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## Fish Distribution Within a Tidal Freshwater Marsh in the Lower Fraser River

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## Canadian Data Report of Fisheries and Aquatic Sciences 917



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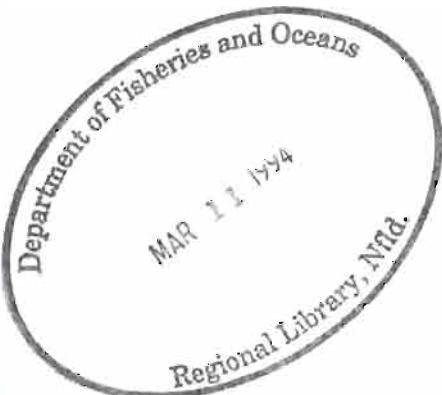
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**Canadian Data Report of**

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**1993**

**FISH DISTRIBUTION WITHIN A TIDAL FRESHWATER MARSH  
IN THE LOWER FRASER RIVER**

**by**

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**ABSTRACT**

Whitehouse, T.R., D.E. Boyle, C.D. Levings, J. Newman and J. Black. 1993. Fish distribution within a tidal freshwater marsh in the lower Fraser River. Can. Data Rep. Fish. Aquat. Sci. 917: 49 p.

Fish surveys were conducted to ascertain the presence and distribution of fish in the Surrey Bend marsh during the spring of 1991. Catch data are reported for beach and pole seining in March through July of 1991. Length and weight data are summarized for chum salmon, (*Oncorhynchus keta*), chinook salmon (*O. tshawytscha*), and sockeye salmon (*O. nerka*).

**RESUME**

Whitehouse, T.R., D.E. Boyle, C.D. Levings, J. Newman and J. Black. 1993. Fish distribution within a tidal freshwater marsh in the lower Fraser River. Can. Data Rep. Fish. Aquat. Sci. 917: 49 p.

Pour vérifier la présence et la distribution des poissons dans le marais de Surrey Bend, nous y avons effectué des relevés au printemps 1991. Nous présentons les données sur les captures réalisées avec des sennes de plage et à bâtons de mars à juillet 1991. Nous résumons les données sur la longueur et le poids pour le saumon kéta (*Oncorhynchus keta*), le saumon quinnat (*O. tshawytscha*) et le saumon rouge (*O. nerka*).

## INTRODUCTION

The ecology of fish using fresh water marshes within the tidal portion of the lower Fraser River is very poorly known. Although a number of studies have examined marshes further downriver (e.g. Duck-Barber-Woodward Islands; Levy and Northcote, 1982), there are no published reports from areas upstream where tidal influence is significant but salinity effects are absent. In 1990, fisheries data from a major tidal freshwater marsh located on the south shore of the Fraser River above Port Mann (hereafter referred to as Surrey Bend marsh) were required to advise habitat managers of the nature of fish use of the habitat. Commercial interests proposed to deposit fill material from construction activities onto land thought to be at a tidal elevation above levels used by salmonids. However a natural creek and a manmade ditch drain this marsh and upland watershed to the Fraser River. Preliminary data (e.g. Lister 1987) indicated that juvenile salmon were present in these habitats but more detailed information was required.

Fish surveys were conducted in spring and summer 1991 to determine the extent of use of the Surrey Bend marsh by juvenile salmonids and other fish species. These data are given in the present report and complement botanical and wildlife information presented by Kistritz et al (1992). The tidally induced variation in the water levels at the marsh was less than 2 m; the maximum variation occurred in early spring when the Fraser River was at low discharge. At low tide, water depths less than 1 m allowed the use of pole seines. At high tide, beach seining was possible.

## SITE DESCRIPTIONS

### SAMPLING AREAS

Sampling reaches surveyed during this study may be categorized into three major areas: 1) the drainage ditch; 2) the natural creek channel; and 3) sites adjacent to the creek mouth in the mainstem Fraser River. Site locations are shown in Figure 1.

The ditch and upper creek (upstream of the confluence of the ditch and creek, Site C3 this study) transect several hundred meters of hardhack (*Spirea douglasii*) and reed canarygrass (*Phalaris arundinacea*) bog-marsh complex. The ditch is a modification to the natural drainage of the system, having been excavated to a depth of two to three meters below the natural flood plain elevation. The lower creek (below site C3) transects reed canarygrass meadows and along its final 250 m forms the western boundary of an alder

(*Alnus rubra*) and cottonwood (*Populus trichocarpa*) grove established on the bank of the Fraser.

#### DITCH SITES

Sites described below are located in the drainage ditch paralleling the access road at the north end of 176th Street in Surrey municipality. Water levels within the ditch are influenced by both upland drainage and tidal effects. All sites within the ditch are characterized by steep mud banks, vegetated down to the high water level, with exposed mud/silt within intertidal elevations. The bottom substrate was comprised of loosely compacted organic debris (detritus, wood, peat) to depths exceeding 30 cm.

D1 - Situated at the lower end of the drainage ditch approximately 50 m above the confluence of the ditch and the natural creek channel, and 400 m from the Fraser, wetted width of the channel at lower water levels was approximately 1.5 m. Water depth at low tides did not exceed 30 cm. On high tides channel width was approximately 3-4 m with water depths of approximately 1.5 m.

D2, D3, D4, D5 - Sites were approximately 550, 900, 1300, 1500 m above the Fraser/creek confluence, respectively. From site D5 downstream to site D2, the ditch profile was relatively constant. Wetted width at low water (unaffected by tide) was approximately 1.5 m, maximum depth at low water did not exceed 30 cm. On tidal floods water depth increased to approximately 1.0-1.5 m; with wetted channel width varying from 3-4 m.

D6 - Site is located immediately downstream of the culverts on the north side of the railway tracks at the foot of 176th Street. This site is the upstream boundary of the ditch, approximately 1700 m above the confluence of the creek and the Fraser. Bottom substrate consisted of sand, coarse gravel, to large rock (railway roadbed ballast). Water levels were affected by tides as far upstream as this site. Channel wetted width (low water) was approximately 2-2.5 m, depth varied from a trickle to 20 cm at high tide.

#### CREEK SITES

Sites sampled within the natural creek channel were grouped into three general categories: a) sites with no vegetation in the channel (from the confluence of the Fraser to approximately 500 m upstream); b) sites with sparse to heavy emergent vegetation in the channel (from 500 m to 1100 m from the Fraser); and c) sites with dense emergent

vegetation and hardhack root wad/hummocks in the channel. Present over the complete reach of the natural creek were intermittently spaced dendritic channels which drained into the main creek and were flooded at higher high water.

C1, C2, C3, C4, C5, C6 - These sites were all located in reaches of creek where vegetation was absent. Sites were located at 0 m and approximately 230, 360, 380, 460, and 530 m, respectively, from the Fraser confluence. Channel morphology was characterized by steep, exposed mud/silt banks, and compact to loosely compact mud/silt bottom substrate.

C1 - Located at the confluence of the Fraser River and the creek, this site was characterized as pool habitat. Channel width at low water was 7-10 m, with depth exceeding 2 m. Sampling was conducted in the creek rather than in the Fraser mainstem as log boom storage prevented access to the true creek-river confluence.

C2 - Pool habitat, channel width at low water was 5-7 m, depth exceeded 2 m at low water.

C3 - Pool/creek habitat. This site was situated at the junction of the ditch and creek channel. Channel width varied from 3.5 m at low water to 6 m at high tide. Water depth varied from 1.2 m in the pool at low tide, to over 2.5-3.0 m at high tide levels. Substrate at this site included some sand/gravel.

C4, C5, C6 - At low water levels, creek channel width at these sites varied from approximately 1 to 1.5 m. Water depth varied from 10-25cm. Sloughing of large (e.g. 1.0 x 0.25 m) sections of creek bank were noted through this reach. On tidal inundation, water depth exceeded 1 m and wetted channel width varied to 5-7 m.

C7, C8, C9, C10, C11, C12 - Located approximately 610, 680, 730, 790, 860, and 930 m respectively from the creek mouth, these sites all represented creek habitat with varying degrees of in-channel vegetation (primarily reed canarygrass). Vegetation density varied from sparse (few stems present) to very dense (channel completely "clogged" with stems such that it was impossible to push a pole seine through). At low tide, these sites consisted of series of glide/riffle/pool complexes. Some patches of sand/small gravel were observed, but the predominant bottom substrate was mud/silt. Low water channel width varied from 0.75 to 2 m, channel depth varied from 20 to 80 cm. On tidal inundation, channel width was 2-3 m with increased in water depth on the order of 0.5-0.6 m.

C13, C14, C15, C16, C17 - These sites were located in the reach of the creek within a hardhack/spruce community, from 1000 to 1400 m above the creek mouth. The creek channel meanders around hardhack root wads which have been undermined by the water flow. This creek habitat was characterized by narrow (0.75 m) relatively deep 0.75-1.0 m channels which wound through dense hardhack stands. Dense stands of reed canarygrass were observed in the channel.

C18, C19, C20 - These sites were situated above the railway tracks in ditches which had been excavated in peat bog and then partially filled with gravel. These ditches were dug in 1990 to develop spawning habitat for coho salmon, in compensation for habitat loss (Steve MacFarlane, DFO, New Westminster, pers. comm.). Channel width was approximately 1.5 m, water depth did not exceed 20 cm.

#### FRASER RIVER SITES

F1, F2 - Sampling was conducted at two sites within the mainstem of the Fraser River. Site F1 was approximately 200 m downstream from the outlet of the creek. The site was a low gradient sand beach, located in a gap between logbooms which were moored in the mid to low intertidal. This site was inaccessible in May 1991 when an additional boom was moored over this site. Site F2, situated 100 m upstream of the creek outlet was sampled as an alternate to F1 when that site became unavailable for sampling. Site F2 was a low gradient sand beach situated immediately upstream of the boom storage areas.

#### METHODS

Fish sampling was carried out by either beach seine or pole seine net. Beach seining was carried out where water depth or channel width precluded efficient use of the pole seine. The beach seine net measured 15 m in length by 2 m deep, with wings of 12.5 mm knotless nylon mesh, and a bunt of 6.25 mm knotless nylon mesh. The pole seine net measured 2 m wide by 1.5 m deep, with a mesh size of 6.25 mm. Site access was obtained either by boat (Fraser River and some creek/ditch sites) or by vehicle (ditch sites via 176th Street access road). Access to the upper creek sites was by foot only.

Beach seine sampling was carried out by stretching the net out along one bank of the channel and then pulling or tossing the lead-line off the bank into the channel. The cork line had to be held back during deployment to prevent rolling or folding of the net due to the steepness of the

banks. When the whole net was in the water, each end of the seine was then pulled directly across the channel and the net was pursed on the opposite bank. All fish captured were collected from the net and held for enumeration in 20 l pails filled with creek water. Where consecutive sets were made, the net was pulled above or below the previously swept area and the process was repeated.

Beach seining was used to sample fish from the Fraser River sites, from the lower creek sites, and from the 176th Street ditch sites. The Fraser River and lower creek sites (C3 and below) were either riverine or large pool habitat which could not be sampled effectively with the pole seine at any tidal stage or river discharge level. Sites within the 176th Street ditch were sampled with both the beach seine and the pole seine net during the first sampling trip (March 28, 1991) as low Fraser River water levels permitted effective pole seining on low tide. Pole seine sampling in April and May at the ditch sites was impossible due to higher water levels in the Fraser River.

Pole seine sampling was carried out at creek sites above site C3. The channel size and depth permitted relatively effective sampling by pole seine gear within this reach of the creek. Sampling effectiveness, in terms of areal coverage (linear distance and channel width sampled) was markedly decreased within the upper reaches of the creek due to the presence of emergent vegetation within the creek channel. This was the common case for sites within the hardhack bog (sites C13-C17). Sampling at these sites was opportunistic, and was carried out where breaks in the vegetation permitted the sampling of a minimum of a one metre pass with the net. Sampling was more effective at sites C4 through C12 due to reduced vegetation in the creek channel.

Fish samples collected in the field were preserved in 10% (v/v) formalin solution. All samples from March, April and May were returned to the West Vancouver Laboratory where species identifications were verified. The samples were then weighed (nearest 0.01g) and fork lengths (nearest mm) were measured. Each fish was assigned a unique identification number for future reference. Following a period of at least four weeks in formalin the samples were transferred to a storage solution of 40% (v/v) isopropyl alcohol. Fish samples from the July sampling were not retained or measured.

Table 1 provides a list of the variables measured during the sampling. Current velocity ( $m \cdot s^{-1}$ ), where determined, was measured mid-channel, at 50% of the maximum

depth using a Marsh McBirney model 301 portable current meter. Surface temperature (nearest 0.5°C) was determined from a mid-channel location using a hand held alcohol thermometer. Species codes are listed in Table 2.

## RESULTS

Catch data organized by sampling date, sampling site, and species abundance are presented in Appendix 1. Surface temperature and current velocity, where measured, are also presented in Appendix 1. Length and weight data from the preserved samples are presented in Appendix 2.

A summary of all fish species caught for each of the sampling trips is given in Table 3. The data are summarized as creek sites (C1-C20), ditch sites (D1-D6) and Fraser River sites adjacent to the mouth of the creek (F1 and F2). Tables 4-9 provide total numbers of each species caught on each of the trips for the various reaches of creek and ditch. The creek results are summarized as sites below the junction with the ditch (sites C1-C3), middle reach (sites C4-C10), and upper reach sites (C11-C20). The number of beach seine or pole seine sets is reported in the tables as well. Estimates of the total area seined are included for all reaches except the upper creek sites.

Figures 2-4 show mean fork lengths for chum, chinook and sockeye collected in March, April and May. The results are summarized as Fraser River sites (F1 and F2), creek sites below the junction with the ditch (C1-C3), creek sites above the junction with the ditch (C4-C20), and ditch sites (D1-D6). Insufficient numbers of salmonids were caught in the July sampling for calculations of mean lengths from specific habitats.

## ACKNOWLEDGEMENTS

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Table 1. Description of the variables and codes presented in catch data.

VARIABLE NAME	VARIABLE DESCRIPTION	CODE
DATE	Sampling date (yyymmdd)	
SITE	Sampling site	
TEMP	Surface temperature (°C)	
FLOW	Stream current speed ( $m \cdot s^{-1}$ )	
NET	Type of seine used Beach seine Pole seine	BS PS
TSET	Total sets per site	
SET	Sequential set per site	
TIME	Sampling time (PST)	
SPEC	Species (defined in Table 2)	
STGE	Life History Stage Adult Smolt Pre-smolt Fry Juvenile Ammocoete	AD SM PS FR JU AM
ORG	Marked or unmarked fish Hatchery produced fish Unknown (natural production plus unmarked hatchery fish)	H .
TOT	Catch by species, stage, and origin Missing data	.

Table 2. Scientific and common names and species codes of fishes seined from Surrey Bend in 1991.

