbour Marina inside the south breakwater. Predominantly rip rap substrate, some sand at low tide levels, steep slope.
6.	Beach seine site in Discovery Passage outside the south Discovery Harbour Marina breakwater. Gravel and cobble substrate, kelp bed, shallow slope.
7.	Purse seine site in Discovery Passage offshore from site 1 at the boat launching ramp on Tyee Spit. Kelp bed, swift currents.
8.	Purse seine site in Discovery Passage offshore from site 2 at the Westmin loading dock. Large kelp bed, swift currents.
9.	Purse seine site in Discovery Passage offshore from the north Discovery Harbour Marina breakwater and south of the current deflector. Eelgrass bed, swift currents.
10.	Purse seine site in Discovery Passage offshore from the Discovery Harbour Marina breakwater and south of the marina entrance. Swift currents.
11.	Purse seine site in Discovery Harbour Marina north of the harbour entrance. Light to moderate currents.

Site No.	Description
12.	Purse seine site in Discovery Harbour Marina in the midpoint of the harbour. Light to moderate currents.
13.	Purse seine site in Discovery Harbour Marina in the south end of the harbour. Light to moderate currents.
14.	Purse seine site in the Campbell River estuary near the mouth of Nunn's Creek on the east side of the estuary inside Tyee Spit. Light currents.
15.	Purse seine site in the Campbell River estuary in the abandoned log sort pocket on the east side of the estuary. Light currents.
16.	Beach seine site in the Campbell river estuary in a slough on the west side of the river. Mud and sand substrate, heavy riparian vegetation, shallow slope.
17.	Beach seine site in the Campbell River estuary on the east side of the mouth of Nunn's Creek. Gravel substrate, marsh, moderate slope.
18.	Beach seine site in the Campbell River estuary on the south arm of Baikie's Slough at the confluence with the Campbell River. Gravel and sand substrate, moderate slope.
19.	Beach seine site in the Campbell River estuary on the west side of Tyee Spit. Gravel and mud substrate, marsh, steep slope.

Table 2. Temperature, salinity and dissolved oxygen data.

Date	Site No.	Time (PST)	Depth (m)	Temp. °C	Sal. ‰	Oxygen % sat.
May 2	6	1010	0	10.0	28.9	100
"	"	"	1	9.5	28.9	96
May 2	5	1045	0	9.5	27.9	91
"	"	"	1	9.5	27.9	92
"	"	"	2	9.5	27.9	92
"	"	"	3	9.2	28.1	90
"	"	"	4	9.2	28.1	93
May 2	4	1120	0	10.0	28.6	87
"	"	"	1	9.5	28.8	87
"	"	"	2	9.3	28.9	85
"	"	"	3	9.2	28.9	84
"	"	"	4	9.2	28.9	82
May 2	3	1145	0	9.6	28.9	103
"	"	"	1	10.0	28.2	102
"	"	"	2	10.2	28.2	124
"	"	"	3	10.2	28.3	114
May 2	2	1220	0	10.2	27.5	80
"	"	"	1	10.3	27.5	81
May 2	1	1255	0	10.3	27.4	81
"	"	"	1	10.5	27.1	80
"	"	"	2	10.5	27.2	80
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May 6	15	1145	0	11.0	3.8	100
"	"	"	1	10.1	26.5	99
"	"	"	2	10.0	27.9	90
"	"	"	3	9.6	27.9	89
"	"	"	4	9.6	28.2	94
May 6	14	1215	0	11.0	3.2	101
"	"	"	1	10.4	25.6	85
"	"	"	2	10.0	25.8	85
"	"	"	3	9.8	27.2	78
"	"	"	4	9.6	27.3	79
"	"	"	5	9.5	27.9	75
May 6	13	1315	0	10.6	27.0	88
"	"	"	1	10.4	28.0	88
"	"	"	2	10.0	28.2	79
"	"	"	3	10.0	28.2	78
"	"	"	4	10.1	28.5	78



Table 2 (cont'd)

Date	Site No.	Time (PST)	Depth (m)	Temp. °C	Sal. ‰	Oxygen % sat.
May 6	11	1405	0	10.7	27.5	88
"	"	"	1	10.5	28.7	88
"	"	"	2	10.2	28.7	85
"	"	"	3	9.8	28.9	83
"	"	"	4	9.6	28.9	82
May 7	6	1120	0	10.8	22.9	97
"	"	"	1	10.8	30.5	101
May 7	5	1155	0	10.9	27.3	86
"	"	"	1	10.6	27.8	87
"	"	"	2	10.5	28.0	86
"	"	"	3	10.3	28.6	88
"	"	"	4	10.3	28.0	88
May 7	4	1215	0	10.8	25.8	83
"	"	"	1	10.7	26.0	83
"	"	"	2	10.6	25.8	80
"	"	"	3	10.3	27.8	80
"	"	"	4	10.2	27.5	78
May 7	3	1240	0	11.0	31.5	87
"	"	"	1	10.7	32.7	80
"	"	"	2	10.4	31.5	86
"	"	"	3	10.4	30.1	83
"	"	"	4	10.9	29.0	74
"	"	"	5	12.0	27.3	81
May 7	2	1330	0	10.0	24.3	103
"	"	"	1	10.1	28.1	110
"	"	"	2	10.1	28.5	118
May 13	15	1100	0	10.0	1.0	105
"	"	"	1	10.7	1.1	101
"	"	"	2	10.2	16.5	87
"	"	"	3	10.0	28.1	95
"	"	"	4	10.0	28.7	82
May 13	14	1230	0	10.9	2.8	106
"	"	"	1	10.3	2.0	94
"	"	"	2	10.0	22.3	93
"	"	"	3	9.8	28.4	91
"	"	"	4	9.8	28.0	88

Table 2 (cont'd)

Date	Site No.	Time (PST)	Depth (m)	Temp. °C	Sal. ‰	Oxygen % sat.
May 13	13	1340	0	11.8	27.9	104
"	"	"	1	10.6	29.3	99
"	"	"	2	10.0	29.7	93
"	"	"	3	10.2	29.8	94
"	"	"	4	10.2	29.8	91
"	"	"	5	9.9	29.8	92
May 13	11	1405	0	11.5	29.4	107
"	"	"	1	11.1	29.2	108
"	"	"	2	10.4	30.0	103
"	"	"	3	10.0	30.0	98
"	"	"	4	10.0	29.5	96
"	"	"	5	10.0	30.0	96
May 13	8	1430	0	12.0	28.0	92
"	"	"	1	11.5	28.2	91
"	"	"	2	10.9	29.5	91
"	"	"	3	10.6	29.8	92
May 14	1	1145	0	11.0	27.5	98
"	"	"	1	10.7	28.0	99
"	"	"	2	10.5	28.0	102
May 14	2	1230	0	12.2	25.3	100
"	"	"	1	12.0	26.0	98
"	"	"	1.5	12.2	25.5	96
May 14	5	1335	0	12.0	29.1	112
"	"	"	1	11.1	29.0	111
"	"	"	2	12.0	28.5	98
"	"	"	3	10.8	29.2	98
"	"	"	4	12.0	29.7	101
May 14	4	1410	0	12.0	29.3	109
"	"	"	1	11.7	31.2	107
"	"	"	2	11.2	30.0	113
"	"	"	3	11.0	30.4	110
"	"	"	4	11.4	30.2	111
May 14	3	1500	0	11.0	30.5	111
"	"	"	1	10.5	30.5	107
"	"	"	2	10.5	30.5	105
"	"	"	3	10.5	30.8	109

Table 2 (cont'd)

Date	Site No.	Time (PST)	Depth (m)	Temp. °C	Sal. ‰	Oxygen % sat.
May 21	15	1020	0	11.5	2.7	102
"	"	"	1	10.8	9.3	100
"	"	"	2	10.2	23.7	93
"	"	"	3	10.0	27.5	96
"	"	"	4	10.0	28.0	86
May 21	14	1115	0	11.5	2.0	103
"	"	"	1	10.5	13.8	100
"	"	"	2	10.5	24.0	97
"	"	"	3	10.2	27.0	96
"	"	"	4	10.1	27.8	93
May 21	13	1200	0	12.0	27.3	98
"	"	"	1	10.2	28.5	100
"	"	"	2	10.7	28.3	88
"	"	"	3	10.5	28.3	93
"	"	"	4	10.1	28.5	94
"	"	"	5	10.3	28.8	87
May 21	11	1245	0	10.7	28.9	100
"	"	"	1	11.0	28.5	101
"	"	"	2	10.6	28.8	100
"	"	"	3	10.4	29.0	97
"	"	"	4	10.0	29.0	94
"	"	"	5	10.0	29.0	96
May 21	9	1345	0	11.5	28.0	101
"	"	"	1	11.0	27.5	102
"	"	"	2	11.0	28.0	102
"	"	"	3	11.0	28.0	102
"	"	"	4	10.9	28.0	102
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May 22	5	1030	0	11.5	28.1	98
"	"	"	1	11.0	28.5	97
"	"	"	2	11.0	28.8	93
"	"	"	3	10.8	29.0	89
"	"	"	4	10.5	29.1	82
"	"	"	5	10.2	29.5	79
May 22	4	1115	0	11.2	28.8	96
"	"	"	1	11.0	28.9	97
"	"	"	2	11.3	28.8	96
"	"	"	3	11.2	28.9	94
"	"	"	4	11.0	29.4	92
"	"	"	5	10.8	29.4	91

