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**Diel Feeding of Juvenile Pink, Chum, and Coho Salmon in Icy Strait,  
Southeastern Alaska, May–September 2001**

by

Molly V. Sturdevant, Emily A. Fergusson, Joseph A. Orsi and Alex C. Wertheimer

Auke Bay Laboratory  
Alaska Fisheries Science Center  
National Marine Fisheries Service  
National Oceanic and Atmospheric Administration  
United States Department of Commerce  
11305 Glacier Highway  
Juneau, AK 99801-8626 USA

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## Abstract

This document reports the preliminary results of diel feeding studies and the status of gastric evacuation studies on juvenile pink (*Oncorhynchus gorbuscha*), chum (*O. keta*), and coho (*O. kisutch*) salmon conducted in marine waters of the northern region of southeastern Alaska from May–September 2001. These process studies were conducted as part of the Southeast Coastal Monitoring (SECM) Project of the Auke Bay Laboratory, National Marine Fisheries Service. The objectives of the diel feeding study were to monitor diel feeding intensity and diel prey composition monthly for each species; samples were also collected for an evacuation study, with the objective of monitoring the passage of food through the gastric tract of juvenile pink and chum salmon in May and July. Monthly sampling was conducted on a transect in Icy Strait by beach seining near shore in May and by surface trawling at a station 6.4 km offshore in June–September. For the diel feeding study, we examined 220 pink, 226 chum and 137 coho salmon at seven 3-hr intervals (D1–D7) between 04:00 and 22:00. Juvenile pink, chum and coho salmon fed actively during all months; stomachs of all species averaged 50–100% fullness index and prey percent body weight (%BW) generally averaged 1–4% in all diel periods, with only 2 empty stomachs observed. With these consistently good feeding conditions over the five months, pink and chum salmon lengths increased by a factor of five from about 40–200 mm fork length. Diel patterns in feeding were evident for pink and chum salmon in June and July and for coho salmon in July, with mean fullness index and %BW increasing from minima in the morning to maxima late in the day. In May, in the near shore habitat, pink and chum salmon ate a varied diet, comprised predominantly of small and large calanoid copepods and harpacticoid copepods. In June and July, when all three salmon species were present further offshore, juvenile pink and chum salmon diets shifted to larvaceans and euphausiids, while juvenile coho salmon diets were comprised of decapod larvae and fish. In August and September, pink and chum salmon ate larvaceans and hyperiid amphipods. The evacuation study data will be used to calculate gastric evacuation rates from the decline in stomach contents between 0–32 hr and for different diets and temperatures. Results from these studies will be used to derive biophysical input parameters for bioenergetic models.

## Introduction

In this document, we report preliminary results of diel feeding studies and the status of samples collected for gastric evacuation studies on juvenile pink (*Oncorhynchus gorbuscha*), chum (*O. keta*), and coho (*O. kisutch*) salmon in Icy Strait in 2001. These process studies were conducted during monthly monitoring for the Southeast Alaska Coastal Monitoring (SECM) Project of the Auke Bay Laboratory (ABL), National Marine Fisheries Service (NMFS). The SECM project was initiated in 1997 to study the habitat use and early marine ecology of juvenile Pacific salmon (*O. spp.*) in three habitats (inshore, strait, and coastal) along a primary seaward migration corridor used by juvenile salmon. SECM results are reported monthly in NMFS cruise reports and annually in North Pacific Anadromous Fish Commission documents (e.g., Sturdevant et al. 2001; Wertheimer et al. 2001; Orsi et al., 2002). In May–September 2001, we conducted five 7-d cruises aboard the NOAA ship *John N. Cobb* in inside, strait, and coastal marine waters of the northern region of southeastern Alaska. Objectives of the process studies were to monitor diel feeding intensity (fullness) and determine changes in diel feeding periodicity and prey composition for co-occurring juvenile pink, chum and coho salmon by season and size, and to monitor the passage of food through the guts of juvenile pink and chum salmon in May and July. Information from the feeding periodicity and gastric evacuation studies will be combined with size information to compute daily ration and to develop bioenergetic models of juvenile salmon growth.

## METHODS

### Fish sampling:

The Icy Strait migration corridor was selected for conducting shipboard experiments to determine diel feeding periodicity and gastric evacuation rates of juvenile pink, chum, and coho salmon. This corridor was selected because the majority of wild and hatchery salmon produced in the region transit through it to enter the Gulf of Alaska (Orsi et al. 2002) and because a five-year time series of catch data exists for it. In May, sampling was accomplished with a beach seine in near shore habitat at the ends of the Icy Strait transect because juvenile pink and chum salmon remain along beaches during early spring (e.g., Cooney et al 1981; Landingham et al. 1987; Mortensen and Wertheimer 1988; Wertheimer and Celwycz 1996; Jaenicke and Celewycz 1998) (Figure 1). In June, July, August and September, sampling was accomplished by surface trawling at station ISC (6.4 km off the northern beach at latitude 58° 15.28', longitude 135° 26.65'). Monthly sampling was conducted at seven diel periods over two days. Multiple-day sampling was necessary because the *John N. Cobb* is not a 24-hr endurance vessel. We defined diel periods D1–D7 as 3-hr intervals beginning at 04:00, 07:00, 10:00, 13:00, 16:00, 19:00, and 22:00, respectively. To initiate evacuation studies, sub-samples from these hauls were also defined as T0.

*Beach seining.* On May 22–23, beach seining was initiated at 06:50 (D2). Beach seine sets were made from a 5.5-m skiff with a 37-m beach seine set in a round-haul pattern at selected cobble beaches at the north (Homeshore) and south (Crist Point) ends of the Icy Strait transect (Figure 1). The beach seine tapered from 5 m depth at the center to 1.5 m depth at the ends of each

wing; mesh size was 20 mm stretched, with a center panel of 10 mm mesh. Seine hauls were repeated during each time period fished until sufficient samples were collected for diel samples and evacuation studies. Fish other than pink and chum salmon were not enumerated and were released alive.

*Trawling.* After fish left the beaches in June, sampling in epipelagic waters was accomplished with a Nordic 264 rope trawl fished at the surface, directly astern the of *John N. Cobb*. The 184-m long trawl had a mouth opening approximately 20-m deep and 26-m wide. The trawl was spread by a pair of 3-m, 544-kg Lite trawl doors and was held at the surface by clusters of Polyform buoys. It was fished fully open with 150-m of main warp out at a speed of about 1.0-1.5 m sec<sup>-1</sup> (2-3 knots), and covered about 1.9-km (1.0 nm). Trawl mesh sizes ranged from 162.6-cm to 8.9-cm from the throat to the bunt; a 0.8-cm mesh knotless liner about 6 m long was sewn into the cod end and a 10.2-cm mesh panel was sewn aft of the headrope to minimize the loss of fish. Trawling was conducted on June 29-30, July 30-31, August 28-30, and September 28-30 (Table 1). At least four hauls were made daily; the 20-min fishing period actually required 45-min from deployment to retrieval. Trawls were initiated at 04:00, 07:00, 10:00 and 13:00 on the first day and at 13:00, 16:00, 19:00, and 22:00 on the second day; the replicate 13:00 hauls were done to collect samples to confirm diet similarity at the same time on different days. Trawl hauls were repeated, within the diel period, if catches were not sufficient, once in July and three times in September. Fish other than the three juvenile salmon species were retained for other purposes (Orsi et al. 2002).

#### Oceanographic sampling:

To accompany diel fish samples collected in the trawl, biophysical oceanographic samples were collected using NORPAC and bongo nets and a thermosalinograph. The NORPAC net had a 50-cm frame with 243-? m mesh and was hauled vertically; the bongo net system had a 60-cm frame with 505 and 333-? m mesh and was hauled in double-oblique fashion (45° angle). During the May diel sampling, one 20-m NORPAC and one deep (200-m) bongo sample were collected mid-day at ISC. During June-September, one 20-m NORPAC and one 20-m bongo sample were collected for each diel period. In addition, one deep (200-m) double-oblique bongo haul with a 30-sec pause at depth was made daily at ISC to sample the integrated water column. General Oceanics flow meters were placed inside each of the bongo nets to determine the volume filtered and a Bendix/Marine Advisors Model T-1 Bathykymograph<sup>1</sup> time depth recorder was used to validate the maximum deployment depth. Zooplankton samples were preserved in 5% formalin-seawater solution after removing any large jellyfish. Physical oceanographic data were collected at ISC with an onboard thermosalinograph (Sea-Bird SBE 21) and included surface (2-m) temperature (°C) and salinity (PSU) for each diel period data.

#### Shipboard processing and experiments:

*May.* After each haul, fish were sorted and pink and chum salmon fry were either anesthetized with tricaine methanesulfonate (MS-222) and preserved in 10% formalin-seawater (diel study) or immediately transferred to the vessel in buckets of fresh seawater (evacuation experiment). The

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<sup>1</sup> Reference to trade names does not imply endorsement by the Auke Bay Laboratory, National Marine Fisheries Service, NOAA Fisheries.

buckets of salmon fry for evacuation studies were placed in tanks full of seawater and aerated. Seawater in the tanks was pumped from 2-m below the vessel and filtered through a 63- $\mu$ m sieve to remove potential zooplankton food. Fish sub-samples (n=10) were removed at nine intervals ranging from 1-32 hours after T0, a time duration judged sufficient to completely empty the stomachs; samples were preserved in 10% formalin-seawater.

*June-September.* After each haul, the fish caught were anesthetized, identified, and subsamples (n=12) were preserved in 10% formalin-seawater (diel study) or, for July pinks and chums, transferred immediately from the net into 2.5 m<sup>3</sup> live tanks (evacuation study). The live tanks employed the same filtration system used in May; thermometers failed during tank temperature monitoring, but 2-m surface temperatures during the experiment on July 30-31 were recorded as 11.5-13.2°C (Orsi et al. 2002). Evacuation study sub-samples were collected as in May.

#### Laboratory processing:

*Fish.* Preserved fish were measured (nearest mm FL) and weighed (nearest mg wet weight) and the stomachs were excised, weighed (nearest mg wet weight), and stored in 50% isopropyl alcohol. During later microscopic analysis, indices of stomach fullness and prey digestion were recorded from visual assessment. Relative fullness was recorded as: empty, 5% (trace), 25%, 50%, 75%, 100% or 110% (distended). The state of digestion was recorded as: 1 = partially digested, 2 = mostly digested 3 = empty, and 5 = ruptured gut due to poor preservation. Stomach content weight was determined as the difference between the weights of the full and the empty stomach. Stomach contents were teased apart and prey organisms were identified and enumerated on a gridded petri dish. As much as possible, taxa were identified by species, sex, life history stage, and size groups to examine prey selection. Large calanoid copepods were identified as those > 2.5 mm total length (TL). Small calanoids were identified as those  $\leq$  2.5 mm TL, and included the common pelagic cyclopoid, *Oithona* spp. Taxa such as euphausiid or amphipod species were similarly defined by life history stage and/or length ranges. Prey weight values were taken from data on file at the ABL. When very abundant, the numbers of gelatinous larvaceans without hard parts to count were estimated by multiplying the number of uniformly-sized clumps teased apart by the numbers estimated per clump. Prey biomass was calculated by multiplying prey counts by the mean weight per taxon-size class.

*Plankton.* Settled volumes (SVs, ml) of NORPAC samples were measured in the laboratory after 24-hr in Imhof cones. These samples were replaced in storage bottles for later microscopic analysis of species composition and abundance. Displacement volumes (DVs, ml) of bongo samples were determined and taxonomic composition was visually estimated as percent volume of the top five categories. Displacement volumes and species composition of sub-samples obtained with a Folsom splitter have been completed, but not analyzed, for the deep bongo sample series; species composition and DV of the shallow diel bongo samples are in progress. Settled volumes of diel 20-m vertical zooplankton hauls (NORPAC) and DVs of monthly shallow and deep bongos are included in this report.

*Analysis.* Data were summarized by species and month for each diel or evacuation period, and included size as mean FL and wet weight; stomach mean fullness index (% fullness); prey percent body weight (%BW, stomach content wet weight divided by fish body weight without

stomach contents); mean total numbers and weights of prey; mean percent numbers (%N), mean percent weights (%W), and percent frequency of occurrence (%FO) of major prey taxa. Rates of gastric evacuation will be calculated for May and July from the decline in fish stomach content mass from T0 through successive intervals of starvation. Zooplankton species composition will be summarized as mean numbers  $m^{-3}$ ; prey selection will be determined by comparing taxa consumed to taxa present in the 20-m water column. Evacuation rates will be combined with data on diel feeding periodicity to calculate daily ration for juvenile pink and chum salmon; biophysical data will be used in bioenergetic models to assess prey consumption.

## ***RESULTS and DISCUSSION***

Throughout the season, samples were used from ten beach seine hauls, 34 trawl hauls, 34 NORPAC hauls and 33 bongo hauls. For diel feeding studies, stomachs of 518 juvenile salmon were sampled over the five months (Table 1). Salmon were not caught in every diel period sampled; in general, each species was caught in four to seven diel periods each month. Two notable exceptions were pink salmon in June, when sufficient samples were caught in only two periods, and coho salmon, which were caught in sufficient numbers only in June and July (Table 1). All diel samples have been processed except the September pink salmon. For gastric evacuation studies, 152 pink and 171 chum salmon were sampled from beach seine catches in May, while 104 pink and 159 chum salmon were sampled from trawl catches in July. In May, catches of chum salmon required two T0 samples and catches of pink salmon required four T0 samples to cover evacuation periods; in July, three T0 catches were required for both species (Wertheimer et al., unpublished May cruise report CR-01-09; Sturdevant et al., unpublished July cruise report CR-01-13). Catches of juvenile coho were not large enough to allow evacuation studies to be done on them.

Pink and chum salmon mean sizes were very similar to one another in each month, while coho salmon were larger than these species in June and July (Orsi et al. 2002). From May to September, mean lengths of juvenile pink salmon increased steadily from 40–88–118–56–196 mm FL (Table 2); similarly, mean sizes of juvenile chum salmon increased steadily from 45–94–118–150–197 mm FL in these months (Table 3). Juvenile coho salmon lengths averaged 160 and 188 mm FL in June and July (Table 4). From May to June, pink and chum salmon size increases represented 52–55% in length and 92–94% in weight. From June to September, their monthly sizes increased 20–25% in length and 45–63% in weight. These size increases indicate good growth conditions for both species (see also Orsi et al. 2002).

