

Southeast Alaska Coastal Monitoring Project

JC-04-14 August Cruise Report

25 October 2004

Prepared by

Emily A. Fergusson, Joseph A. Orsi, Molly V. Sturdevant,
Laurie Weitkamp*, and Carl Reese**,
Auke Bay Laboratory, 11305 Glacier Highway
Juneau, Alaska 99801-8626
TEL (907) 789-6613 FAX (907) 789-6094
E-mail: emily.fergusson@noaa.gov

*Northwest Fisheries Science Center, NOAA Fisheries, Seattle Washington

**University of Alaska Fairbanks, School of Fisheries and Ocean Sciences

Scientists from the Marine Salmon Investigations Program at Auke Bay Laboratory, Alaska Fisheries Science Center, National Marine Fisheries Service (NMFS), NOAA, the Northwest Fisheries Science Center, NMFS, NOAA, and the University of Alaska Fairbanks conducted an 8-day cruise aboard the NOAA ship *John N. Cobb* in the marine waters of the northern region of southeastern Alaska 21-28 August 2004. This cruise, JC-04-14, was the last of five Southeast Alaska Coastal Monitoring (SECM) Project cruises scheduled for 2004.

The SECM project was initiated in 1997 to study the habitat and early marine ecology of juvenile Pacific salmon (*Oncorhynchus* spp.) in inshore, strait, and coastal habitats along their primary seaward migration corridor, as well as to examine the intra- and inter-annual variability of physical and biological oceanographic indices in relation to the distribution, abundance, growth, and survival of salmon and other fish populations at the same localities. The habitats studied span from near Juneau 250 km westward through Icy Strait, culminating 64 km offshore in the Gulf of Alaska. Objectives for these cruises were: 1) to collect biological data on juvenile Pacific salmon and other pelagic fish species from surface rope trawl samples, and, 2) to monitor physical and biological oceanographic indices seasonally at sampling stations in these habitats.

Sampling in 2004 marks the eighth year of the SECM long-term study. In May and June of this year, in addition to the standard monitoring suite, three stations in Taku Inlet were added to accomplish research objectives of a new cooperative project between Auke Bay Laboratory, University of Alaska Juneau Center for Fisheries and Ocean Sciences, Douglas Island Pink and Chum hatchery, and the Alaska Department of Fish and Game. The Taku Inlet study investigates hatchery and wild chum salmon interactions in near shore habitats, and is funded by Southeast Sustainable Salmon Funds (SSSF).

METHODS

Thirteen stations were scheduled for sampling on cruise JC-04-14 (Table 1, Figure 1). Stations were located in Auke Bay and along three transects with four stations each in Upper Chatham Strait, Icy Strait, and off Icy Point. Oceanographic measurements were planned for all stations and trawling was planned at all stations except Auke Bay and the two outermost stations of the Icy Point transect (IPC and IPD). Replicate rope trawl samples, with minimal oceanographic sampling, were also planned for Icy Strait and the two innermost stations of the Icy Point transect (IPA and IPB). In addition to this work, five sets of 20/40 minute trawls were planned at Icy Strait to try to assess net efficiency and size selectivity.

Oceanographic sampling:

Oceanographic data were collected at each station immediately before or after each trawl haul, and consisted of one conductivity-temperature-depth profiler (CTD) cast, one or more vertical plankton hauls with conical nets, and one double oblique plankton haul with a bongo net system. The CTD data were collected with a Sea-Bird¹ SBE 19 Seacat profiler to 200 m or within 10 m of the bottom. Surface (2 m) temperature and salinity data were collected at 1-minute intervals with an onboard thermosalinograph (Sea-Bird SBE 21). Surface water samples were taken at each station for later nutrient and chlorophyll analysis contracted to the Marine Chemistry Laboratory at the University of Washington School of Oceanography. To quantify ambient light levels, light intensities (W/m^2) were recorded at each station with a Li-Cor Model 189 radiometer.