Date	Site No.	Time (PST)	Depth (m)	Temp. °C	Sal. ‰	Oxygen % sat.
May 22	3	1210	0	11.2	28.4	95
"	"	"	1	11.0	29.0	96
"	"	"	2	10.8	29.5	93
"	"	"	3	10.5	29.9	91
"	"	"	4	10.2	30.1	94
May 22	6	1300	0	11.3	28.9	101
"	"	"	1	11.1	29.0	98
"	"	"	2	11.0	29.1	101
May 22	2	1400	0	11.2	28.0	99
"	"	"	1	11.0	28.0	101
May 22	1	1500	0	11.2	26.0	109
"	"	"	1	11.2	27.9	104
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June 4	15	0915	0	12.1	4.0	103
"	"	"	1	11.8	15.0	105
"	"	"	2	10.2	28.1	92
"	"	"	3	10.0	29.0	89
"	"	"	4	10.0	29.0	87
"	"	"	5	10.0	29.1	84
June 4	14	0945	0	12.9	4.8	98
"	"	"	1	11.0	26.2	86
"	"	"	2	10.9	27.4	86
"	"	"	3	10.8	27.9	86
"	"	"	4	10.5	28.2	86
"	"	"	5	10.2	28.5	81
June 4	9	1210	0	9.0	29.0	90
"	"	"	1	9.3	30.0	87
"	"	"	2	9.8	30.0	85
"	"	"	3	9.8	29.7	84
"	"	"	4	9.9	29.8	84
June 4	10	1250	0	9.0	33.0	85
"	"	"	1	9.7	33.0	84
"	"	"	2	9.8	32.5	-
June 4	11	1350	0	12.0	28.9	92
"	"	"	1	11.6	29.4	91
"	"	"	2	10.9	29.9	89
"	"	"	3	10.5	30.0	88
"	"	"	4	10.5	30.0	86

Table 2 (cont'd)

Date	Site No.	Time (PST)	Depth (m)	Temp. °C	Sal. ‰	Oxygen % sat.
June 4	13	1430	0	11.0	31.1	92
"	"	"	1	11.8	31.5	88
"	"	"	2	12.0	31.0	82
"	"	"	3	12.0	29.7	84
"	"	"	4	12.2	30.7	92
June 5	1	1000	0	11.2	29.2	97
"	"	"	1	11.0	29.2	94
"	"	"	2	11.0	29.4	98
June 5	2	1035	0	11.9	29.0	99
"	"	"	1	11.6	29.0	100
"	"	"	2	11.5	29.0	107
June 5	6	1130	0	12.5	30.4	130
"	"	"	1	11.5	30.5	128
June 5	5	1220	0	12.0	29.4	99
"	"	"	1	11.5	30.0	101
"	"	"	2	10.8	30.0	95
"	"	"	3	10.5	30.2	91
June 5	4	1300	0	12.0	29.0	92
"	"	"	1	11.5	29.4	97
"	"	"	2	11.2	29.5	98
"	"	"	3	10.9	29.0	97
"	"	"	4	10.8	29.0	93
June 5	3	1400	0	13.2	29.4	100
"	"	"	1	12.5	30.0	94
"	"	"	2	12.0	30.0	98
"	"	"	3	11.8	30.1	96
"	"	"	4	11.2	30.0	99
June 17	13	1300	0	13.8	27.0	99
"	"	"	1	13.0	27.4	100
"	"	"	2	12.2	27.8	96
"	"	"	3	11.5	28.0	80
"	"	"	4	11.2	28.0	83
June 17	11	1400	0	13.8	26.9	101
"	"	"	1	13.0	27.4	100
"	"	"	2	12.8	28.0	98
"	"	"	3	11.4	28.2	95
"	"	"	4	11.0	28.2	90

Table 2 (cont'd)

Date	Site No.	Time (PST)	Depth (m)	Temp. ° C	Sal. ‰	Oxygen % sat.
June 18	1	1015	0	11.8	28.5	97
"	"	"	1	10.8	28.8	85
"	"	"	2	10.5	29.0	85
"	"	"	3	10.2	29.0	88
June 18	2	1115	0	12.4	28.2	93
"	"	"	1	12.0	28.9	97
"	"	"	2	12.0	28.5	97
"	"	"	3	11.8	29.2	107
June 18	6	1200	0	13.0	28.8	105
"	"	"	1	13.0	28.8	105
June 18	5	1245	0	14.0	28.9	98
"	"	"	1	14.0	28.8	101
"	"	"	2	13.8	28.2	100
"	"	"	3	12.2	29.0	86
"	"	"	4	12.2	29.0	105
June 18	4	1320	0	13.9	29.0	107
"	"	"	1	13.5	28.5	106
"	"	"	2	12.5	29.0	100
"	"	"	3	11.5	29.0	92
"	"	"	4	11.1	29.0	90
"	"	"	5	11.0	29.2	89
June 18	3	1415	0	15.0	30.5	100
"	"	"	1	12.5	31.2	102
"	"	"	2	12.2	31.2	102
"	"	"	3	11.9	31.2	100
"	"	"	4	11.2	31.5	98
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July 2	15	1030	0	14.8	5.0	101
"	"	"	1	12.2	26.8	89
"	"	"	2	12.0	28.2	91
"	"	"	3	12.9	28.6	94
"	"	"	4	11.8	29.0	88
July 2	14	1115	0	15.5	5.5	101
"	"	"	1	12.3	27.0	86
"	"	"	2	12.0	27.6	84
"	"	"	3	11.8	28.1	84
"	"	"	4	11.7	28.1	83
"	"	"	5	11.6	28.1	80



Table 2 (cont'd) 14

Date	Site No.	Time (PST)	Depth (m)	Temp. ° C	Sal. ‰	Oxygen % sat.
July 2	13	1230	0	14.4	31.0	93
"	"	"	1	14.2	31.8	93
"	"	"	2	13.0	32.0	83
"	"	"	3	12.2	32.4	79
"	"	"	4	12.2	33.0	77
July 2	11	1400	0	13.8	29.5	86
"	"	"	1	13.2	30.5	86
"	"	"	2	13.2	30.5	85
"	"	"	3	13.0	31.0	85
"	"	"	4	12.8	31.2	83
"	"	"	5	12.0	31.9	81
July 3	1	1045	0	13.0	28.5	84
"	"	"	1	12.8	28.6	86
"	"	"	2	10.0	30.2	66
July 3	2	1130	0	13.0	20.8	96
"	"	"	1	12.8	23.0	96
"	"	"	2	12.8	24.0	98
"	"	"	3	12.8	27.5	99
July 3	5	1250	0	14.8	29.5	90
"	"	"	1	13.5	30.0	86
"	"	"	2	12.5	30.8	71
"	"	"	3	12.0	31.5	84
"	"	"	4	12.0	31.5	88
July 3	4	1330	0	13.5	30.0	89
"	"	"	1	13.5	30.0	88
"	"	"	2	13.2	30.0	88
"	"	"	3	12.0	31.0	81
"	"	"	4	11.8	31.0	74
July 3	3	1415	0	14.2	29.0	89
"	"	"	1	14.0	29.2	89
"	"	"	2	13.2	29.8	78
"	"	"	3	12.2	30.0	75
"	"	"	4	11.8	30.8	71
July 3	6	1500	0	13.0	29.0	89
"	"	"	1	12.4	29.2	89
"	"	"	2	12.4	29.8	89

Table 2 (cont'd)

Date	Site No.	Time (PST)	Depth (m)	Temp. °C	Sal. ‰	Oxygen % sat.
July 16	15	1100	0	15.8	3.8	102
"	"	"	1	12.8	27.0	160
"	"	"	2	12.0	28.0	120
"	"	"	3	11.8	28.0	109
"	"	"	4	11.4	28.2	92
July 16	14	1135	0	16.5	6.2	108
"	"	"	1	12.0	29.8	117
"	"	"	2	11.5	30.0	103
"	"	"	3	11.2	30.6	109
"	"	"	4	11.0	30.8	88
July 16	7	1230	0	14.0	17.0	116
"	"	"	1	12.0	23.5	110
"	"	"	2	10.8	28.8	86
"	"	"	3	10.5	29.0	84
"	"	"	4	10.8	29.0	82
"	"	"	5	11.0	28.2	81
July 16	11	1350	0	13.1	28.8	126
"	"	"	1	12.8	29.2	125
"	"	"	2	12.4	29.0	123
"	"	"	3	11.0	28.8	119
"	"	"	4	10.8	30.0	98
July 16	13	1430	0	13.5	30.4	130
"	"	"	1	12.8	30.8	130
"	"	"	2	11.8	30.9	108
"	"	"	3	11.5	30.9	109
"	"	"	4	11.2	31.0	103
"	"	"	5	11.0	31.4	-
July 17	1	1020	0	10.4	30.2	83
"	"	"	1	10.2	30.2	82
"	"	"	2	10.0	31.0	80
"	"	"	3	10.0	31.0	79
"	"	"	4	10.0	31.0	76
July 17	2	1100	0	10.5	31.5	84
"	"	"	1	10.2	31.5	83
"	"	"	2	10.2	31.2	81
"	"	"	3	10.2	31.0	81
"	"	"	4	10.0	30.5	80

Table 2 (cont'd)

Date	Site No.	Time (PST)	Depth (m)	Temp. °C	Sal. ‰	Oxygen % sat.
July 17	5	1215	0	12.2	31.8	98
"	"	"	1	11.5	32.2	95
"	"	"	2	11.0	32.2	72
"	"	"	3	10.8	32.8	78
"	"	"	4	10.5	32.5	-
July 17	4	1345	0	12.8	29.5	130
"	"	"	1	12.0	29.9	128
"	"	"	2	11.5	29.5	119
"	"	"	3	11.2	29.8	113
"	"	"	4	11.0	29.8	101
July 17	3	1420	0	13.8	30.5	115
"	"	"	1	12.8	31.3	122
"	"	"	2	12.2	31.3	112
"	"	"	3	11.5	31.8	101
"	"	"	4	11.2	31.4	85
July 17	6	1500	0	11.2	31.8	90
"	"	"	1	11.0	31.8	89
"	"	"	2	10.8	32.0	90

Table 3. Summary of catches of juvenile salmonids (BS=beach seine, PS=purse seine, Cuth=cutthroat, Sth=steelhead).