Monthly feeding intensity was high in all diel periods for juvenile pink salmon (Table 5; Figures 2 and 5), juvenile chum salmon (Table 6; Figures 3 and 6) and juvenile coho salmon (Table 6; Figures 4 and 7). For pink salmon ( $n = 155$ ), monthly stomach fullness index averaged 66–100% from May–August, in all diel periods except one (June D1); no empty stomachs were found, and the June D1 sample is the only one in which mean %BW fell below 1% (Table 5). A diel trend in pink salmon fullness was evident in June and July. Mean fullness index increased from 50–66% at 07:00 to 100% at 19:00 or 22:00 in both months (Figure 2); mean %BW increased over this period from 0.6% to 4.2% in June and from 1.4 to 4.8% in July (Figure 5; Table 5). Mean stomach content weight and total number of prey consumed by juvenile pink salmon were much higher in June–August than in May, but fullness and %BW were generally not higher. These

patterns indicate that appropriate types and sizes of prey were available both early and late in the season and that monthly feeding conditions were consistently good for growing pink salmon.

For juvenile chum salmon, average stomach fullness was even greater during diel periods of each month than for pink salmon, with higher total numbers of prey consumed (Table 6; Figure 3). In May, mean fullness index of chum salmon was consistently very high, at least 80% throughout the day; however, digestion index was higher at mid-day compared to morning, while numbers of prey and %BW values dipped at mid-day, suggesting a decline in feeding activity or change in prey composition (Table 6). For chum salmon in June and July, as for pink salmon, we observed a diel trend for increasing fullness and %BW from 04:00-22:00; in June, fullness index increased from 61-97% and %BW increased from 1.5-3.7%, while in July, fullness index increased from 68-89% and %BW increased from 1.6-3.3% over the day. We observed a similar pattern of diel increases (although lower magnitudes) for chum salmon in September. Seasonally, mean fullness index and %BW of the May chum salmon were the highest, even though numbers of prey consumed were the lowest. This reflects the small size of fish in May and the near shore prey composition dominated (%N) by appropriately-sized small prey (haracticoids and large and small calanoids), compared to a diet of larger prey for larger pink and chum salmon in the epipelagic strait habitat later in the season (euphausiids, hyperiids and larvacea) (Figures 8 and 9). Small prey continued to appear in the diets as smaller numerical percentages (Tables 11 and 12). No consistent change in prey composition by diel period was observed except in August, when the contribution of hyperiid amphipods increased from a small portion to the predominant taxon in diets of both pink and chum salmon.

Coho salmon fullness index was higher in June than in July (Table 7; Figure 4), when diet was numerically dominated by fish and hyperiid amphipods compared to decapod larvae (Table 13; Figure 10). As with the pinks and chums, we observed a diel trend for increasing fullness from 04:00-22:00 in July for the coho. Many of the coho stomachs in July were burst open due to poor preservation, preventing us from calculating stomach content weight and %BW.

Seasonal and diel patterns in standing stock of mesozooplankton in surface waters were indicated by the settled volumes (SVs) of the NORPAC diel samples (Table 17; Figure 11). In June-August, SVs were highest late in the day, generally declined to a minimum at mid-day, and increased through the evening. This is consistent with greatest feeding intensity of juvenile pink and chum salmon late in the day in these months. Seasonal SVs were clearly greatest in June, with early (07:00) and late (19:00) peaks of 55 and 72 ml; SVs were lowest in September, being only a few ml in volume. Phytoplankton was evident only in September, the spring bloom having passed by the time we sampled in late May.

Seasonal volumetric estimates of macrozooplankton were available from a small series of bongo samples collected at 20-m and 200-m depths. The sums of the displacement volumes (DVs) of the 505-□m and 333-□m pairs indicated greatest zooplankton standing stock in May and June compared to July-September (Table 18); seasonally, peak abundance of macrozooplankton therefore occurred in the same month as peak abundance of mesozooplankton. By depth, the DVs of shallow bongo samples were a factor of one-two orders of magnitude lower than DVs of deep bongo samples (Table 18). While we have not processed the diel series of bongo samples collected in the water column occupied by juvenile salmon, the shallow-deep sample volumes we

present here were generally collected in mid-day, at which time the diel series of NORPAC SVs reached their minima and vertically-migrating species are likely to have descended to deep water. Large and small copepods, chaetognaths, euphausiids, crab zoeae, hyperiid amphipods, and oikopleurans were consistently among the top-ranked macrozooplankton taxa, by volume, in the bongo samples (Table 18).

The ranked zooplankton composition of bongo samples was compared to juvenile salmon prey composition. Large and small calanoid copepods dominated biomass of zooplankton samples May–July (Table 18); they were present in pink and chum salmon stomach contents May–July but their percent numbers dominated the diets only in May. Conversely, larvacea comprised a small percentage of zooplankton biomass, while dominating the diets of pink and chum salmon (Figures 8-9). Coho predominantly ate decapod larvae in June and July, the only months when this taxon appeared in the zooplankton samples (Figure 10).

The 2-m surface temperatures at ISC rose from 7 °C in May to a peak near 14 °C in June–August, then declined to 9 °C in September. Temperatures showed little diel variation by month except in June (Table 19; see also Orsi et al. 2002). They were about 12.5 °C from 04:00-13:00, rising to about 13.5 °C from 16:00-22:00. Seasonally, temperatures in June–August were similarly high, then dropped 3-4°C in September (Figure 11). Salinities were generally above 24 PSU throughout the diel periods in June-August, then rose in September. A diel pattern was evident only in September, when morning PSU were greater than evening PSU (Table 19). In May, the coldest month, pink and chum salmon relative size increases were greatest. Consistently high surface temperatures in June–August contrasted with the declining zooplankton volumes after the June peak.

Results from the diel feeding and gastric evacuation studies will be used to derive biophysical input parameters for bioenergetic models. These results are important because salmon comprise an important commercial fisheries resource in southeastern Alaska. Large-scale hatchery production of chum, pink, and coho salmon has prompted concern over the potential for increased competitive interactions between enhanced and wild stocks of salmon in both near shore, coastal, and oceanic habitats. Bioenergetic modeling could be useful for assessing the demands of increased hatchery production on the carrying capacity of the marine ecosystem. Our preliminary results will provide model parameters specific to juvenile chum, pink and coho salmon, including information on diel feeding periodicity and gastric evacuation rates.

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Table 1.--Numbers of juvenile pink, chum and coho salmon stomachs examined by diel feeding period in each of five months from Icy Strait, Southeast Alaska, 2001. The last section of the table shows specific haul numbers fish were caught in (Orsi et al., 2002). Feeding periods were approximately three hours apart beginning at 04:00 (see text for details). Fish collected in May were sampled by beach seine onshore; all others were collected with a Nordic surface trawl at ISC. Numbers in parentheses represent fish remaining to be processed. NS indicates no sample.

Sampling day	D1	D2	D3	D4	D5	D6	D7	Monthly total
<b>Pink salmon (<i>Oncorhynchus gorbuscha</i>)</b>								
May 22	NS	12	11	10	10	10	NS	53
June 29-30	1	9	NS	10	NS	1	NS	21
July 30-31	NS	10	10	13	10	4	NS	47
August 28, 30	NS	NS	NS	4	10	10	10	34
September 28-20	(6)	(9)	(1)	(10)	(10)	(10)	(10)	(65)
Species total								220
<b>Chum salmon (<i>O. keta</i>)</b>								
May 22	NS	10	10	10	10	10	NS	50
June 29-30	7	10	10	18	8	10	5	68
July 30-31	NS	10	10	13	10	10	0	53
August 28, 30	NS	NS	NS	10	4	10	3	27
September 28-20	NS	NS	3	6	10	4	5	28
Species total								226
<b>Coho salmon (<i>O. kisutch</i>)</b>								
June 29-30	10	10	3	15	10	10	10	68
July 30-31	10	10	10	20	7	9	3	69
Species total								137
Grand total								518
<b>Haul numbers</b>								
May 22	NS	1	3	5-6	10-12	16-18	NS	
June 29-30	5027	5028	5029	5030, 5031	5032	5033	5034	
July 30-31	5053	5054	5055	5056, 5057	5058	5059	5060	
August 28, 30	5077	5078	5079	5080, 5084	5085	5086	5087	
September 28-20	5102	5103	5104	5107, 5114	5116	5109	5110	

Table 2.—Juvenile pink salmon number of fish (n) and size (mean, range and standard error [SE] of lengths [FL, mm] and wet weights [g]) by diel period, May-September 2001.

Diel period	Size	May				June				July				August				September			
		n	range	?	se	n	range	?	se	n	range	?	se	n	range	?	se	n	range	?	se
D1	Length	---				1	108	108.0	0.0	---				---				6	187-207	194.0	3.0
	Weight	---				1	10.8	10.8	0.0	---				---				6	49.8-97.4	70.6	6.3
D2	Length	12	31-52	38.6	2.1	9	88-110	93.7	2.2	10	115-130	120.9	1.5	---				9	178-211	193.3	3.3
	Weight	12	0.1-0.9	0.4	0.1	9	6.0-12.9	7.3	0.7	10	12.6-18.4	15.5	0.6	---				9	55.1-85.5	68.4	3.1
D3	Length	11	32-48	37.8	1.9	---				10	109-124	114.9	1.5	---				10	168-217	194.2	4.8
	Weight	11	0.1-0.7	0.3	0.1	---				10	12.7-17.8	14.3	0.5	---				10	43.8-109.1	70.2	6.3
D4	Length	10	34-47	42.3	1.5	10	71-85	80.8	1.2	13	99-140	117.8	3.0	4	125-164	148.0	9.1	10	182-211	196.9	2.7
	Weight	10	0.2-0.7	0.5	0.0	10	3.4-5.5	4.8	0.2	13	7.6-21.5	14.9	1.0	4	12.4-44.6	28.8	3.3	10	51.2-95.7	70.9	4.4
D5	Length	10	34-47	40.7	1.4	---				10	107-129	114.9	2.3	10	112-162	140.1	5.4	10	178-222	200.6	4.0
	Weight	10	0.2-0.7	0.4	0.1	---				10	10.4-21.7	14.2	1.1	10	12.4-44.6	28.8	3.3	10	49.3-100.8	77.3	5.1
D6	Length	10	31-48	38.5	2.0	1	89	89.0	0.0	4	115-138	126.5	5.2	10	135-175	161.4	3.7	10	186-212	200.5	2.8
	Weight	10	0.1-0.8	0.4	0.1	1	6.021	6.0	0.0	4	14.7-28.6	20.4	3.1	10	25.3-60.1	45.4	3.0	10	60.1-95.6	77.7	4.1
D7	Length	---				---				---				10	143-195	169.7	5.2	10	183-215	196.3	3.3
	Weight	---				---				---				10	27.1-82.5	51.7	5.5	10	68.1-125.5	83.4	5.5

Table 3.—Juvenile chum salmon number of fish (n) and size (mean, range and standard error [SE] of lengths [FL, mm] and wet weights [g]) by diel period, May-September 2001.

Diel period	Size	May				June				July				August				September				
		n	range	?	se	n	range	?	se	n	range	?	se	n	range	?	se	n	range	?	se	
D1	Length	---				7	80-103	90.3	3.2	---				---				---				
	Weight	---				7	4.6-9.4	6.6	0.7	---				---				---				
D2	Length	10	41-52	45.9	1.3	10	83-100	91.0	1.6	10	94-117	105.5	2.5	---				---				
	Weight	10	0.4-1.0	0.7	0.1	10	4.9-9.2	6.9	0.4	10	6.7-13.9	10.8	0.9	---				---				
D3	Length	10	44-55	47.9	1.0	10	90-115	98.3	2.8	10	108-131	120.5	2.2	---				3	183-212	197.0	8.4	
	Weight	10	0.6-1.2	0.8	0.1	10	6.5-13.0	8.6	0.7	10	11.9-23.7	16.5	1.1	---				3	58.8-103.7	81.0	13.0	
D4	Length	10	39-54	44.8	1.6	18	75-109	91.1	2.4	13	92-129	112.5	3.3	10	128-157	142.0	3.1	6	171-204	186.8	5.6	
	Weight	10	0.3-1.2	0.6	0.1	18	3.3-12.1	6.9	0.6	13	6.1-20.7	12.9	1.2	10	22.4-39.8	30.9	1.9	6	48.1-89.6	67.3	6.6	
D5	Length	10	39-51	44.3	1.2	8	87-114	99.8	3.1	10	107-138	119.0	3.1	4	120-162	141.0	8.7	10	183-217	200.2	3.9	
	Weight	10	0.4-0.8	0.5	0.0	8	5.2-14.5	9.1	1.1	10	11.4-26.6	16.7	1.5	4	18.3-51.6	32.4	7.0	10	60.4-104.1	82.4	5.0	
D6	Length	10	37-45	41.5	0.7	10	81-110	95.8	3.1	10	112-152	131.5	4.0	10	131-188	158.5	5.9	4	181-206	192.0	6.0	
	Weight	10	0.2-0.6	0.5	0.0	10	5.3-12.1	8.5	0.7	10	13.5-35.2	21.5	2.0	10	23.1-80.2	47.4	5.4	4	59.6-104.5	80.7	11.4	
D7	Length	---				5	89-97	92.4	1.5	---				3	137-185	153.7	15.7	5	186-233	205.2	8.7	
	Weight	---				5	6.3-8.9	7.5	0.5	---				3	25.6-71.6	43.0	14.4	5	65.5-125.6	89.1	11.8	

Table 4.—Juvenile coho salmon number of fish (n) and size (mean, range and standard error [SE] of lengths [FL, mm] and wet weights [g]) by diel period, June-July 2001.