Zooplankton Sampling:

Zooplankton was sampled at all stations with several net types during each month. At least one shallow vertical haul (20 m) was made at each station with a 50-cm, 243- Φ m mesh NORPAC net. Up to one deep vertical haul (to 200 m or within 10 m of bottom) was made at most stations with a 57-cm, 202- Φ m mesh WP-2 net (Table 2). One double oblique bongo haul was made at all stations, except the Upper Chatham Strait stations, to a depth of 200 m or within 20 m of the bottom using a 60-cm diameter frame with 505- Φ m and 333- Φ m mesh nets. In addition, one shallow (20 m) bongo was made at the Icy Strait stations except in May. A Bendix bathykymograph was used with the oblique bongo hauls to record the maximum sampling depth of each haul. General Oceanics model 2031 or Rigosha flow meters were placed inside the bongo and deep conical nets for calculation of filtered water volumes. During replicate trawls, only the NORPAC sample was collected at a given station.

Trawl Sampling:

Fish sampling was accomplished with a Nordic 264 rope trawl modified to fish the surface water directly astern of the *John N. Cobb*. The trawl was 184 m long and had a mouth opening of 24 m

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

by 30 m (depth by width). A pair of 3-m foam-filled Lite trawl doors, each weighing 544 kg (91 kg submerged), was used to spread the trawl open. Earlier gear trials with this vessel and trawl indicated the actual fishing dimensions of the trawl to be 18 m deep (head rope to foot rope) by 24 m wide (wingtip to wingtip), with a spread between the trawl doors ranging from 52 m to 60. Trawl mesh sizes from the jib lines aft to the cod end were 162.6 cm, 81.3 cm, 40.6 cm, 20.3 cm, 12.7 cm, and 10.1 cm over the 129.6-m meshed length of the rope trawl. A 6.1-m long, 0.8-cm knotless liner mesh was sewn into the cod end. The trawl also contained a small mesh panel of 10.2-cm mesh sewn along the jib lines on the top panel between the head rope and the 162.6-cm mesh to reduce loss of small fish. To keep the trawl headrope at the surface, a cluster of three A-4 Polyform buoys, each encased in a knotted mesh bag, was tethered to each wingtip of the headrope, and one A-3 Polyform float was clipped onto the center of the headrope. The trawl was fished with 137 m of 1.6-cm wire main warp attached to each door and three 55-m (two 1.0-cm and one 1.3-cm) wire bridles.

For each haul, the trawl was fished across a station for 20 min at about 1.5 m/sec (3 knots), covering approximately 1.9 km (1.0 nautical mile). Station coordinates were targeted as the midpoint of the trawl haul; however, current, swell, and wind conditions dictated the direction in which the trawl was set. Trawling effort in the strait habitat was augmented to ensure that sufficient samples of marked juvenile salmon were obtained for interannual comparisons. In particular, replicate trawls were conducted in Icy Strait when weather and time allowed, with minimal accompanying oceanographic sampling.

After each trawl haul, the fish were anesthetized with tricaine methanesulfonate (MS-222), identified, enumerated, measured, labeled, bagged, and frozen. After the catch was sorted, fish and squid were measured to the nearest mm fork length (FL) or mantle length with a Limnoterra FMB IV electronic measuring board. Usually all fish and squid were measured, but very large catches were subsampled due to processing time constraints. Up to 50 juvenile salmon of each species were bagged individually; the remainder was bagged in bulk. All fish were frozen immediately after measurement. During times of extended processing, fish were chilled with ice packs to minimize tissue decomposition and gastric activity. All chinook and coho salmon were examined for missing adipose fins that would indicate the possible presence of implanted CWTs.

Laboratory processing:

Data on settled volumes (SV) of zooplankton in the 20-m vertical NORPAC tows and from decoded CWTs of fish lacking adipose fins are included in this report. Laboratory processing in progress includes 1) measurement of weight and condition of juvenile salmon; 2) determination of energetic content from frozen samples of juvenile pink (*O. gorbuscha*), chum (*O. keta*), and coho salmon; 3) examination for otolith thermal marks in frozen samples of juvenile chum, sockeye (*O. nerka*), coho, and chinook salmon; 4) scale samples of each species of juvenile salmon; 5) measurement of plankton displacement volumes of all bongo net samples; and 6) zooplankton species composition and abundance from the bongo net samples taken at the Icy Strait stations.