Date	Site No.	Time (PST)	Set No.	Pink	Chum	Chinook		Coho		Cuth	Sth
						Unmark	Mark	Unmark	Mark		
May 2	6	0950	BS1	3080	432	0	0	0	0	0	0
"	"	1005	BS2	7	1	0	0	0	0	0	0
"	5	1030	BS1	0	0	0	0	0	0	0	0
"	"	1037	BS2	0	0	0	0	0	0	0	0
"	4	1107	BS1	3	4	0	0	0	0	0	0
"	"	1116	BS2	18	5	0	0	0	0	0	0
"	3	1134	BS1	0	0	0	0	0	0	0	0
"	"	1141	BS2	40	4	0	0	0	0	0	0
"	2	1205	BS1	164	42	0	0	0	0	0	0
"	"	1215	BS2	249	13	0	0	0	0	0	0
"	1	1242	BS1	0	0	0	0	0	0	0	0
"	"	1248	BS2	0	0	0	0	0	0	0	0
May 3	15	0912	PS	0	0	0	0	0	0	0	0
"	14	0950	PS	0	0	0	0	0	0	0	0
"	12	1045	PS	0	0	0	0	0	0	0	0
May 6	15	1137	PS	0	0	0	0	0	0	0	0
"	14	1204	PS	0	0	0	0	0	0	0	0
"	13	1306	PS	0	0	0	0	0	0	0	0
"	12	1330	PS	196	0	1554	98	0	0	0	0
"	11	1358	PS	430	0	10	0	0	0	0	0
May 7	16	1030	BS1	0	456	968	0	0	0	0	0
"	6	1100	BS1	177	141	0	0	0	0	0	0
"	"	1110	BS2	552	516	0	0	0	0	0	0
"	5	1135	BS1	50	0	0	0	0	0	0	0
"	"	1143	BS2	1	0	0	0	0	0	0	0
"	4	1205	BS1	1	1	0	0	0	0	0	0
"	"	1210	BS2	0	0	0	0	0	0	0	0
"	3	1225	BS1	0	0	4670	330	0	0	0	0
"	2	1300	BS1	1670	510	70	0	0	0	0	0
"	"	1310	BS2	5120	1000	940	20	0	0	0	0
May 13	15	1035	PS	0	0	0	0	0	0	0	0
"	14	1213	PS	0	0	0	0	0	0	0	0
"	13	1325	PS	0	0	0	0	0	0	0	0
"	11	1400	PS	0	0	0	0	0	0	0	0
May 13	8	1417	PS	0	0	186	15	0	0	0	0
May 14	18	0940	BS1	0	48	432	144	12	0	0	0
"	17	1005	BS1	0	0	240	30	150	0	6	0
"	19	1030	BS1	6	49	78	14	8	0	1	3

Table 3 (cont'd).

Date	Site No.	Time (PST)	Set No.	Pink	Chum	Chinook		Coho		Cuth	Sth
						Unmark	Mark	Unmark	Mark		
May 14	1	1100	BS1	1	1	107	6	4	0	0	0
"	"	1120	BS2	0	0	12	0	0	0	0	0
"	2	1203	BS1	712	200	0	0	0	0	0	0
"	"	1216	BS2	7518	1820	280	42	0	0	0	0
"	5	1300	BS1	0	1	131	9	1	0	0	0
"	"	1310	BS2	0	0	28	1	0	0	0	0
"	4	1350	BS1	1	0	47	2	0	0	0	0
"	"	1400	BS2	0	0	2	0	0	0	0	0
"	3	1418	BS1	0	4	360	32	0	0	0	0
"	"	1440	BS2	0	4	191	15	2	0	0	0
May 21	15	1011	PS	0	0	0	0	0	0	0	0
"	14	1045	PS	6	8	4	0	0	0	0	0
"	13	1145	PS	1	0	28	4	1	0	0	0
"	11	1225	PS	0	0	40	0	0	0	0	0
"	9	1325	PS	0	0	0	0	0	0	0	0
May 22	16	0930	BS1	0	110	693	0	0	0	0	0
"	5	1010	BS1	1	0	103	11	0	0	0	0
"	"	1020	BS2	0	0	0	0	0	0	0	0
"	4	1055	BS1	0	2	22	5	0	0	0	0
"	"	1105	BS2	0	4	46	5	0	0	0	0
"	3	1147	BS1	0	0	0	0	0	0	0	0
"	"	1200	BS2	0	0	0	0	0	0	0	0
"	6	1245	BS1	0	0	0	0	0	0	0	0
"	"	1250	BS2	0	0	0	0	0	0	0	0
"	2	1315	BS1	2160	540	0	0	0	0	0	0
"	"	1320	BS2	708	276	84	0	0	0	0	0
"	1	1416	BS1	0	0	12	1	2	0	0	0
"	"	1430	BS2	0	0	65	5	0	0	0	0
June 4	15	0858	PS	0	0	1	3	32	2	0	0
"	14	0932	PS	0	0	0	0	0	0	0	0
"	9	1140	PS	14	12	18	0	4	1	0	0
"	10	1226	PS	15	57	33	0	15	0	0	0
"	11	1300	PS	0	0	15	0	87	3	0	0
"	13	1409	PS	0	0	25	3	25	1	0	0
June 5	1	0930	BS1	0	20	58	13	10	3	0	0
"	"	0946	BS2	0	36	104	32	8	0	0	0
"	2	1015	BS1	0	0	6	1	0	0	0	0
"	"	1025	BS2	0	0	2	1	0	0	0	0
"	6	1046	BS1	0	0	0	0	0	0	0	0
"	"	1050	BS2	1	15	39	4	0	0	0	0
"	5	1145	BS1	0	1	4	1	0	0	0	0
"	"	1200	BS2	0	0	78	12	126	0	0	0
"	4	1240	BS1	0	11	2	0	18	0	0	0

Table 3 (cont'd).

Date	Site No.	Time (PST)	Set No.	Pink	Chum	Chinook		Coho		Cuth	Sth
						Unmark	Mark	Unmark	Mark		
June 5	4	1245	BS2	0	0	6	0	3	1	0	0
"	3	1310	BS1	2	22	74	6	16	0	0	0
"	"	1325	BS2	0	28	58	2	0	0	0	0
June 17	13	1220	PS	2	3	46	7	7	0	0	0
"	11	1320	PS	5	52	18	4	0	0	0	0
June 18	16	0900	BS1	0	0	85	0	0	0	0	0
"	17	0921	BS1	3	0	6	0	123	6	5	0
"	1	0959	BS1	96	0	408	120	96	0	0	0
"	"	1005	BS2	16	0	60	2	4	0	0	0
"	2	1034	BS1	14	88	15	0	0	0	0	0
"	"	1040	BS2	21	92	10	0	0	0	0	0
"	6	1141	BS1	1	1	4	0	0	0	0	0
"	"	1150	BS2	0	0	0	0	0	0	0	0
"	5	1213	BS1	22	30	36	4	6	0	0	0
"	"	1220	BS2	3	7	8	1	0	0	0	0
"	4	1300	BS1	0	144	5	0	9	0	0	0
"	"	1310	BS2	0	8	0	2	0	0	0	0
"	3	1339	BS1	1	67	21	1	0	0	0	0
"	"	1350	BS2	0	5	21	1	3	0	0	0
July 2	15	1000	PS	0	12	8	2	3	0	0	0
"	14	1040	PS	0	22	8	0	0	0	0	0
"	13	1206	PS	0	7	3	0	1	0	0	0
"	11	1340	PS	0	127	3	0	0	0	0	0
July 3	16	0910	BS1	0	0	16	0	0	0	0	0
"	17	0945	BS1	0	0	15	0	100	10	10	0
"	1	1015	BS1	0	62	4	1	1	0	0	0
"	"	1025	BS2	0	293	23	5	0	0	0	0
"	2	1105	BS1	0	0	0	0	0	0	0	0
"	"	1115	BS2	0	2	2	0	0	0	0	0
"	5	1225	BS1	0	3	3	3	3	0	0	0
"	"	1235	BS2	0	0	0	0	0	0	0	0
"	4	1310	BS1	0	0	0	0	0	0	0	0
"	"	1320	BS2	0	0	0	0	0	0	0	0
"	3	1350	BS1	0	95	16	1	2	0	0	0
"	"	1400	BS2	0	2	0	0	0	0	0	0
"	6	1425	BS1	0	7	1	0	0	0	0	0
"	"	1440	BS2	0	0	0	0	0	0	0	0
July 16	15	1040	PS	0	3	4	0	0	0	1	0
"	14	1115	PS	0	0	0	0	0	0	0	0
"	7	1215	PS	0	203	5	0	0	0	0	0
"	11	1325	PS	0	28	7	0	0	0	0	0
"	13	1410	PS	0	20	2	0	0	0	0	0



Table 3 (cont'd).

