

**GLOBEC Northeast Pacific, Gulf of Alaska
Cruise Report, F/V *Great Pacific*
July 11 – August 8, 2002**

Chief Scientist Leg 1

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Port of Departure: Dutch Harbor, Alaska

Port of Return: Dutch Harbor, Alaska

Cruise Goals/Scientific Purpose

The July – August 2002 OCC/GLOBEC cruise focused on salmon (*Oncorhynchus* spp.), and zooplankton distribution, and physical properties (current, temperature, and salinity) along 10 transects beginning at Ocean Cape near Yakutat, Alaska and ending at Cape Kaguyak at the western end of Kodiak Island (Figure 1). Sampling along each transect occurred over the continental shelf of the Gulf of Alaska and beyond the 200-m contour and into oceanic depths. The purpose was to investigate the relationships between biological and physical oceanographic processes that affect the distribution of juvenile salmon in the coastal Gulf of Alaska. Cruise participants are listed in Table 1.

Cruise Objectives

1. Determine the distribution of salmon along the 10 transects sampled (Figure 1).
2. Determine the distribution of zooplankton within the study area.
3. Determine ocean current velocity, surface temperature and salinity, and density stratification.

Table 1. GLOBEC Cruise Participants

Alison Cross	Graduate Student/ University of Washington
Chuck Guthrie	Genetics/ AFSC/ABL
Ellen Martinson	Salmon Age and Growth/ AFSC/ABL
Angela Middleton	Biologist/ AFSC/ABL
Jamal Hasan Moss	Graduate Student/ University of Washington
Sigrid Salo	Oceanographer/ PMEL

Sampling Activities

The OCC/GLOBEC survey along the coastal waters of the Gulf of Alaska was conducted July 11 – August 8, 2002. The survey area included 10 transects beginning with the Ocean Cape transect near Yakutat, Alaska and ending at Cape Kaguyak at the western end of Kodiak Island (Figure 1). Transects sampled during the survey were perpendicular to shore and extended from nearshore across the continental shelf to oceanic waters beyond the 200-m shelf break. Sampling stations along each transect were generally spaced 18.5 km apart; each transect included a nearshore station (station less than 4 km from shore).

The survey was conducted aboard the contract fishing vessel (F/V) *Great Pacific* (38 meters in length). Fish samples were collected using a midwater rope trawl, which is 198-m long, has hexagonal mesh in wings and body, and has a 1.2-cm mesh liner in the codend. The rope trawl was towed at 3.5 to 5 kts, at or near surface, and had a typical spread of 45-m horizontally and 10-m vertically. All tows lasted 30 minutes and covered 2.8 to 4.6 km. Most of the sampling was done during daylight hours; two tows occurred during night as part of a 24-hour repeat sampling of the GAK 2 station (samples taken every 4 hours).

Salmon and other fishes were sorted by species and counted. Standard biological measurements including fork length, body weight, and sex as well as scale samples from the preferred area (to document age and growth) were taken from subsamples of all salmon species. Subsamples of juvenile pink (*Oncorhynchus gorbuscha*), chum (*O. keta*), and sockeye (*O. nerka*) salmon were frozen whole for laboratory analyses of food habits, otolith hatchery thermal marks (pink and chum salmon), and genetic analysis (chum salmon). Tissues and otoliths were also saved from immature and maturing chum salmon to determine stock distribution and migration of these salmon. All other fish species were counted; juvenile rockfish (*Sebastes* spp.) and sablefish (*Anoplopoma fimbria*) were frozen whole for laboratory analyses.

Oceanographic measurements were made at trawl stations immediately prior to each trawl haul. Depth profiles of temperature, salinity, and fluorescence from surface to near-bottom or 200-m (whichever was shallower) were collected using a Sea-Bird SBE 19 Seacat CTD (conductivity-temperature-depth) profiler¹. On each cast, a Niskin bottle collected a discrete water sample for salinity and fluorescence calibration with the CTD.