Species Code	Family and Scientific Name	Common Name
LAMP	PETROMYZONIDAE <i>Lampetra</i> sp.	unidentified lamprey
CHIN	SALMONIDAE <i>Oncorhynchus tshawytscha</i>	chinook salmon
CHUM	<i>Oncorhynchus keta</i>	chum salmon
COHO	<i>Oncorhynchus kisutch</i>	coho salmon
SOCK	<i>Oncorhynchus nerka</i>	sockeye salmon
STLH	<i>Oncorhynchus mykiss</i>	steelhead trout
CUTT	<i>Oncorhynchus clarki clarki</i>	cutthroat trout
PEAM	CYPRINIDAE <i>Mylocheilus caurinus</i>	peamouth chub
SQUA	<i>Ptychocheilus oregonensis</i>	northern squawfish
DACE	<i>Rhinichthys cataractae</i>	longnose dace
LEOP	<i>Rhinichthys falcatus</i>	leopard dace
REDS	<i>Richardsonius balteatus</i>	redside shiner
BMIN	<i>Hybognathus hankinsoni</i>	brassy minnow
CARP	<i>Cyprinus carpio</i>	carp
UNCY		unidentified cyprinid
LSSU	CATOSTOMIDAE <i>Catostomus macrocheilus</i>	largescale sucker
STIC	GASTEROSTEIDAE <i>Gasterosteus aculeatus</i>	threespine stickleback
SCUL	COTTIDAE <i>Cottus asper</i>	prickly sculpin
CRAP	CENTRARCHIDAE <i>Pomoxis nigromaculatus</i>	black crappie
STAR	PLEURONECTIDAE <i>Platichthys stellatus</i>	starry flounder
BULL	ICTALURIDAE <i>Ictalurus nebulosus</i>	brown bullhead
EULA	OSMERIDAE <i>Thaleichthys pacificus</i>	eulachon

Table 3. Fish species sampled in all beach seines and pole seines, Surrey Bend, 1991. "+" indicates presence, "—" indicates not caught. Site names given in parentheses.

SPEC	Creek (C1-C20)				Ditch (D1-D6)				Fraser R. (F1 & F2)			
	Mar 28	Apr 26	May 29	Jul 02	Mar 28	Apr 26	May 29	Jul 02	Mar 28	Apr 26	May 29	Jul 02
LAMP	-	-	-	-	-	-	-	-	-	+	-	n
CHIN	+	+	+	+	+	+	+	-	+	+	+	o
CHUM	+	+	+	+	+	+	-	+	+	+	-	t
COHO	+	+	+	-	+	-	+	-	-	-	-	+
SOCK	+	+	+	+	-	+	+	-	-	+	+	s
STLH	-	-	-	-	-	-	-	-	-	-	+	a
CUTT	-	-	+	-	-	-	-	-	-	-	-	m
PEAM	+	+	+	+	-	+	+	+	+	+	+	p
SQUA	+	+	+	+	+	+	+	+	+	+	-	l
DACE	-	+	-	-	-	-	-	-	-	+	-	e
LEOP	-	-	+	-	-	-	-	-	-	-	-	d
REDS	+	+	+	+	+	+	+	+	-	+	+	
BMIN	-	-	-	-	-	-	+	-	-	-	-	
CARP	-	+	-	-	+	-	-	-	-	-	-	
UNCY	+	-	-	-	+	-	-	-	-	-	-	
LSSU	+	-	+	+	-	-	+	+	-	-	-	+
STIC	+	+	+	+	+	+	+	+	-	+	+	
SCUL	+	+	+	+	+	+	+	+	-	+	+	
CRAP	-	+	+	-	-	-	+	+	-	+	-	
STAR	+	+	+	+	-	-	-	-	+	+	+	
BULL	-	-	+	+	-	-	-	-	-	+	+	
EULA	-	-	-	-	-	-	-	-	-	+	-	

Table 4. Fish sampled by beach seine in Fraser River near mouth of creek (sites F1 and F2), Surrey Bend, 1991.

SPEC	March 28	April 26	May 29	July 2
LAMP	-	1	-	
CHIN	8 fry	21 fry	2 smolt	n
CHUM	40 fry	3 fry	-	o
COHO	-	-	1 fry + 1 smolt	t
SOCK	-	3 fry + 1 smolt	5 fry	
STLH	-	-	2 smolt	s
CUTT	-	-	-	a
PEAM	1	11	3	m
SQUA	1	3	-	p
DACE	-	2	-	l
LEOP	-	-	-	e
REDS	-	16	2	d
BMIN	-	-	-	
CARP	-	-	-	
UNCY	-	-	-	
LSSU	-	-	1	
STIC	-	58	4	
SCUL	-	73	72	
CRAP	-	10	-	
STAR	18	77	9	
BULL	-	1	1	
EULA	-	1	-	
 total sets	3	4	3	0
approximate area sampled	800 m <sup>2</sup>	850 m <sup>2</sup>	800 m <sup>2</sup>	

Table 5. Fish sampled by beach seine in creek below junction with ditch (sites C1-C3), Surrey Bend, 1991.

SPEC	March 28	April 26	May 29	July 2
LAMP	-	-	-	-
CHIN	9 fry	107 fry	26 fry + 2 pre- smolt	3
CHUM	106 fry	37 fry	1 fry	2
COHO	3 fry	3 smolt	7 fry + 5 smolt	-
SOCK	-	6 fry	799 fry	3
STLH	-	-	-	-
CUTT	-	-	1 adult + 3 smolt	-
PEAM	-	4383	75	14
SQUA	-	260	19	31
DACE	-	21	-	-
LEOP	-	-	-	-
REDS	2	336	232	57
BMIN	-	-	-	-
CARP	-	-	-	-
UNCY	8	-	-	-
LSSU	1	-	3	4
STIC	4	624	32	20
SCUL	2	38	139	75
CRAP	-	10	1	-
STAR	2	10	1	2
BULL	-	-	1	1
EULA	-	-	-	-
 total sets	7	2	8	6
approximate area sampled	550 m <sup>2</sup>	150 m <sup>2</sup>	800 m <sup>2</sup>	650 m <sup>2</sup>

Table 6. Fish sampled by pole seine in middle reach of creek (sites C4-C10), Surrey Bend, 1991.

SPEC	March 28	April 26	May 29	July 2
LAMP	-	-	-	-
CHIN	31 fry	61 fry	4 fry	-
CHUM	132 fry	24 fry	-	-
COHO	8 fry	1 fry	2 fry	-
SOCK	-	3 fry	29 fry	-
STLH	-	-	-	-
CUTT	-	-	-	-
PEAM	-	1	1	-
SQUA	3	-	24	4
DACE	-	2	-	-
LEOP	-	-	2	-
REDS	11	74	108	2
BMIN	-	-	-	-
CARP	-	-	-	-
UNCY	35	-	-	-
LSSU	1	-	-	-
STIC	85	64	227	104
SCUL	1	11	35	1
CRAP	-	-	-	-
STAR	-	-	-	-
BULL	-	-	-	1
EULA	-	-	-	-
 total sets	14	10	6	11
 approximate area sampled	175 m <sup>2</sup>	185 m <sup>2</sup>	35 m <sup>2</sup>	70 m <sup>2</sup>

Table 7. Fish sampled by pole seine in upper reach of creek  
 (sites C11-C20), Surrey Bend, 1991.

SPEC	March 28	April 26	May 29	July 2
LAMP	-	-	-	-
CHIN	3 fry	5 fry + 1 smolt	4 fry	-
CHUM	15 fry		1 fry	-
COHO	-	-	21 fry	-
SOCK	1 smolt		116 fry	-
STLH	-	-	-	-
CUTT	-	-	-	-
PEAM	8	2	-	-
SQUA	-	-	6	-
DACE	-	3	-	-
LEOP	-	-	-	-
REDS	-	21	4	-
BMIN	-	-	-	-
CARP	-	2	-	-
UNCY	-	-	-	-
LSSU	-	-	-	-
STIC	40	57	166	5
SCUL	2	-	2	-
CRAP	-	-	-	-
STAR	-	-	-	-
BULL	-	-	-	-
EULA	-	-	-	-
 total sets	7	5	6	6
approximate area sampled	na	na	na	na

Table 8. Fish sampled by beach seine in ditch (sites D1-D6), Surrey Bend, 1991.

SPEC	March 28	April 26	May 29	July 2
LAMP	-	-	-	-
CHIN	1 fry	38 fry + 2 smolt	8 fry + 1 pre-smolt	-
CHUM	23 fry	24 fry	-	2
COHO	-	-	8 fry + 1 smolt	-
SOCK	-	40 fry + 1 smolt	68 fry	-
STLH	-	-	-	-
CUTT	-	-	-	-
PEAM	-	20	247	210
SQUA	5	6	26	77
DACE	-	-	-	-
LEOP	-	-	-	-
REDS	4	52	132	226
BMIN	-	-	1	-
CARP	1	-	-	-
UNCY	-	-	-	-
LSSU	-	-	27	36
STIC	5	30	72	11
SCUL	1	17	38	25
CRAP	-	-	1	4
STAR	-	-	-	-
BULL	-	-	-	-
EULA	-	-	-	-
<b>total sets</b>	15	12	12	12
<b>approximate area sampled</b>	450 m <sup>2</sup>	450 m <sup>2</sup>	450 m <sup>2</sup>	450 m <sup>2</sup>

Table 9. Fish sampled by pole seine in ditch (sites D1-D6),  
Surrey Bend, 1991.

SPEC	March 28	April 26	May 29	July 2
LAMP	-			
CHIN	22 fry			
CHUM	42 fry	n	n	n
COHO	1 fry	o	o	o
SOCK	-	t	t	t
STLH	-			
CUTT	-	s	s	s
PEAM	-	a	a	a
SQUA	1	m	m	m
DACE	-	p	p	p
LEOP	-	l	l	l
REDS	150	e	e	e
BMIN	-	d	d	d
CARP	-			
UNCY	1			
LSSU	-			
STIC	15			
SCUL	1			
CRAP	-			
STAR	-			
BULL	-			
EULA	-			
 total sets	16			
approximate area sampled		125 m <sup>2</sup>		



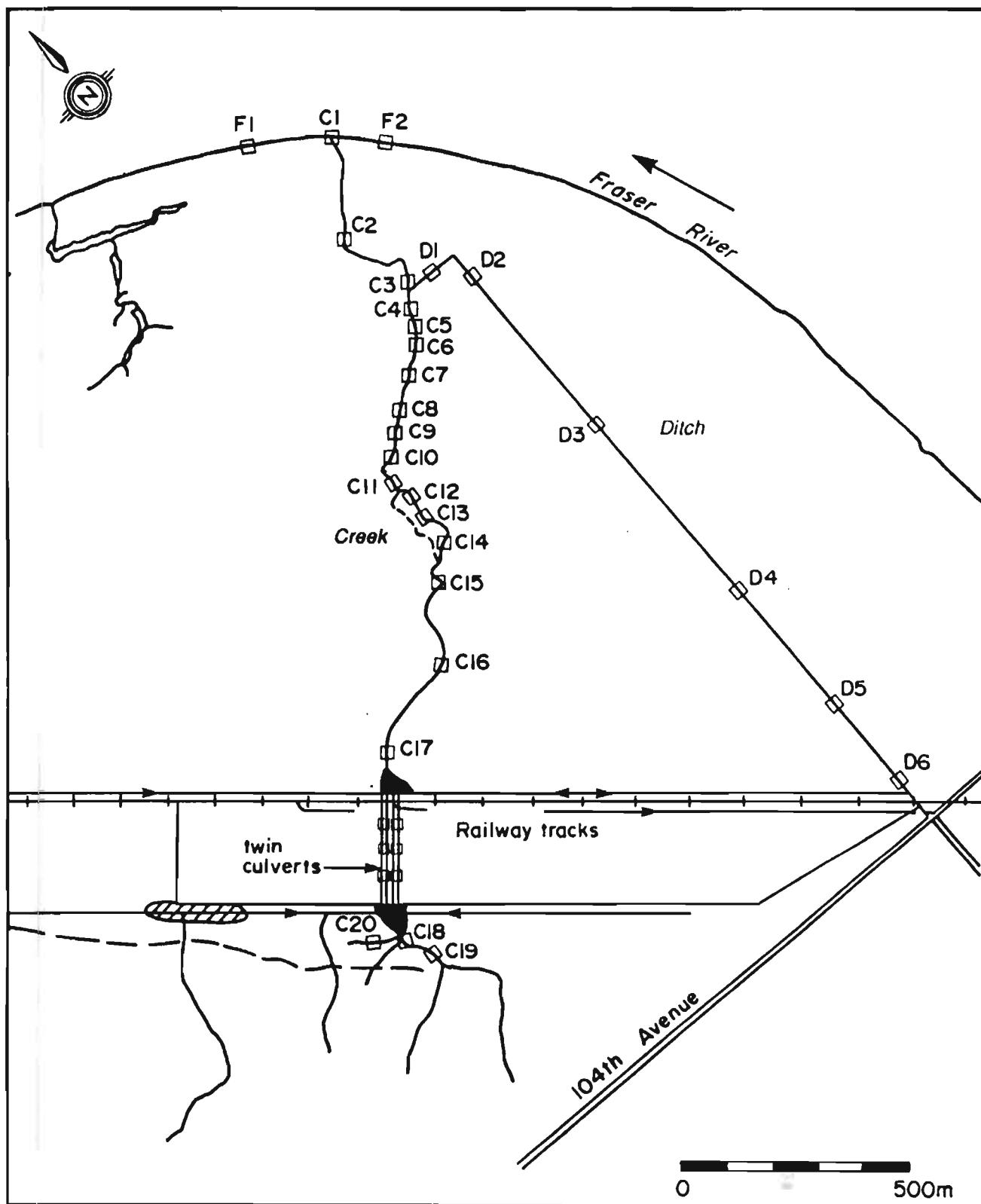
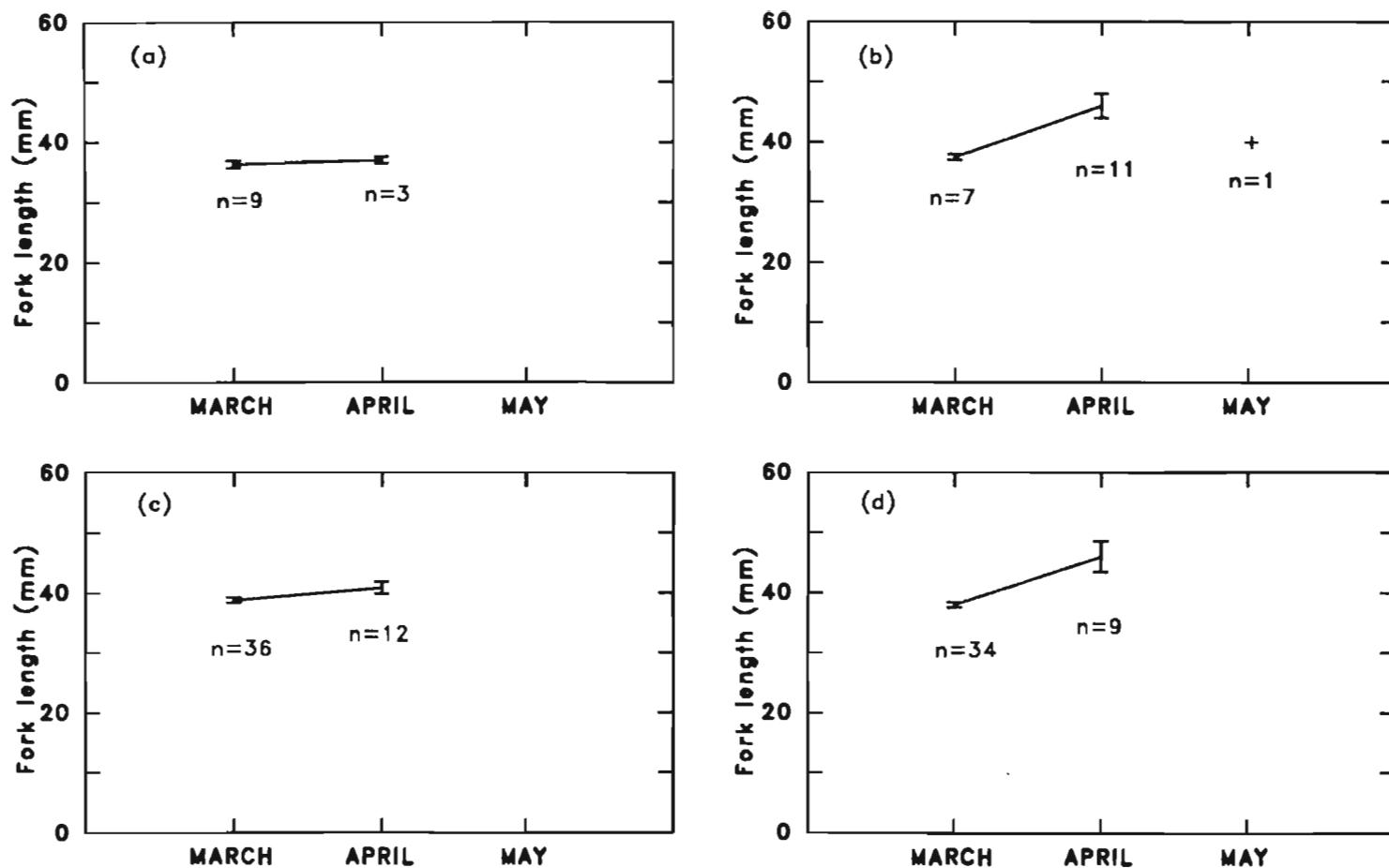
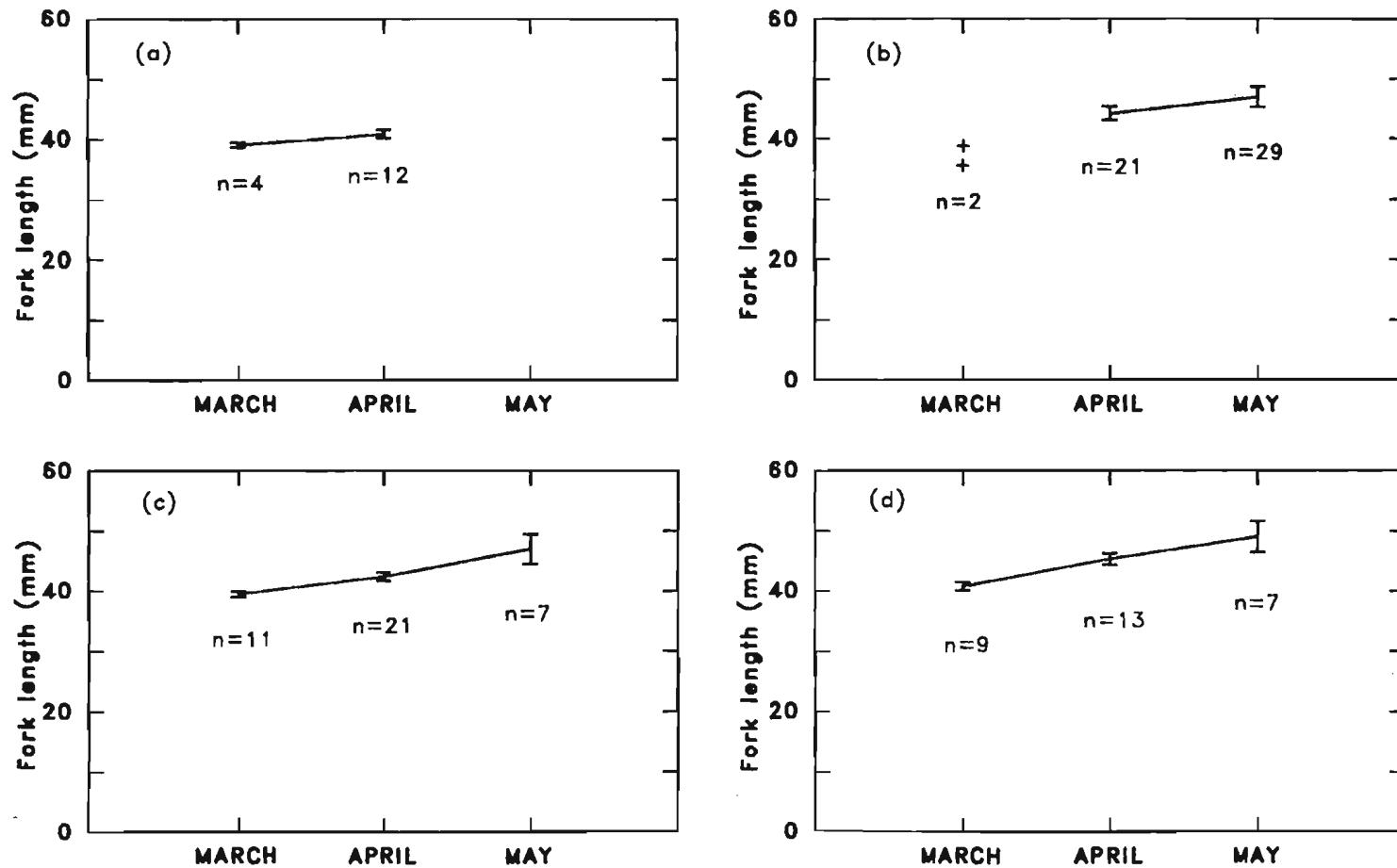