Date	Site No.	Time (PST)	Set No.	Pink	Chum	Chinook		Coho		Cuth	Sth
						Unmark	Mark	Unmark	Mark		
July 17	1	0940	BS1	0	3	9	1	0	0	0	0
"	"	0950	BS2	0	15	21	3	1	0	0	0
"	2	1030	BS1	0	62	41	3	1	0	0	0
"	"	1043	BS2	0	2	21	1	0	0	0	0
"	5	1140	BS1	0	2	5	0	0	0	0	0
"	"	1150	BS2	0	5	4	0	1	0	0	0
"	4	1321	BS1	0	0	3	0	0	0	0	0
"	"	1330	BS2	0	2	1	0	0	0	0	0
"	3	1355	BS1	0	0	0	0	0	0	0	0
"	"	1400	BS2	0	1	4	0	0	0	0	0
"	6	1430	BS1	0	0	1	1	0	0	0	0
"	"	1440	BS2	0	0	0	0	1	0	0	0

Table 4. Lengths, weights and scale samples collected for juvenile chinook captured (BS=beach seine, PS= purse seine, MK= marked hatchery fish).

Date	Site No.	Time (PST)	Set	Fish No.	Length (mm)	Weight (g)	Scale Book	Scale Square
May 14	1	1100	BS	1	93	8.7	5951	1 - 2
"	"	"	"	2	98	10.8	"	3 - 4
"	"	"	"	3	92	9.0	"	5 - 6 MK
"	"	"	"	4	91	7.2	"	7 - 8
"	"	"	"	5	93	8.1	"	9-10
"	"	"	"	6	97	8.9	"	11-12 MK
"	"	"	"	7	90	8.1	"	13-14
"	"	"	"	8	101	9.8	"	15-16
"	"	"	"	9	92	8.1	"	17-18
"	"	"	"	10	90	7.5	"	19-20
"	"	"	"	11	94	8.7	"	21-22
"	"	"	"	12	95	8.7	"	23-24
"	"	"	"	13	75	4.3	"	25-26
"	"	"	"	14	98	10.7	"	27-28
"	"	"	"	15	96	9.6	"	29-30
May 14	2	1216	BS	1	97	9.8	5951	31-32
"	"	"	"	2	96	10.2	"	33-34 MK
"	"	"	"	3	99	9.8	"	35-36
"	"	"	"	4	95	8.5	"	37-38
"	"	"	"	5	99	7.9	"	39-40 MK
"	"	"	"	6	98	10.0	"	41-42
"	"	"	"	7	94	9.1	"	43-44
"	"	"	"	8	100	10.1	"	45-46
"	"	"	"	9	92	8.2	"	47-48
"	"	"	"	10	97	9.6	"	49-50
May 14	5	1300	BS	1	97	9.1	5952	1- 2
"	"	"	"	2	95	8.9	"	3- 4
"	"	"	"	3	88	6.4	"	5- 6
"	"	"	"	4	88	6.6	"	7- 8 MK
"	"	"	"	5	100	10.2	"	9-10
"	"	"	"	6	70	3.5	"	11-12
"	"	"	"	7	92	7.3	"	13-14
"	"	"	"	8	95	8.7	"	15-16
"	"	"	"	9	105	12.4	"	17-18
"	"	"	"	10	92	7.8	"	19-20 MK

Table 4 (cont'd).

Date	Site No.	Time (PST)	Set	Fish No.	Length (mm)	Weight (g)	Scale Book	Scale Square
May 14	4	1350	BS	1	94	8.7	5952	21-22
"	"	"	"	2	89	6.9	"	23-24
"	"	"	"	3	95	8.6	"	25-26
"	"	"	"	4	97	8.0	"	27-28
"	"	"	"	5	91	7.5	"	29-30
"	"	"	"	6	96	8.6	"	31-32
"	"	"	"	7	93	8.1	"	33-34 MK
"	"	"	"	8	92	7.8	"	35-36
"	"	"	"	9	92	7.6	"	37-38
"	"	"	"	10	75	3.8	"	39-40
May 14	3	1418	BS	1	91	7.8	5953	1- 2
"	"	"	"	2	92	8.6	"	3- 4
"	"	"	"	3	92	8.1	"	5- 6
"	"	"	"	4	101	10.6	"	7- 8 MK
"	"	"	"	5	89	6.9	"	9-10
"	"	"	"	6	92	8.0	"	11-12
"	"	"	"	7	90	7.3	"	13-14
"	"	"	"	8	94	8.8	"	15-16 MK
"	"	"	"	9	90	6.7	"	17-18
"	"	"	"	10	92	7.7	"	19-20
May 21	13	1145	PS	1	102	10.5	-	-
"	"	"	"	2	102	11.0	-	-
"	"	"	"	3	101	10.6	-	-
"	"	"	"	4	103	11.5	-	-
"	"	"	"	5	97	9.7	-	-
"	"	"	"	6	98	9.5	-	-
"	"	"	"	7	103	11.5	-	-
"	"	"	"	8	98	10.5	-	-
"	"	"	"	9	103	11.1	-	-
"	"	"	"	10	103	11.1	-	-
May 21	11	1225	PS	1	99	8.9	-	-
"	"	"	"	2	98	9.2	-	-
"	"	"	"	3	104	10.9	-	-
"	"	"	"	4	88	6.7	-	-
"	"	"	"	5	101	12.8	-	-

Table 4 (cont'd).

Date	Site No.	Time (PST)	Set	Fish No.	Length (mm)	Weight (g)	Scale Book	Scale Square
May 21	11	1225	PS	6	109	12.7	-	-
"	"	"	"	7	106	11.6	-	-
"	"	"	"	8	102	10.6	-	-
"	"	"	"	9	94	8.2	-	-
"	"	"	"	10	98	9.7	-	-
May 22	5	1010	BS	1	96	8.8	5954	1- 2
"	"	"	"	2	97	8.8	"	3- 4
"	"	"	"	3	98	8.7	"	5- 6
"	"	"	"	4	93	7.8	"	7- 8 MK
"	"	"	"	5	104	11.9	"	9-10
"	"	"	"	6	100	10.3	"	11-12
"	"	"	"	7	102	10.8	"	13-14
"	"	"	"	8	100	10.6	"	15-16
"	"	"	"	9	87	6.6	"	17-18
"	"	"	"	10	98	9.9	"	19-20
May 22	4	1055	BS	1	97	8.9	5954	21-22
"	"	"	"	2	90	7.4	"	23-24 MK
"	"	"	"	3	96	9.2	"	25-26
"	"	"	"	4	93	7.5	"	27-28
"	"	"	"	5	106	12.7	"	29-30
"	"	"	"	6	92	7.8	"	31-32
"	"	"	"	7	99	10.1	"	33-34
"	"	"	"	8	97	9.2	"	35-36
"	"	"	"	9	103	10.8	"	37-38
"	"	"	"	10	89	7.9	"	39-40
May 22	2	1315	BS	1	100	10.8	5956	1- 2
"	"	"	"	2	104	12.1	"	3- 4
"	"	"	"	3	106	12.5	"	5- 6
"	"	"	"	4	109	13.1	"	7- 8
"	"	"	"	5	92	8.5	"	9-10
"	"	"	"	6	105	11.6	"	11-12
"	"	"	"	7	112	14.1	"	13-14 MK
"	"	"	"	8	98	10.4	"	15-16
"	"	"	"	9	105	12.0	"	17-18
"	"	"	"	10	100	9.6	"	19-20
"	"	"	"	11	100	9.9	"	21-22

Table 4 (cont'd).

Date	Site No.	Time (PST)	Set	Fish No.	Length (mm)	Weight (g)	Scale Book	Scale Square
May 22	2	1315	BS	12	103	10.6	5956	23-24
"	"	"	"	13	94	9.2	"	25-26
"	"	"	"	14	102	11.3	"	27-28
"	"	"	"	15	100	10.8	"	29-30
"	"	"	"	16	75	4.8	"	31-32
May 22	1	1416	BS	1	78	4.4	5957	1- 2
"	"	"	"	2	108	13.1	"	3- 4
"	"	"	"	3	102	12.1	"	5- 6 MK
"	"	"	"	4	114	16.4	"	7- 8
"	"	"	"	5	104	12.2	"	9-10
"	"	"	"	6	103	12.1	"	11-12
"	"	"	"	7	93	7.9	"	13-14
"	"	"	"	8	80	4.9	"	15-16
"	"	"	"	9	97	9.6	"	17-18
"	"	"	"	10	101	10.5	"	19-20
"	"	"	"	11	106	12.3	"	21-22 MK
"	"	"	"	12	93	9.4	"	23-24
"	"	"	"	13	101	10.7	"	25-26
"	"	"	"	14	86	6.5	"	27-28
"	"	"	"	15	93	7.8	"	29-30
June 4	9	1140	PS	1	98	9.5	5961	1- 2
"	"	"	"	2	111	13.9	"	3- 4
"	"	"	"	3	110	13.3	"	5- 6
"	"	"	"	4	85	6.2	"	7- 8
"	"	"	"	5	84	7.6	"	9-10
"	"	"	"	6	105	11.6	"	11-12
"	"	"	"	7	106	12.2	"	13-14
"	"	"	"	8	118	17.9	"	15-16
"	"	"	"	9	92	7.3	"	17-18
"	"	"	"	10	120	17.6	"	19-20
"	"	"	"	11	106	12.1	"	21-22
"	"	"	"	12	100	9.8	"	23-24
"	"	"	"	13	94	7.6	"	25-26
"	"	"	"	14	110	13.2	"	27-28
"	"	"	"	15	102	13.4	"	29-30
"	"	"	"	16	98	9.9	"	31-32

Table 4 (cont'd).