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

Plankton samples were collected using a 1-m² Tucker trawl fitted with a 505- μ m mesh net that was towed near surface (approximately 1 knot) for 5 minutes. Volume of water filtered by each net was estimated by flow meters and the plankton samples were preserved in 5% formalin. Plankton samples were also collected using a WP-2 net fitted with a 253- μ m mesh net that was deployed vertically to 100-m depth. Plankton samples collected from the WP-2 net were frozen and will be used for stable carbon and nitrogen isotope analysis. The current beneath the ship was measured continuously with a 300-kHz acoustic Doppler current profiler (ADCP). A differential Global Positioning System (GPS) receiver and a GPS-based attitude determination unit provided associated position and heading measurements. A thermosalinograph and fluorometer sampling water from the seachest provided continuous measurements of near-surface temperature, salinity, and fluorescence. Satellite-tracked drifting buoys drogued at 40-m were deployed at designated trawl stations to measure the strength and direction of the current along the continental shelf.

Daily Cruise Summary

11-27 July. Leg 1 of the cruise departed Dutch Harbor, Alaska on July 11 and arrived in Yakutat, Alaska on July 16 to load scientists and gear. The cruise departed Yakutat the evening of July 16 and proceeded to the nearshore station along the Ocean Cape transect; work at this station began the morning of July 17. Work at each station included vertical CTD casts to 200-m, surface tow for zooplankton using a Tucker trawl, a vertical plankton tow using a WP2 net to collect zooplankton for isotope analysis at various stations across the transects and a surface tow for salmon and other marine fishes using the rope trawl. The cruise continued sampling stations along the Cape Yakataga (2-days; July 19 and 20), Cape St. Elias (1-day; July 21), Cape Cleare (2-days; July 22 and 23), and Seward Line (4-days; July 23 – 26) transects. Drifter buoys were deployed at stations OC1 and OC2 along the Ocean Cape transect, stations IB1 and IB2 along the Cape Yakataga transect, and at GAK5, GAK4, and GAK3 along the Seward Line transect. A 24-hour repeated sampling experiment (1 sample every 4 hours) was also completed at the GAK2 station along the Seward Line transect. Leg 1 was completed on July 27 in Seward, Alaska.

28 July – 8 August. Leg 2 of the cruise left Seward the evening of July 28 and sampling was begun along the Gore Point transect the morning of July 29. Sampling along the Gore Point, Cape Chiniak, Cape Nukshak, Cape Kekernoi, and Cape Kagayuk transects included CTD, Tucker trawl, vertical plankton tow at various locations, and a surface trawl for juvenile salmon and other marine fishes. Sampling ended after station CKAG6 on the Cape Kagayuk transect was completed the evening of August 5; the vessel then traveled to Dutch Harbor, arriving August 8, 2002, ending the cruise.

Summary of Sampling Operations

Salmon Sampling (Farley)

During the survey, 83 trawl stations were completed beginning nearshore at the Ocean Cape transect and ending at the southwestern end of Kodiak Island along Cape Kaguyak (Figure 1). A total of 5,083 salmon were captured (Table 2). The largest component of the catch was juvenile salmon including pink (34.5%), chum (3.6%), sockeye (15.0%), coho (*O. kisutch*; 9.7%), and chinook (*O. tshawytscha*; 2.3%). Immature salmon in our catch included chum (10.9%), sockeye (5.8%), and chinook (3.1%). Maturing salmon in our catch included pink (7.7%), chum (4.0%), sockeye (<1%), coho (2.8%), and chinook (<1%) salmon. Other species captured during the survey are listed in Table 3.

Salmon distribution within the survey varied by life history stage (Table 2). Juvenile salmon were mainly distributed along the shelf with the highest catch per unit effort (CPUE; number of salmon caught within a 30 minute time period) of juvenile pink and chum salmon occurring west of Prince William Sound (PWS). Highest CPUE of juvenile sockeye and coho salmon occurred east of PWS and within Shelikof Strait; whereas, the highest CPUE for juvenile chinook salmon occurred along the Cape Cleare transect. Immature chum salmon were found along all transects sampled with the largest CPUE generally occurring at offshore locations beyond the 200-m contour along the Cape Chiniak transect. Immature sockeye salmon were distributed offshore along transects east of PWS and across the shelf and offshore along transects west of PWS with the highest CPUE occurring along the Gore Point and Cape Chiniak transects. Immature chinook salmon were mainly distributed west of PWS with the highest CPUE occurring along the Gore Point transect. Mature pink and chum and coho salmon were found along all transects sampled.

Acknowledgments

We wish to thank the Alaska Boat Company, particularly Captains C. Bronson (Leg 1) and M. Zimny (Leg 2) and the crew of the F/V *Great Pacific*, for their fine efforts and technical assistance in all aspects of our field surveys.