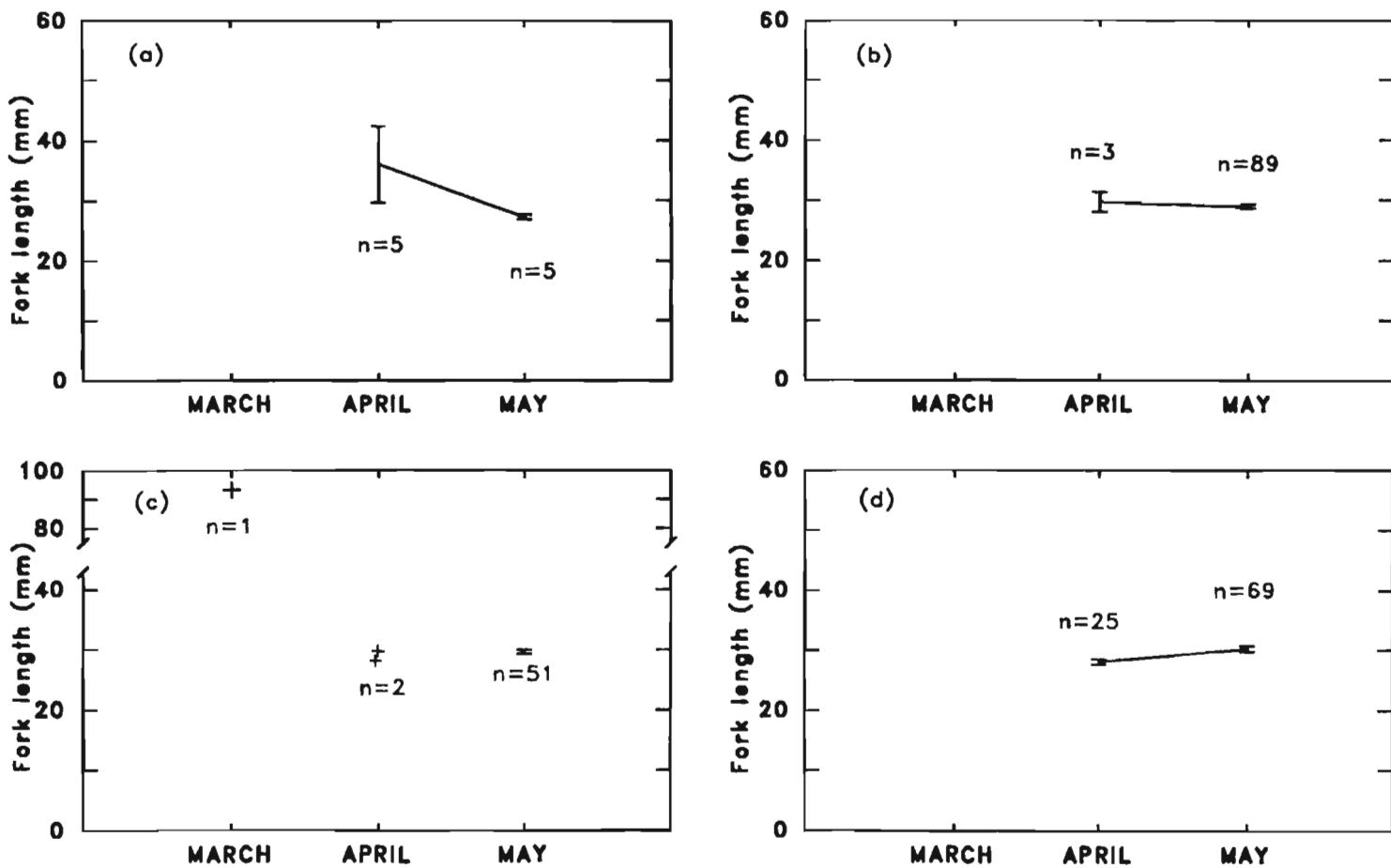
Figure 1. Location of sampling sites for pole and beach seining, Surrey Bend, 1991.



**Figure 2.** Mean fork length ( $\pm 1$  standard error) of chum salmon from Surrey Bend, 1991. Capture location: (a) Fraser River near creek mouth; (b) creek below junction with ditch; (c) creek above junction with ditch; (d) ditch. "+" = single data point.



**Figure 3.** Mean fork length ( $\pm 1$  standard error) of chinook salmon from Surrey Bend, 1991. Capture location: (a) Fraser River near creek mouth; (b) creek below junction with ditch; (c) creek above junction with ditch; (d) ditch. "+" = single data point.



**Figure 4.** Mean fork length ( $\pm 1$  standard error) of sockeye salmon from Surrey Bend, 1991. Capture location: (a) Fraser River near creek mouth; (b) creek below junction with ditch; (c) creek above junction with ditch; (d) ditch. "+" = single data point.

**Appendix 1. Surrey Bend beach and pole seine catch data,  
1991.**

DATE	SITE	TEMP	FLOW	NET	TSET	SET	TIME	SPEC	STGE	ORG	TOT
910328	D4	.	.	BS	3	1	0620	CHUM	FR	.	3
910328	D4	.	.	BS	3	1	0620	CARP	.	.	1
910328	D4	.	.	BS	3	1	0620	SQUA	JU	.	3
910328	D4	.	.	BS	3	1	0620	REDS	JU	.	3
910328	D4	.	.	BS	3	2	0625	STIC	.	.	2
910328	D4	.	.	BS	3	3	0630	CHIN	FR	.	1
910328	D4	.	.	BS	3	3	0630	CHUM	FR	.	1
910328	D5	.	.	BS	3	1	0642	CHUM	FR	.	1
910328	D5	.	.	BS	3	2	0645	CHUM	FR	.	1
910328	D5	.	.	BS	3	3	0650	CHUM	FR	.	6
910328	D3	.	.	BS	3	1	0708	CHUM	FR	.	1
910328	D3	.	.	BS	3	1	0708	SQUA	JU	.	1
910328	D3	.	.	BS	3	2	0714	STIC	.	.	1
910328	D3	.	.	BS	3	3	0719	SQUA	JU	.	1
910328	D2	.	1.0	BS	3	1	0733	CHUM	FR	.	1
910328	D2	.	1.0	BS	3	2	0737	CHUM	FR	.	1
910328	D2	.	1.0	BS	3	2	0737	STIC	.	.	1
910328	D2	.	1.0	BS	3	3	0745	.	.	.	0
910328	D1	4.0	0.18	BS	3	1	0755	CHUM	FR	.	8
910328	D1	4.0	0.18	BS	3	1	0755	STIC	.	.	1
910328	D1	4.0	0.18	BS	3	2	0800	SCUL	.	.	1
910328	D1	4.0	0.18	BS	3	2	0800	REDS	JU	.	1
910328	D1	4.0	0.18	BS	3	3	0805	.	.	.	0
910328	C3	.	.	BS	3	1	0825	CHUM	FR	.	44
910328	C3	.	.	BS	3	1	0825	COHO	FR	.	1
910328	C3	.	.	BS	3	2	0840	CHIN	FR	.	7
910328	C3	.	.	BS	3	2	0840	CHUM	FR	.	52
910328	C3	.	.	BS	3	2	0840	COHO	FR	.	2
910328	C3	.	.	BS	3	2	0840	STIC	.	.	2
910328	C3	.	.	BS	3	2	0840	UNCY	.	.	8
910328	C3	.	.	BS	3	3	0850	CHUM	FR	.	3
910328	C3	.	.	BS	3	3	0850	STIC	.	.	2
910328	C1	.	.	BS	4	1	0910	CHUM	FR	.	3
910328	C1	.	.	BS	4	1	0910	STAR	.	.	2
910328	C1	.	.	BS	4	1	0910	REDS	JU	.	1
910328	C1	.	.	BS	4	2	0915	.	.	.	0
910328	C1	.	.	BS	4	3	0930	CHUM	FR	.	2
910328	C1	.	.	BS	4	3	0930	CHIN	FR	.	2
910328	C1	.	.	BS	4	3	0930	REDS	JU	.	1
910328	C1	.	.	BS	4	3	0930	SCUL	.	.	1
910328	C1	.	.	BS	4	3	0930	LSSU	JU	.	1
910328	C1	.	.	BS	4	4	0940	CHUM	FR	.	2
910328	C1	.	.	BS	4	4	0940	SCUL	.	.	1
910328	F1	.	.	BS	3	1	0955	CHUM	FR	.	18
910328	F1	.	.	BS	3	1	0955	CHIN	FR	.	4
910328	F1	.	.	BS	3	1	0955	STAR	.	.	11
910328	F1	.	.	BS	3	1	0955	PEAM	JU	.	1
910328	F1	.	.	BS	3	1	0955	SQUA	JU	.	1
910328	F1	.	.	BS	3	2	1000	CHUM	FR	.	19
910328	F1	.	.	BS	3	2	1000	CHIN	FR	.	3
910328	F1	.	.	BS	3	2	1000	STAR	.	.	7
910328	F1	.	.	BS	3	3	1010	CHIN	FR	.	1
910328	F1	.	.	BS	3	3	1010	CHUM	FR	.	3
910328	C4	.	.	PS	4	1	1040	CHIN	FR	.	1
910328	C4	.	.	PS	4	1	1040	STIC	.	.	1
910328	C4	.	.	PS	4	1	1040	SCUL	.	.	1
910328	C4	.	.	PS	4	2	1100	COHO	FR	.	1
910328	C4	.	.	PS	4	2	1100	CHUM	FR	.	2
910328	C4	.	.	PS	4	3	1102	.	.	.	0
910328	C4	.	.	PS	4	4	1104	.	.	.	0