Diel period	Size	May				June				July				August				September				
		n	range	?	se	n	range	?	se	n	range	?	se	n	range	?	se	n	range	?	se	
D1	Length	---				10	120-170	150.3	4.7	10	177-233	196.7	5.9	---				---				
	Weight	---				10	17.5-50.3	37.4	3.2	10	66.0-145.0	87.9	8.3	---				---				
D2	Length	---				10	129-171	150.5	5.1	10	153-207	178.3	4.9	---				---				
	Weight	---				10	23.7-56.9	40.0	4.2	10	44.8-111.6	69.1	6.5	---				---				
D3	Length	---				3	121-157	143.3	11.3	10	157-229	200.4	7.3	---				---				
	Weight	---				3	21.2-44.8	35.9	7.4	10	46.3-144.5	101.4	11.4	---				---				
D4	Length	---				15	116-191	154.9	5.1	20	154-211	183.3	3.4	---				---				
	Weight	---				15	16.3-79.5	42.6	4.2	20	36.9-122.2	74.4	4.6	---				---				
D5	Length	---				10	141-187	161.5	5.1	7	162-226	181.4	8.6	---				---				
	Weight	---				10	29.0-68.2	47.1	4.2	7	49.4-127.8	74.2	10.2	---				---				
D6	Length	---				10	146-196	181.9	4.6	9	160-221	193.2	7.0	---				---				
	Weight	---				10	32.9-85.2	69.2	4.8	9	44.7-132.6	88.8	10.6	---				---				
D7	Length	---				10	143-180	166.4	3.4	3	167-190	176.7	6.9	---				---				
	Weight	---				10	33.1-63.5	51.7	2.9	3	47.1-70.7	56.8	7.1	---				---				

Table 5.—Juvenile pink salmon digestion index, fullness index, mean number of prey in stomach, stomach content weight (g), and prey percent body weight (%BW). Standard errors are noted in parentheses. NP denotes sample processing not completed. NS denotes no samples taken.

	Diel Period	Digestion index	Fullness index	Mean number prey/stomach	Stomach content weight	%BW
May	D1	NS	NS	NS	NS	NS
	D2	1	77 (3.7)	59.4 (13.2)	0.009 (0.002)	2.2 (0.3)
	D3	1	68 (7.6)	17.1 (5.1)	0.005 (0.001)	1.6 (0.2)
	D4	1	60 (6.7)	21.9 (3.5)	0.009 (0.001)	1.9 (0.2)
	D5	1	80 (5.0)	26.6 (3.0)	0.011 (0.003)	2.5 (0.5)
	D6	2	75 (3.7)	43.7 (9.4)	0.010 (0.002)	2.4 (0.2)
	D7	NS	NS	NS	NS	NS
June	D1	2	50 (0.0)	157.0 (0.0)	0.062 (0.000)	0.6 (0.0)
	D2	1	91 (7.4)	745.1 (41.1)	0.185 (0.017)	2.6 (0.2)
	D3	NS	NS	NS	NS	NS
	D4	2	85 (4.1)	618.5 (57.0)	0.149 (0.011)	3.2 (0.2)
	D5	NS	NS	NS	NS	NS
	D6	1	100 (0.0)	716.0 (0.0)	0.241 (0.000)	4.2 (0.0)
	D7	NS	NS	NS	NS	NS
July	D1	NS	NS	NS	NS	NS
	D2	2	66 (6.3)	350.6 (77.4)	0.212 (0.023)	1.4 (0.1)
	D3	1	76 (5.9)	299.6 (66.2)	0.228 (0.030)	1.6 (0.2)
	D4	1	83 (3.7)	272.3 (20.8)	0.306 (0.023)	2.2 (0.2)
	D5	1	90 (4.1)	754.7 (220.5)	0.335 (0.033)	2.5 (0.2)
	D6	1	100 (0.0)	786.8 (120.2)	0.887 (0.092)	4.8 (0.7)
	D7	NS	NS	NS	NS	NS
Aug.	D1	NS	NS	NS	NS	NS
	D2	NS	NS	NS	NS	NS
	D3	NS	NS	NS	NS	NS
	D4	2	69 (6.3)	632.3 (372.7)	0.424 (0.085)	1.5 (0.5)
	D5	1	70 (3.3)	892.6 (252.9)	0.393 (0.055)	1.5 (0.3)
	D6	2	73 (2.5)	582.8 (67.1)	0.562 (0.071)	1.3 (0.2)
	D7	2	71 (7.2)	236.3 (76.5)	0.476 (0.106)	1.1 (0.3)
Sept.	D1	NP	NP	NP	NP	NP
	D2	NP	NP	NP	NP	NP
	D3	NP	NP	NP	NP	NP
	D4	NP	NP	NP	NP	NP
	D5	NP	NP	NP	NP	NP
	D6	NP	NP	NP	NP	NP
	D7	NP	NP	NP	NP	NP

Table 6.—Juvenile chum salmon digestion index, fullness index, mean number of prey in stomach, stomach content weight, (g) and prey percent body weight (%BW). Standard errors are noted in parentheses. Only one empty stomach was observed, in July D2. NP denotes sample not processed. NS denotes no samples taken.

	Diel Period	Digestion index	Fullness index	Mean number prey/stomach	Stomach content weight	%BW
May	D1	NS	NS	NS	NS	NS
	D2	1	95 (3.3)	71.1 (11.3)	0.030 (0.004)	4.7 (0.5)
	D3	2	83 (5.3)	68.9 (12.8)	0.028 (0.003)	3.7 (0.4)
	D4	2	88 (5.6)	34.5 (5.8)	0.014 (0.002)	2.3 (0.2)
	D5	2	80 (5.0)	22.2 (3.8)	0.016 (0.002)	3.2 (0.4)
	D6	1	88 (4.2)	49.8 (7.5)	0.017 (0.002)	4.0 (0.3)
	D7					
June	D1	2	61 (7.4)	165.6 (37.65)	0.092 (0.0265)	1.5 (0.5)
	D2	1	83 (3.8)	526.9 (52.45)	0.174 (0.0195)	2.6 (0.2)
	D3	1	76 (6.9)	578.8 (66.35)	0.192 (0.0175)	2.4 (0.2)
	D4	1	76 (5.1)	404.2 (51.45)	0.152 (0.0205)	2.3 (0.2)
	D5	2	81 (12.7)	262.4 (116.45)	0.242 (0.0625)	2.7 (0.6)
	D6	2	83 (5.3)	1091.1 (198.05)	0.293 (0.035)	3.7 (0.4)
	D7	1	97 (5.8)	677.2 (80.25)	0.261 (0.036)	3.7 (0.6)
July	D1	NS	NS	NS	NS	NS
	D2	2	68 (8.4)	437.8 (69.4)	0.160 (0.023)	1.6 (0.2)
	D3	1	80 (5.0)	632.7 (170.6)	0.312 (0.086)	1.8 (0.4)
	D4	1	75 (4.0)	333.4 (87.4)	0.271 (0.050)	2.2 (0.3)
	D5	1	84 (4.4)	786.5 (172.3)	0.405 (0.048)	2.6 (0.3)
	D6	1	89 (4.6)	929.0 (71.0)	0.675 (0.072)	3.3 (0.3)
	D7	NS	NS	NS	NS	NS
Aug.	D1	NS	NS	NS	NS	NS
	D2	NS	NS	NS	NS	NS
	D3	NS	NS	NS	NS	NS
	D4	1	78 (2.5)	943.1 (157.3)	0.491 (0.042)	1.7 (0.2)
	D5	2	59 (16.3)	539.8 (155.0)	0.411 (0.102)	1.7 (0.6)
	D6	2	80 (5.0)	494.4 (118.1)	0.661 (0.114)	1.6 (0.3)
	D7	2	53 (21.7)	290.0 (171.6)	0.353 (0.073)	1.1 (0.5)
Sept.	D1	NS	NS	NS	NS	NS
	D2	NS	NS	NS	NS	NS
	D3	1	67 (8.3)	794.0 (156.6)	0.507 (0.105)	0.6 (0.1)
	D4	2	71 (4.2)	1234.7 (128.9)	0.940 (0.165)	1.5 (0.3)
	D5	2	78 (2.5)	2100.1 (200.5)	1.383 (0.129)	1.7 (0.2)
	D6	2	81 (6.3)	1700.8 (390.7)	1.384 (0.272)	1.8 (0.3)
	D7	2	85 (6.1)	161.4 (49.8)	1.529 (0.462)	1.6 (0.3)

Table 7.—Juvenile coho salmon digestion index, fullness index, mean number of prey in stomach, stomach content weight (g), and prey percent body weight (%BW). Standard errors are noted in parentheses. Only one empty stomach was observed, in July D1. NP denotes sample not processed. NS denotes no samples taken. Stomach content weight of July D2-D5 fish could not be measured due to poor preservation, but relative fullness index could be estimated.

	Diel Period	Digestion index	Fullness index	Mean number prey/stomach	Stomach content weight	%BW
May	D1	NS	NS	NS	NS	NS
	D2	NS	NS	NS	NS	NS
	D3	NS	NS	NS	NS	NS
	D4	NS	NS	NS	NS	NS
	D5	NS	NS	NS	NS	NS
	D6	NS	NS	NS	NS	NS
	D7	NS	NS	NS	NS	NS
June	D1	2	85 (6.7)	24.6 (7.0)	0.546 (0.105)	1.6 (0.3)
	D2	1	93 (6.3)	37.5 (5.0)	0.865 (0.130)	2.2 (0.3)
	D3	1	103 (3.3)	82.0 (24.2)	1.485 (0.189)	4.5 (0.5)
	D4	2	85 (6.3)	50.5 (10.4)	0.781 (0.154)	2.0 (0.4)
	D5	1	86 (5.9)	49.8 (11.9)	0.923 (0.243)	2.0 (0.4)
	D6	1	100 (3.0)	88.9 (23.1)	1.431 (0.183)	2.3 (0.3)
	D7	1	85 (7.2)	151.6 (38.0)	1.220 (0.208)	2.5 (0.4)
July	D1	2	52 (10.2)	38.9 (9.6)	0.373 (0.073)	0.4 (0.1)
	D2	5	70 (3.3)	137.1 (20.8)	—	—
	D3	5	70 (5.0)	199.1 (25.2)	—	—
	D4	5	80 (4.3)	177.0 (22.6)	—	—
	D5	5	75 (0.0)	104.0 (24.0)	—	—
	D6	1	94 (3.7)	146.6 (31.8)	1.888 (0.219)	2.6 (0.6)
	D7	1	92 (8.3)	168.3 (51.9)	—	3.0 (0.6)
Aug.	D1	NS	NS	NS	NS	NS
	D2	NS	NS	NS	NS	NS
	D3	NS	NS	NS	NS	NS
	D4	NS	NS	NS	NS	NS
	D5	NS	NS	NS	NS	NS
	D6	NS	NS	NS	NS	NS
	D7	NS	NS	NS	NS	NS
Sept.	D1	NS	NS	NS	NS	NS
	D2	NS	NS	NS	NS	NS
	D3	NS	NS	NS	NS	NS
	D4	NS	NS	NS	NS	NS
	D5	NS	NS	NS	NS	NS
	D6	NS	NS	NS	NS	NS
	D7	NS	NS	NS	NS	NS

Table 8.—Mean percent frequency of occurrence of prey (%FO) by major taxon and numbers of fish examined during seven diel periods for juvenile pink salmon sampled monthly in Icy Strait, southeastern Alaska from May–September 2001. Values include fish that did not consume the taxon.

Diel period	Number of fish	Large calanoids	Small calanoids	Harpacticoids	Decapod larvae	Euphausiids	Fish	Gastropods	Hyperiid	Larvacea	Barnacle larvae	Chaetognaths	Cladocera	Gammarids	Insects	Other
<b>May</b>																
D2	12	41.7	100.0	58.3	0.0	16.7	0.0	0.0	8.3	0.0	8.3	0.0	0.0	0.0	0.0	16.7
D3	11	54.5	63.6	36.4	0.0	27.3	27.3	0.0	0.0	63.6	9.1	0.0	0.0	9.1	0.0	9.1
D4	10	80.0	50.0	40.0	20.0	90.0	0.0	10.0	0.0	50.0	10.0	0.0	0.0	0.0	50.0	10.0
D5	10	80.0	80.0	30.0	0.0	60.0	0.0	0.0	10.0	60.0	20.0	0.0	0.0	0.0	50.0	0.0
D6	10	80.0	100.0	60.0	0.0	80.0	10.0	0.0	10.0	30.0	10.0	0.0	0.0	0.0	20.0	0.0
<b>June</b>																
D1	1	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	100.0	0.0	0.0	0.0	0.0	100.0
D2	9	0.0	77.8	11.1	22.2	100.0	0.0	88.9	11.1	55.6	100.0	0.0	88.9	11.1	22.2	100.0
D4	10	30.0	90.0	10.0	20.0	90.0	0.0	70.0	30.0	100.0	90.0	10.0	90.0	0.0	20.0	70.0
D6	1	0.0	100.0	0.0	0.0	100.0	0.0	100.0	100.0	100.0	100.0	0.0	100.0	0.0	0.0	100.0
<b>July</b>																
D2	10	60.0	20.0	0.0	50.0	30.0	0.0	0.0	90.0	100.0	20.0	0.0	10.0	0.0	0.0	10.0
D3	10	90.0	80.0	0.0	50.0	70.0	10.0	10.0	70.0	80.0	10.0	10.0	10.0	0.0	0.0	30.0
D4	13	76.9	100.0	0.0	84.6	92.3	15.4	7.7	100.0	30.8	7.7	0.0	0.0	0.0	23.1	15.4
D5	10	80.0	100.0	0.0	70.0	30.0	10.0	0.0	100.0	80.0	20.0	0.0	0.0	0.0	0.0	10.0
D6	4	25.0	25.0	0.0	75.0	100.0	0.0	0.0	100.0	75.0	25.0	0.0	0.0	0.0	0.0	0.0
<b>August</b>																
D4	4	75.0	0.0	0.0	50.0	50.0	0.0	0.0	75.0	75.0	0.0	0.0	0.0	0.0	0.0	0.0
D5	10	80.0	20.0	0.0	40.0	60.0	0.0	0.0	100.0	70.0	0.0	0.0	0.0	0.0	20.0	10.0
D6	10	60.0	40.0	0.0	60.0	0.0	0.0	0.0	100.0	80.0	0.0	10.0	0.0	0.0	10.0	10.0
D7	10	40.0	0.0	0.0	60.0	90.0	10.0	0.0	80.0	0.0	0.0	10.0	0.0	0.0	0.0	10.0

Table 9.—Mean percent frequency of occurrence of prey (%FO) by major taxon and numbers of fish examined during seven diel periods for juvenile chum salmon sampled monthly in Icy Strait, southeastern Alaska from May-September 2001. Values include fish that did not consume the taxon.