Table 2. Catch per unit effort (CPUE) of juvenile (J), immature (I), and adult (A) salmon by species and station by the F/V *Great Pacific* in the Gulf of Alaska, July 17 - August 5, 2002. Dash (-) indicates no salmon caught.

Date	Station	Trawl	Pink		Chum			Sockeye			Coho		Chinook		
			ID	ID	J	A	J	I	A	J	I	A	J	I	A
7/17	OC1	1	8	1	-	-	2	-	-	3	27	5	5	-	-
7/17	OC2	2	4	9	20	-	2	36	-	5	16	1	3	-	-
7/17	OC3	3	-	-	6	-	-	26	-	-	14	1	-	-	-
7/17	OC4	4	-	2	4	-	-	63	-	-	6	1	-	-	-
7/17	OC5	5	-	-	-	-	-	18	-	-	8	-	-	-	-
7/18	OC6	6	-	-	-	-	1	-	1	1	-	2	-	-	-
7/18	OC7	7	-	-	-	1	-	-	-	1	-	1	-	-	-
7/18	OC8	8	-	1	-	-	-	-	-	-	-	-	-	-	-
7/18	OC9	9	-	-	-	1	-	-	1	-	-	-	-	-	-
7/18	OC10	10	-	3	-	-	1	-	-	-	-	-	-	-	-
7/19	IB9	11	-	1	-	1	-	-	-	-	-	-	-	-	-
7/19	IB8	12	-	-	-	-	-	-	5	-	-	-	-	-	-
7/19	IB7	13	-	4	-	1	-	-	4	-	-	-	-	-	-
7/19	IB6	14	-	9	-	4	1	-	2	-	2	-	-	1	-
7/19	IB5	15	3	1	-	-	-	2	1	-	4	-	-	-	-
7/20	IB3	16	2	-	-	-	-	16	-	-	10	-	-	-	-
7/20	IB2	17	-	5	-	-	-	27	-	-	20	3	3	-	-
7/20	IB1	18	-	-	-	-	13	-	-	-	13	1	7	3	-
7/20	IB4	19	-	4	-	8	1	21	-	-	11	-	1	-	-
7/21	CSE5	20	-	21	-	3	1	-	-	1	-	-	-	-	-
7/21	CSE4	21	-	-	-	-	-	-	1	-	-	-	-	-	-
7/21	CSE3	22	-	5	14	2	1	47	-	-	38	5	-	-	-
7/21	CSE2	23	-	3	-	1	1	10	-	-	13	4	-	5	1
7/21	CSE1	24	-	-	-	-	1	3	-	-	12	-	3	-	-
7/22	CC1	25	2	21	2	-	3	3	-	-	15	4	11	-	2
7/22	CC2	26	3	4	-	-	3	8	-	-	1	2	8	2	-
7/22	CC3	27	41	-	20	6	2	9	-	1	2	-	10	-	1
7/22	CC4	28	-	2	-	4	1	-	-	1	-	2	18	3	-
7/22	CC5	29	-	-	1	2	2	2	-	-	-	-	10	-	1
7/22	CC6	30	1	5	-	68	-	-	-	-	-	2	-	-	1
7/23	CC7	31	70	4	1	-	-	6	3	-	-	-	-	-	-
7/23	CC8	32	-	25	-	-	-	-	1	-	-	-	-	-	-
7/23	GAK13	33	-	2	-	2	-	-	3	-	-	-	-	-	-
7/23	GAK12	34	-	10	-	4	-	-	2	-	-	2	-	-	-
7/24	GAK11	35	-	4	-	4	-	1	-	-	-	1	-	-	-
7/24	GAK10	36	167	16	7	5	1	4	-	-	-	1	-	-	-
7/24	GAK9	37	11	-	1	3	-	-	7	-	-	1	-	-	-
7/24	GAK8	38	24	1	-	10	1	10	-	-	-	1	-	-	1
7/24	GAK7	39	334	-	25	1	1	17	11	1	-	3	-	-	-

Table 2. (Con't) Catch per unit effort (CPUE) of juvenile (J), immature (I), and adult (A) salmon by species and station by the F/V *Great Pacific* in the Gulf of Alaska, July 17 - August 5, 2002. Dash (-) indicates no salmon caught.