RESULTS and DISCUSSION

All thirteen stations scheduled for sampling in the northern region of southeastern Alaska were sampled (Table 1). Standard oceanographic sampling and surface trawling were conducted according to the following schedule:

Day 1: Auke Bay (1 station) and Upper Chatham Strait (2 stations)

Day 2: Upper Chatham Strait (2 stations)

Day 3: Icy Point (4 stations)

Day 4: Icy Strait (4 stations, 5 tows) replicate sampling & 20/40 minute testing

Day 5: Icy Strait (1 station, 6 tows) 20/40 minute testing

Day 6: Icy Strait (1 station, 2 tows) 20/40 minute testing

Day 7: Icy Strait (1 station, 1 tow) nocturnal sampling

Day 8: transit to Juneau NMFS Subport.

Oceanographic sampling was accomplished at each station. A total of 26 CTD casts, 26 NORPAC tows, 10 deep (≤ 200 -m) bongo tows (20 net samples), 5 shallow (20-m) bongo tows (10 net samples), and 9 WP-2 tows were made during the cruise (Table 2). Water samples also were taken at all 13 stations for chlorophyll and nutrient analysis.

Surface (2-m) temperatures and salinities ranged from 11.8 to 17.5°C and from 18.1 to 31.3 PSU (Table 3). Temperatures were lowest at station ISA, 11.8 to 12.0°C, on the Icy Strait transect while the rest of the stations in the strait habitat averaged 14.5°C, never measuring below 13.8°C. Temperatures were highest at stations IPB and IPD (17.5 and 17.4°C) on the Icy Point transect in the Gulf of Alaska. Salinity followed the typical spatial pattern, lowest at the ABM station and increasing toward the Gulf of Alaska. In concordance with temperature, salinity was highest at the Icy Point stations, measuring over 30.0 PSU.

Zooplankton biomass, as determined from the SVs of the 20-m vertical tow samples, ranged from 1 to 50 ml (Table 3). No measurable phytoplankton was present at any station, indicating low primary production at this time. Oikopleuran (Larvacea) slub (gelatinous material) was prevalent in all samples except those taken in the coastal habitat, which prevented the determination of zooplankton SVs.

Juvenile salmon were caught at all strait stations and only one (IPA) of the two coastal stations sampled, whereas non-juvenile salmon were only caught at the ISC station. A total of 560 juveniles and 5 non-juveniles were collected from 26 rope trawl hauls (Tables 4, 5, and 6). Juvenile salmon were the most frequently occurring taxon, with pink, coho, and chum salmon having the highest frequency of occurrence (58-77% of hauls). Among the juvenile salmon species, pink and coho salmon were most abundant, with total catches of 148 and 136 (Tables 4 and 6); catches of juvenile chum and sockeye salmon were lower (50 and 14), and catches of juvenile chinook salmon (4) were the lowest. Non-juvenile salmon catches included 2 immature chinook and 3 adult coho (Tables 4 and 6).

A total of 203 non-salmonids were caught in the rope trawl (Tables 5 and 6). By species, the largest catches were 118 spiny dogfish (*Squalus acanthias*), 39 squid (Goniatidae), 19 crested sculpin (*Blepsias bilobus*), and 10 Pacific herring (*Clupea pallasii*). Of the non-salmonids captured, crested sculpin occurred the most frequently (46% of hauls), but only were found in the strait habitat. The spiny dogfish were the most abundant non-salmonid captured in the coastal habitat, with a catch of 112 at station IPA. The salmon shark was captured at station ISC, and was tagged and released. The shark was a male, 193 cm fork length and tagged with tag # 98146.

Stock of origin was identified for salmon lacking the adipose fin that contained CWTs. Of the ten salmon lacking the adipose fin, two of the four chinook and four of the six coho contained CWTs (Table 7). The two chinook with CWTs were immature (age 1.1 and 1.2) whereas the two chinook without CWTs were juveniles. All of the coho lacking the adipose fin were juveniles. All CWT fish were recovered in the Icy Strait transect and all originated from localities within southeastern Alaska.