Diel period	Number of fish	Large calanoids	Small calanoids	Harpacticoids	Decapod larvae	Euphausiids	Fish	Gastropods	Hyperiid	Larvacea	Barnacle larvae	Chaetognaths	Cladocera	Gammarids	Insects	Other
<b>May</b>																
D2	10	90.0	100.0	70.0	0.0	20.0	0.0	0.0	30.0	60.0	10.0	0.0	0.0	10.0	70.0	40.0
D3	10	100.0	100.0	50.0	20.0	70.0	0.0	0.0	0.0	80.0	0.0	0.0	0.0	40.0	50.0	50.0
D4	10	80.0	100.0	70.0	10.0	100.0	0.0	0.0	0.0	50.0	20.0	0.0	0.0	0.0	80.0	20.0
D5	10	90.0	100.0	40.0	0.0	90.0	30.0	0.0	20.0	20.0	10.0	0.0	0.0	0.0	50.0	10.0
D6	10	100.0	100.0	60.0	0.0	100.0	20.0	0.0	0.0	90.0	0.0	0.0	0.0	0.0	90.0	10.0
<b>June</b>																
D1	7	28.6	14.3	14.3	0.0	71.4	14.3	14.3	14.3	85.7	57.1	0.0	57.1	0.0	57.1	14.3
D2	10	20.0	30.0	0.0	30.0	100.0	30.0	10.0	10.0	90.0	70.0	0.0	90.0	0.0	10.0	20.0
D3	10	20.0	70.0	0.0	60.0	90.0	0.0	10.0	50.0	80.0	50.0	0.0	70.0	0.0	20.0	0.0
D4	18	33.3	55.6	0.0	11.1	94.4	33.3	5.6	27.8	100.0	61.1	0.0	22.2	0.0	16.7	5.6
D5	8	25.0	0.0	0.0	12.5	87.5	75.0	12.5	25.0	62.5	0.0	0.0	0.0	0.0	12.5	25.0
D6	10	20.0	50.0	0.0	40.0	100.0	20.0	10.0	40.0	100.0	40.0	0.0	40.0	0.0	0.0	10.0
D7	5	0.0	40.0	0.0	20.0	100.0	20.0	0.0	40.0	100.0	40.0	0.0	20.0	0.0	0.0	0.0
<b>July</b>																
D2	10	0.0	0.0	0.0	20.0	20.0	0.0	0.0	50.0	90.0	20.0	0.0	0.0	20.0	0.0	10.0
D3	10	80.0	60.0	0.0	50.0	60.0	0.0	0.0	100.0	100.0	10.0	0.0	10.0	10.0	0.0	0.0
D4	13	84.6	61.5	0.0	46.2	84.6	0.0	7.7	100.0	76.9	0.0	0.0	0.0	0.0	0.0	0.0
D5	10	60.0	60.0	10.0	30.0	40.0	0.0	0.0	90.0	100.0	20.0	0.0	20.0	0.0	0.0	20.0
D6	10	50.0	50.0	0.0	70.0	50.0	30.0	0.0	100.0	90.0	20.0	0.0	10.0	0.0	0.0	10.0
<b>August</b>																
D4	10	10.0	0.0	0.0	10.0	40.0	0.0	0.0	80.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0
D5	4	50.0	0.0	0.0	50.0	25.0	0.0	0.0	100.0	100.0	0.0	0.0	0.0	0.0	0.0	25.0
D6	10	70.0	0.0	0.0	20.0	20.0	30.0	0.0	100.0	70.0	20.0	0.0	0.0	0.0	10.0	0.0
D7	3	33.3	0.0	0.0	33.3	33.3	0.0	0.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	33.3
D6	10	60.0	0.0	0.0	90.0	80.0	90.0	40.0	70.0	0.0	0.0	0.0	0.0	10.0	10.0	10.0

Table 9. –(cont.)

	Diel period	Number of fish	Large calanoids	Small calanoids	Harpacticoids	Decapod larvae	Euphausiids	Fish	Gastropods	Hyperiid	Larvacea	Barnacle larvae	Chaetognaths	Cladocera	Gammarids	Insects	Other
<b>September</b>	<b>D7</b>	3	33.3	0.0	0.0	33.3	33.3	0.0	0.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	33.3
	<b>D3</b>	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0
	<b>D4</b>	6	0.0	0.0	0.0	0.0	16.7	0.0	0.0	100.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0
	<b>D5</b>	10	20.0	30.0	0.0	0.0	10.0	0.0	0.0	100.0	100.0	0.0	10.0	0.0	0.0	10.0	0.0
	<b>D6</b>	4	0.0	0.0	0.0	0.0	75.0	0.0	0.0	100.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0
	<b>D7</b>	5	20.0	20.0	0.0	0.0	100.0	0.0	0.0	100.0	20.0	0.0	0.0	0.0	0.0	0.0	0.0

Table 10. –Mean percent frequency of occurrence of prey (%FO) by major taxon and numbers of fish examined during seven diel periods for juvenile coho salmon sampled monthly in Icy Strait, southeastern Alaska from May-September 2001. Values include fish that did not consume the taxon.

	Diel period	Number of fish	Large calanoids	Small calanoids	Harpacticoids	Decapod larvae	Euphausiids	Fish	Gastropods	Hyperids	Larvacea	Barnacle larvae	Chaetognaths	Cladocera	Gammarids	Insects	Other
<b>June</b>	<b>D1</b>	10	30.0	20.0	0.0	80.0	40.0	90.0	0.0	50.0	10.0	0.0	0.0	0.0	0.0	0.0	0.0
	<b>D2</b>	10	0.0	0.0	0.0	90.0	40.0	100.0	10.0	90.0	0.0	0.0	0.0	0.0	0.0	10.0	0.0
	<b>D3</b>	3	33.3	0.0	0.0	66.7	66.7	100.0	100.0	33.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	<b>D4</b>	15	13.3	6.7	0.0	100.0	33.3	86.7	40.0	73.3	0.0	0.0	0.0	6.7	13.3	13.3	0.0
	<b>D5</b>	10	20.0	0.0	0.0	80.0	40.0	90.0	70.0	80.0	0.0	10.0	0.0	10.0	0.0	30.0	0.0
	<b>D6</b>	10	60.0	0.0	0.0	90.0	80.0	90.0	40.0	70.0	0.0	0.0	0.0	0.0	10.0	10.0	10.0
	<b>D7</b>	10	40.0	50.0	0.0	100.0	70.0	70.0	10.0	70.0	0.0	0.0	0.0	10.0	0.0	10.0	0.0
<b>July</b>	<b>D1</b>	10	0.0	0.0	0.0	90.0	10.0	20.0	0.0	60.0	0.0	0.0	0.0	0.0	10.0	0.0	0.0
	<b>D2</b>	10	0.0	0.0	0.0	100.0	30.0	20.0	0.0	80.0	0.0	0.0	0.0	0.0	0.0	0.0	10.0
	<b>D3</b>	10	0.0	0.0	0.0	100.0	10.0	10.0	0.0	60.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	<b>D4</b>	20	0.0	0.0	0.0	100.0	10.0	35.0	0.0	60.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	<b>D5</b>	7	0.0	0.0	14.3	100.0	14.3	71.4	0.0	71.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	<b>D6</b>	9	0.0	0.0	0.0	100.0	11.1	77.8	0.0	55.6	0.0	11.1	0.0	0.0	0.0	0.0	0.0
	<b>D7</b>	3	33.3	33.3	0.0	100.0	100.0	66.7	0.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Table 11. –Mean percent number of prey (%N) by major taxon during seven diel periods for juvenile pink salmon sampled monthly in Icy Strait, southeastern Alaska from May-September 2001. Values include fish that did not consume the taxon.

Diel period	Large calanoids	Small calanoids	Harpacticoids	Decapod larvae	Euphausiids	Fish	Gastropods	Hyperiid	Larvacea	Barnacle larvae	Chaetognaths	Cladocera	Gammarids	Insects	Other
<b>May</b>															
<b>D2</b>	2.8	77.8	18.1	0.0	0.6	0.0	0.0	0.2	0.0	0.1	0.0	0.0	0.0	0.0	0.5
<b>D3</b>	25.1	44.8	6.1	0.0	2.1	6.0	0.0	0.0	11.2	1.8	0.0	0.0	1.8	0.0	1.1
<b>D4</b>	27.5	16.4	3.5	2.4	22.8	0.0	0.8	0.0	12.9	0.4	0.0	0.0	0.0	12.8	0.5
<b>D5</b>	17.0	37.9	3.3	0.0	10.9	0.0	0.0	0.3	15.6	1.7	0.0	0.0	0.0	13.2	0.0
<b>D6</b>	5.9	79.8	5.9	0.0	6.0	0.1	0.0	0.2	1.4	0.1	0.0	0.0	0.0	0.6	0.0
<b>June</b>															
<b>D1</b>	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	87.3	11.5	0.0	0.0	0.0	0.0	0.6
<b>D2</b>	0.0	1.3	0.0	0.0	37.5	0.0	1.2	0.0	19.9	34.6	0.0	1.0	0.0	0.0	4.2
<b>D4</b>	0.4	41.7	0.0	0.1	11.1	0.0	0.2	0.1	30.3	13.1	0.0	1.6	0.0	0.0	1.4
<b>D6</b>	0.0	0.4	0.0	0.0	22.5	0.0	0.7	1.3	70.4	1.4	0.0	2.0	0.0	0.0	1.4
<b>July</b>															
<b>D2</b>	1.2	0.7	0.0	2.8	4.8	0.0	0.0	5.7	84.7	0.0	0.0	0.0	0.0	0.0	0.0
<b>D3</b>	20.4	4.6	0.0	0.9	2.6	0.1	0.0	24.9	46.1	0.1	0.2	0.0	0.0	0.0	0.1
<b>D4</b>	26.5	1.3	0.0	1.0	2.4	0.1	0.0	65.2	3.1	0.2	0.0	0.0	0.0	0.1	0.1
<b>D5</b>	28.6	1.4	0.0	1.1	0.5	0.1	0.0	17.3	51.0	0.0	0.0	0.0	0.0	0.0	0.0
<b>D6</b>	0.3	0.0	0.0	3.2	1.3	0.0	0.0	72.1	23.0	0.0	0.0	0.0	0.0	0.0	0.0
<b>August</b>															
<b>D4</b>	0.8	0.0	0.0	0.5	8.4	0.0	0.0	31.0	59.3	0.0	0.0	0.0	0.0	0.0	0.0
<b>D5</b>	7.5	1.0	0.0	2.1	0.2	0.0	0.0	28.7	60.4	0.0	0.0	0.0	0.0	0.0	0.0
<b>D6</b>	2.1	0.1	0.0	0.4	0.0	0.0	0.0	62.3	34.9	0.0	0.1	0.0	0.0	0.0	0.0
<b>D7</b>	0.4	0.0	0.0	0.6	39.6	0.0	0.0	59.2	0.0	0.0	0.0	0.0	0.0	0.0	0.1

Table 12. –Mean percent number of prey (%N) by major taxon during seven diel periods for juvenile chum salmon sampled monthly in Icy Strait, southeastern Alaska from May-September 2001. Values include fish that did not consume the taxon.

Diel period	Large calanoids	Small calanoids	Harpacticoids	Decapod larvae	Euphausiids	Fish	Gastropods	Hyperids	Larvacea	Barnacle larvae	Chaetognaths	Cladocera	Gammarids	Insects	Other
<b>May</b>															
<b>D2</b>	18.4	47.9	20.9	0.0	0.4	0.0	0.0	0.8	7.2	0.1	0.0	0.0	0.2	2.0	2.1
<b>D3</b>	7.5	66.2	7.3	0.4	6.5	0.0	0.0	0.0	5.9	0.0	0.0	0.0	1.0	2.0	3.2
<b>D4</b>	17.4	35.1	4.6	0.3	13.4	0.0	0.0	0.0	6.0	2.9	0.0	0.0	0.0	18.9	1.3
<b>D5</b>	14.7	44.6	2.0	0.0	17.7	2.0	0.0	3.5	5.3	1.4	0.0	0.0	0.0	8.4	0.3
<b>D6</b>	15.6	45.6	7.1	0.0	5.5	0.5	0.0	0.0	12.7	0.0	0.0	0.0	0.0	10.5	2.4
<b>June</b>															
<b>D1</b>	1.0	0.3	0.1	0.0	17.0	0.1	0.0	0.1	71.0	7.1	0.0	2.0	0.0	0.7	0.5
<b>D2</b>	0.0	0.1	0.0	0.1	57.2	0.2	0.0	0.0	41.5	0.4	0.0	0.5	0.0	0.0	0.0
<b>D3</b>	0.2	0.2	0.0	0.5	58.6	0.0	0.0	0.2	39.7	0.4	0.0	0.3	0.0	0.0	0.0
<b>D4</b>	0.1	3.7	0.0	0.1	36.2	0.4	0.0	0.1	58.7	0.4	0.0	0.1	0.0	0.1	0.0
<b>D5</b>	0.2	0.0	0.0	0.1	55.7	4.9	0.1	0.2	29.5	0.0	0.0	0.0	0.0	8.9	0.5
<b>D6</b>	0.0	0.1	0.0	0.2	24.5	0.0	0.7	0.5	73.8	0.0	0.0	0.0	0.0	0.0	0.0
<b>D7</b>	0.0	0.2	0.0	0.0	64.8	0.0	0.0	0.2	33.6	0.1	0.0	1.1	0.0	0.0	0.0
<b>July</b>															
<b>D2</b>	0.0	0.0	0.0	0.1	0.7	0.0	0.0	3.4	85.6	0.1	0.0	0.0	0.1	0.0	0.1
<b>D3</b>	10.6	0.5	0.0	4.4	1.4	0.0	0.0	9.2	73.9	0.0	0.0	0.0	0.0	0.0	0.0
<b>D4</b>	34.5	1.4	0.0	0.9	9.0	0.0	0.0	26.1	28.2	0.0	0.0	0.0	0.0	0.0	0.0
<b>D5</b>	22.3	0.3	0.0	1.1	3.4	0.0	0.0	5.2	67.7	0.0	0.0	0.1	0.0	0.0	0.0
<b>D6</b>	0.6	0.2	0.0	1.4	0.7	0.1	0.0	53.2	43.8	0.0	0.0	0.0	0.0	0.0	0.0
<b>August</b>															
<b>D4</b>	3.4	0.0	0.0	0.0	0.2	0.0	0.0	13.4	83.0	0.0	0.0	0.0	0.0	0.0	0.0
<b>D5</b>	1.9	0.0	0.0	0.3	0.0	0.0	0.0	46.2	51.6	0.0	0.0	0.0	0.0	0.0	0.0
<b>D6</b>	0.8	0.0	0.0	2.6	0.3	0.9	0.0	59.9	35.6	0.0	0.0	0.0	0.0	0.0	0.0
<b>D7</b>	1.3	0.0	0.0	0.2	0.2	0.0	0.0	98.3	0.0	0.0	0.0	0.0	0.0	0.0	0.1

Table 12. –(cont.)