Date	Station ID	Trawl ID	Pink		Chum			Sockeye			Coho		Chinook		
			J	A	J	I	A	J	I	A	J	A	J	I	A
7/24	GAK6	40	21	1	-	2	3	1	-	-	-	1	1	5	-
7/24	GAK5	41	73	1	2	6	-	12	-	-	-	3	-	1	-
7/25	GAK4	42	95	3	1	-	3	2	3	-	2	1	2	-	-
7/25	GAK3	43	12	10	-	3	-	5	-	-	-	-	2	1	1
7/25	GAK1	44	58	-	9	-	-	5	-	-	63	-	-	-	-
7/26	GAK2	45	-	-	-	3	45	-	-	-	-	-	21	-	1
7/26	GAK2	46	-	2	-	25	11	2	-	-	7	-	5	1	-
7/26	GAK2	47	187	4	5	-	-	5	-	-	3	-	1	-	1
7/26	GAK2	48	43	2	-	-	-	-	-	1	3	-	-	-	-
7/26	GAK2	49	137	18	-	-	-	4	-	-	10	-	1	-	-
7/26	GAK2	50	-	22	-	-	-	2	-	-	2	-	-	-	-
7/29	GP1	51	6	4	-	11	1	13	-	-	6	3	-	1	-
7/29	GP2	52	2	-	-	2	2	52	16	-	1	1	-	6	-
7/29	GP3	53	33	-	3	1	2	22	12	1	1	1	-	15	-
7/29	GP4	54	3	4	-	-	1	-	3	-	-	1	-	4	-
7/29	GP5	55	2	12	-	10	2	-	16	-	1	11	-	28	-
7/30	GP6	56	-	20	-	-	-	-	14	-	-	29	1	-	-
7/30	GP7	57	-	1	-	1	3	-	4	-	-	4	-	-	-
7/30	GP8	58	-	-	-	-	2	-	-	-	-	-	-	6	-
7/30	GP9	59	-	6	-	3	3	-	46	1	-	1	-	10	-
7/30	GP10	60	-	-	-	44	49	1	4	-	-	1	-	-	-
7/31	GP11	61	321	5	1	5	-	3	9	-	-	-	-	-	-
7/31	GP12	62	13	4	-	12	2	-	8	-	-	-	-	-	-
7/31	GP13	63	-	2	-	17	-	-	6	1	-	-	-	-	-
7/31	GP14	64	-	1	-	14	-	-	-	-	-	-	-	-	-
8/1	CCH7	65	-	2	-	47	1	-	2	-	-	-	-	1	-
8/1	CCH6	66	-	1	-	57	1	-	5	-	-	-	-	-	-
8/1	CCH5	67	-	4	-	22	-	-	33	-	1	-	-	-	-
8/1	CCH4	68	-	12	-	39	2	1	37	-	-	-	-	-	-
8/1	CCH3	69	-	-	-	32	2	-	-	-	-	-	-	-	-
8/2	CCH2	70	-	8	-	23	15	-	1	-	2	1	-	7	-
8/2	CCH1	71	-	1	-	1	-	-	-	-	3	-	-	5	-
8/3	CN3	72	33	15	4	-	4	19	-	1	11	3	1	8	-
8/3	CN2	73	40	3	36	8	4	72	-	-	5	2	-	1	-
8/3	CN1	74	-	9	5	-	1	5	-	-	75	4	-	4	-
8/4	CK1	75	-	15	-	3	2	3	6	-	40	14	-	18	-

Table 2. (Con't) Catch per unit effort (CPUE) of juvenile (J), immature (I), and adult (A) salmon by species and station by the F/V *Great Pacific* in the Gulf of Alaska, July 17 - August 5, 2002. Dash (-) indicates no salmon caught.

Date	Station ID	Trawl ID	Pink		Chum			Sockeye			Coho		Chinook		
			J	A	J	I	A	J	I	A	J	A	J	I	A
8/4	CK2	76	5	15	15	1	1	195	13	-	18	-	-	-	-
8/4	CK3	77	1	12	2	4	-	7	1	-	29	-	-	3	-
8/5	CKAG1	78	-	2	-	-	1	-	-	-	-	10	2	2	-
8/5	CKAG2	79	-	3	-	1	-	-	-	-	-	4	-	11	-
8/5	CKAG3	80	-	-	-	1	1	1	-	-	-	1	-	1	-
8/5	CKAG4	81	-	1	-	13	2	-	3	-	-	1	-	4	-
8/5	CKAG5	82	-	1	-	11	-	-	6	-	-	1	-	1	-
8/5	CKAG6	83	-	-	-	2	-	-	5	-	-	-	-	-	-

Table 3. Catch per unit effort (CPUE) of marine fishes by species and station by the F/V *Great Pacific* in the Gulf of Alaska, July 17 - August 5, 2002. Dash (-) indicates no marine fish caught. Life history stages include juvenile (J), young of the year (YOY), and adult (A).