Stomach analysis of 55 potential predators of juvenile salmon while onboard the vessel included: adult spiny dogfish (36), adult walleye pollock (*Theragra chalcogramma*, 4), adult coho salmon (3), immature chinook salmon (2), and black rockfish (*Sebastes melanops*, 1). Of the 55 predators examined, 71% contained prey items (39) and 29% were empty (1 immature chinook salmon, 2 walleye pollock, and 13 spiny dogfish). Evidence of predation on juvenile salmon was observed in two of the adult coho salmon examined.

ACKNOWLEDGMENTS

We acknowledge and compliment the command and crew of the NOAA ship *John N. Cobb* for their cooperation and performance during the cruise. Minor modifications in the sampling schedule to account for weather allowed us to achieve our scientific objectives.

Table 1.—Localities and coordinates of stations sampled in the marine waters of the northern region of southeastern Alaska using the NOAA ship *John N. Cobb*, 21-28 August 2004. Station positions are shown in Figure 1. Distance between stations, within a transect, is indicated in the “between km” column.

Station	Latitude North	Longitude West	Distance		Depth m
			offshore km	between km	
Inshore					
Auke Bay					
ABM	58° 22.00'	134° 40.00'	1.5	—	60
Strait					
Upper Chatham Strait transect					
UCA	58° 04.57'	135° 00.08'	3.2	—	400
UCB	58° 06.22'	135° 00.91'	6.4	3.2	100
UCC	58° 07.95'	135° 01.69'	6.4	3.2	100
UCD	58° 09.64'	135° 02.52'	3.2	3.2	200
Icy Strait transect					
ISA	58° 13.25'	135° 31.76'	3.2	—	128
ISB	58° 14.22'	135° 29.26'	6.4	3.2	200
ISC	58° 15.28'	135° 26.65'	6.4	3.2	200
ISD	58° 16.38'	135° 23.98'	3.2	3.2	234
Coastal					
Icy Point transect					
IPA	58° 20.12'	137° 07.16'	6.9	—	160
IPB	58° 12.71'	137° 16.96'	23.4	16.8	130
IPC	58° 05.28'	137° 26.75'	40.2	16.8	150
IPD	57° 53.50'	137° 42.60'	65.0	24.8	1,300

Table 2.—Oceanographic and biological samples collected in the marine waters of the northern region of southeastern Alaska using the NOAA ship *John N. Cobb*, 21-28 August 2004. One asterisk indicates a set of shallow (20-m) and deep (up to 200m) bongos were taken. Two asterisks indicate a 40 minute haul duration.

Date	Time	Haul #	Station	CTD	Rope trawl	Chlorophyll & nutrients	Plankton net samples		
							NORPAC	bongo	WP-2
21 August	1030	8086	ABM	1	0	1	3	2	1
21 August	1600	8087	UCD	1	1	1	1	0	0
21 August	1811	8088	UCC	1	1	1	1	0	0
22 August	0917	8089	UCB	1	1	1	1	0	0
22 August	0730	8090	UCA	1	1	1	1	0	0
23 August	0756	8091	IPA	1	1	1	1	2	1
23 August	1015	8092	IPA	0	1	0	0	0	0
23 August	1147	8093	IPB	1	1	1	1	2	1
23 August	1359	8094	IPB	0	1	0	0	0	0
23 August	1530	8095	IPC	1	0	1	1	2	1
23 August	1810	8096	IPD	1	0	1	1	2	1
24 August	1002	8097	ISA	1	1	1	1	4*	1
24 August	1210	8098	ISB	1	1	1	1	4*	1
24 August	1450	8099	ISC	1	1	1	1	4*	1
24 August	1620	8100	ISD	1	1	1	1	4*	1
25 August	0715	8101	ISA	1	1	0	1	0	0
25 August	0850	8102	ISB	1	1	0	1	0	0
25 August	1020	8103	ISC	1	1	0	1	0	0
25 August	1210	8104**	ISC	1	1	0	1	0	0
25 August	1415	8105	ISD	1	1	0	1	0	0
26 August	0735	8106	ISC	1	1	0	1	0	0
26 August	0900	8107**	ISC	1	1	0	1	0	0
26 August	1105	8108	ISC	1	1	0	1	0	0
26 August	1311	8109**	ISC	0	1	0	0	0	0
26 August	1420	8110	ISC	1	1	0	1	0	0
26 August	1619	8111**	ISC	0	1	0	0	0	0
27 August	0730	8112**	ISC	1	1	0	1	0	0
27 August	1000	8113	ISC	0	1	0	0	0	0
28 August	0030	8114	ISC	1	1	0	1	4*	0
Total				24	26	13	26	30	9