	Diel period	Large calanoids	Small calanoids	Harpacticoids	Decapod larvae	Euphausiids	Fish	Gastropods	Hyperiid	Larvacea	Barnacle larvae	Chaetognaths	Cladocera	Gammarids	Insects	Other
<b>September</b>																
	<b>D3</b>	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.3	95.7	0.0	0.0	0.0	0.0	0.0	0.0
	<b>D4</b>	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.3	95.7	0.0	0.0	0.0	0.0	0.0	0.0
	<b>D5</b>	0.0	0.0	0.0	0.0	0.4	0.0	0.0	2.5	97.1	0.0	0.0	0.0	0.0	0.0	0.0
	<b>D6</b>	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	98.9	0.0	0.0	0.0	0.0	0.0	0.0
	<b>D7</b>	0.3	0.1	0.0	0.0	84.0	0.0	0.0	11.8	3.8	0.0	0.0	0.0	0.0	0.0	0.0

Table 13. –Mean percent number of prey (%N) by major taxon during seven diel periods for juvenile coho salmon sampled monthly in Icy Strait, southeastern Alaska from May-September 2001. Values include fish that did not consume the taxon.

Diel period	Large calanoids	Small calanoids	Harpacticoids	Decapod larvae	Euphausiids	Fish	Gastropods	Hyperiid	Larvacea	Barnacle larvae	Chaetognaths	Cladocera	Gammarids	Insects	Other
<b>June</b>															
<b>D1</b>	4.2	6.1	0.0	27.7	5.7	44.8	0.0	11.0	0.6	0.0	0.0	0.0	0.0	0.0	0.0
<b>D2</b>	0.0	0.0	0.0	35.5	1.7	47.1	0.4	14.7	0.0	0.0	0.0	0.0	0.0	0.6	0.0
<b>D3</b>	0.3	0.0	0.0	42.3	4.2	42.7	5.5	4.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0
<b>D4</b>	0.5	0.6	0.0	37.9	1.1	33.9	12.9	10.7	0.0	0.0	0.0	0.6	0.9	1.0	0.0
<b>D5</b>	0.8	0.0	0.0	35.8	2.2	33.7	13.9	8.4	0.0	0.2	0.0	0.2	0.0	4.9	0.0
<b>D6</b>	2.0	0.0	0.0	46.0	4.3	43.0	1.4	3.1	0.0	0.0	0.0	0.0	0.0	0.0	0.2
<b>D7</b>	1.8	2.4	0.0	72.1	1.6	16.7	2.4	2.6	0.0	0.0	0.0	0.1	0.0	0.3	0.0
<b>July</b>															
<b>D1</b>	0.0	0.0	0.0	82.9	0.7	0.9	0.0	5.3	0.0	0.0	0.0	0.0	0.2	0.0	0.0
<b>D2</b>	0.0	0.0	0.0	93.7	0.5	2.8	0.0	2.7	0.0	0.0	0.0	0.0	0.0	0.0	0.3
<b>D3</b>	0.0	0.0	0.0	98.6	0.0	0.4	0.0	0.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0
<b>D4</b>	0.0	0.0	0.0	90.4	0.2	6.5	0.0	2.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0
<b>D5</b>	0.0	0.0	0.1	62.9	0.3	28.9	0.0	7.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0
<b>D6</b>	0.0	0.0	0.0	69.8	0.1	28.5	0.0	1.5	0.0	0.1	0.0	0.0	0.0	0.0	0.0
<b>D7</b>	0.3	0.6	0.0	73.2	3.7	9.4	0.0	12.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0



Table 15.—Mean percent weight of prey (%W) by major taxon during seven diel periods for juvenile chum salmon sampled monthly in Icy Strait, southeastern Alaska from May–September 2001. Values include fish that did not consume the taxon.

	Diel period	Large calanoids	Small calanoids	Harpacticoids	Decapod larvae	Euphausiids	Fish	Gastropods	Hyperiid	Larvacea	Barnacle larvae	Chaetognaths	Cladocera	Gammarids	Insects	Other
<b>May</b>	<b>D2</b>	52.3	18.3	15.0	0.0	0.6	0.0	0.0	3.4	1.2	0.3	0.0	0.0	1.4	6.0	1.4
	<b>D3</b>	40.6	29.3	2.5	5.3	10.0	0.0	0.0	0.0	1.2	0.0	0.0	0.0	5.0	4.1	2.1
	<b>D4</b>	49.2	11.9	2.0	0.8	8.8	0.0	0.0	0.0	0.6	1.1	0.0	0.0	0.0	25.2	0.5
	<b>D5</b>	42.6	8.3	0.3	0.0	11.3	21.0	0.0	8.9	0.8	0.7	0.0	0.0	0.0	6.1	0.0
	<b>D6</b>	45.2	17.9	3.0	0.0	6.8	8.8	0.0	0.0	2.9	0.0	0.0	0.0	0.0	13.5	1.8
	<b>June</b>	<b>D1</b>	9.1	0.3	0.1	0.0	32.9	12.1	0.5	3.2	19.1	20.3	0.0	0.5	0.0	1.9
	<b>D2</b>	0.2	0.0	0.0	1.4	75.7	9.5	0.0	0.0	11.6	1.0	0.0	0.1	0.0	0.5	0.0
	<b>D3</b>	1.6	0.2	0.0	8.8	70.2	0.0	0.0	0.2	17.1	1.2	0.0	0.1	0.0	0.6	0.0
	<b>D4</b>	2.1	4.1	0.0	1.2	63.7	10.3	0.0	0.7	15.0	2.0	0.0	0.0	0.0	0.7	0.0
	<b>D5</b>	0.3	0.0	0.0	0.0	34.8	51.5	0.0	0.4	12.6	0.0	0.0	0.0	0.0	0.2	0.1
	<b>D6</b>	0.3	0.1	0.0	4.4	56.9	2.9	2.6	1.2	31.5	0.1	0.0	0.0	0.0	0.0	0.0
	<b>D7</b>	0.0	0.0	0.0	1.0	89.0	0.6	0.0	0.1	9.0	0.1	0.0	0.1	0.0	0.0	0.0
<b>July</b>	<b>D2</b>	0.0	0.0	0.0	2.1	0.5	0.0	0.0	19.1	66.1	1.6	0.0	0.0	0.6	0.0	0.0
	<b>D3</b>	19.8	0.2	0.0	23.0	3.0	0.0	0.0	21.2	32.4	0.3	0.0	0.0	0.1	0.0	0.0
	<b>D4</b>	39.1	0.1	0.0	4.7	15.0	0.0	0.0	27.3	13.8	0.0	0.0	0.0	0.0	0.0	0.0
	<b>D5</b>	33.5	0.3	0.0	6.3	7.5	0.0	0.0	13.8	38.6	0.0	0.0	0.0	0.0	0.0	0.0
	<b>D6</b>	2.7	0.1	0.0	10.3	2.8	4.9	0.0	72.3	6.9	0.0	0.0	0.0	0.0	0.0	0.0
	<b>August</b>	<b>D4</b>	7.0	0.0	0.0	0.1	13.0	0.0	0.0	33.4	46.6	0.0	0.0	0.0	0.0	0.0
	<b>D5</b>	4.6	0.0	0.0	0.7	2.7	0.0	0.0	86.2	5.7	0.0	0.0	0.0	0.0	0.0	0.0
	<b>D6</b>	1.2	0.0	0.0	4.4	2.9	9.1	0.0	71.1	10.3	0.3	0.0	0.0	0.0	0.6	0.0
	<b>D7</b>	1.7	0.0	0.0	0.4	2.0	0.0	0.0	95.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Table 15.—(cont.)

Diel period	Large calanoids	Small calanoids	Harpacticoids	Decapod larvae	Euphausiids	Fish	Gastropods	Hyperiid	Larvacea	Barnacle larvae	Chaetognaths	Cladocera	Gammarids	Insects	Other
<b>September</b>															
<b>D3</b>	0.0	0.0	0.0	0.0	0.0	0.0	0.0	64.3	35.7	0.0	0.0	0.0	0.0	0.0	0.0
<b>D4</b>	0.0	0.0	0.0	0.0	1.9	0.0	0.0	64.8	33.3	0.0	0.0	0.0	0.0	0.0	0.0
<b>D5</b>	1.2	0.0	0.0	0.0	8.7	0.0	0.0	46.6	43.4	0.0	0.0	0.0	0.0	0.0	0.0
<b>D6</b>	0.0	0.0	0.0	0.0	14.6	0.0	0.0	21.9	63.5	0.0	0.0	0.0	0.0	0.0	0.0
<b>D7</b>	0.0	0.0	0.0	0.0	98.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Table 16.—Mean percent weight of prey (%W) by major taxon during seven diel periods for juvenile coho salmon sampled monthly in Icy Strait, northern southeastern Alaska from May–September 2001. Values include fish that did not consume the taxon.

Diel period	Large calanoids	Small calanoids	Harpacticoids	Decapod larvae	Euphausiids	Fish	Gastropods	Hyperids	Larvacea	Barnacle larvae	Chaetognaths	Cladocera	Gammarids	Insects	Other
<b>June</b>															
<b>D1</b>	0.9	0.1	0.0	27.2	0.4	67.8	0.0	3.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
<b>D2</b>	0.0	0.0	0.0	34.4	0.3	62.7	0.1	2.4	0.0	0.0	0.0	0.0	0.0	0.1	0.0
<b>D3</b>	0.1	0.0	0.0	43.7	2.8	51.0	1.2	1.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
<b>D4</b>	0.2	0.0	0.0	37.3	0.5	54.8	2.1	4.0	0.0	0.0	0.0	0.0	0.9	0.1	0.0
<b>D5</b>	0.3	0.0	0.0	39.8	0.8	53.6	2.6	2.5	0.0	0.0	0.0	0.0	0.0	0.4	0.0
<b>D6</b>	0.5	0.0	0.0	40.8	1.1	55.2	0.3	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
<b>D7</b>	1.2	0.0	0.0	68.0	0.9	27.0	1.1	1.7	0.0	0.0	0.0	0.0	0.0	0.1	0.0
<b>July</b>															
<b>D1</b>	0.0	0.0	0.0	84.9	0.5	3.3	0.0	1.2	0.0	0.0	0.0	0.0	0.2	0.0	0.0
<b>D2</b>	0.0	0.0	0.0	93.0	0.1	5.7	0.0	1.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
<b>D3</b>	0.0	0.0	0.0	99.2	0.0	0.5	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
<b>D4</b>	0.0	0.0	0.0	89.8	0.1	9.2	0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
<b>D5</b>	0.0	0.0	0.0	62.0	0.4	36.1	0.0	1.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
<b>D6</b>	0.0	0.0	0.0	64.7	0.1	34.8	0.0	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
<b>D7</b>	0.0	0.0	0.0	76.3	1.3	19.1	0.0	3.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Table 17.—Zooplankton settled volumes (ZSV, ml) from 20-m NORPAC hauls sampled during each diel period May-September, 2001 at Icy Strait station ISC in the northern region of southeastern Alaska. NS denotes no samples taken. Phytoplankton volumes were measurable only in September.

Sampling day	ZSV						
	D1	D2	D3	D4	D5	D6	D7
May 22	NS	NS	NS	18	NS	NS	NS
June 29-30	39	55	40	30 38	44	72	60
July 30-31	8	6	4	5 5	9	9	16
August 28, 30	6	5	4	4 3	6	8	11
September 28-30	15	1	2	1 2 6	2 5	3	5

Table 18.---Zooplankton displacement volumes (ZDV, ml) and rank of visually-assessed volumes of dominant taxa for shallow (20-m) and deep (200-m) bongo hauls at station ISC in Icy Strait, northern region of southeastern Alaska May-September 2001. Volumetric percent composition in parentheses. LC=Large copepods, SC=Small copepods, CT=Chaetognaths, EU=Euphausiids, CZ= Crab zoeae, HY=Hyperiid, OK=Oikopleurans, JE=Jellies, SH=Shrimp-like crustaceans, PT = phytoplankton; NP denotes samples not yet processed.

Day	Mesh size (□m)	ZDV	Rank 1	Rank 2	Rank 3	Rank 4	Rank 5
<b>Shallow bongos</b>							
May 20	333	24	LC (45)	CT (18)	SC (12)	OK (10)	SH ( 3)
	505	19	SC (30)	LC (25)	CT (13)	OK ( 5)	--
June 28	333	20	SC (32)	LC (18)	CT ( 8)	OK ( 5)	EU ( 2)
	505	11	CT (25)	EU (20)	LC ( 7)	CZ ( 5)	--
July 29	333	3	SC (40)	CZ (25)	LC (15)	EU ( 3)	CT ( 2)
	505	2	LC (47)	CZ (25)	HY (15)	JE ( 5)	SC ( 3)
August 27	333	NP	NP	NP	NP	NP	NP
	505	NP	NP	NP	NP	NP	NP
September 27	333	1	SC (95)	--	--	--	--
	505	NP	LC (50)	HY (50)	--	--	--
<b>Deep bongos</b>							
May 20	333	179	LC (40)	SC (20)	CT (12)	HY ( 3)	--
	505	142	LC (63)	OK (10)	CT ( 6)	PT (21)	--
June 28	333	288	LC (25)	CT (25)	EU (15)	HY (10)	SC (10)
	505	228	LC (55)	CT (28)	HY ( 4)	EU ( 2)	--
July 29	333	176	LC (33)	CT (20)	HY (15)	EU ( 5)	SC ( 3)
	505	113	LC (35)	CT (25)	HY (20)	EU (10)	--
August 27	333	NP	NP	NP	NP	NP	NP
	505	NP	NP	NP	NP	NP	NP
September 27	333	89	CT (50)	LC (25)	HY (15)	EU ( 5)	SC ( 3)
	505	61	CT (50)	LC (20)	HY (15)	EU ( 5)	SC ( 3)

Table 19.-Temperatures ( $^{\circ}\text{C}$ ) and salinities (PSU) at Icy Strait in the northern waters of southeastern Alaska, May-September 2001. NS denotes no sample.