Date	Site No.	Time (PST)	Set	Fish No.	Length (mm)	Weight (g)	Scale Book	Scale Square
June 4	9	1140	PS	17	92	7.6	5961	33-34
June 4	10	1226	PS	1	102	10.6	5962	1- 2
"	"	"	"	2	110	13.2	"	3- 4
"	"	"	"	3	103	11.7	"	5- 6
"	"	"	"	4	93	7.9	"	7- 8
"	"	"	"	5	113	16.2	"	9-10
"	"	"	"	6	108	13.7	"	11-12
"	"	"	"	7	98	9.9	"	13-14
"	"	"	"	8	102	10.6	"	15-16
"	"	"	"	9	111	14.4	"	17-18
"	"	"	"	10	104	11.3	"	19-20
"	"	"	"	11	100	9.8	"	21-22
June 4	11	1300	PS	1	113	14.2	5964	1- 2
"	"	"	"	2	104	10.3	"	3- 4
"	"	"	"	3	98	8.9	"	5- 6
"	"	"	"	4	110	13.1	"	7- 8
"	"	"	"	5	109	13.4	"	9-10
June 4	13	1409	PS	1	108	12.7	5963	1- 2
"	"	"	"	2	102	10.2	"	3- 4
"	"	"	"	3	103	11.0	"	5- 6
"	"	"	"	4	112	14.1	"	7- 8
"	"	"	"	5	108	12.2	"	9-10
"	"	"	"	6	110	12.8	"	11-12
"	"	"	"	7	107	12.7	"	13-14
"	"	"	"	8	102	10.5	"	15-16
"	"	"	"	9	108	12.0	"	17-18 MK
"	"	"	"	10	105	10.8	"	19-20
June 5	1	0930	BS	1	96	8.8	5965	1- 2
"	"	"	"	2	94	9.0	"	3- 4
"	"	"	"	3	102	10.8	"	5- 6
"	"	"	"	4	109	13.1	"	7- 8 MK
"	"	"	"	5	90	6.6	"	9-10
"	"	"	"	6	110	14.1	"	11-12
"	"	"	"	7	78	4.7	"	13-14
"	"	"	"	8	106	12.7	"	15-16



Table 4 (cont'd).

Date	Site No.	Time (PST)	Set	Fish No.	Length (mm)	Weight (g)	Scale Book	Scale Square
June 5	1	0930	BS	9	94	8.2	5965	17-18
"	"	"	"	10	106	12.5	"	19-20
June 5	2	1015	BS	1	93	8.5	5966	1- 2
"	"	"	"	2	110	15.9	"	3- 4
"	"	"	"	3	103	10.5	"	5- 6
"	"	"	"	4	93	8.7	"	7- 8 MK
"	"	"	"	5	100	10.8	"	9-10
"	"	"	"	6	96	8.6	"	11-12 MK
"	"	"	"	7	94	8.7	"	13-14
"	"	"	"	8	110	14.6	"	15-16
"	"	"	"	9	89	6.6	"	17-18
"	"	"	"	10	97	10.3	"	19-20
June 5	6	1050	BS	1	120	19.3	5967	1- 2
"	"	"	"	2	106	13.1	"	3- 4
"	"	"	"	3	83	5.2	"	5- 6
"	"	"	"	4	110	15.0	"	7- 8
"	"	"	"	5	109	14.5	"	9-10
"	"	"	"	6	95	9.9	"	11-12
"	"	"	"	7	112	16.1	"	13-14 MK
"	"	"	"	8	107	12.9	"	15-16
"	"	"	"	9	77	5.1	"	17-18
"	"	"	"	10	108	14.7	"	19-20
June 5	5	1145	BS	1	72	4.0	5968	1- 2
"	"	"	"	2	70	3.3	"	3- 4
"	"	"	"	3	90	6.8	"	5- 6
"	"	"	"	4	96	8.9	"	7- 8
"	"	"	"	5	91	7.2	"	9-10 MK
"	"	"	"	6	103	11.3	"	11-12
"	"	"	"	7	98	9.2	"	13-14
"	"	"	"	8	100	10.0	"	15-16
"	"	"	"	9	94	7.7	"	17-18
"	"	"	"	10	95	8.8	"	19-20
"	"	"	"	11	84	5.6	"	21-22 MK
June 5	4	1240	BS	1	103	11.8	5968	23-24
"	"	"	"	2	105	11.8	"	25-26

Table 4 (cont'd).

Date	Site No.	Time (PST)	Set	Fish No.	Length (mm)	Weight (g)	Scale Book	Scale Square
June 5	4	1240	BS	3	118	19.4	5968	27-28
"	"	"	"	4	105	12.8	"	29-30
"	"	"	"	5	96	8.3	"	31-32
"	"	"	"	6	94	9.2	"	33-34
"	"	"	"	7	116	15.8	"	35-36
"	"	"	"	8	103	10.1	"	37-38
June 5	3	1310	BS	1	59	1.9	5966	21-22
"	"	"	"	2	113	14.1	"	23-24
"	"	"	"	3	65	2.7	"	25-26
"	"	"	"	4	64	2.8	"	27-28
"	"	"	"	5	96	9.0	"	29-30
"	"	"	"	6	75	4.0	"	31-32
"	"	"	"	7	88	6.8	"	33-34 MK
"	"	"	"	8	56	1.9	"	35-36
"	"	"	"	9	82	5.8	"	37-38
"	"	"	"	10	107	13.0	"	39-40
"	"	"	"	11	60	1.7	-	-
"	"	"	"	12	65	2.0	-	-
"	"	"	"	13	52	1.0	-	-
"	"	"	"	14	47	0.8	-	-
June 17	13	1220	PS	1	127	23.9	5975	1- 2 MK
"	"	"	"	2	123	20.3	"	3- 4
"	"	"	"	3	129	26.0	"	5- 6
"	"	"	"	4	120	18.8	"	7- 8 MK
"	"	"	"	5	133	30.6	"	9-10
"	"	"	"	6	127	23.6	"	11-12
"	"	"	"	7	130	27.2	"	13-14
"	"	"	"	8	125	24.3	"	15-16
"	"	"	"	9	118	18.8	"	17-18
"	"	"	"	10	116	17.9	"	19-20
June 17	11	1320	PS	1	112	15.1	5969	1- 2
"	"	"	"	2	131	27.6	"	3- 4
"	"	"	"	3	102	10.7	"	5- 6
"	"	"	"	4	119	20.3	"	7- 8
"	"	"	"	5	121	21.1	"	9-10

Table 4 (cont'd).

Date	Site No.	Time (PST)	Set	Fish No.	Length (mm)	Weight (g)	Scale Book	Scale Square
June 17	11	1320	PS	6	110	13.3	5969	11-12
"	"	"	"	7	124	20.8	"	13-14
"	"	"	"	8	101	9.7	"	15-16 MK
"	"	"	"	9	106	12.3	"	17-18
"	"	"	"	10	120	18.6	"	19-20 MK
"	"	"	"	11	110	14.4	"	21-22
June 18	16	0900	BS	1	53	-	-	-
"	"	"	"	2	52	-	-	-
"	"	"	"	3	60	-	-	-
"	"	"	"	4	48	-	-	-
"	"	"	"	5	57	-	-	-
"	"	"	"	6	48	-	-	-
"	"	"	"	7	54	-	-	-
"	"	"	"	8	55	-	-	-
"	"	"	"	9	58	-	-	-
"	"	"	"	10	52	-	-	-
"	"	"	"	11	54	-	-	-
"	"	"	"	12	49	-	-	-
"	"	"	"	13	64	-	-	-
"	"	"	"	14	56	-	-	-
June 18	1	0959	BS	1	108	13.4	5974	1- 2
"	"	"	"	2	117	17.1	"	3- 4
"	"	"	"	3	108	12.0	"	5- 6
"	"	"	"	4	120	18.8	"	7- 8
"	"	"	"	5	75	3.2	"	9-10 MK
"	"	"	"	6	110	13.0	"	11-12
"	"	"	"	7	125	21.0	"	13-14
"	"	"	"	8	79	5.5	"	15-16
"	"	"	"	9	125	22.9	"	17-18
"	"	"	"	10	79	4.7	"	19-20
"	"	"	"	11	100	-	"	21-22 MK
"	"	"	"	12	75	4.3	"	23-24
"	"	"	"	13	108	12.0	"	25-26
"	"	"	"	14	105	10.6	"	27-28
"	"	"	"	15	112	16.1	"	29-30 MK

Table 4 (cont'd).