Table 3.—Temperature (2-m), salinity (2-m) and NORPAC (20-m) zooplankton settled volume at stations sampled in the marine waters of the northern region of southeastern Alaska using the NOAA ship *John N. Cobb*, 21-28 August, 2004. All hauls except 8114 were made during daylight hours. Asterisks denote that separation of zooplankton from slub was not distinct.

Date	Haul #	Station	Temperature (°C)	Salinity (PSU)	Plankton settled volumes (ml)		
					Zoo-	Phyto-	Total
21 August	8086	ABM	14.3	18.1	*	0	60
21 August	8087	UCD	14.6	23.1	*	0	10
21 August	8088	UCC	14.5	24.3	*	0	3
22 August	8089	UCB	13.8	26.4	*	0	3
22 August	8090	UCA	14.6	25.1	*	0	1
23 August	8091	IPA	14.8	30.3	4	0	4
23 August	8092	IPA	15.0	30.4	—	—	—
23 August	8093	IPB	17.2	31.3	1	0	1
23 August	8094	IPB	17.5	31.3	—	—	—
23 August	8095	IPC	16.8	31.3	3	0	3
23 August	8096	IPD	17.4	31.3	3	0	3
24 August	8097	ISA	12.0	26.9	5	0	5
24 August	8098	ISB	14.3	21.7	4	0	4
24 August	8099	ISC	14.2	23.3	*	0	7
24 August	8100	ISD	14.5	22.5	*	0	30
25 August	8101	ISA	11.8	26.5	*	0	6
25 August	8102	ISB	14.1	21.7	*	0	7
25 August	8103	ISC	14.2	23.2	*	0	37
25 August	8104	ISC	14.0	24.5	*	0	3
25 August	8105	ISD	14.1	23.5	*	0	38
26 August	8106	ISC	14.6	23.1	*	0	30
26 August	8107	ISC	14.6	23.0	*	0	20
26 August	8108	ISC	14.6	22.8	*	0	20
26 August	8109	ISC	14.9	21.8	—	—	—
26 August	8110	ISC	14.8	21.3	*	0	43
26 August	8111	ISC	14.7	21.1	—	—	—
27 August	8112	ISC	14.0	23.2	*	0	10
27 August	8113	ISC	14.5	21.6	—	—	—
28 August	8114	ISC	14.4	22.7	*	0	50

Table 4.—Catches of salmon from rope trawl hauls at stations in marine waters of the northern region of southeastern Alaska using the NOAA ship *John N. Cobb*, 21-28 August 2004. All hauls except 8114 were made during daylight hours.

Date	Haul #	Station	Juvenile salmon					Immature	Adult
			Pink	Chum	Sockeye	Coho	Chinook	Chinook	Coho
21 August	8087	UCD	—	1	—	3	—	—	—
21 August	8088	UCC	19	8	2	1	—	—	—
22 August	8089	UCB	33	6	—	—	—	—	—
22 August	8090	UCA	6	10	2	2	—	—	—
23 August	8091	IPA	—	1	2	—	—	—	—
23 August	8092	IPA	1	2	3	—	—	—	—
23 August	8093	IPB	—	—	—	—	—	—	—
23 August	8094	IPB	—	—	—	—	—	—	—
24 August	8097	ISA	11	2	—	20	1	—	—
24 August	8098	ISB	—	3	—	16	1	—	—
24 August	8099	ISC	2	—	—	3	—	—	—
24 August	8100	ISD	1	—	—	—	—	—	—
25 August	8101	ISA	—	—	—	28	—	—	—
25 August	8102	ISB	3	—	—	5	—	—	—
25 August	8103	ISC	3	1	—	5	1	—	1
25 August	8104	ISC	3	2	—	11	1	—	—
25 August	8105	ISD	4	2	—	6	—	—	—
26 August	8106	ISC	2	—	—	3	—	—	—
26 August	8107	ISC	1	—	1	17	—	—	1
26 August	8108	ISC	2	1	—	1	—	—	—
26 August	8109	ISC	4	2	—	1	—	1	—
26 August	8110	ISC	2	—	—	—	—	—	—
26 August	8111	ISC	16	5	2	7	—	1	1
27 August	8112	ISC	29	4	1	4	—	—	—
27 August	8113	ISC	3	—	—	1	—	—	—
28 August	8114	ISC	3	—	1	2	—	—	—
Total catch			148	50	14	136	4	2	3