DATE	SITE	TEMP	FLOW	NET	TSET	SET	TIME	SPEC	STGE	ORG	TOT
910328	C5	.	.	PS	4	1	1106	UNCY	JU	.	1
910328	C5	.	.	PS	4	2	1108	CHUM	FR	.	11
910328	C5	.	.	PS	4	2	1108	CHIN	FR	.	8
910328	C5	.	.	PS	4	2	1108	STIC	.	.	1
910328	C5	.	.	PS	4	3	1111	CHIN	FR	.	2
910328	C5	.	.	PS	4	3	1111	CHUM	FR	.	4
910328	C5	.	.	PS	4	3	1111	STIC	.	.	2
910328	C5	.	.	PS	4	4	1114	CHUM	FR	.	4
910328	C5	.	.	PS	4	4	1114	STIC	.	.	1
910328	C5	.	.	PS	4	4	1114	REDS	.	.	1
910328	C5	.	.	PS	4	4	1114	SQUA	.	.	1
910328	C6	.	.	PS	5	1	1117	CHUM	FR	.	11
910328	C6	.	.	PS	5	1	1117	CHIN	FR	.	5
910328	C6	.	.	PS	5	1	1117	STIC	.	.	9
910328	C6	.	.	PS	5	1	1117	COHO	FR	.	5
910328	C6	.	.	PS	5	1	1117	REDS	JU	.	1
910328	C6	.	.	PS	5	1	1117	SQUA	JU	.	1
910328	C6	.	.	PS	5	2	1120	CHIN	FR	.	5
910328	C6	.	.	PS	5	2	1120	CHUM	FR	.	5
910328	C6	.	.	PS	5	2	1120	STIC	.	.	16
910328	C6	.	.	PS	5	2	1120	UNCY	.	.	8
910328	C6	.	.	PS	5	3	1123	STIC	.	.	10
910328	C6	.	.	PS	5	3	1123	CHIN	FR	.	3
910328	C6	.	.	PS	5	3	1123	CHUM	FR	.	3
910328	C6	.	.	PS	5	3	1123	UNCY	.	.	26
910328	C6	.	.	PS	5	4	1128	.	.	.	0
910328	C6	.	.	PS	5	5	1130	CHUM	FR	.	72
910328	C6	.	.	PS	5	5	1130	STIC	.	.	15
910328	C6	.	.	PS	5	5	1130	REDS	.	.	1
910328	C6	.	.	PS	5	5	1130	CHIN	FR	.	7
910328	C6	.	.	PS	5	5	1130	SQUA	.	.	1
910328	C6	.	.	PS	5	5	1130	COHO	FR	.	2
910328	C7	.	.	PS	1	1	1140	STIC	.	.	30
910328	C7	.	.	PS	1	1	1140	CHUM	FR	.	20
910328	C7	.	.	PS	1	1	1140	LSSU	.	.	1
910328	C7	.	.	PS	1	1	1140	REDS	.	.	8
910328	C13	.	.	PS	1	1	1150	PEAM	.	.	7
910328	C13	.	.	PS	1	1	1150	STIC	.	.	27
910328	C13	.	.	PS	1	1	1150	SCUL	.	.	2
910328	C15	.	.	PS	1	1	1205	SOCK	SM	.	1
910328	C15	.	.	PS	1	1	1205	PEAM	.	.	1
910328	C15	.	.	PS	1	1	1205	STIC	.	.	1
910328	C17	.	.	PS	1	1	1233	CHUM	FR	.	15
910328	C17	.	.	PS	1	1	1233	CHIN	FR	.	3
910328	C17	.	.	PS	1	1	1233	STIC	.	.	1
910328	C18	.	.	PS	1	1	1240	.	.	.	0
910328	C19	.	.	PS	1	1	1242	STIC	.	.	5
910328	C20	.	.	PS	2	1	1245	STIC	.	.	3
910328	C20	.	.	PS	2	2	1246	STIC	.	.	3
910328	D6	.	.	PS	1	1	1325	CHUM	FR	.	14
910328	D6	.	.	PS	1	1	1325	COHO	FR	.	1
910328	D6	.	.	PS	1	1	1325	STIC	.	.	4
910328	D1	.	.	PS	3	1	1345	STIC	.	.	1
910328	D1	.	.	PS	3	1	1345	UNCY	.	.	1
910328	D1	.	.	PS	3	2	1347	CHIN	FR	.	1
910328	D1	.	.	PS	3	3	1348	SCUL	.	.	1
910328	D1	.	.	PS	3	3	1348	STIC	.	.	1
910328	D1	.	.	PS	3	3	1348	CHUM	FR	.	4
910328	D2	.	.	PS	3	1	1350	REDS	.	.	1
910328	D2	.	.	PS	3	2	1352	STIC	.	.	1

DATE	SITE	TEMP	FLOW	NET	TSET	SET	TIME	SPEC	STGE	ORG	TOT
910328	D2	.	.	PS	3	3	1353	CHUM	FR	.	2
910328	D3	.	.	PS	3	1	1405	STIC	.	.	1
910328	D3	.	.	PS	3	2	1406	STIC	.	.	1
910328	D3	.	.	PS	3	3	1407	.	.	.	0
910328	D4	12.0	0.03	PS	3	1	1410	REDS	.	.	14
910328	D4	12.0	0.03	PS	3	2	1415	REDS	.	.	131
910328	D4	12.0	0.03	PS	3	2	1415	CHUM	FR	.	14
910328	D4	12.0	0.03	PS	3	2	1415	CHIN	FR	.	19
910328	D4	12.0	0.03	PS	3	2	1415	STIC	.	.	3
910328	D4	12.0	0.03	PS	3	2	1415	SQUA	.	.	1
910328	D4	12.0	0.03	PS	3	3	1420	.	.	.	0
910328	D5	.	.	PS	3	1	1425	REDS	.	.	3
910328	D5	.	.	PS	3	1	1425	CHUM	FR	.	1
910328	D5	.	.	PS	3	2	1427	CHUM	FR	.	6
910328	D5	.	.	PS	3	2	1427	CHIN	FR	.	2
910328	D5	.	.	PS	3	2	1427	STIC	.	.	1
910328	D5	.	.	PS	3	3	1430	STIC	.	.	2
910328	D5	.	.	PS	3	3	1430	CHUM	FR	.	1
910328	D5	.	.	PS	3	3	1430	REDS	.	.	1
910426	D4	8.0	0.07	BS	3	1	1010	CHIN	FR	.	3
910426	D4	8.0	0.07	BS	3	1	1010	CHUM	FR	.	1
910426	D4	8.0	0.07	BS	3	1	1010	SOCK	FR	.	6
910426	D4	8.0	0.07	BS	3	1	1010	STIC	.	.	2
910426	D4	8.0	0.07	BS	3	1	1010	REDS	.	.	4
910426	D4	8.0	0.07	BS	3	1	1010	SQUA	JU	.	4
910426	D4	8.0	0.07	BS	3	2	1015	STIC	.	.	1
910426	D4	8.0	0.07	BS	3	2	1015	CHIN	FR	.	2
910426	D4	8.0	0.07	BS	3	2	1015	CHUM	FR	.	2
910426	D4	8.0	0.07	BS	3	2	1015	REDS	.	.	2
910426	D4	8.0	0.07	BS	3	2	1015	SQUA	JU	.	2
910426	D4	8.0	0.07	BS	3	3	1020	PEAM	.	.	11
910426	D4	8.0	0.07	BS	3	3	1020	REDS	.	.	21
910426	D4	8.0	0.07	BS	3	3	1020	CHIN	FR	.	13
910426	D4	8.0	0.07	BS	3	3	1020	CHUM	FR	.	8
910426	D4	8.0	0.07	BS	3	3	1020	SOCK	FR	.	25
910426	D4	8.0	0.07	BS	3	3	1020	STIC	.	.	7
910426	D3	.	.	BS	3	1	1050	REDS	.	.	2
910426	D3	.	.	BS	3	1	1050	PEAM	.	.	2
910426	D3	.	.	BS	3	1	1050	STIC	.	.	1
910426	D3	.	.	BS	3	2	1053	REDS	.	.	2
910426	D3	.	.	BS	3	2	1053	PEAM	.	.	1
910426	D3	.	.	BS	3	2	1053	CHIN	FR	.	1
910426	D3	.	.	BS	3	2	1053	STIC	.	.	2
910426	D3	.	.	BS	3	3	1100	STIC	.	.	1
910426	D3	.	.	BS	3	3	1100	CHIN	FR	.	2
910426	D3	.	.	BS	3	3	1100	SCUL	.	.	1
910426	D3	.	.	BS	3	3	1100	CHUM	FR	.	1
910426	D2	.	.	BS	3	1	1115	STIC	.	.	3
910426	D2	.	.	BS	3	1	1115	REDS	JU	.	1
910426	D2	.	.	BS	3	1	1115	SOCK	FR	.	2
910426	D2	.	.	BS	3	1	1115	CHIN	FR	.	3
910426	D2	.	.	BS	3	1	1115	CHUM	FR	.	1
910426	D2	.	.	BS	3	2	1124	REDS	JU	.	7
910426	D2	.	.	BS	3	2	1124	STIC	.	.	2
910426	D2	.	.	BS	3	2	1124	PEAM	.	.	3
910426	D2	.	.	BS	3	2	1124	SCUL	.	.	2
910426	D2	.	.	BS	3	2	1124	CHIN	FR	.	2
910426	D2	.	.	BS	3	3	1130	STIC	.	.	9
910426	D2	.	.	BS	3	3	1130	SCUL	.	.	3
910426	D2	.	.	BS	3	3	1130	CHIN	FR	.	1

DATE	SITE	TEMP	FLOW	NET	TSET	SET	TIME	SPEC	STGE	ORG	TOT
910426	D2	.	.	BS	3	3	1130	CHUM	FR	.	3
910426	D2	.	.	BS	3	3	1130	REDS	.	.	5
910426	D2	.	.	BS	3	3	1130	PEAM	.	.	2
910426	D2	.	.	BS	3	3	1130	SOCK	FR	.	2
910426	D1	.	.	BS	3	1	1150	CHIN	SM	.	1
910426	D1	.	.	BS	3	1	1150	STIC	.	.	1
910426	D1	.	.	BS	3	1	1150	PEAM	.	.	1
910426	D1	.	.	BS	3	1	1150	REDS	.	.	2
910426	D1	.	.	BS	3	1	1150	CHIN	FR	.	3
910426	D1	.	.	BS	3	1	1150	SOCK	FR	.	2
910426	D1	.	.	BS	3	1	1150	SCUL	.	.	1
910426	D1	.	.	BS	3	2	1158	SCUL	.	.	9
910426	D1	.	.	BS	3	2	1158	REDS	.	.	5
910426	D1	.	.	BS	3	2	1158	SOCK	SM	.	1
910426	D1	.	.	BS	3	2	1158	CHIN	SM	.	1
910426	D1	.	.	BS	3	2	1158	CHIN	FR	.	5
910426	D1	.	.	BS	3	2	1158	CHUM	FR	.	6
910426	D1	.	.	BS	3	2	1158	SOCK	FR	.	3
910426	D1	.	.	BS	3	2	1205	CHIN	FR	.	3
910426	D1	.	.	BS	3	3	1205	CHUM	FR	.	2
910426	D1	.	.	BS	3	3	1205	STIC	.	.	1
910426	D1	.	.	BS	3	3	1205	SCUL	.	.	1
910426	D1	.	.	BS	3	3	1205	REDS	.	.	1
910426	C3	8.0	0.06	BS	1	1	1221	REDS	.	.	196
910426	C3	8.0	0.06	BS	1	1	1221	CHIN	FR	.	27
910426	C3	8.0	0.06	BS	1	1	1221	CHUM	FR	.	7
910426	C3	8.0	0.06	BS	1	1	1221	STIC	.	.	4
910426	C3	8.0	0.06	BS	1	1	1221	COHO	SM	.	3
910426	C3	8.0	0.06	BS	1	1	1221	DACE	.	.	1
910426	C3	8.0	0.06	BS	1	1	1221	SOCK	FR	.	4
910426	C3	8.0	0.06	BS	1	1	1221	PEAM	.	.	3
910426	C3	8.0	0.06	BS	1	1	1221	SCUL	.	.	18
910426	C3	8.0	0.06	BS	1	1	1221	SOCK	FR	.	2
910426	F1	.	.	BS	4	1	1330	PEAM	.	.	7
910426	F1	.	.	BS	4	1	1330	SQUA	.	.	1
910426	F1	.	.	BS	4	1	1330	STIC	.	.	27
910426	F1	.	.	BS	4	1	1330	STAR	.	.	30
910426	F1	.	.	BS	4	1	1330	SCUL	.	.	35
910426	F1	.	.	BS	4	1	1330	REDS	.	.	4
910426	F1	.	.	BS	4	1	1330	CHUM	FR	.	3
910426	F1	.	.	BS	4	1	1330	CHIN	FR	.	12
910426	F1	.	.	BS	4	1	1330	SOCK	FR	.	3
910426	F1	.	.	BS	4	1	1330	SOCK	SM	.	1
910426	F1	.	.	BS	4	2	1335	BULL	.	.	1
910426	F1	.	.	BS	4	2	1335	STIC	.	.	7
910426	F1	.	.	BS	4	2	1335	STAR	.	.	5
910426	F1	.	.	BS	4	2	1335	SCUL	.	.	6
910426	F1	.	.	BS	4	2	1335	REDS	.	.	3
910426	F1	.	.	BS	4	2	1335	PEAM	.	.	1
910426	F1	.	.	BS	4	2	1335	LAMP	AM	.	1
910426	F1	.	.	BS	4	3	1340	SCUL	.	.	6
910426	F1	.	.	BS	4	3	1340	REDS	.	.	2
910426	F1	.	.	BS	4	3	1340	STIC	.	.	3
910426	F1	10.0	.	BS	4	4	1415	STIC	.	.	21
910426	F1	10.0	.	BS	4	4	1415	SCUL	.	.	26
910426	F1	10.0	.	BS	4	4	1415	STAR	.	.	42
910426	F1	10.0	.	BS	4	4	1415	SQUA	.	.	2
910426	F1	10.0	.	BS	4	4	1415	PEAM	.	.	3
910426	F1	10.0	.	BS	4	4	1415	DACE	.	.	2
910426	F1	10.0	.	BS	4	4	1415	REDS	.	.	7

DATE	SITE	TEMP	FLOW	NET	TSET	SET	TIME	SPEC	STGE	ORG	TOT
910426	F1	10.0	.	BS	4	4	1415	EULA	.	.	1
910426	F1	10.0	.	BS	4	1	1415	CHIN	FR	.	9
910426	C1	.	.	BS	1	1	1445	STIC	.	.	620
910426	C1	.	.	BS	1	1	1445	PEAM	.	.	4380
910426	C1	.	.	BS	1	1	1445	REDS	.	.	140
910426	C1	.	.	BS	1	1	1445	SQUA	.	.	260
910426	C1	.	.	BS	1	1	1445	CHIN	FR	.	80
910426	C1	.	.	BS	1	1	1445	SCUL	.	.	20
910426	C1	.	.	BS	1	1	1445	CHUM	FR	.	30
910426	C1	.	.	BS	1	1	1445	DACE	.	.	20
910426	C1	.	.	BS	1	1	1445	STAR	.	.	10
910426	C1	.	.	BS	1	1	1445	CRAP	.	.	10
910426	C5	.	.	PS	1	1	1530	SCUL	.	.	1
910426	C5	.	.	PS	1	1	1530	REDS	.	.	2
910426	C5	.	.	PS	1	1	1530	DACE	.	.	1
910426	C5	.	.	PS	1	1	1530	CHIN	FR	.	6
910426	C5	.	.	PS	1	1	1530	CHUM	FR	.	4
910426	C6	.	.	PS	3	1	1535	SCUL	.	.	2
910426	C6	.	.	PS	3	2	1540	SCUL	.	.	3
910426	C6	.	.	PS	3	2	1540	CHIN	FR	.	1
910426	C6	.	.	PS	3	2	1540	REDS	.	.	1
910426	C6	.	.	PS	3	3	1545	REDS	.	.	49
910426	C6	.	.	PS	3	3	1545	CHUM	FR	.	3
910426	C6	.	.	PS	3	3	1545	STIC	.	.	4
910426	C6	.	.	PS	3	3	1545	SCUL	.	.	3
910426	C6	.	.	PS	3	3	1545	PEAM	.	.	1
910426	C6	.	.	PS	3	3	1545	CHIN	FR	.	2
910426	C7	.	.	PS	3	1	1555	REDS	.	.	4
910426	C7	.	.	PS	3	1	1555	STIC	.	.	1
910426	C7	.	.	PS	3	1	1555	SCUL	.	.	1
910426	C7	.	.	PS	3	1	1555	SOCK	FR	.	1
910426	C7	.	.	PS	3	1	1555	CHIN	FR	.	1
910426	C7	.	.	PS	3	2	1600	CHIN	FR	.	28
910426	C7	.	.	PS	3	2	1600	CHUM	FR	.	7
910426	C7	.	.	PS	3	2	1600	COHO	FR	.	1
910426	C7	.	.	PS	3	2	1600	SOCK	FR	.	2
910426	C7	.	.	PS	3	2	1600	STIC	.	.	4
910426	C7	.	.	PS	3	3	1605	CHIN	FR	.	5
910426	C7	.	.	PS	3	3	1605	REDS	.	.	4
910426	C7	.	.	PS	3	3	1605	SCUL	.	.	1
910426	C7	.	.	PS	3	3	1605	STIC	.	.	2
910426	C7	.	.	PS	3	3	1605	CHUM	FR	.	1
910426	C9	.	.	PS	1	1	1608	REDS	.	.	13
910426	C9	.	.	PS	1	1	1608	CHIN	FR	.	13
910426	C9	.	.	PS	1	1	1608	CHUM	FR	.	4
910426	C9	.	.	PS	1	1	1608	STIC	.	.	12
910426	C10	.	.	PS	2	1	1614	CHIN	FR	.	2
910426	C10	.	.	PS	2	1	1614	CHUM	FR	.	1
910426	C10	.	.	PS	2	1	1614	STIC	.	.	7
910426	C10	.	.	PS	2	2	1617	STIC	.	.	34
910426	C10	.	.	PS	2	2	1617	CHUM	FR	.	4
910426	C10	.	.	PS	2	2	1617	CHIN	FR	.	3
910426	C10	.	.	PS	2	2	1617	DACE	.	.	1
910426	C10	.	.	PS	2	2	1617	REDS	.	.	1
910426	C14	.	.	PS	2	1	1620	STIC	.	.	24
910426	C14	.	.	PS	2	1	1620	CHIN	FR	.	2
910426	C14	.	.	PS	2	2	1630	STIC	.	.	12
910426	C14	.	.	PS	2	2	1630	CHIN	FR	.	3
910426	C14	.	.	PS	2	2	1630	DACE	.	.	2
910426	C15	.	.	PS	1	1	1645	STIC	.	.	19