Date		D1	D2	D3	D4	D5	D6	D7
May 22	Temp.	NS	NS	NS	7.0	NS	NS	NS
	Salinity	NS	NS	NS	31.1	NS	NS	NS
June 29	Temp.	12.5	12.3	12.4	13.0	13.7	13.5	13.2
	Salinity	23.7	24.1	24.3	24.7	24.6	24.5	24.3
July 30	Temp.	12.3	12.5	12.6	12.7	12.8	12.7	12.7
	Salinity	24.8	24.2	23.9	23.9	23.6	24.0	24.1
August 28	Temp.	12.6	12.5	12.6	12.5	12.8	12.6	12.5
	Salinity	23.7	23.8	23.6	24.1	23.9	24.7	24.8
September 28	Temp.	9.2	9.2	9.3	9.3	9.4	9.2	9.2
	Salinity	27.3	27.4	27.6	25.4	24.9	25.9	25.9

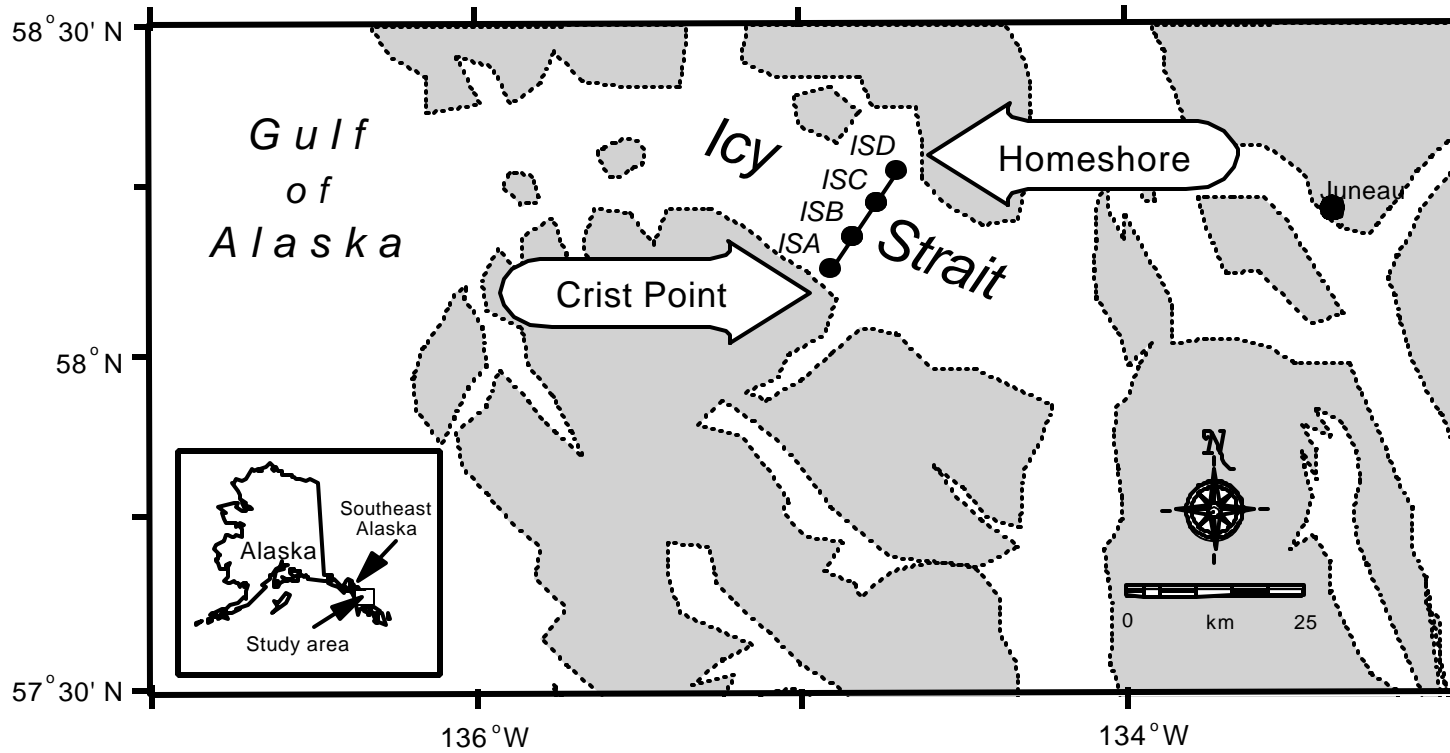


Figure 1.—Location in Icy Strait, northern Southeast Alaska, where process studies were conducted on juvenile salmon from the NOAA vessel *John N. Cobb* in 2001. Stomach samples for diel feeding studies were collected by beach seining at Homeshore and Crist Point in May and by trawling at ISC each month from June to September. Stomach samples for shipboard gastric evacuation studies were collected at the same locations in May and July.

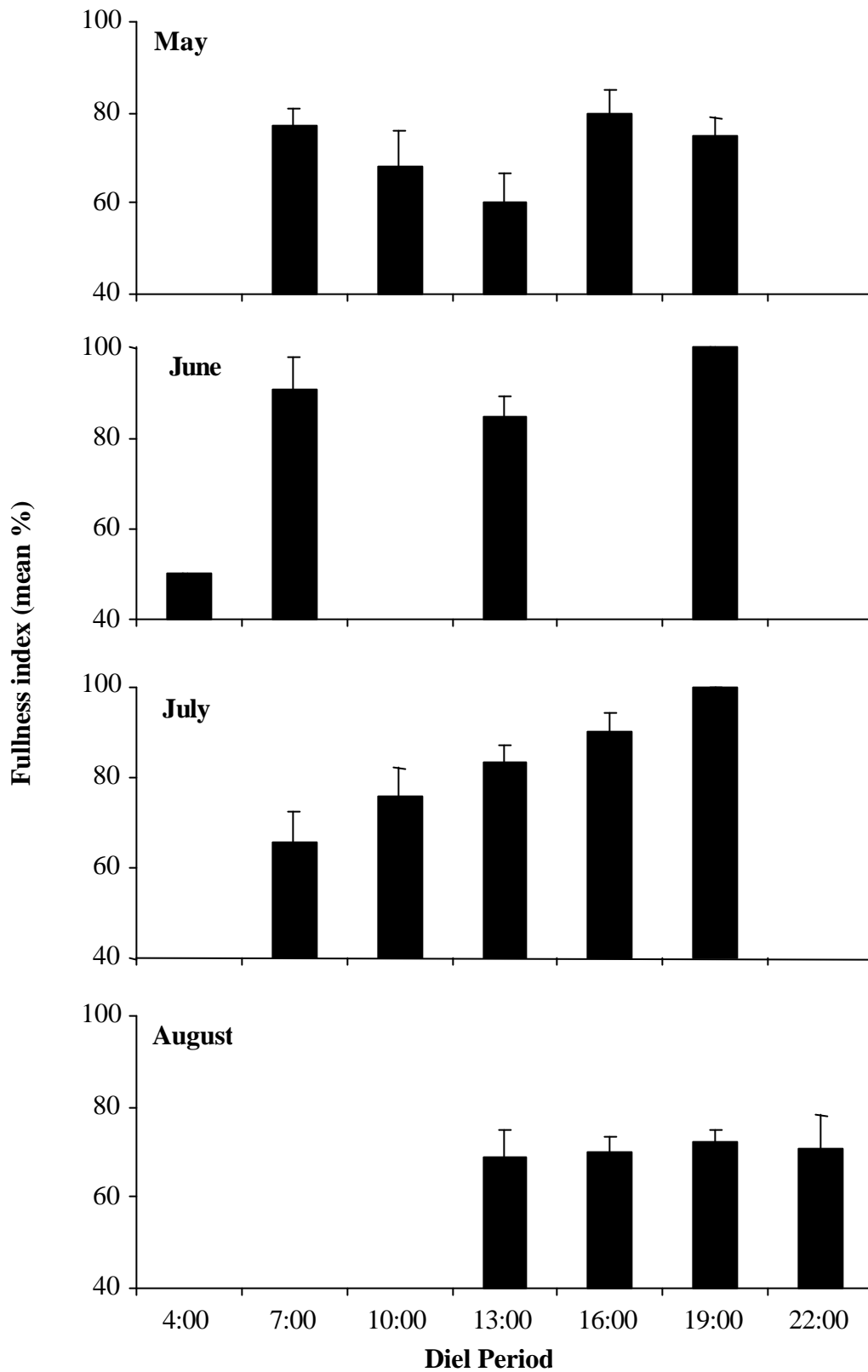


Figure 2.—Juvenile pink salmon monthly stomach fullness index, with standard error bars, by diel period at station ISC in Icy Strait, northern southeastern Alaska, May-September 2001.

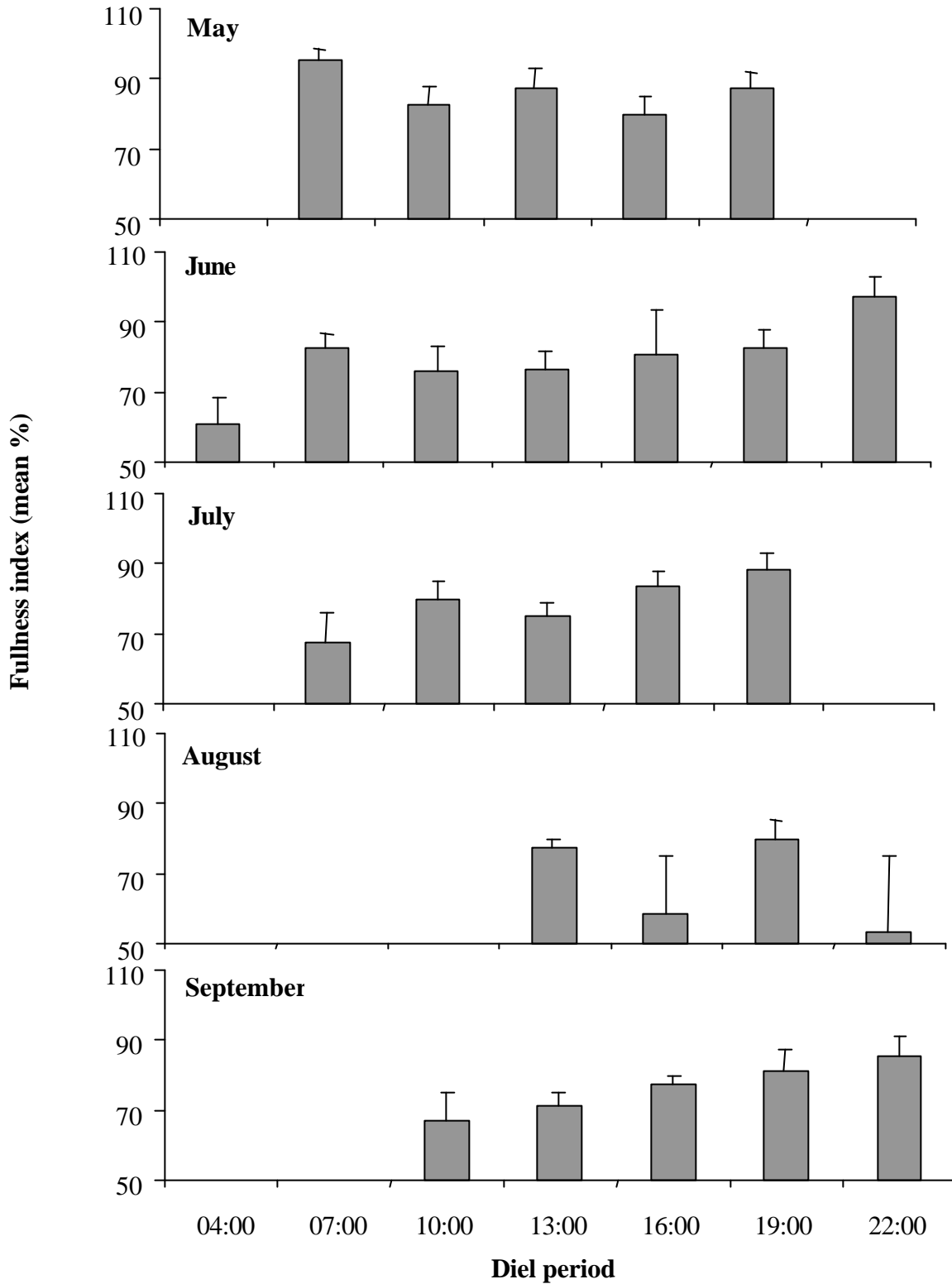


Figure 3.—Juvenile chum salmon monthly stomach fullness index, with standard error bars, by diel period at station ISC in Icy Strait, northern southeastern Alaska, May-September 2001.