Date	Station ID	Pollock		Herr-	Cape-	Sand-	Wolf-	Dagger-	Prow-	Sable-	J.Rock-	Dog-	Sand-	Squid	Salmon
		J	YOY	A	ing	lin	lance	eel	tooth	fish	fish	fish	fish	fish	Squid
7/17	OC1	-	-	-	-	-	-	-	-	1	-	3	-	-	-
7/17	OC2	-	-	-	-	-	-	-	-	-	-	216	-	-	1
7/17	OC3	-	-	-	-	-	-	-	1	-	-	11	-	-	-
7/17	OC4	12	-	-	-	-	-	-	1	-	2	54	-	-	-
7/17	OC5	-	-	-	-	-	-	-	-	-	-	42	-	-	-
7/18	OC6	-	-	-	-	-	-	-	-	-	4	10	-	-	-
7/18	OC7	-	-	-	-	-	-	1	-	-	80	2	-	-	-
7/18	OC8	-	-	-	-	-	-	1	6	-	300	-	-	-	-
7/18	OC9	2	-	-	-	-	-	-	1	-	150	-	-	-	-
7/18	OC10	-	-	-	-	-	-	-	1	-	-	-	-	-	-
7/19	IB9	-	-	-	-	-	-	-	-	-	31	-	-	25	-
7/19	IB8	-	-	-	-	-	-	-	-	-	236	-	-	95	-
7/19	IB7	-	-	-	-	-	-	-	1	-	108	-	-	10	-
7/19	IB6	-	-	-	-	-	-	-	-	-	163	1	-	-	-
7/19	IB5	-	-	-	-	-	-	-	-	-	30	-	-	6	-
7/20	IB3	-	-	-	-	-	-	-	-	-	1	27	-	-	-
7/20	IB2	-	-	-	-	-	-	-	2	-	-	14	-	-	-
7/20	IB1	-	-	-	15	-	202	-	-	-	-	1	-	-	-
7/20	IB4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7/21	CSE5	10	-	-	-	-	-	1	-	-	-	-	-	-	-
7/21	CSE4	7	-	-	-	-	-	-	-	-	9	-	-	100	-
7/21	CSE3	-	-	-	-	-	-	-	-	-	-	268	-	-	-
7/21	CSE2	-	-	-	-	-	-	-	-	-	-	28	-	-	-
7/21	CSE1	4	-	-	-	-	1	-	1	-	-	-	-	-	-
7/22	CC1	1	-	-	-	-	-	-	6	-	-	-	-	-	-
7/22	CC2	-	-	-	-	-	-	-	-	-	-	38	-	-	-
7/22	CC3	-	-	-	-	-	-	-	-	-	-	44	-	-	-
7/22	CC4	-	-	-	-	-	-	-	1	-	-	20	-	-	-
7/22	CC5	-	-	-	-	-	1	-	1	-	-	4	-	10	-
7/22	CC6	-	-	-	-	-	-	-	1	-	-	360	-	-	-
7/23	CC7	1	-	-	-	-	-	-	-	-	55	-	-	100	-
7/23	CC8	-	-	-	-	-	-	-	-	-	-	-	-	30	-
7/23	GAK13	-	-	-	-	-	-	-	-	-	6	-	-	100	-
7/23	GAK12	-	-	-	-	-	-	-	1	-	14	-	-	300	-
7/24	GAK11	1	-	-	-	-	-	2	-	-	1	-	-	80	-
7/24	GAK10	-	-	-	-	-	-	-	-	-	10	-	-	-	-
7/24	GAK9	-	-	-	-	-	-	-	-	-	31	-	-	-	-
7/24	GAK8	-	-	6	-	-	-	-	-	-	-	-	-	-	-
7/24	GAK7	-	-	-	-	-	-	-	-	-	-	15	-	-	-

Table 3. (Con't) Catch per unit effort (CPUE) of marine fishes by species and station by the F/V *Great Pacific* in the Gulf of Alaska, July 17 - August 5, 2002. Dash (-) indicates no marine fish caught. Life history stages include juvenile (J), young of the year (YOY), and adult (A).