DATE	SITE	TEMP	FLOW	NET	TSET	SET	TIME	SPEC	STGE	ORG	TOT
910426	C15	.	.	PS	1	1	1645	REDS	.	.	1
910426	C15	.	.	PS	1	1	1645	CARP	.	.	2
910426	C16	.	.	PS	1	1	1700	REDS	.	.	20
910426	C16	.	.	PS	1	1	1700	DACE	.	.	1
910426	C16	.	.	PS	1	1	1700	CHIN	SM	.	1
910426	C16	.	.	PS	1	1	1700	PEAM	.	.	2
910426	C17	.	.	PS	1	1	1720	STIC	.	.	2
910529	C3	11.0	0.08	BS	3	1	0850	CHIN	PS	.	1
910529	C3	11.0	0.08	BS	3	1	0850	STIC	.	.	1
910529	C3	11.0	0.08	BS	3	1	0850	REDS	JU	.	11
910529	C3	11.0	0.08	BS	3	1	0850	REDS	AD	.	3
910529	C3	11.0	0.08	BS	3	1	0850	PEAM	.	.	9
910529	C3	11.0	0.08	BS	3	1	0850	SQUA	.	.	3
910529	C3	11.0	0.08	BS	3	1	0850	SCUL	.	.	1
910529	C3	11.0	0.08	BS	3	1	0850	CUTT	SM	.	1
910529	C3	11.0	0.08	BS	3	1	0850	CUTT	SM	H	1
910529	C3	11.0	0.08	BS	3	1	0850	SOCK	FR	.	9
910529	C3	11.0	0.08	BS	3	2	0855	CHIN	PS	.	1
910529	C3	11.0	0.08	BS	3	2	0855	REDS	JU	.	12
910529	C3	11.0	0.08	BS	3	2	0855	PEAM	.	.	4
910529	C3	11.0	0.08	BS	3	2	0855	STIC	.	.	5
910529	C3	11.0	0.08	BS	3	2	0855	SCUL	.	.	1
910529	C3	11.0	0.08	BS	3	2	0855	COHO	SM	.	1
910529	C3	11.0	0.08	BS	3	2	0855	SOCK	FR	.	4
910529	C3	11.0	0.08	BS	3	3	0900	PEAM	.	.	4
910529	C3	11.0	0.08	BS	3	3	0900	CUTT	SM	.	1
910529	C3	11.0	0.08	BS	3	3	0900	SCUL	.	.	1
910529	C3	11.0	0.08	BS	3	3	0900	SOCK	FR	.	3
910529	C3	11.0	0.08	BS	3	3	0900	REDS	JU	.	21
910529	D1	11.0	0.08	BS	3	1	0940	SQUA	AD	.	1
910529	D1	.	.	BS	3	1	0940	SCUL	AD	.	1
910529	D1	.	.	BS	3	1	0940	SCUL	JU	.	2
910529	D1	.	.	BS	3	1	0940	PEAM	.	.	9
910529	D1	.	.	BS	3	1	0940	STIC	.	.	1
910529	D1	.	.	BS	3	1	0940	REDS	JU	.	9
910529	D1	.	.	BS	3	1	0940	SOCK	FR	.	10
910529	D1	.	.	BS	3	1	0940	SQUA	JU	.	1
910529	D1	.	.	BS	3	2	0945	SQUA	.	.	2
910529	D1	.	.	BS	3	2	0945	STIC	.	.	2
910529	D1	.	.	BS	3	2	0945	PEAM	.	.	1
910529	D1	.	.	BS	3	2	0945	SCUL	.	.	4
910529	D1	.	.	BS	3	3	0950	SQUA	JU	.	3
910529	D1	.	.	BS	3	3	0950	STIC	.	.	2
910529	D1	.	.	BS	3	3	0950	SCUL	.	.	1
910529	D1	.	.	BS	3	3	0950	REDS	JU	.	5
910529	D1	.	.	BS	3	3	0950	SOCK	FR	.	3
910529	D1	.	.	BS	3	3	0950	SQUA	AD	.	1
910529	D2	.	0.04	BS	3	1	1010	PEAM	AD	.	3
910529	D2	.	0.04	BS	3	1	1010	SQUA	.	.	1
910529	D2	.	0.04	BS	3	1	1010	COHO	SM	.	1
910529	D2	.	0.04	BS	3	1	1010	PEAM	JU	.	10
910529	D2	.	0.04	BS	3	1	1010	REDS	AD	.	2
910529	D2	.	0.04	BS	3	1	1010	STIC	.	.	1
910529	D2	.	0.04	BS	3	1	1010	SCUL	.	.	2
910529	D2	.	0.04	BS	3	1	1010	REDS	JU	.	17
910529	D2	.	0.04	BS	3	1	1010	SOCK	FR	.	1
910529	D2	.	0.04	BS	3	1	1010	COHO	FR	.	1
910529	D2	.	0.04	BS	3	2	1015	LSSU	AD	.	1
910529	D2	.	0.04	BS	3	2	1015	SQUA	AD	.	1
910529	D2	.	0.04	BS	3	2	1015	SQUA	.	.	1

DATE	SITE	TEMP	FLOW	NET	TSET	SET	TIME	SPEC	STGE	ORG	TOT
910529	D2	.	0.04	BS	3	2	1015	PEAM	.	.	8
910529	D2	.	0.04	BS	3	2	1015	STIC	.	.	2
910529	D2	.	0.04	BS	3	2	1015	COHO	FR	.	1
910529	D2	.	0.04	BS	3	2	1015	SOCK	FR	.	8
910529	D2	.	0.04	BS	3	2	1015	REDS	JU	.	7
910529	D2	.	0.04	BS	3	2	1015	SCUL	.	.	1
910529	D2	.	0.04	BS	3	3	1020	SQUA	.	.	1
910529	D2	.	0.04	BS	3	3	1020	SCUL	.	.	4
910529	D2	.	0.04	BS	3	3	1020	REDS	.	.	10
910529	D2	.	0.04	BS	3	3	1020	STIC	.	.	3
910529	D4	12.0	0.05	BS	3	1	1220	SQUA	AD	.	1
910529	D4	12.0	0.05	BS	3	1	1220	STIC	.	.	8
910529	D4	12.0	0.05	BS	3	1	1220	REDS	JU	.	33
910529	D4	12.0	0.05	BS	3	1	1220	SCUL	.	.	2
910529	D4	12.0	0.05	BS	3	1	1220	SOCK	FR	.	8
910529	D4	12.0	0.05	BS	3	1	1220	PEAM	JU	.	9
910529	D4	12.0	0.05	BS	3	2	1225	PEAM	JU	.	21
910529	D4	12.0	0.05	BS	3	2	1225	SQUA	.	.	7
910529	D4	12.0	0.05	BS	3	2	1225	STIC	.	.	11
910529	D4	12.0	0.05	BS	3	2	1225	REDS	JU	.	5
910529	D4	12.0	0.05	BS	3	2	1225	SCUL	.	.	10
910529	D4	12.0	0.05	BS	3	2	1225	COHO	FR	.	1
910529	D4	12.0	0.05	BS	3	2	1225	SOCK	FR	.	8
910529	D4	12.0	0.05	BS	3	3	1230	CRAP	.	.	1
910529	D4	12.0	0.05	BS	3	3	1230	LSSU	.	.	6
910529	D4	12.0	0.05	BS	3	3	1230	STIC	.	.	15
910529	D4	12.0	0.05	BS	3	3	1230	SOCK	FR	.	8
910529	D4	12.0	0.05	BS	3	3	1230	CHIN	FR	.	2
910529	D4	12.0	0.05	BS	3	3	1230	SQUA	.	.	6
910529	D4	12.0	0.05	BS	3	3	1230	PEAM	.	.	24
910529	D4	12.0	0.05	BS	3	3	1230	SCUL	.	.	2
910529	D4	12.0	0.05	BS	3	3	1230	REDS	.	.	13
910529	D5	12.0	0.05	BS	3	1	1320	PEAM	.	.	50
910529	D5	12.0	0.05	BS	3	1	1320	STIC	.	.	13
910529	D5	12.0	0.05	BS	3	1	1320	LSSU	JU	.	10
910529	D5	12.0	0.05	BS	3	1	1320	REDS	.	.	14
910529	D5	12.0	0.05	BS	3	1	1320	SCUL	.	.	8
910529	D5	12.0	0.05	BS	3	1	1320	COHO	FR	.	4
910529	D5	12.0	0.05	BS	3	1	1320	SOCK	FR	.	1
910529	D5	12.0	0.05	BS	3	1	1320	SOCK	FR	.	11
910529	D5	12.0	0.05	BS	3	2	1325	STIC	.	.	3
910529	D5	12.0	0.05	BS	3	2	1325	SCUL	.	.	1
910529	D5	12.0	0.05	BS	3	2	1325	PEAM	.	.	3
910529	D5	12.0	0.05	BS	3	2	1325	REDS	.	.	2
910529	D5	12.0	0.05	BS	3	2	1325	CHIN	FR	.	1
910529	D5	12.0	0.05	BS	3	2	1325	SOCK	FR	.	1
910529	D5	12.0	0.05	BS	3	2	1325	COHO	FR	.	1
910529	D5	12.0	0.05	BS	3	3	1330	PEAM	JU	.	109
910529	D5	12.0	0.05	BS	3	3	1330	STIC	.	.	11
910529	D5	12.0	0.05	BS	3	3	1330	LSSU	JU	.	10
910529	D5	12.0	0.05	BS	3	3	1330	SCUL	.	.	2
910529	D5	12.0	0.05	BS	3	3	1330	REDS	JU	.	15
910529	D5	12.0	0.05	BS	3	3	1330	BMIN	.	.	1
910529	D5	12.0	0.05	BS	3	3	1330	CHIN	FR	.	5
910529	D5	12.0	0.05	BS	3	3	1330	SOCK	FR	.	9
910529	D5	12.0	0.05	BS	3	3	1330	CHIN	PS	.	1
910529	C2	.	.	BS	2	1	1400	CRAP	AD	.	1
910529	C2	.	.	BS	2	1	1400	SQUA	.	.	2
910529	C2	.	.	BS	2	1	1400	PEAM	.	.	6
910529	C2	.	.	BS	2	1	1400	SCUL	.	.	8

DATE	SITE	TEMP	FLOW	NET	TSET	SET	TIME	SPEC	STGE	ORG	TOT
910529	C2	.	.	BS	2	1	1400	STIC	.	.	3
910529	C2	.	.	BS	2	1	1400	CHIN	FR	.	4
910529	C2	.	.	BS	2	1	1400	COHO	FR	.	2
910529	C2	.	.	BS	2	1	1400	SOCK	FR	.	11
910529	C2	.	.	BS	2	2	1410	CUTT	AD	.	1
910529	C2	.	.	BS	2	2	1410	SCUL	.	.	16
910529	C2	.	.	BS	2	2	1410	PEAM	.	.	2
910529	C2	.	.	BS	2	2	1410	STIC	.	.	1
910529	C2	.	.	BS	2	2	1410	SOCK	FR	.	9
910529	C1	.	.	BS	1	1	1500	COHO	SM	.	2
910529	C1	.	.	BS	1	1	1500	SQUA	JU	.	14
910529	C1	.	.	BS	1	1	1500	REDS	.	.	160
910529	C1	.	.	BS	1	1	1500	CHIN	FR	.	18
910529	C1	.	.	BS	1	1	1500	SOCK	FR	.	747
910529	C1	.	.	BS	1	1	1500	CHUM	FR	.	1
910529	C1	.	.	BS	1	1	1500	COHO	FR	.	1
910529	C1	.	.	BS	1	1	1500	BULL	.	.	1
910529	C1	.	.	BS	1	1	1500	STIC	.	.	14
910529	C1	.	.	BS	1	1	1500	LSSU	AD	.	2
910529	C1	.	.	BS	1	1	1500	SCUL	.	.	59
910529	C1	.	.	BS	1	1	1500	PEAM	.	.	19
910529	C1	.	.	BS	1	1	1500	STAR	.	.	1
910529	F2	11.0	0.29	BS	3	1	1545	STLH	SM	H	1
910529	F2	11.0	0.29	BS	3	1	1545	SCUL	.	.	23
910529	F2	11.0	0.29	BS	3	1	1545	STIC	.	.	4
910529	F2	11.0	0.29	BS	3	1	1545	STAR	.	.	3
910529	F2	11.0	0.29	BS	3	1	1545	CHIN	SM	.	1
910529	F2	11.0	0.29	BS	3	1	1545	PEAM	.	.	2
910529	F2	11.0	0.29	BS	3	1	1545	REDS	JU	.	2
910529	F2	11.0	0.29	BS	3	1	1545	BULL	.	.	1
910529	F2	11.0	0.29	BS	3	2	1550	LSSU	AD	.	1
910529	F2	11.0	0.29	BS	3	2	1550	CHIN	SM	.	1
910529	F2	11.0	0.29	BS	3	2	1550	COHO	SM	H	1
910529	F2	11.0	0.29	BS	3	2	1550	STAR	.	.	4
910529	F2	11.0	0.29	BS	3	2	1550	PEAM	.	.	1
910529	F2	11.0	0.29	BS	3	2	1550	SCUL	.	.	29
910529	F2	11.0	0.29	BS	3	2	1550	SOCK	FR	.	5
910529	F2	11.0	0.29	BS	3	3	1555	STLH	SM	H	1
910529	F2	11.0	0.29	BS	3	3	1555	STAR	.	.	2
910529	F2	11.0	0.29	BS	3	3	1555	SCUL	.	.	20
910529	C3	12.0	0.04	BS	2	1	1610	SCUL	.	.	36
910529	C3	12.0	0.04	BS	2	1	1610	COHO	SM	.	2
910529	C3	12.0	0.04	BS	2	1	1610	PEAM	.	.	31
910529	C3	12.0	0.04	BS	2	1	1610	LSSU	JU	.	1
910529	C3	12.0	0.04	BS	2	1	1610	COHO	FR	.	4
910529	C3	12.0	0.04	BS	2	1	1610	SOCK	FR	.	7
910529	C3	12.0	0.04	BS	2	1	1610	CHIN	FR	.	4
910529	C3	12.0	0.04	BS	2	1	1610	STIC	.	.	3
910529	C3	12.0	0.04	BS	2	2	1615	SCUL	.	.	17
910529	C3	12.0	0.04	BS	2	2	1615	SOCK	FR	.	9
910529	C3	12.0	0.04	BS	2	2	1615	REDS	JU	.	25
910529	C3	12.0	0.04	BS	2	2	1615	STIC	.	.	5
910529	C6	.	.	PS	3	1	1650	SOCK	FR	.	7
910529	C6	.	.	PS	3	1	1650	REDS	JU	.	5
910529	C6	.	.	PS	3	1	1650	SCUL	.	.	5
910529	C6	.	.	PS	3	1	1650	STIC	.	.	13
910529	C6	.	.	PS	3	2	1655	STIC	.	.	57
910529	C6	.	.	PS	3	2	1655	SCUL	.	.	9
910529	C6	.	.	PS	3	2	1655	REDS	JU	.	2
910529	C6	.	.	PS	3	2	1655	SOCK	FR	.	3