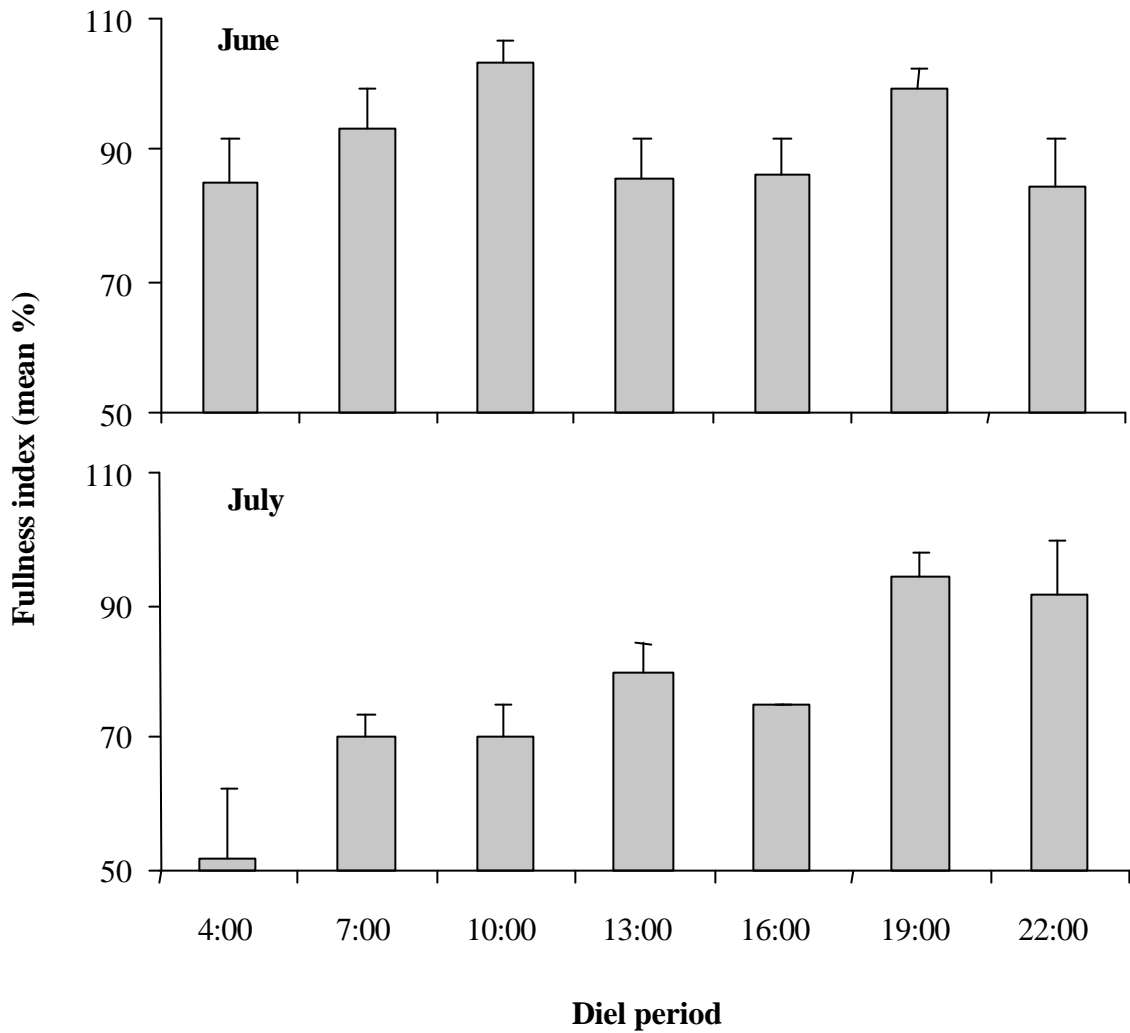


Figure 4.—Juvenile coho salmon monthly stomach fullness index, with standard error bars, by diel period at station ISC in Icy Strait, northern southeastern Alaska, May-September 2001.

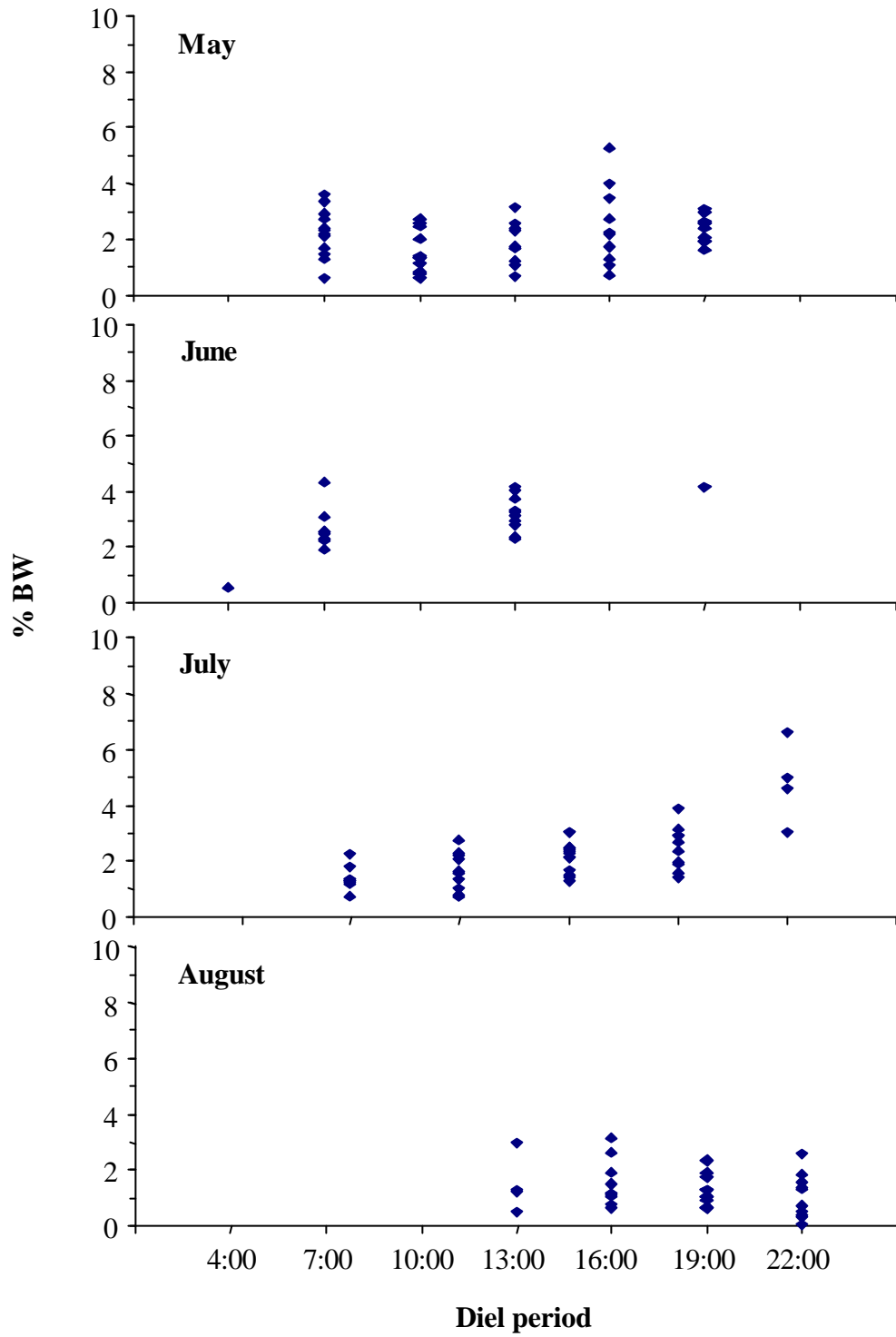


Figure 5.—Juvenile pink salmon monthly prey percent body weight (%BW) by diel period at station ISC in Icy Strait, northern southeastern Alaska, May-September 2001.

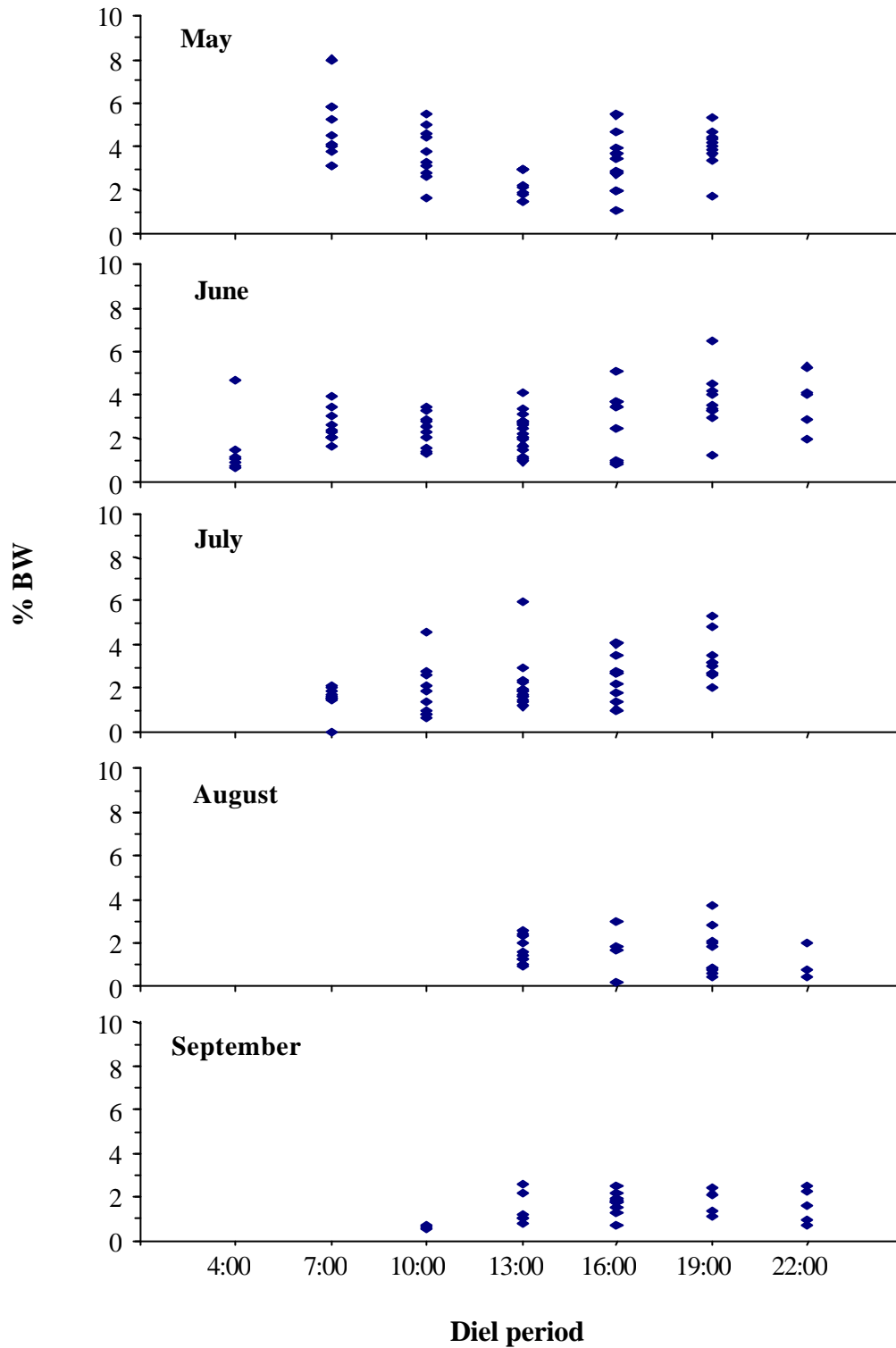


Figure 6.—Juvenile chum salmon monthly prey percent body weight (%BW) by diel period at station ISC in Icy Strait, northern southeastern Alaska, May-September 2001.

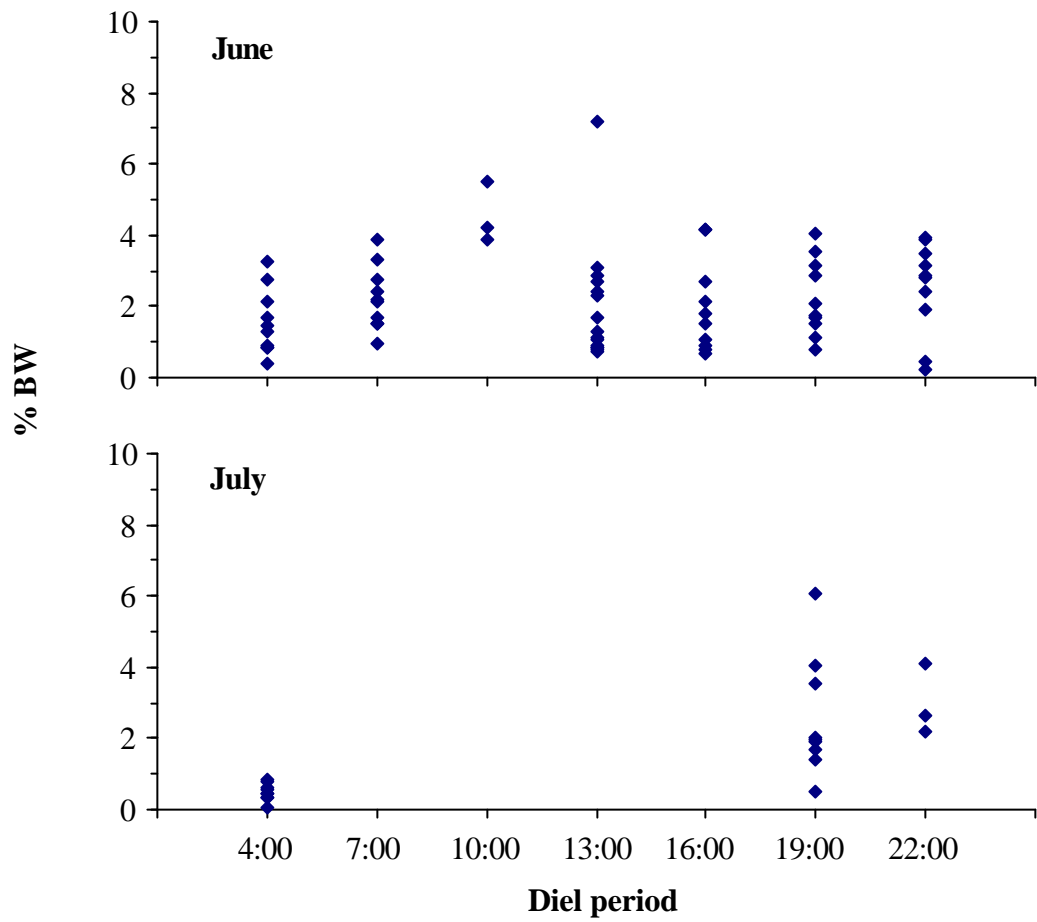


Figure 7.—Juvenile coho salmon monthly prey percent body weight (%BW) by diel period at station ISC in Icy Strait, northern southeastern Alaska, May-September 2001. Stomach content weight of July D2-D5 fish could not be measured due to poor preservation.