Date	Site No.	Time (PST)	Set	Fish No.	Length (mm)	Weight (g)	Scale Book	Scale Square
June 18	2	1005	BS	1	91	7.6	5973	1- 2
"	"	"	"	2	75	3.7	"	3- 4
"	"	"	"	3	97	7.5	"	5- 6
"	"	"	"	4	78	5.2	"	7- 8
"	"	"	"	5	63	2.0	"	9-10
"	"	"	"	6	78	4.4	"	11-12
"	"	"	"	7	73	4.1	"	13-14
"	"	"	"	8	75	4.1	"	15-16
"	"	"	"	9	78	4.2	"	17-18
"	"	"	"	10	70	3.0	"	19-20
June 18	6	1141	BS	1	88	7.1	5970	1- 2
"	"	"	"	2	88	7.9	"	3- 4
"	"	"	"	3	110	12.3	"	5- 6
"	"	"	"	4	73	4.0	"	7- 8
June 18	5	1213	BS	1	102	12.0	5970	9- 10
"	"	"	"	2	110	15.0	"	11-12
"	"	"	"	3	102	11.3	"	13-14
"	"	"	"	4	120	20.5	"	15-16
"	"	"	"	5	120	20.3	"	17-18 MK
"	"	"	"	6	77	4.1	"	19-20
"	"	"	"	7	131	25.9	"	21-22
"	"	"	"	8	96	9.8	"	23-24
"	"	"	"	9	117	18.9	"	25-26
"	"	"	"	10	118	20.8	"	27-28
June 18	4	1300	BS	1	112	16.8	5971	1- 2
"	"	"	"	2	127	22.9	"	3- 4 MK
"	"	"	"	3	108	12.4	"	5- 6
"	"	"	"	4	109	12.7	"	7- 8 MK
"	"	"	"	5	100	9.2	"	9-10
"	"	"	"	6	110	14.0	"	11-12
"	"	"	"	7	111	13.4	"	13-14
June 18	3	1339	BS	1	112	17.0	5971	15-16
"	"	"	"	2	109	14.1	"	17-18
"	"	"	"	3	83	4.9	"	19-20
"	"	"	"	4	110	14.3	"	21-22

Table 4 (cont'd).

Date	Site No.	Time (PST)	Set	Fish No.	Length (mm)	Weight (g)	Scale Book	Scale Square
June 18	3	1339	BS	5	103	12.1	5971	23-24
"	"	"	"	6	109	14.4	"	25-26
"	"	"	"	7	103	12.6	"	27-28
"	"	"	"	8	110	12.2	"	29-30
"	"	"	"	9	107	13.1	"	31-32
"	"	"	"	10	108	11.2	"	33-34
July 2	15	1000	PS	1	85	-	-	-
"	"	"	"	2	84	-	-	-
"	"	"	"	3	84	-	-	- MK
"	"	"	"	4	90	-	-	-
"	"	"	"	5	85	-	-	-
"	"	"	"	6	80	-	-	-
"	"	"	"	7	85	-	-	-
"	"	"	"	8	78	-	-	-
"	"	"	"	9	104	-	-	- MK
"	"	"	"	10	76	-	-	-
July 2	13	1206	PS	1	75	4.3	5976	1- 2
"	"	"	"	2	124	21.6	"	3- 4
"	"	"	"	3	131	24.8	"	5- 6
July 2	11	1340	PS	1	136	27.6	5976	9-10
"	"	"	"	2	123	21.2	"	11-12
"	"	"	"	3	108	13.4	"	13-14
July 3	16	0910	BS	1	56	-	-	-
"	"	"	"	2	55	-	-	-
"	"	"	"	3	62	-	-	-
"	"	"	"	4	75	-	-	-
"	"	"	"	5	62	-	-	-
"	"	"	"	6	59	-	-	-
"	"	"	"	7	52	-	-	-
"	"	"	"	8	58	-	-	-
"	"	"	"	9	58	-	-	-
"	"	"	"	10	63	-	-	-
"	"	"	"	11	68	-	-	-
"	"	"	"	12	56	-	-	-

Table 4 (cont'd).

Date	Site No.	Time (PST)	Set	Fish No.	Length (mm)	Weight (g)	Scale Book	Scale Square
July 3	16	0910	BS	13	62	-	-	-
"	"	"	"	14	62	-	-	-
"	"	"	"	15	53	-	-	-
"	"	"	"	16	62	-	-	-
July 3	1	1015	BS	1	82	6.0	5972	1- 2 MK
"	"	"	"	2	85	6.4	"	3- 4
"	"	"	"	3	85	6.4	"	5- 6
"	"	"	"	4	101	10.5	"	7- 8
"	"	"	"	5	93	6.7	"	9-10
"	"	"	"	6	162	53.1	"	11-12
"	"	"	"	7	98	10.1	"	13-14
"	"	"	"	8	126	25.9	"	15-16
"	"	"	"	9	104	11.8	"	17-18
"	"	"	"	10	132	25.5	"	19-20 MK
"	"	"	"	11	137	29.8	"	21-22
July 3	2	1115	BS	1	84	6.2	5972	23-24
"	"	"	"	2	80	5.3	"	25-26
July 3	5	1225	BS	1	109	14.5	5972	27-28
"	"	"	"	2	109	15.1	"	29-30
"	"	"	"	3	88	8.1	"	31-32
"	"	"	"	4	80	5.1	"	33-34
"	"	"	"	5	78	4.7	"	35-36
"	"	"	"	6	81	5.8	"	37-38
July 3	3	1350	BS	1	121	19.6	5977	1- 2
"	"	"	"	2	120	18.1	"	3- 4
"	"	"	"	3	119	21.1	"	5- 6
"	"	"	"	4	122	22.2	"	7- 8
"	"	"	"	5	86	6.2	"	9-10
"	"	"	"	6	72	4.2	"	11-12
"	"	"	"	7	130	24.6	"	13-14
"	"	"	"	8	129	22.9	"	15-16
"	"	"	"	9	119	18.0	"	17-18
"	"	"	"	10	117	17.9	"	19-20 MK
"	"	"	"	11	109	14.5	"	21-22
"	"	"	"	12	85	6.3	"	23-24

Table 4 (cont'd).

Date	Site No.	Time (PST)	Set	Fish No.	Length (mm)	Weight (g)	Scale Book	Scale Square
July 16	15	1040	PS	1	78	-	-	-
"	"	"	"	2	74	-	-	-
"	"	"	"	3	84	-	-	-
"	"	"	"	4	75	-	-	-
July 16	7	1215	PS	1	132	28.4	5982	1- 2
July 16	11	1325	PS	1	107	13.6	5982	5- 6
"	"	"	"	2	124	20.5	"	7- 8
"	"	"	"	3	120	17.8	"	9-10
"	"	"	"	4	111	16.9	"	11-12
"	"	"	"	5	142	33.2	"	13-14
"	"	"	"	6	147	38.5	"	15-16
July 16	13	1410	PS	1	120	20.7	5982	17-18
"	"	"	"	2	116	19.1	"	19-20
July 17	1	0940	BS	1	75	4.4	5981	1- 2
"	"	"	"	2	84	6.5	"	3- 4
"	"	"	"	3	97	9.2	"	5- 6 MK
"	"	"	"	4	74	4.4	"	7- 8
"	"	"	"	5	104	13.0	"	9-10
"	"	"	"	6	93	8.8	"	11-12
"	"	"	"	7	73	4.3	"	13-14
"	"	"	"	8	88	9.1	"	15-16
"	"	"	"	9	77	4.8	"	17-18
"	"	"	"	10	94	9.1	"	19-20
"	"	"	"	11	89	7.2	"	21-22
"	"	"	"	12	99	9.5	"	23-24 MK
"	"	"	"	13	146	38.3	"	25-26
"	"	"	"	14	161	53.2	"	27-28
"	"	"	"	15	133	26.7	"	29-30 MK
"	"	"	"	16	81	5.3	"	31-32
"	"	"	"	17	137	33.3	"	33-34
"	"	"	"	18	88	6.6	"	35-36
"	"	"	"	19	123	18.9	"	37-38
"	"	"	"	20	126	18.7	"	39-40
"	"	"	"	21	106	12.0	"	41-42

Table 4 (cont'd).

Date	Site No.	Time (PST)	Set	Fish No.	Length (mm)	Weight (g)	Scale Book	Scale Square
July 17	2	1030	BS	1	91	7.8	5978	1- 2
"	"	"	"	2	78	4.7	"	3- 4
"	"	"	"	3	78	-	"	5- 6
"	"	"	"	4	93	8.2	"	7- 8
"	"	"	"	5	90	7.6	"	9-10
"	"	"	"	6	93	8.2	"	11-12
"	"	"	"	7	78	4.6	"	13-14
"	"	"	"	8	87	7.0	"	15-16
"	"	"	"	9	97	9.1	"	17-18
"	"	"	"	10	103	12.7	"	19-20
"	"	"	"	11	86	6.2	"	21-22 MK
"	"	"	"	12	98	10.1	"	23-24
"	"	"	"	13	78	5.2	"	25-26 MK
"	"	"	"	14	81	5.6	"	27-28
"	"	"	"	15	67	3.5	"	29-30 MK
"	"	"	"	16	112	14.4	"	31-32 MK
"	"	"	"	17	110	15.9	"	33-34
"	"	"	"	18	134	25.1	"	35-36
July 17	5	1140	BS	1	70	3.7	5979	1- 2
"	"	"	"	2	89	7.9	"	3- 4
"	"	"	"	3	83	5.7	"	5- 6
"	"	"	"	4	60	2.0	"	7- 8
"	"	"	"	5	71	3.7	"	9-10
"	"	"	"	6	76	4.3	"	11-12
"	"	"	"	7	72	3.8	"	13-14
"	"	"	"	8	118	19.6	"	15-16
July 17	4	1321	BS	1	94	7.9	5979	17-18
"	"	"	"	2	128	23.5	"	19-20
"	"	"	"	3	136	25.5	"	21-22
"	"	"	"	4	143	32.4	"	23-24
July 17	3	1355	BS	1	120	20.0	5979	25-26
"	"	"	"	2	129	25.2	"	27-28
"	"	"	"	3	93	9.4	"	29-30
"	"	"	"	4	105	11.4	"	31-32
July 17	6	1430	BS	1	95	8.6	5979	35-36
"	"	"	"	2	90	8.4	"	37-38



Table 5. Scale reading data for juvenile chinook captured (99=unable to age).