DATE	SITE	TEMP	FLOW	NET	TSET	SET	TIME	SPEC	STGE	ORG	TOT
910529	C6	.	.	PS	3	2	1655	LEOP	.	.	1
910529	C6	.	.	PS	3	3	1700	SQUA	.	.	14
910529	C6	.	.	PS	3	3	1700	REDS	.	.	9
910529	C6	.	.	PS	3	3	1700	STIC	.	.	11
910529	C6	.	.	PS	3	3	1700	SCUL	.	.	5
910529	C6	.	.	PS	3	3	1700	COHO	FR	.	1
910529	C6	.	.	PS	3	3	1700	SOCK	FR	.	3
910529	C8	.	.	PS	3	1	1705	REDS	.	.	54
910529	C8	.	.	PS	3	1	1705	STIC	.	.	105
910529	C8	.	.	PS	3	1	1705	LEOP	.	.	1
910529	C8	.	.	PS	3	1	1705	SCUL	.	.	10
910529	C8	.	.	PS	3	1	1705	PEAM	.	.	1
910529	C8	.	.	PS	3	1	1705	SQUA	JU	.	7
910529	C8	.	.	PS	3	2	1710	COHO	FR	.	1
910529	C8	.	.	PS	3	2	1710	STIC	.	.	15
910529	C8	.	.	PS	3	2	1710	REDS	.	.	6
910529	C8	.	.	PS	3	2	1710	SCUL	.	.	1
910529	C8	.	.	PS	3	2	1710	CHIN	FR	.	2
910529	C8	.	.	PS	3	3	1715	SOCK	FR	.	16
910529	C8	.	.	PS	3	3	1715	CHIN	FR	.	2
910529	C8	.	.	PS	3	3	1715	SCUL	.	.	5
910529	C8	.	.	PS	3	3	1715	REDS	.	.	32
910529	C8	.	.	PS	3	3	1715	STIC	.	.	26
910529	C8	.	.	PS	3	3	1715	SQUA	.	.	3
910529	C11	.	.	PS	3	1	1720	STIC	.	.	27
910529	C11	.	.	PS	3	1	1720	SQUA	.	.	6
910529	C11	.	.	PS	3	1	1720	COHO	FR	.	6
910529	C11	.	.	PS	3	1	1720	SOCK	FR	.	21
910529	C11	.	.	PS	3	1	1720	SCUL	.	.	2
910529	C11	.	.	PS	3	1	1720	REDS	.	.	3
910529	C11	.	.	PS	3	2	1725	STIC	.	.	37
910529	C11	.	.	PS	3	2	1725	COHO	FR	.	2
910529	C11	.	.	PS	3	2	1725	SOCK	FR	.	26
910529	C11	.	.	PS	3	3	1730	STIC	.	.	33
910529	C11	.	.	PS	3	3	1730	COHO	FR	.	11
910529	C11	.	.	PS	3	3	1730	CHUM	FR	.	1
910529	C11	.	.	PS	3	3	1730	SOCK	FR	.	31
910529	C13	.	.	PS	3	1	1745	SOCK	FR	.	18
910529	C13	.	.	PS	3	1	1745	CHIN	FR	.	1
910529	C13	.	.	PS	3	1	1745	STIC	.	.	26
910529	C13	.	.	PS	3	1	1745	REDS	.	.	1
910529	C13	.	.	PS	3	2	1750	CHIN	FR	.	2
910529	C13	.	.	PS	3	2	1750	SOCK	FR	.	11
910529	C13	.	.	PS	3	2	1750	STIC	.	.	14
910529	C13	.	.	PS	3	3	1755	STIC	.	.	29
910529	C13	.	.	PS	3	3	1755	COHO	FR	.	2
910529	C13	.	.	PS	3	3	1755	CHIN	FR	.	1
910529	C13	.	.	PS	3	3	1755	SOCK	FR	.	9
910702	D5	.	.	BS	3	1	830	PEAM	.	.	27
910702	D5	.	.	BS	3	1	830	REDS	.	.	26
910702	D5	.	.	BS	3	1	830	LSSU	.	.	12
910702	D5	.	.	BS	3	1	830	STIC	JU	.	2
910702	D5	.	.	BS	3	1	830	SQUA	.	.	2
910702	D5	16.0	.	BS	3	2	845	PEAM	.	.	59
910702	D5	16.0	.	BS	3	2	845	REDS	.	.	38
910702	D5	16.0	.	BS	3	2	845	LSSU	.	.	10
910702	D5	16.0	.	BS	3	2	845	SQUA	.	.	8
910702	D5	16.0	.	BS	3	2	845	STIC	.	.	2
910702	D5	16.0	.	BS	3	3	855	PEAM	.	.	76
910702	D5	16.0	.	BS	3	3	855	REDS	.	.	29

DATE	SITE	TEMP	FLOW	NET	TSET	SET	TIME	SPEC	STGE	ORG	TOT
910702	D5	16.0	.	BS	3	3	855	LSSU	.	.	5
910702	D5	16.0	.	BS	3	3	855	SQUA	.	.	17
910702	D5	16.0	.	BS	3	3	855	STIC	.	.	1
910702	D4	.	.	BS	3	1	930	PEAM	.	.	10
910702	D4	.	.	BS	3	1	930	REDS	.	.	17
910702	D4	.	.	BS	3	1	930	SQUA	.	.	4
910702	D4	.	.	BS	3	2	940	PEAM	.	.	2
910702	D4	.	.	BS	3	2	940	REDS	.	.	13
910702	D4	.	.	BS	3	2	940	SQUA	.	.	3
910702	D4	.	.	BS	3	3	950	PEAM	.	.	20
910702	D4	.	.	BS	3	3	950	REDS	.	.	85
910702	D4	.	.	BS	3	3	950	SQUA	.	.	23
910702	D4	.	.	BS	3	3	950	LSSU	.	.	2
910702	D1	.	.	BS	3	1	1030	SQUA	.	.	2
910702	D1	.	.	BS	3	1	1030	PEAM	.	.	6
910702	D1	.	.	BS	3	1	1030	STIC	.	.	1
910702	D1	.	.	BS	3	1	1030	REDS	.	.	2
910702	D1	.	.	BS	3	1	1030	SCUL	.	.	10
910702	D1	.	.	BS	3	2	1035	PEAM	.	.	1
910702	D1	.	.	BS	3	2	1035	CHUM	.	.	2
910702	D1	.	.	BS	3	2	1035	SCUL	.	.	3
910702	D1	.	.	BS	3	2	1035	STIC	.	.	3
910702	D1	.	.	BS	3	3	1040	SQUA	.	.	1
910702	D1	.	.	BS	3	3	1040	PEAM	.	.	5
910702	D1	.	.	BS	3	3	1040	SCUL	.	.	1
910702	D1	.	.	BS	3	3	1040	REDS	.	.	3
910702	D1	.	.	BS	3	3	1040	LSSU	.	.	1
910702	C3	.	.	BS	3	1	1050	LSSU	.	.	2
910702	C3	.	.	BS	3	1	1050	SCUL	.	.	14
910702	C3	.	.	BS	3	1	1050	SQUA	.	.	3
910702	C3	.	.	BS	3	1	1050	REDS	.	.	1
910702	C3	.	.	BS	3	1	1050	STIC	.	.	2
910702	C3	.	.	BS	3	1	1050	PEAM	.	.	1
910702	C3	.	.	BS	3	2	1100	REDS	.	.	7
910702	C3	.	.	BS	3	2	1100	STIC	.	.	8
910702	C3	.	.	BS	3	2	1100	SQUA	AD	.	4
910702	C3	.	.	BS	3	2	1100	CHUM	.	.	1
910702	C3	.	.	BS	3	2	1100	LSSU	.	.	1
910702	C3	.	.	BS	3	3	1110	PEAM	.	.	5
910702	C3	.	.	BS	3	3	1110	SQUA	.	.	16
910702	C3	.	.	BS	3	3	1110	REDS	.	.	39
910702	C3	.	.	BS	3	3	1110	STIC	.	.	8
910702	C3	.	.	BS	3	3	1110	SOCK	.	.	2
910702	C3	.	.	BS	3	3	1110	LSSU	.	.	1
910702	C1	14.5	.	BS	3	1	1205	PEAM	.	.	4
910702	C1	14.5	.	BS	3	1	1205	SQUA	.	.	2
910702	C1	14.5	.	BS	3	1	1205	REDS	.	.	2
910702	C1	14.5	.	BS	3	1	1205	STIC	.	.	2
910702	C1	14.5	.	BS	3	1	1205	CHIN	.	.	1
910702	C1	14.5	.	BS	3	1	1205	SCUL	.	.	3
910702	C1	14.5	.	BS	3	2	1215	BULL	.	.	1
910702	C1	14.5	.	BS	3	2	1215	SQUA	.	.	3
910702	C1	14.5	.	BS	3	2	1215	SCUL	.	.	49
910702	C1	14.5	.	BS	3	2	1215	REDS	.	.	5
910702	C1	14.5	.	BS	3	2	1215	CHUM	.	.	1
910702	C1	14.5	.	BS	3	2	1215	SOCK	.	.	1
910702	C1	14.5	.	BS	3	2	1215	CHIN	.	.	2
910702	C1	14.5	.	BS	3	2	1215	PEAM	.	.	2
910702	C1	14.5	.	BS	3	2	1215	STAR	.	.	2
910702	C1	14.5	.	BS	3	3	1220	SQUA	.	.	3

DATE	SITE	TEMP	FLOW	NET	TSET	SET	TIME	SPEC	STGE	ORG	TOT
910702	C1	14.5	.	BS	3	3	1220	SCUL	.	.	9
910702	C1	14.5	.	BS	3	3	1220	REDS	.	.	3
910702	C1	14.5	.	BS	3	3	1220	PEAM	.	.	2
910702	C6	18.5	.	PS	1	1	1320	STIC	.	.	3
910702	C6	18.5	.	PS	3	1	1320	STIC	JU	.	45
910702	C6	18.5	.	PS	3	2	1320	SCUL	.	.	1
910702	C6	18.5	.	PS	3	2	1320	BULL	.	.	1
910702	C6	18.5	.	PS	3	2	1320	SQUA	.	.	4
910702	C6	18.5	.	PS	3	2	1320	REDS	.	.	2
910702	C6	18.5	.	PS	3	3	1320	.	.	.	0
910702	C7	.	.	PS	3	1	1325	.	.	.	0
910702	C7	.	.	PS	3	2	1330	STIC	.	.	1
910702	C7	.	.	PS	3	3	1330	STIC	.	.	1
910702	C8	.	.	PS	2	1	1330	.	.	.	0
910702	C8	.	.	PS	2	2	1400	.	.	.	0
910702	C9	.	.	PS	1	1	1400	STIC	JU	.	46
910702	C10	.	.	PS	1	1	1400	.	.	.	0
910702	C11	.	.	PS	4	1	1415	STIC	.	.	2
910702	C11	.	.	PS	4	2	1420	STIC	.	.	2
910702	C11	.	.	PS	4	3	1420	.	.	.	0
910702	C11	.	.	PS	4	4	1430	STIC	.	.	1
910702	C12	.	.	PS	2	1	1430	.	.	.	0
910702	C12	.	.	PS	2	2	1430	.	.	.	0
910702	C6	19.0	.	PS	1	1	1445	STIC	.	.	8
910702	D3	.	.	BS	3	1	1500	LSSU	.	.	1
910702	D3	.	.	BS	3	1	1500	SCUL	.	.	1
910702	D3	.	.	BS	3	1	1500	REDS	.	.	2
910702	D3	.	.	BS	3	1	1500	SQUA	.	.	2
910702	D3	.	.	BS	3	1	1500	PEAM	.	.	1
910702	D3	.	.	BS	3	2	1515	CRAP	.	.	2
910702	D3	.	.	BS	3	2	1515	SQUA	.	.	2
910702	D3	.	.	BS	3	2	1515	REDS	.	.	9
910702	D3	.	.	BS	3	2	1515	STIC	.	.	2
910702	D3	.	.	BS	3	2	1515	PEAM	.	.	2
910702	D3	.	.	BS	3	2	1515	LSSU	.	.	1
910702	D3	.	.	BS	3	2	1515	SCUL	.	.	8
910702	D3	.	.	BS	3	3	1530	CRAP	.	.	2
910702	D3	.	.	BS	3	3	1530	REDS	.	.	2
910702	D3	.	.	BS	3	3	1530	SQUA	AD	.	13
910702	D3	.	.	BS	3	3	1530	LSSU	.	.	4
910702	D3	.	.	BS	3	3	1530	PEAM	.	.	1
910702	D3	.	.	BS	3	3	1530	SCUL	.	.	3

Appendix 2. Length (mm) and weight (g) of fish samples  
(preserved in formalin) from Surrey Bend, 1991.