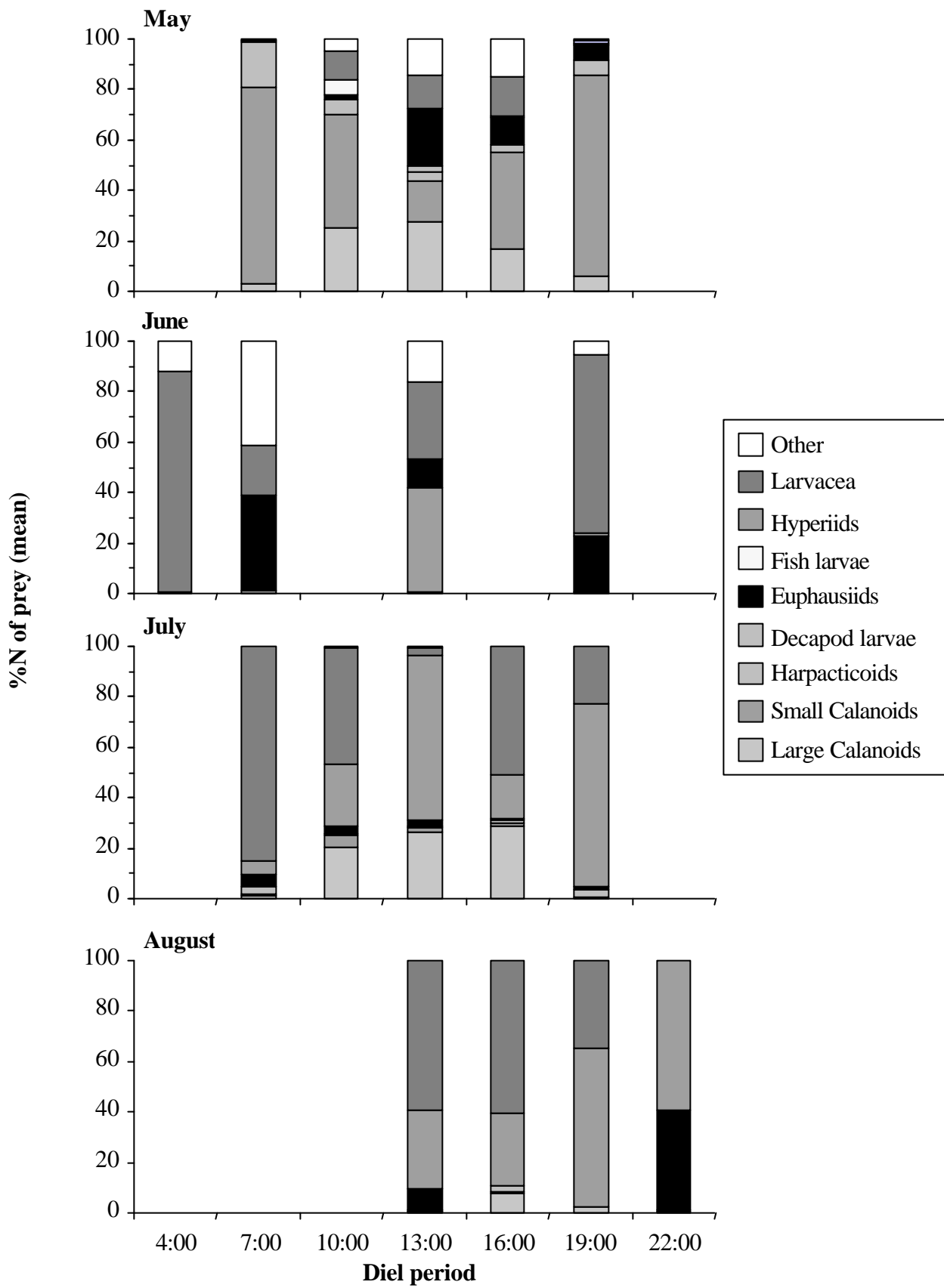


Figure 8.—Juvenile pink salmon monthly percent number (%N) of prey by diel period at station ISC in Icy Strait, northern southeastern Alaska, May–September 2001.

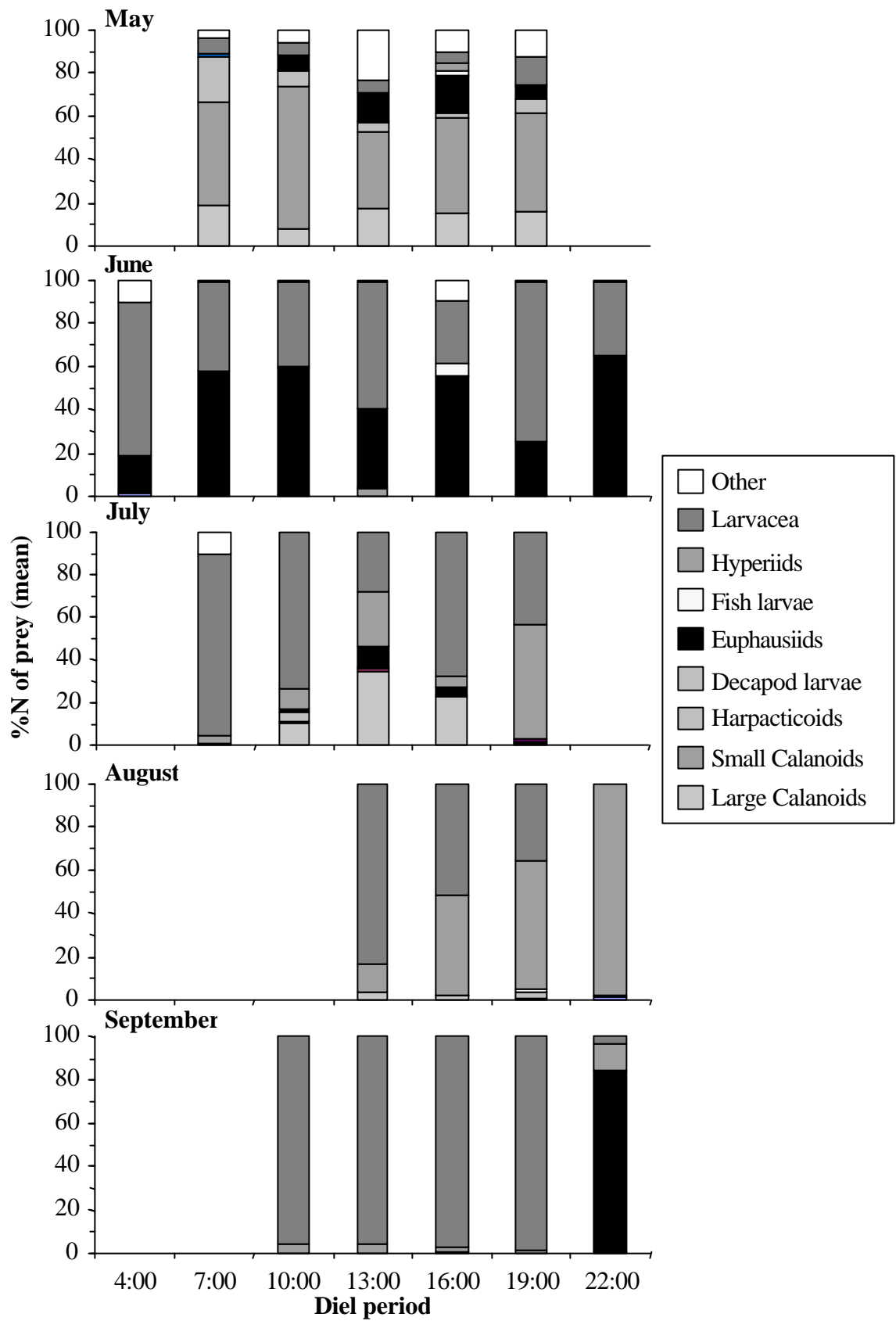


Figure 9.—Juvenile chum salmon monthly percent number (%N) of prey by diel period at station ISC in Icy Strait, northern southeastern Alaska, May–September 2001.

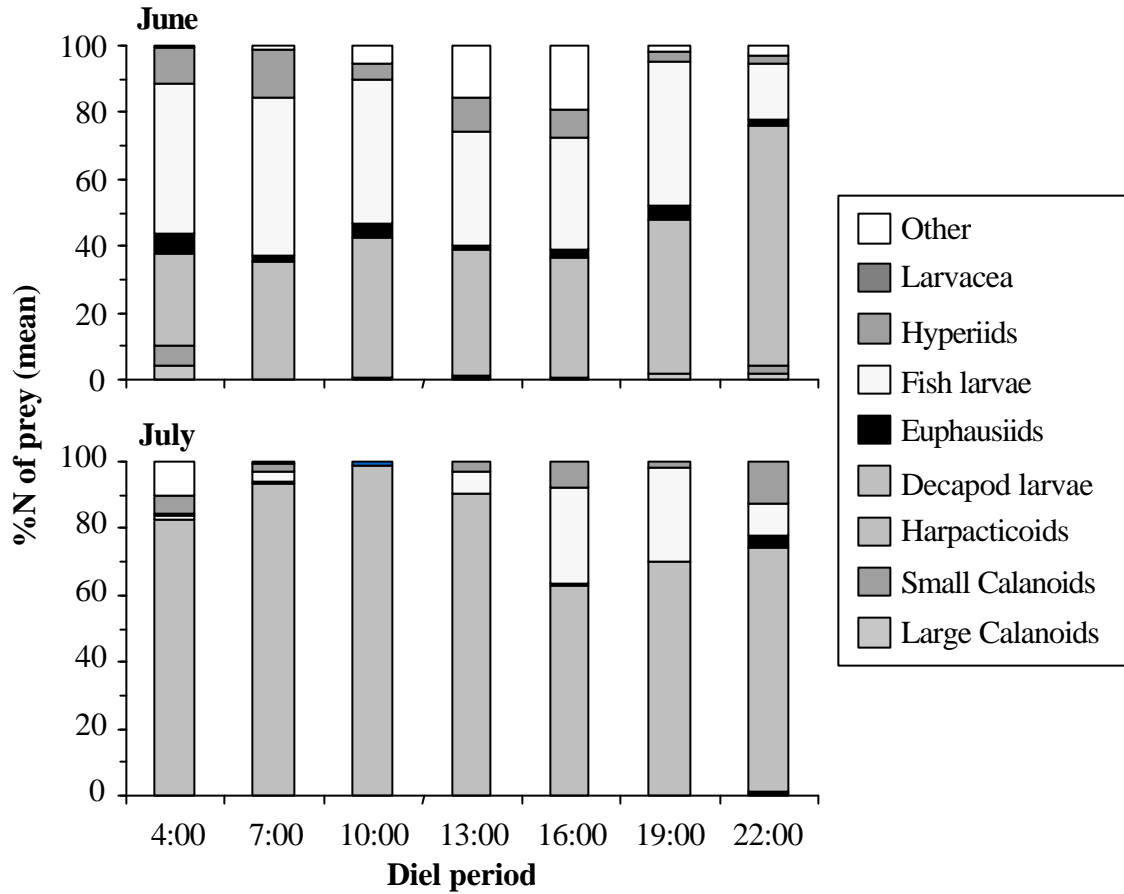


Figure 10.—Juvenile coho salmon monthly percent number (%N) of prey by diel period at station ISC in Icy Strait, northern southeastern Alaska, May–September 2001.

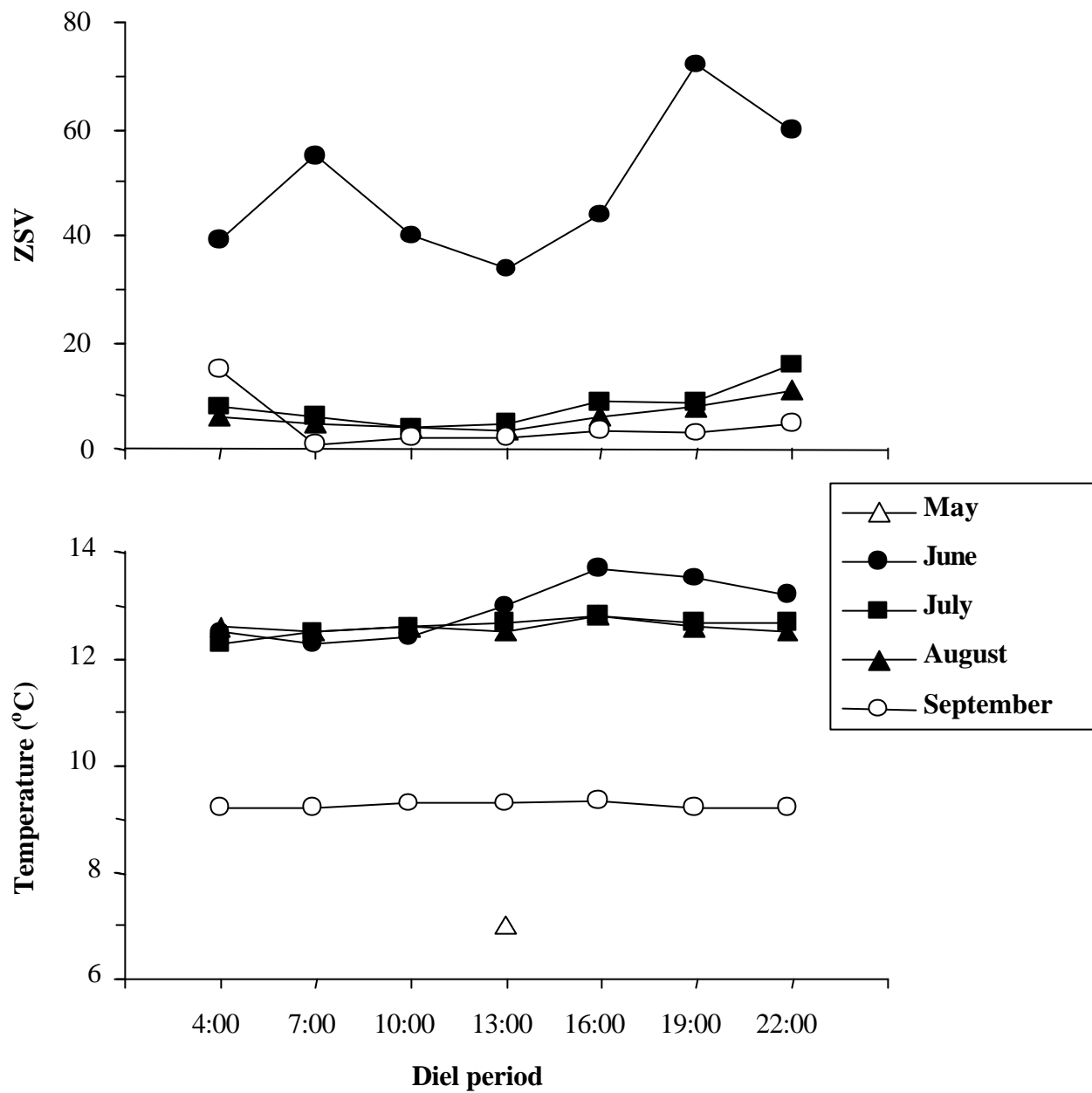


Figure 11.—Monthly zooplankton settled volumes (ZSV, ml) from 20-m NORPAC hauls and 2-m water temperature (°C) by diel period at station ISC in Icy Strait, northern southeastern Alaska, May-September 2001. ZSV were not sampled in May.