Table 5.—Non-salmonid catches from rope trawl hauls at stations in marine waters of the northern region of southeastern Alaska using the NOAA ship *John N. Cobb*, 21-28 August 2004. All hauls except 8114 were made during daylight hours.

Date	Haul#	Station	Spiny dogfish	Squid	Crested sculpin	Pacific herring	Myctophid	Walleye pollock	3-spined stickleback	Prow- fish	Black rockfish	Smooth- tongue	Smooth lumpsucker	Salmon shark
21 August	8087	UCD	—	—	1	—	1	—	—	—	—	—	—	—
21 August	8088	UCC	—	—	1	—	2	1	—	—	—	—	—	—
22 August	8089	UCB	—	—	4	—	—	—	—	—	—	—	—	—
22 August	8090	UCA	—	—	—	—	—	—	—	—	—	—	—	—
23 August	8091	IPA	6	—	—	—	—	—	—	—	1	—	—	—
23 August	8092	IPA	112	—	—	—	—	—	—	—	—	—	—	—
23 August	8093	IPB	—	—	—	—	—	—	—	—	—	—	—	—
23 August	8094	IPB	—	—	—	—	—	—	—	—	—	—	—	—
24 August	8097	ISA	—	—	1	—	—	—	—	—	—	—	—	—
24 August	8098	ISB	—	—	1	—	—	—	—	—	—	—	—	—
24 August	8099	ISC	—	—	1	—	—	—	—	—	—	—	—	—
24 August	8100	ISD	—	—	3	—	—	—	—	—	—	—	1	—
25 August	8101	ISA	—	—	—	—	—	—	—	1	—	—	—	—
25 August	8102	ISB	—	—	—	—	—	1	—	—	—	—	—	—
25 August	8103	ISC	—	—	—	—	—	—	—	—	—	—	—	—
25 August	8104	ISC	—	—	—	—	—	—	—	1	—	—	—	—
25 August	8105	ISC	—	—	—	—	—	—	—	—	—	—	—	—
26 August	8106	ISC	—	—	2	—	—	—	—	—	—	—	—	—
26 August	8107	ISC	—	—	1	—	—	—	—	—	—	—	—	1
26 August	8108	ISC	—	—	—	—	—	—	—	—	—	—	—	—
26 August	8109	ISC	—	—	2	—	—	1	—	—	—	—	—	—
26 August	8110	ISC	—	—	—	—	—	—	—	—	—	—	—	—
26 August	8111	ISC	—	—	1	—	—	—	—	—	—	—	—	—
27 August	8112	ISC	—	—	1	—	1	1	—	—	—	—	—	—
27 August	8113	ISC	—	—	—	—	—	—	—	—	—	—	—	—
28 August	8114	ISC	—	39	—	10	—	—	3	—	—	1	—	—
Totals			118	39	19	10	4	4	3	2	1	1	1	1

Table 6—Number, length, percent frequency of occurrence, and life history stage of fish caught in 26 rope trawl hauls in the marine waters of the northern region of southeastern Alaska using the NOAA ship *John N. Cobb*, 21-28 August 2004. A subsample (30 of 112) of the spiny dogfish caught in haul 8092 was processed for length. Abbreviations: J = juvenile, I = immature, A = adult