Date	Site No.	Fish No.	Age	No. circuli	Comments
May 14	1	1	00	13	
"	"	2	00	14	
"	"	3	00	13	
"	"	4	00	12	Prominent check (9 circuli)
"	"	5	00	11	
"	"	6	00	14	
"	"	7	00	13	
"	"	8	00	14	
"	"	9	00	12	
"	"	10	00	12	
"	"	11	00	14	Prominent check (12 circuli)
"	"	12	00	12	
"	"	13	00	11	
"	"	14	00	13	
"	"	15	00	12	
May 14	2	1	-	-	
"	"	2	00	11	
"	"	3	00	14	Prominent check (12 circuli)
"	"	4	00	12	
"	"	5	00	13	Prominent check (8 circuli)
"	"	6	00	11	Prominent check (8 circuli)
"	"	7	00	13	Prominent check (9 circuli)
"	"	8	00	12	
"	"	9	00	14	
"	"	10	00	10	
May 14	5	1	00	13	Prominent check (9 circuli)
"	"	2	00	11	Prominent check (7 circuli)
"	"	3	00	13	
"	"	4	00	10	
"	"	5	00	11	
"	"	6	00	9	Prominent check (8 circuli)
"	"	7	00	11	Prominent check (7 circuli)
"	"	8	00	9	
"	"	9	00	13	Prominent check (11 circuli)
"	"	10	00	12	Prominent check (8 circuli)
May 14	4	1	00	11	Prominent check (9 circuli)
"	"	2	00	11	Prominent check (8 circuli)

Date	Site No.	Fish No.	Age	No. circuli	Comments
May 14	4	3	00	14	Prominent check (11 circuli)
"	"	4	00	13	Prominent check (11 circuli)
"	"	5	00	11	Prominent check (9 circuli)
"	"	6	00	12	Prominent check (10 circuli)
"	"	7	00	13	Prominent check (9 circuli)
"	"	8	00	11	
"	"	9	00	12	Prominent check (10 circuli)
"	"	10	00	10	Prominent check (7 circuli)
May 14	3	1	00	12	Prominent check (7 circuli)
"	"	2	-	-	
"	"	3	00	11	Prominent check (8 circuli)
"	"	4	00	14	Prominent check (11 circuli)
"	"	5	00	13	Prominent check (8 circuli)
"	"	6	00	12	Prominent check (9 circuli)
"	"	7	00	12	
"	"	8	-	-	
"	"	9	-	-	
"	"	10	-	-	
May 22	5	1	00	13	
"	"	2	00	14	
"	"	3	00	14	
"	"	4	00	11	
"	"	5	00	13	
"	"	6	00	15	Prominent check (10 circuli)
"	"	7	00	12	
"	"	8	00	13	
"	"	9	-	-	
"	"	10	-	-	
May 22	4	1	00	13	Prominent check (10 circuli)
"	"	2	00	11	Prominent check (7 circuli)
"	"	3	00	13	Prominent check (10 circuli)
"	"	4	00	13	
"	"	5	00	15	
"	"	6	-	-	
"	"	7	00	13	
"	"	8	00	14	

Date	Site No.	Fish No.	Age	No. circuli	Comments
May 22	4	9	00	13	
"	"	10	00	13	Prominent check (9 circuli)
May 22	2	1	10	11	Tight freshwater growth
"	"	2	00	16	Prominent check (16 circuli)
"	"	3	00	16	
"	"	4	00	14	Prominent check (10 circuli)
"	"	5	00	14	
"	"	6	00	15	
"	"	7	00	14	
"	"	8	00	15	
"	"	9	00	15	Prominent check (10 circuli)
"	"	10	00	15	Prominent check (10 circuli)
"	"	11	00	13	
"	"	12	00	13	
"	"	13	00	12	
"	"	14	00	14	
"	"	15	00	13	Prominent check (9 circuli)
"	"	16	00	14	
May 22	1	1	99*	14	Prominent check (11 circuli)
"	"	2	00	15	Prominent check (10 circuli)
"	"	3	00	13	
"	"	4	99	-	
"	"	5	00	12	
"	"	6	00	13	
"	"	7	00	12	
"	"	8	00	14	Prominent check (12 circuli)
"	"	9	00	12	
"	"	10	00	14	
"	"	11	00	13	
"	"	12	00	13	
"	"	13	99	-	
"	"	14	00	12	
"	"	15	00	14	
June 4	9	1	00	16	
"	"	2	00	16	
"	"	3	00	18	

Table 5 (cont'd).

Date	Site No.	Fish No.	Age	No. circuli	Comments
June 4	9	4	00	13	Prominent check (10 circuli)
"	"	5	00	18	Prominent check (10 circuli)
"	"	6	00	15	
"	"	7	00	14	
"	"	8	00	18	
"	"	9	00	13	Prominent check (10 circuli)
"	"	10	00	18	Prominent check (11 circuli)
"	"	11	00	17	
"	"	12	99	-	
"	"	13	00	16	
"	"	14	00	16	
"	"	15	99	-	
"	"	16	00	12	
"	"	17	00	13	
June 4	10	1	00	13	
"	"	2	00	14	
"	"	3	00	13	
"	"	4	00	14	
"	"	5	00	14	
"	"	6	00	12	
"	"	7	00	14	
"	"	8	00	16	Prominent check (14 circuli)
"	"	9	00	16	
"	"	10	00	17	
"	"	11	00	15	
June 4	13	1	00	16	
"	"	2	00	14	
"	"	3	00	12	
"	"	4	00	13	
"	"	5	00	15	
"	"	6	00	15	
"	"	7	00	15	
"	"	8	00	14	
"	"	9	00	16	
"	"	10	00	13	Prominent check (14 circuli)
June 4	11	1	00	15	
"	"	2	00	16	

Date	Site No.	Fish No.	Age	No. circuli	Comments
June 4	11	3	00	15	
"	"	4	00	14	
"	"	5	00	17	
June 5	1	1	00	13	
"	"	2	99	-	
"	"	3	00	13	
"	"	4	00	17	
"	"	5	00	12	
"	"	6	00	16	
"	"	7	00	11	
"	"	8	00	13	
"	"	9	00	13	
"	"	10	99	-	
June 5	2	1	00	13	
"	"	2	00	17	
"	"	3	00	16	
"	"	4	00	11	
"	"	5	00	10	
"	"	6	00	10	
"	"	7	00	14	
"	"	8	00	11	
"	"	9	00	15	
"	"	10	00	13	
June 5	3	1	00	6	
"	"	2	00	14	
"	"	3	00	6	
"	"	4	00	8	
"	"	5	00	10	
"	"	6	99	-	
"	"	7	00	9	
"	"	8	99	-	
"	"	9	00	5	
"	"	10	00	11	
"	"	11	00	14	
June 5	6	1	00	15	
"	"	2	00	15	Prominent check (12 circuli)

Table 5 (cont'd).

Date	Site No.	Fish No.	Age	No. circuli	Comments
June 5	6	3	00	13	
"	"	4	00	15	Prominent check (13 circuli)
"	"	5	00	14	
"	"	6	00	14	
"	"	7	00	16	Prominent check (13 circuli)
"	"	8	00	14	
"	"	9	00	12	Prominent check (9 circuli)
"	"	10	99	-	
June 5	5	1	00	7	
"	"	2	00	11	
"	"	3	00	10	
"	"	4	00	13	
"	"	5	00	10	
"	"	6	00	13	
"	"	7	99	-	
"	"	8	99	-	
"	"	9	00	13	
"	"	10	00	12	
"	"	11	00	12	Prominent check (12 circuli)
June 5	4	1	00	15	
"	"	2	00	13	
"	"	3	00	17	
"	"	4	00	12	
"	"	5	00	16	
"	"	6	00	13	
"	"	7	00	16	
"	"	8	00	13	
June 17	11	1	00	18	
"	"	2	00	18	
"	"	3	00	14	
"	"	4	99	-	
"	"	5	00	17	
"	"	6	00	17	
"	"	7	00	17	
"	"	8	00	13	
"	"	9	00	12	

Table 5 (cont'd).

Date	Site No.	Fish No.	Age	No. circuli	Comments
June 17	11	10	00	14	
"	"	11	-	-	
June 17	13	1	00	16	Prominent check (13 circuli)
"	"	2	00	15	Prominent check (12 circuli)
"	"	3	00	16	
"	"	4	00	17	
"	"	5	00	16	Prominent check (11 circuli)
"	"	6	00	16	Prominent check (12 circuli)
"	"	7	00	16	Prominent check (11 circuli)
"	"	8	00	17	Prominent check (15 circuli)
"	"	9	00	16	
"	"	10	00	15	
June 18	6	1	00	12	
"	"	2	99	-	
"	"	3	00	14	
"	"	4	00	9	
June 18	5	1	00	17	
"	"	2	00	15	
"	"	3	00	13	
"	"	4	00	17	
"	"	5	00	14	Prominent check (7 circuli)
"	"	6	00	11	
"	"	7	00	15	Prominent check (12 circuli)
"	"	8	00	11	
"	"	9	00	16	
"	"	10	-	-	
June 18	4	1	00	12	
"	"	2	00	15	Prominent check (11 circuli)
"	"	3	00	15	
"	"	4	00	14	
"	"	5	00	14	
"	"	6	00	16	Prominent check (12 circuli)
"	"	7	00	16	
June 18	3	1	00	16	
"	"	2	00	19	

Table 5 (cont'd).