DATE	SITE	IDNUM	SPECIES	LENGTH	WEIGHT
910328	C5	910001	CHUM	38	0.35
910328	C5	910002	CHUM	41	0.45
910328	C5	910003	CHUM	36	0.34
910328	C5	910004	STIC	42	0.83
910328	C5	910005	CHUM	35	0.35
910328	C5	910006	CHUM	36	0.27
910328	C5	910007	CHUM	38	0.30
910328	C5	910008	SQUA	25	0.12
910328	C5	910009	CHUM	35	0.18
910328	C5	910010	CHUM	36	0.34
910328	C5	910011	REDS	25	0.19
910328	C5	910012	CHUM	36	0.29
910328	C5	910013	CHUM	34	0.24
910328	C5	910014	CHUM	35	0.32
910328	C5	910015	SQUA	21	0.09
910328	D1	910346	CHUM	39	0.38
910328	D1	910347	CHUM	38	0.35
910328	D1	910348	CHUM	38	0.38
910328	D1	910349	CHUM	36	0.29
910328	D1	910350	CHUM	38	0.33
910328	D1	910351	CHUM	38	0.33
910328	D1	910352	CHUM	38	0.33
910328	D1	910353	STIC	32	0.28
910328	C6	910087	CHIN	38	0.36
910328	C6	910088	CHIN	39	0.42
910328	C6	910089	CHIN	38	0.39
910328	C6	910090	CHIN	38	0.39
910328	C6	910091	CHIN	39	0.39
910328	C6	910092	CHIN	40	0.47
910328	C6	910093	CHIN	39	0.43
910328	C6	910094	CHIN	39	0.38
910328	C6	910095	CHUM	39	0.37
910328	C6	910096	CHUM	37	0.27
910328	C6	910097	CHUM	40	0.46
910328	C6	910098	CHUM	37	0.27
910328	C6	910099	CHUM	39	0.39
910328	C6	910100	CHUM	37	0.26
910328	C6	910101	CHUM	36	0.25
910328	C6	910102	CHUM	38	0.28
910328	C6	910103	CHUM	38	0.38
910328	C6	910104	CHUM	39	0.39
910328	C6	910105	STIC	48	1.28
910328	C6	910106	STIC	48	0.89
910328	C6	910107	STIC	47	1.35
910328	C6	910108	STIC	39	0.71
910328	C6	910109	STIC	38	0.51
910328	C6	910110	STIC	45	1.02
910328	C6	910111	STIC	46	1.00
910328	C6	910112	STIC	39	0.71
910328	C6	910113	STIC	38	0.61

DATE	SITE	IDNUM	SPECIES	LENGTH	WEIGHT
910328	C6	910114	STIC	35	0.39
910328	C6	910115	STIC	30	0.26
910328	C6	910116	REDS	28	0.18
910328	C6	910117	SQUA	28	0.19
910328	D5	910338	CHUM	38	0.32
910328	D5	910339	CHUM	35	0.24
910328	D5	910340	CHUM	36	0.28
910328	D5	910341	CHUM	36	0.33
910328	D5	910342	CHUM	36	0.30
910328	D5	910343	CHUM	37	0.37
910328	D5	910344	CHUM	35	0.26
910328	D5	910345	CHUM	28	0.13
910328	D4	911429	CARP	78	8.26
910328	D4	911430	STIC	43	0.93
910328	D4	911431	STIC	45	0.90
910328	D4	911432	CHIN	42	0.47
910328	D4	911433	CHUM	40	0.39
910328	D4	911434	CHUM	38	0.34
910328	D4	911435	CHUM	40	0.36
910328	D4	911436	CHUM	39	0.32
910328	D4	911437	SQUA	27	0.15
910328	D4	911438	SQUA	26	0.13
910328	D4	911439	SQUA	23	0.09
910328	D4	911440	REDS	24	0.08
910328	D4	911441	REDS	24	0.08
910328	D4	911442	REDS	27	0.10
910328	D3	910355	SQUA	24	0.18
910328	D3	910356	CHUM	37	0.35
910328	D3	910357	STIC	36	0.41
910328	C1	910324	CHIN	36	0.38
910328	C1	910325	CHIN	39	0.48
910328	C1	910326	CHUM	37	0.31
910328	C1	910327	CHUM	38	0.32
910328	C1	910328	CHUM	37	0.32
910328	C1	910329	CHUM	40	0.38
910328	C1	910330	CHUM	36	0.26
910328	C1	910331	CHUM	38	0.34
910328	C1	910332	CHUM	36	0.23
910328	C1	910333	REDS	34	0.35
910328	C1	910334	REDS	26	0.16
910328	C1	910335	LSSU	38	0.43
910328	C1	910336	SCUL	61	2.37
910328	C1	910337	SCUL	46	0.81
910328	F1	910118	STAR	68	2.78
910328	F1	910119	STAR	83	4.63
910328	F1	910120	STAR	73	3.69
910328	F1	910121	PEAM	49	1.04
910328	F1	910122	SQUA	27	0.18
910328	F1	910123	CHIN	39	0.35
910328	F1	910124	CHIN	39	0.41

DATE	SITE	IDNUM	SPECIES	LENGTH	WEIGHT
910328	F1	910125	CHIN	38	0.39
910328	F1	910126	CHUM	37	0.29
910328	F1	910127	CHUM	35	0.29
910328	F1	910128	CHUM	36	0.27
910328	F1	910129	CHUM	37	0.27
910328	F1	910130	CHUM	37	0.31
910328	F1	910131	CHUM	35	0.21
910328	F1	910132	CHIN	40	0.39
910328	F1	910133	CHUM	40	0.39
910328	F1	910134	CHUM	35	0.28
910328	F1	910135	CHUM	34	0.22
910328	C15	910016	SOCK	94	6.77
910328	C17	910358	STIC	26	0.19
910328	C17	910359	CHIN	42	0.61
910328	C17	910360	CHIN	40	0.59
910328	C17	910361	CHIN	42	0.68
910328	C17	910362	CHUM	40	0.46
910328	C17	910363	CHUM	38	0.44
910328	C17	910364	CHUM	42	0.51
910328	C17	910365	CHUM	44	0.59
910328	C17	910366	CHUM	41	0.46
910328	C17	910367	CHUM	39	0.50
910328	C17	910368	CHUM	44	0.66
910328	C17	910369	CHUM	43	0.61
910328	C17	910370	CHUM	41	0.52
910328	C17	910371	CHUM	42	0.59
910328	C17	910372	CHUM	40	0.45
910328	C17	910373	CHUM	39	0.38
910328	C17	910374	CHUM	41	0.57
910328	C17	910375	CHUM	40	0.53
910328	C17	910376	CHUM	38	0.46
910328	D4	910065	CHIN	40	0.42
910328	D4	910066	CHIN	45	0.67
910328	D4	910067	CHIN	38	0.37
910328	D4	910068	CHIN	40	0.45
910328	D4	910069	CHIN	42	0.45
910328	D4	910070	CHIN	41	0.45
910328	D4	910071	CHIN	39	0.40
910328	D4	910072	CHIN	40	0.43
910328	D4	910073	CHUM	40	0.38
910328	D4	910074	CHUM	38	0.35
910328	D4	910075	CHUM	42	0.39
910328	D4	910076	CHUM	40	0.37
910328	D4	910077	CHUM	41	0.44
910328	D4	910078	CHUM	37	0.30
910328	D4	910079	CHUM	38	0.36
910328	D4	910080	CHUM	38	0.31
910328	D4	910081	CHUM	40	0.37
910328	D4	910082	CHUM	39	0.41
910328	D4	910083	CHUM	39	0.34

DATE	SITE	IDNUM	SPECIES	LENGTH	WEIGHT
910328	D4	910084	CHUM	43	0.45
910328	D4	910085	CHUM	38	0.36
910328	D4	910086	CHUM	40	0.44
910426	D4	910017	CHIN	49	1.54
910426	D4	910018	CHIN	44	1.03
910426	D4	910019	CHIN	48	1.40
910426	D4	910020	CHIN	51	1.68
910426	D4	910021	CHIN	42	0.95
910426	D4	910022	CHIN	48	1.17
910426	D4	910023	CHIN	46	1.12
910426	D4	910024	CHIN	44	0.93
910426	D4	910025	CHIN	49	1.33
910426	D4	910026	CHIN	43	1.00
910426	D4	910027	CHIN	43	0.87
910426	D4	910028	CHIN	43	0.81
910426	D4	910029	CHIN	39	0.63
910426	D4	910030	CHUM	54	1.54
910426	D4	910031	CHUM	48	1.04
910426	D4	910032	CHUM	49	1.19
910426	D4	910033	CHUM	46	1.06
910426	D4	910034	CHUM	55	1.57
910426	D4	910035	CHUM	41	0.65
910426	D4	910036	CHUM	49	1.00
910426	D4	910037	CHUM	42	0.60
910426	D4	910038	REDS	24	0.22
910426	D4	910038	REDS	26	0.19
910426	D4	910038	REDS	32	0.40
910426	D4	910038	SQUA	27	0.16
910426	D4	910038	SQUA	22	0.11
910426	D4	910038	REDS	30	0.19
910426	D4	910038	SQUA	24	0.14
910426	D4	910038	SQUA	22	0.10
910426	D4	910038	SQUA	28	0.22
910426	D4	910038	REDS	26	0.16
910426	D4	910039	SOCK	28	0.15
910426	D4	910040	SOCK	27	0.15
910426	D4	910041	SOCK	30	0.24
910426	D4	910042	SOCK	30	0.28
910426	D4	910043	SOCK	32	0.31
910426	D4	910044	SOCK	28	0.30
910426	D4	910045	SOCK	29	0.38
910426	D4	910046	SOCK	27	0.28
910426	D4	910047	SOCK	25	0.18
910426	D4	910048	SOCK	29	0.24
910426	D4	910049	SOCK	30	0.37
910426	D4	910050	SOCK	29	0.26
910426	D4	910051	SOCK	26	0.24
910426	D4	910052	SOCK	28	0.20
910426	D4	910053	SOCK	28	0.24
910426	D4	910054	SOCK	29	0.32

DATE	SITE	IDNUM	SPECIES	LENGTH	WEIGHT
910426	D4	910055	SOCK	25	0.23
910426	D4	910056	SOCK	25	0.21
910426	D4	910057	SOCK	33	0.39
910426	D4	910058	SOCK	28	0.22
910426	D4	910059	SOCK	27	0.25
910426	D4	910060	SOCK	30	0.33
910426	D4	910061	SOCK	25	0.18
910426	D4	910062	SOCK	26	0.21
910426	D4	910063	SOCK	30	0.29
910426	D4	910064	CHUM	30	0.31
910426	F1	910225	CHUM	36	0.36
910426	F1	910226	CHUM	37	0.36
910426	F1	910227	CHUM	38	0.26
910426	F1	910228	SOCK	61	1.73
910426	F1	910229	SOCK	33	0.20
910426	F1	910230	SOCK	27	0.09
910426	F1	910231	SOCK	31	0.18
910426	F1	910232	SOCK	28	0.11
910426	F1	910233	CHIN	43	0.68
910426	F1	910234	CHIN	43	0.77
910426	F1	910235	CHIN	40	0.55
910426	F1	910236	CHIN	41	0.72
910426	F1	910237	CHIN	45	0.81
910426	F1	910238	CHIN	41	0.63
910426	F1	910239	CHIN	40	0.59
910426	F1	910240	CHIN	38	0.45
910426	F1	910241	CHIN	40	0.62
910426	F1	910242	CHIN	42	0.68
910426	F1	910243	CHIN	41	0.62
910426	F1	910244	CHIN	36	0.46
910426	C7	910250	SOCK	28	0.22
910426	C7	910251	SOCK	29	0.17
910426	C7	910252	CHIN	43	0.93
910426	C7	910253	CHIN	45	1.01
910426	C7	910254	CHIN	48	1.37
910426	C7	910255	CHIN	40	0.62
910426	C7	910256	CHIN	44	0.92
910426	C7	910257	CHIN	42	0.68
910426	C7	910258	CHIN	39	0.57
910426	C7	910259	CHIN	40	0.66
910426	C7	910260	CHIN	41	0.72
910426	C7	910261	CHIN	42	0.95
910426	C7	910262	CHIN	46	1.17
910426	C7	910263	CHIN	45	0.99
910426	C7	910264	CHIN	40	0.72
910426	C7	910265	CHIN	36	0.42
910426	C7	910266	CHIN	43	0.87
910426	C7	910267	CHIN	50	1.35
910426	C7	910268	CHIN	41	0.81
910426	C7	910269	CHIN	44	0.88

DATE	SITE	IDNUM	SPECIES	LENGTH	WEIGHT
910426	C7	910270	CHIN	39	0.66
910426	C7	910271	CHIN	40	0.71
910426	C7	910272	CHIN	42	0.88
910426	C7	910273	CHUM	44	0.77
910426	C7	910274	CHUM	45	0.85
910426	C7	910275	CHUM	42	0.69
910426	C7	910276	CHUM	44	0.76
910426	C7	910277	CHUM	45	0.89
910426	C7	910278	CHUM	36	0.40
910426	C7	910279	CHUM	43	0.62
910426	C7	910280	CHUM	38	0.33
910426	C7	910281	CHUM	39	0.60
910426	C7	910282	CHUM	40	0.62
910426	C7	910283	CHUM	38	0.49
910426	C7	910284	CHUM	35	0.36
910426	C7	910285	COHO	32	0.25
910426	C3	910299	CHIN	40	0.58
910426	C3	910300	CHIN	41	0.87
910426	C3	910301	CHIN	48	1.21
910426	C3	910302	CHIN	42	0.86
910426	C3	910303	CHIN	39	0.49
910426	C3	910304	CHIN	40	0.70
910426	C3	910305	CHIN	40	0.55
910426	C3	910306	CHIN	53	1.75
910426	C3	910307	CHIN	47	1.23
910426	C3	910308	CHIN	43	0.87
910426	C3	910309	CHIN	42	0.66
910426	C3	910310	CHIN	42	0.62
910426	C3	910311	CHIN	39	0.54
910426	C3	910312	CHUM	55	1.66
910426	C3	910313	CHUM	48	1.20
910426	C3	910314	CHUM	42	0.65
910426	C3	910315	CHUM	48	1.07
910426	C3	910316	CHUM	46	1.00
910426	C3	910317	CHUM	45	0.80
910426	C3	910318	SOCK	33	0.30
910426	C3	910319	SOCK	28	0.15
910426	C3	910320	SOCK	28	0.15
910426	C1	910286	CHUM	49	1.06
910426	C1	910287	CHIN	57	2.33
910426	C1	910288	CHUM	52	1.56
910426	C1	910289	CHUM	51	1.40
910426	C1	910290	CHUM	37	0.42
910426	C1	910291	CHUM	32	0.35
910426	C1	910292	CHIN	39	0.52
910426	C1	910293	CHIN	40	0.60
910426	C1	910294	CHIN	51	1.57
910426	C1	910295	CHIN	52	1.72
910426	C1	910296	CHIN	41	0.71
910426	C1	910297	CHIN	47	1.11

DATE	SITE	IDNUM	SPECIES	LENGTH	WEIGHT
910426	C1	910298	CHIN	44	0.86
910529	D1	911535	SQUA	32	0.23
910529	D1	911536	SQUA	30	0.31
910529	D1	911537	SQUA	28	0.17
910529	D1	911538	SQUA	107	13.38
910529	D1	911539	STIC	71	4.51
910529	D1	911540	PEAM	53	1.64
910529	D1	911541	PEAM	120	19.54
910529	D1	911542	PEAM	63	2.80
910529	D1	911543	PEAM	61	2.76
910529	D1	911544	PEAM	72	4.45
910529	D1	911545	PEAM	68	3.82
910529	D1	911546	PEAM	81	6.05
910529	D1	911547	PEAM	63	2.99
910529	D1	911548	PEAM	77	4.99
910529	D1	911549	REDS	34	0.49
910529	D1	911550	REDS	36	0.58
910529	D1	911551	REDS	26	0.13
910529	D1	911552	REDS	28	0.19
910529	D1	911553	REDS	26	0.13
910529	D1	911554	SOCK	29	0.11
910529	D1	911555	SOCK	29	0.14
910529	D1	911556	SOCK	30	0.09
910529	D1	911557	SOCK	31	0.13
910529	D1	911558	SOCK	28	0.09
910529	D1	911559	SOCK	28	0.11
910529	D1	911560	SOCK	30	0.11
910529	D1	911561	SOCK	27	0.10
910529	D1	911562	SOCK	28	0.08
910529	D1	911563	SOCK	28	0.08
910529	D1	911564	SOCK	26	0.09
910529	D1	911565	SOCK	29	0.09
910529	D1	911566	SOCK	28	0.05
910529	C3	911626	STIC	65	3.31
910529	C3	911627	SQUA	27	0.25
910529	C3	911628	REDS	24	0.12
910529	C3	911629	REDS	32	0.36
910529	C3	911630	REDS	39	0.83
910529	C3	911631	REDS	39	0.62
910529	C3	911632	REDS	36	0.54
910529	C3	911633	REDS	28	0.24
910529	C3	911634	REDS	22	0.08
910529	C3	911635	REDS	35	0.47
910529	C3	911636	CHIN	66	3.62
910529	C3	911637	CHIN	63	2.92
910529	C3	911638	SOCK	27	0.13
910529	C3	911639	SOCK	26	0.12
910529	C3	911640	SOCK	28	0.15
910529	C3	911641	SOCK	27	0.15
910529	C3	911642	SOCK	27	0.12