Common name	Species or family	n	Fork length (mm)			Frequency of occurrence	Live history stage
			min	max	mean		
Pink salmon	<i>Oncorhynchus gorbuscha</i>	148	123	215	163.2	77%	J
Coho salmon	<i>O. kisutch</i>	136	155	390	246.8	73%	J
Chum salmon	<i>O. keta</i>	50	119	225	163.1	58%	J
Sockeye salmon	<i>O. nerka</i>	14	140	206	164.6	31%	J
Chinook salmon	<i>O. tshawytscha</i>	4	229	310	278.8	4%	J
Chinook salmon	<i>O. tshawytscha</i>	2	440	600	520.0	8%	I
Coho salmon	<i>O. kisutch</i>	3	560	730	648.3	12%	A
Total salmonids measured		357					
Squid	Gonatidae	39	19	105	39.7	4%	I
Spiny dogfish	<i>Squalus acanthias</i>	36	605	885	737.4	8%	A
Crested sculpin	<i>Blepsias bilobus</i>	19	117	201	138.5	46%	I–A
Lampfish	Myctophidae	10	39	70	53.1	4%	I–A
Pacific herring	<i>Clupea pallasii</i>	4	140	160	148.3	12%	I
Walleye Pollock	<i>Theragra chalcogramma</i>	4	179	425	342.3	15%	I–A
3-spined stickleback	<i>Gasterosteus aculeatus</i>	3	39	62	49.3	4%	I
Prowfish	<i>Zaprora silenus</i>	2	145	179	162.0	8%	J
Black rockfish	<i>Sebastes melanops</i>	1	540	540	540.0	4%	A
Smoothtongue	<i>Leuroglossus stilbius</i>	1	87	87	87.0	4%	I
Smooth lumpsucker	<i>Aptocyclus ventricosus</i>	1	210	210	210.0	4%	A
Salmon shark	<i>Lamna ditropis</i>	1	1,930	1,930	1,930.0	4%	A
Total non-salmonids measured		115					
Total fish and squid measured		472					

Table 7.—Release and coded-wire tag recovery information for salmon lacking the adipose fin that were captured in rope trawl hauls in the northern region of southeastern Alaska using the NOAA ship *John N. Cobb*, 21–28 August 2004. Agency acronym definitions are: NSRAA = Northern Southeast Regional Aquaculture Association, and DIPAC = Douglas Island Pink and Chum Corporation. Age notations are European, with the numeral before the decimal denoting the number of freshwater winters and the numeral following the decimal denoting the number of marine winters.

Species	Release information						Recovery information						
	Tag code	Brood year	Agency	Locality	Date	Weight (g)	Locality (station code) haul# - fish#	2004 date	Length (mm)	Weight (g)	Age	Days since release	Distance traveled (km)
Chinook	04:05/55	2000	DIPAC	Gastineau Channel	6/14/02	22.5	Icy Strait (ISC) 8111 - 33	8/26	600	2400.0	1.2	440	135
Chinook	04:06/88	2001	NSRA	Kasnyku Bay	6/1/03	39.7	Icy Strait (ISC) 8109 - 11	8/26	440	1100.0	1.1	453	130
Chinook	No Tag	—	—	—	—	—	Icy Strait (ISA) 8097 - 1	8/24	310	376.9	—	—	—
Chinook	No Tag	—	—	—	—	—	Icy Strait (ISC) 8103 - 1	8/25	307	370.7	—	—	—
Coho	04:06/94	2002	NSRA	Hidden Falls	6/6/04	18.5	Icy Strait (ISA) 8101 - 3	8/25	277	256.2	1.0	443	140
Coho	04:09/31	2002	DIPAC	Gastineau Channel	6/9/04	21.2	Icy Strait (ISC) 8111 - 1	8/26	241	167.0	1.0	445	135
Coho	04:09/31	2002	DIPAC	Gastineau Channel	6/9/04	21.2	Icy Strait (ISA) 8101 - 2	8/25	249	196.3	1.0	444	130
Coho	04:09/32	2002	DIPAC	Gastineau Channel	6/8/04	17.2	Icy Strait (ISB) 8102 - 1	8/25	234	142.4	1.0	445	130
Coho	No Tag	—	—	—	—	—	Icy Strait (ISA) 8101 - 1	8/25	247	204.7	—	—	—
Coho	No Tag	—	—	—	—	—	Icy Strait (ISC) 8107 - 1	8/26	225	137.5	—	—	—