Date	Site No.	Fish No.	Age	No. circuli	Comments
June 18	3	3	00	13	
"	"	4	00	13	
"	"	5	00	9	
"	"	6	00	17	
"	"	7	00	14	
"	"	8	00	15	
"	"	9	99	-	
"	"	10	00	14	
"	"	11	00	15	
June 18	2	1	00	12	
"	"	2	00	9	
"	"	3	00	15	
"	"	4	00	7	
"	"	5	00	6	
"	"	6	99	-	
"	"	7	00	9	
"	"	8	00	9	
"	"	9	00	7	
"	"	10	99	-	
June 18	1	1	00	15	
"	"	2	00	15	
"	"	3	00	12	
"	"	4	00	16	
"	"	5	00	8	
"	"	6	00	13	
"	"	7	00	8	
"	"	8	00	7	
"	"	9	00	18	
"	"	10	99	-	
"	"	11	00	11	Prominent check (10 circuli)
"	"	12	00	7	
"	"	13	00	14	Prominent check (9 circuli)
"	"	14	00	13	
"	"	15	00	14	
July 2	13	1	99	-	
"	"	2	00	17	Prominent check (10 circuli)



Table 5 (cont'd).

Date	Site No.	Fish No.	Age	No. circuli	Comments
July 2	13	3	00	18	Prominent check (14 circuli)
July 2	11	1	00	19	Prominent check (17 circuli)
"	"	2	00	18	Prominent check (14 circuli)
"	"	3	99	-	
July 3	1	1	00	11	Prominent check (8 circuli)
"	"	2	00	12	
"	"	3	00	13	Prominent check (12 circuli)
"	"	4	00	12	
"	"	5	00	14	
"	"	6	00	18	Prominent check (12 circuli)
"	"	7	00	11	
"	"	8	00	17	
"	"	9	00	9	
"	"	10	00	17	Prominent check (11 circuli)
"	"	11	00	20	Prominent check (16 circuli)
July 3	2	1	00	11	
"	"	2	00	10	
July 3	5	1	00	17	Prominent check (13 circuli)
"	"	2	00	15	
"	"	3	00	13	
"	"	4	00	10	
"	"	5	00	9	
"	"	6	00	9	
July 3	3	1	00	20	Prominent check (11 circuli)
"	"	2	00	15	Prominent check (10 circuli)
"	"	3	00	17	Prominent check (15 circuli)
"	"	4	00	18	Prominent check (14 circuli)
"	"	5	00	11	
"	"	6	00	11	
"	"	7	00	16	Prominent check (14 circuli)
"	"	8	00	18	
"	"	9	00	14	
"	"	10	00	14	Prominent check (11 circuli)
"	"	11	00	13	
"	"	12	00	12	

Table 5 (cont'd).

Date	Site No.	Fish No.	Age	No. circuli	Comments
July 16	7	1	00	16	
July 16	11	1	00	12	
"	"	2	00	12	
"	"	3	00	13	
"	"	4	00	17	
"	"	5	00	19	Prominent check (15 circuli)
"	"	6	00	16	Prominent check (15 circuli)
July 16	13	1	00	14	
"	"	2	00	11	
July 17	1	1	00	9	
"	"	2	00	11	Prominent check (7 circuli)
"	"	3	00	13	Prominent check (8 circuli)
"	"	4	00	11	
"	"	5	00	13	
"	"	6	00	15	Prominent check (11 circuli)
"	"	7	00	13	Prominent check (8 circuli)
"	"	8	00	10	Prominent check (8 circuli)
"	"	9	00	12	
"	"	10	00	10	Prominent check (8 circuli)
"	"	11	00	11	
"	"	12	00	15	
"	"	13	00	23	
"	"	14	00	19	Prominent check (11 circuli)
"	"	15	00	20	Prominent check (15 circuli)
"	"	16	00	13	
"	"	17	00	19	Prominent check (13 circuli)
"	"	18	00	11	
"	"	19	00	21	Prom. chk. (10 & 16 circuli)
"	"	20	00	18	
"	"	21	00	18	
July 17	2	1	99	-	
"	"	2	00	12	Prominent check (8 circuli)
"	"	3	00	12	
"	"	4	00	12	Prominent check (10 circuli)
"	"	5	00	11	

Table 5 (cont'd).

Date	Site No.	Fish No.	Age	No. circuli	Comments
July 17	2	6	00	11	
"	"	7	00	11	
"	"	8	00	10	
"	"	9	00	9	
"	"	10	00	10	
"	"	11	00	12	
"	"	12	00	10	
"	"	13	00	9	
"	"	14	00	13	
"	"	15	00	11	
"	"	16	00	11	Prominent check (9 circuli)
"	"	17	00	12	Prominent check (10 circuli)
"	"	18	00	15	Prominent check (13 circuli)
July 17	5	1	00	9	
"	"	2	00	15	Prominent check (9 circuli)
"	"	3	00	15	Prominent check (9 circuli)
"	"	4	00	7	
"	"	5	00	10	
"	"	6	00	12	Prominent check (9 circuli)
"	"	7	00	10	
"	"	8	00	19	Prominent check (9 circuli)
July 17	4	1	00	12	
"	"	2	00	16	
"	"	3	00	20	
"	"	4	00	19	Prominent check (13 circuli)
July 17	3	1	00	19	
"	"	2	00	20	
"	"	3	00	12	Prominent check (9 circuli)
"	"	4	00	13	
July 17	6	1	00	14	
"	"	2	00	12	

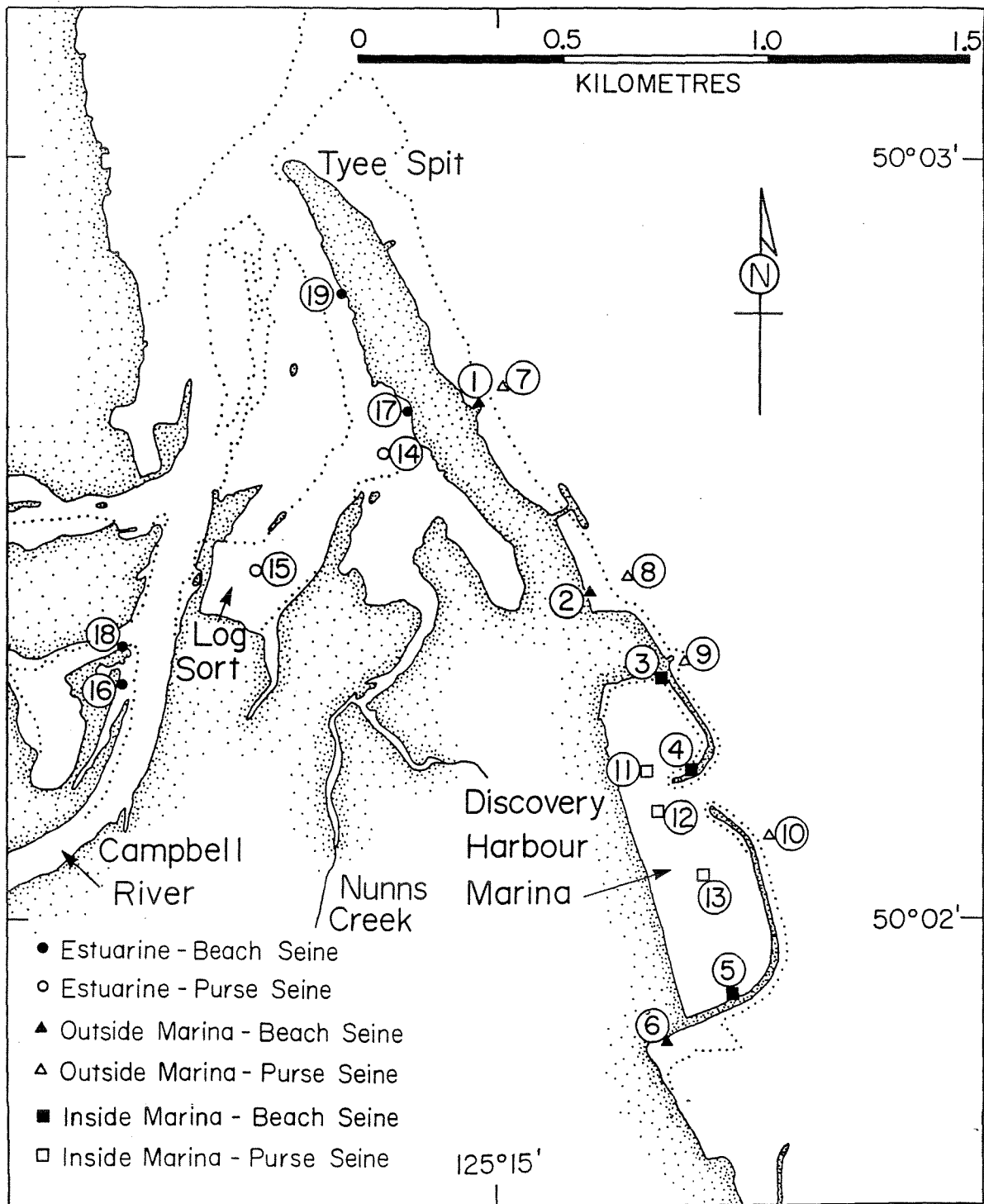


Figure 1. Map of the Campbell River estuary, Discovery Harbour Marina and nearshore area showing the sites sampled in the 1996 survey.