Date	Station ID	Pollock			Herr- ing	Cape- lin	Sand- lance	Wolf- eel	Dagger tooth	Prow- fish	Sable- fish	J.Rock- fish	Dog- fish	Sand- fish	Squid	Salmon shark
		J	YOY	A												
7/24	GAK6	-	-	1	-	-	-	-	-	-	-	-	90	-	-	-
7/24	GAK5	-	-	-	-	-	-	-	-	-	-	-	9	-	-	1
7/25	GAK4	-	-	-	-	-	-	-	-	-	-	1	2	-	-	-
7/25	GAK3	-	-	-	-	-	-	-	-	-	-	-	82	-	-	-
7/25	GAK1	-	-	-	1	-	-	-	-	-	-	-	3	47	-	-
7/26	GAK2	-	50	13	2200	-	-	-	-	-	-	-	1552	-	2	-
7/26	GAK2	-	-	-	-	-	-	-	-	-	-	-	1500	-	-	-
7/26	GAK2	-	-	-	6	-	-	-	-	-	-	-	700	-	-	-
7/26	GAK2	-	-	-	-	-	-	-	-	-	-	-	4	-	-	-
7/26	GAK2	-	-	1	6	-	-	-	-	-	-	-	2	-	-	-
7/26	GAK2	10	-	7	5	-	1	-	-	-	-	-	2	-	3	-
7/29	GP1	-	-	-	12	-	-	-	-	1	-	-	910	-	-	-
7/29	GP2	-	-	-	-	-	-	-	-	1	-	-	4	-	-	-
7/29	GP3	-	-	2	-	-	-	-	-	-	-	-	3	-	-	-
7/29	GP4	-	-	2	-	-	-	-	-	1	-	-	-	-	-	-
7/29	GP5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7/30	GP6	-	-	-	-	11	-	-	-	3	-	-	-	-	-	-
7/30	GP7	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-
7/30	GP8	-	-	-	-	-	-	-	-	1	-	-	-	-	19	-
7/30	GP9	-	-	-	-	-	-	-	-	3	-	1	-	-	24	-
7/30	GP10	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-
7/31	GP11	-	-	-	-	-	-	-	-	1	-	1	-	-	24	-
7/31	GP12	-	-	-	-	-	-	1	-	-	-	32	-	-	100	-
7/31	GP13	-	-	-	-	-	-	-	1	-	-	97	-	-	50	-
7/31	GP14	-	-	-	-	-	-	-	-	-	-	-	-	-	50	-
8/1	CCH7	-	-	1	-	-	-	-	-	-	-	-	-	-	50	-
8/1	CCH6	-	-	1	-	-	-	-	-	-	-	-	-	-	50	-
8/1	CCH5	-	-	-	-	2	-	1	-	4	-	-	-	-	-	-
8/1	CCH4	-	-	5	-	-	-	-	-	2	-	-	-	-	-	-
8/1	CCH3	-	-	-	-	1	-	-	-	1	-	-	-	-	-	-
8/2	CCH2	-	-	-	-	1000	-	-	-	-	-	-	-	10	-	-
8/2	CCH1	-	-	-	1	-	-	-	-	-	-	-	-	41	-	-
8/3	CN3	-	-	3	1	-	-	-	-	-	-	-	-	1	-	-
8/3	CN2	-	-	-	128	-	-	-	-	-	-	-	-	-	-	1
8/3	CN1	2	-	1	11	58	30	-	-	1	-	-	-	-	-	-
8/4	CK1	11	-	41	-	4	87	-	-	-	-	-	-	1	-	-

Table 3. (Con't) Catch per unit effort (CPUE) of marine fishes by species and station by the F/V *Great Pacific* in the Gulf of Alaska, July 17 - August 5, 2002. Dash (-) indicates no marine fish caught. Life history stages include juvenile (J), young of the year (YOY), and adult (A).