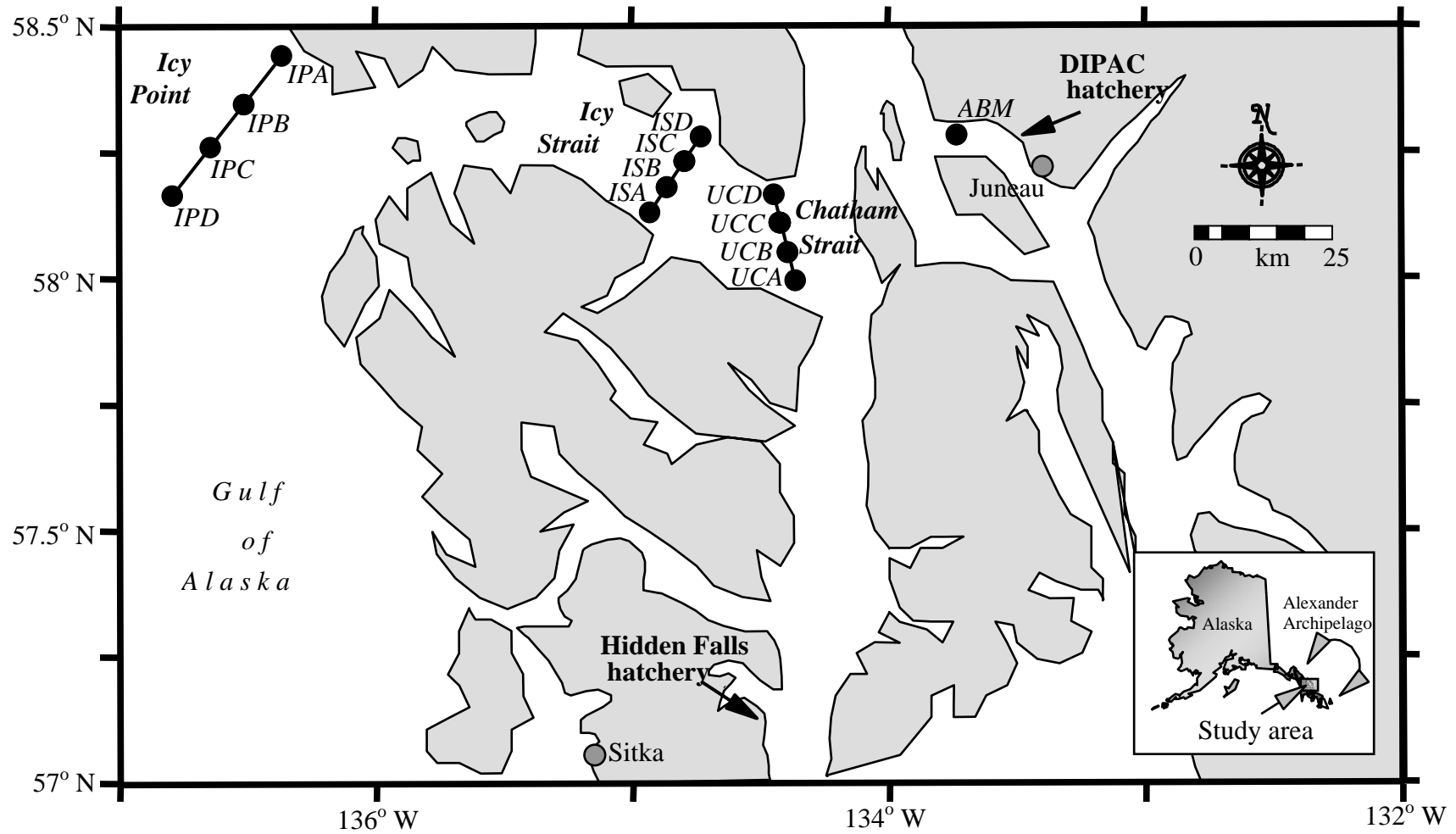


Figure 1.—Thirteen stations sampled in the marine waters of the northern region of southeastern Alaska using the NOAA ship *John N. Cobb*, 21-28 August 2004.