DATE	SITE	IDNUM	SPECIES	LENGTH	WEIGHT
910529	C3	911643	SOCK	28	0.16
910529	C3	911644	SOCK	26	0.10
910529	C3	911645	SOCK	28	0.13
910529	C3	911646	SOCK	28	0.14
910529	C3	911647	SOCK	29	0.16
910529	C3	911648	SOCK	28	0.17
910529	C3	911649	SOCK	27	0.12
910529	C3	911650	SOCK	30	0.16
910529	C3	911651	SOCK	29	0.16
910529	C3	911652	SOCK	28	0.16
910529	C3	911653	SOCK	27	0.12
910529	D2	911463	STIC	68	3.86
910529	D2	911464	STIC	63	3.06
910529	D2	911465	STIC	66	2.93
910529	D2	911466	SQUA	29	0.27
910529	D2	911467	SQUA	30	0.28
910529	D2	911468	SQUA	27	0.17
910529	D2	911469	SOCK	28	0.09
910529	D2	911470	SOCK	31	0.23
910529	D2	911471	SOCK	27	0.13
910529	D2	911472	SOCK	28	0.13
910529	D2	911473	SOCK	30	0.15
910529	D2	911474	SOCK	29	0.15
910529	D2	911475	SOCK	29	0.12
910529	D2	911476	SOCK	28	0.13
910529	D2	911477	SOCK	42	0.73
910529	D2	911478	COHO	33	0.24
910529	D2	911479	SQUA	29	0.23
910529	D2	911480	REDS	32	0.37
910529	D2	911481	REDS	31	0.26
910529	D2	911482	REDS	31	0.26
910529	D2	911483	REDS	32	0.34
910529	D2	911483	REDS	24	0.10
910529	D2	911484	REDS	26	0.16
910529	D2	911485	REDS	30	0.26
910529	D2	911486	REDS	32	0.27
910529	D2	911487	REDS	28	0.18
910529	D4	911654	PEAM	57	2.28
910529	D4	911655	PEAM	46	1.21
910529	D4	911656	LSSU	50	1.72
910529	D4	911657	LSSU	77	6.60
910529	D4	911658	LSSU	59	2.63
910529	D4	911659	LSSU	67	4.16
910529	D4	911660	LSSU	50	1.70
910529	D4	911661	CHIN	50	1.25
910529	D4	911662	SOCK	42	0.82
910529	D4	911663	REDS	33	0.40
910529	D4	911664	REDS	29	0.25
910529	D4	911665	REDS	33	0.47
910529	D4	911666	REDS	29	0.26

DATE	SITE	IDNUM	SPECIES	LENGTH	WEIGHT
910529	D4	911667	REDS	27	0.19
910529	D4	911668	REDS	38	0.62
910529	D4	911669	REDS	29	0.22
910529	D4	911670	REDS	36	0.53
910529	D4	911671	REDS	39	0.72
910529	D4	911672	REDS	33	0.41
910529	D4	911673	REDS	35	0.58
910529	D4	911674	REDS	30	0.32
910529	D4	911675	REDS	25	0.17
910529	D4	911676	STIC	69	3.76
910529	D4	911677	STIC	53	2.05
910529	D4	911678	STIC	48	1.66
910529	D4	911679	STIC	50	1.67
910529	D4	911680	STIC	38	0.56
910529	D4	911681	STIC	71	4.39
910529	D4	911681	STIC	67	3.69
910529	D4	911682	STIC	72	4.59
910529	D4	911683	SQUA	27	0.26
910529	D4	911684	SQUA	24	0.15
910529	D4	911685	SQUA	35	0.57
910529	D4	911686	SQUA	22	0.13
910529	D4	911687	SQUA	27	0.24
910529	D4	911688	SQUA	36	0.53
910529	D4	911689	SQUA	29	0.27
910529	D4	911690	SQUA	31	0.39
910529	D4	911691	SQUA	33	0.44
910529	D4	911692	SQUA	26	0.22
910529	D4	911693	SQUA	26	0.22
910529	D4	911694	SQUA	25	0.15
910529	D4	911695	SQUA	25	0.19
910529	D4	911696	SOCK	29	0.17
910529	D4	911697	SOCK	36	0.44
910529	D4	911698	SOCK	30	0.17
910529	D4	911699	SOCK	29	0.20
910529	D4	911700	SOCK	30	0.23
910529	D4	911701	SOCK	30	0.18
910529	D4	911702	SOCK	29	0.16
910529	D4	911703	SOCK	28	0.15
910529	D4	911704	SOCK	39	0.60
910529	D4	911705	SOCK	39	0.59
910529	D4	911706	SOCK	28	0.16
910529	D4	911707	SOCK	28	0.19
910529	D4	911708	SOCK	29	0.20
910529	D4	911709	SOCK	27	0.13
910529	D4	911710	SOCK	26	0.12
910529	D4	911711	SOCK	29	0.18
910529	D4	911712	SOCK	28	0.16
910529	D4	911713	SOCK	29	0.19
910529	D4	911714	SOCK	31	0.26
910529	D4	911715	SOCK	29	0.15

DATE	SITE	IDNUM	SPECIES	LENGTH	WEIGHT
910529	D4	911716	SOCK	29	0.21
910529	D4	911717	SOCK	29	0.17
910529	D4	911718	SOCK	28	0.15
910529	D4	911719	SOCK	29	0.17
910529	D5	911504	LSSU	44	1.09
910529	D5	911505	BMIN	41	0.82
910529	D5	911506	CHIN	59	2.47
910529	D5	911507	CHIN	39	0.64
910529	D5	911508	CHIN	47	1.07
910529	D5	911509	CHIN	50	1.39
910529	D5	911510	CHIN	55	2.30
910529	D5	911511	COHO	38	0.62
910529	D5	911512	CHIN	43	0.83
910529	D5	911513	SOCK	47	0.92
910529	D5	911514	SOCK	38	0.52
910529	D5	911515	SOCK	33	0.28
910529	D5	911516	SOCK	28	0.15
910529	D5	911517	SOCK	32	0.31
910529	D5	911518	SOCK	28	0.12
910529	D5	911519	SOCK	30	0.22
910529	D5	911520	SOCK	28	0.11
910529	D5	911521	SOCK	30	0.20
910529	D5	911522	SOCK	32	0.25
910529	D5	911523	SOCK	29	0.14
910529	D5	911524	SOCK	30	0.17
910529	D5	911525	SOCK	27	0.13
910529	D5	911526	SOCK	40	0.68
910529	D5	911527	SOCK	30	0.20
910529	D5	911528	SOCK	29	0.13
910529	D5	911529	SOCK	29	0.13
910529	D5	911530	SOCK	29	2.16
910529	D5	911531	SOCK	29	0.14
910529	D5	911532	SOCK	32	0.22
910529	D5	911533	SOCK	29	0.11
910529	D5	911534	SOCK	29	0.13
910529	C1	911353	SQUA	89	8.13
910529	C1	911354	SQUA	28	0.22
910529	C1	911355	SQUA	84	6.88
910529	C1	911356	REDS	33	0.44
910529	C1	911357	REDS	41	0.82
910529	C1	911358	REDS	37	0.72
910529	C1	911359	REDS	36	0.52
910529	C1	911360	REDS	34	0.53
910529	C1	911361	REDS	29	0.27
910529	C1	911362	REDS	28	0.25
910529	C1	911363	SOCK	43	0.76
910529	C1	911364	CHUM	40	0.60
910529	C1	911365	SOCK	39	0.56
910529	C1	911366	SOCK	27	0.08
910529	C1	911367	SOCK	27	0.06

DATE	SITE	IDNUM	SPECIES	LENGTH	WEIGHT
910529	C1	911368	SOCK	28	0.09
910529	C1	911369	SOCK	28	0.10
910529	C1	911370	SOCK	28	0.09
910529	C1	911371	SOCK	28	0.09
910529	C1	911372	SOCK	27	0.09
910529	C1	911373	SOCK	29	0.15
910529	C1	911374	SOCK	26	0.05
910529	C1	911375	SOCK	28	0.10
910529	C1	911376	SOCK	28	0.08
910529	C1	911377	SOCK	28	0.07
910529	C1	911378	SOCK	27	0.07
910529	C1	911379	SOCK	29	0.11
910529	C1	911380	SOCK	28	0.08
910529	C1	911381	SOCK	28	0.06
910529	C1	911382	SOCK	28	0.10
910529	C1	911383	SOCK	28	0.11
910529	C1	911384	SOCK	28	0.08
910529	C1	911385	SOCK	28	0.11
910529	C1	911386	SOCK	30	0.09
910529	C1	911387	SOCK	28	0.09
910529	C1	911388	SOCK	28	0.11
910529	C1	911389	SOCK	28	0.10
910529	C1	911390	SOCK	28	0.09
910529	C1	911391	SOCK	28	0.10
910529	C1	911392	SOCK	28	0.09
910529	C1	911393	SOCK	29	0.12
910529	C1	911394	SOCK	32	0.20
910529	C1	911395	SOCK	29	0.12
910529	C1	911396	SOCK	29	0.11
910529	C1	911397	SOCK	28	0.06
910529	C1	911398	SOCK	28	0.07
910529	C1	911399	SOCK	29	0.09
910529	C1	911400	SOCK	31	0.15
910529	C1	911401	SOCK	28	0.08
910529	C1	911402	SOCK	28	0.08
910529	C1	911403	SOCK	32	0.18
910529	C1	911404	SOCK	29	0.11
910529	C1	911405	SOCK	31	0.18
910529	C1	911406	SOCK	26	0.05
910529	C1	911407	SOCK	29	0.10
910529	C1	911408	SOCK	29	0.09
910529	C1	911409	SOCK	26	0.05
910529	C1	911410	CHIN	37	0.42
910529	C1	911411	CHIN	38	0.47
910529	C1	911412	CHIN	42	0.78
910529	C1	911413	CHIN	44	0.85
910529	C1	911414	CHIN	41	0.63
910529	C1	911415	CHIN	61	2.75
910529	C1	911416	CHIN	37	0.48
910529	C1	911417	CHIN	42	0.78

DATE	SITE	IDNUM	SPECIES	LENGTH	WEIGHT
910529	C1	911418	CHIN	54	1.90
910529	C1	911419	CHIN	43	0.87
910529	C1	911420	CHIN	42	0.77
910529	C1	911421	CHIN	40	0.56
910529	C1	911422	SOCK	38	0.43
910529	C1	911423	CHIN	38	0.50
910529	C1	911424	CHIN	38	0.39
910529	C1	911425	CHIN	35	0.30
910529	C1	911426	CHIN	37	0.45
910529	C1	911427	CHIN	37	0.39
910529	C1	911428	SQUA	48	1.27
910529	F2	911347	COHO	92	10.50
910529	F2	911348	SOCK	27	0.14
910529	F2	911349	SOCK	28	0.17
910529	F2	911350	SOCK	27	0.15
910529	F2	911351	SOCK	28	0.15
910529	F2	911352	SOCK	26	0.11
910529	C3	911444	CHIN	55	2.14
910529	C3	911445	CHIN	46	1.23
910529	C3	911446	CHIN	48	1.19
910529	C3	911447	CHIN	43	0.94
910529	C3	911448	SOCK	39	0.67
910529	C3	911449	SOCK	30	0.18
910529	C3	911450	SOCK	29	0.19
910529	C3	911451	SOCK	29	0.16
910529	C3	911452	SOCK	27	0.12
910529	C3	911453	SOCK	28	0.12
910529	C3	911454	SOCK	28	0.12
910529	C3	911455	SOCK	30	0.12
910529	C3	911456	SOCK	27	0.12
910529	C3	911457	SOCK	28	0.12
910529	C3	911457	SOCK	29	0.13
910529	C3	911458	SOCK	30	0.15
910529	C3	911459	SOCK	30	0.12
910529	C3	911460	SOCK	28	0.13
910529	C3	911461	SOCK	29	0.11
910529	C3	911462	SOCK	28	0.13
910529	C2	911488	SOCK	44	0.91
910529	C2	911489	SOCK	36	0.48
910529	C2	911490	SOCK	26	0.14
910529	C2	911491	SOCK	27	0.16
910529	C2	911492	SOCK	27	0.13
910529	C2	911493	SOCK	29	0.17
910529	C2	911494	SOCK	27	0.14
910529	C2	911495	SOCK	26	0.12
910529	C2	911496	SOCK	27	0.12
910529	C2	911497	SOCK	28	0.14
910529	C2	911498	CHIN	54	1.90
910529	C2	911499	CHIN	57	2.17
910529	C2	911500	CHIN	55	1.96

DATE	SITE	IDNUM	SPECIES	LENGTH	WEIGHT
910529	C2	911501	CHIN	56	2.16
910529	C2	911502	CHIN	59	2.67
910529	C2	911503	CHIN	53	1.70
910529	C8	911567	SOCK	31	0.22
910529	C8	911568	SOCK	28	0.13
910529	C8	911569	SOCK	30	0.17
910529	C8	911570	SOCK	29	0.15
910529	C8	911571	SOCK	30	0.18
910529	C8	911572	SOCK	30	0.16
910529	C8	911573	SOCK	30	0.13
910529	C8	911574	SOCK	28	0.10
910529	C8	911575	SOCK	30	0.17
910529	C8	911576	SOCK	28	0.08
910529	C8	911577	SOCK	32	0.23
910529	C8	911578	SOCK	28	0.11
910529	C8	911579	SOCK	31	0.18
910529	C8	911580	SOCK	30	0.13
910529	C8	911581	SOCK	28	0.11
910529	C8	911582	CHIN	48	1.18
910529	C8	911583	CHIN	47	1.19
910529	C8	911584	CHIN	45	1.05
910529	C8	911585	SOCK	38	0.50
910529	C13	911586	REDS	78	7.60
910529	C13	911587	CHIN	60	2.61
910529	C13	911588	CHIN	48	1.19
910529	C13	911589	CHIN	41	0.79
910529	C13	911590	COHO	41	0.75
910529	C13	911591	CHIN	40	0.56
910529	C13	911592	SOCK	30	0.22
910529	C13	911593	SOCK	31	0.18
910529	C13	911594	SOCK	29	0.14
910529	C13	911595	SOCK	27	0.09
910529	C13	911596	SOCK	30	0.16
910529	C13	911597	SOCK	33	0.28
910529	C13	911598	SOCK	30	0.17
910529	C13	911599	SOCK	29	0.14
910529	C13	911600	SOCK	31	0.25
910529	C13	911601	SOCK	30	0.17
910529	C13	911602	SOCK	29	0.15
910529	C13	911603	SOCK	28	0.11
910529	C13	911604	SOCK	29	0.14
910529	C13	911605	SOCK	28	0.16
910529	C13	911606	SOCK	33	0.25
910529	C13	911607	SOCK	29	0.16
910529	C13	911608	SOCK	28	0.13
910529	C13	911609	SOCK	31	0.17
910529	C13	911610	SOCK	30	0.18
910529	C13	911611	SOCK	31	0.20
910529	C13	911612	SOCK	31	0.20
910529	C13	911613	SOCK	28	0.11

DATE	SITE	IDNUM	SPECIES	LENGTH	WEIGHT
910529	C13	911613	SOCK	28	0.12
910529	C13	911614	SOCK	29	0.14
910529	C13	911615	SOCK	28	0.15
910529	C13	911616	SOCK	29	0.15
910529	C13	911617	SOCK	29	0.15
910529	C13	911618	SOCK	28	0.16
910529	C13	911619	SOCK	29	0.11
910529	C13	911620	SOCK	30	0.14
910529	C13	911621	SOCK	30	0.20
910529	C13	911622	SOCK	29	0.12
910529	C13	911623	SOCK	28	0.13
910529	C13	911624	SOCK	29	0.20
910529	C13	911625	SOCK	29	0.20