Date	Station ID	Pollock			Herring	Cape-ling	Sand-lance	Wolf-eel	Dagger-tooth fish	Prow-fish	Sable-fish	J.Rock-fish	Dog-fish	Sand-fish	Squid	Salmon shark
		J	YOY	A												
8/4	CK2	3	-	2	-	-	2	-	-	-	-	-	-	-	-	-
8/4	CK3	2	-	3	-	-	-	-	-	-	1	-	-	8	-	-
8/5	CKAG1	-	-	3	-	1	-	-	-	1	-	-	-	3	-	-
8/5	CKAG2	1	-	1	-	-	-	-	-	2	-	-	-	447	-	-
8/5	CKAG3	3	-	-	-	5	-	-	-	1	-	-	-	-	-	-
8/5	CKAG4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8/5	CKAG5	-	-	-	-	-	-	-	-	-	-	65	-	-	25	-
8/5	CKAG6	-	-	-	-	-	-	-	-	2	-	17	-	-	25	-

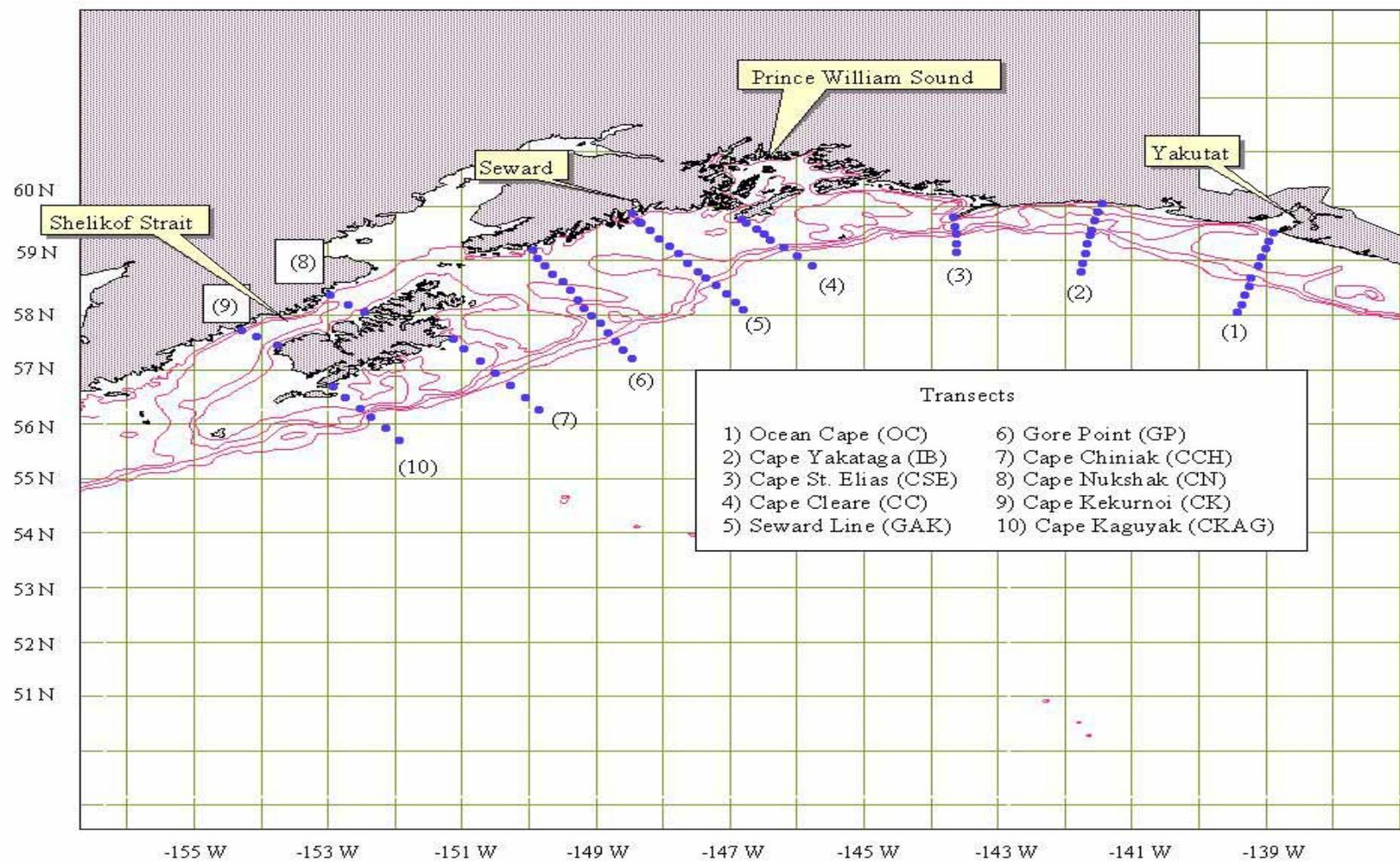


Figure 1. Transects and stations sampled by the NMFS, OCC/GLOBEC program in the Gulf of Alaska July 17 – August 5, 2002.