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Provisional Summary
of
U.S. Observer Activities
and Foreign and Joint Venture Fisheries
in the Northeast Pacific Ocean
and Eastern Bering Sea,
1989

June 1990

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PROVISIONAL SUMMARY OF U.S. OBSERVER ACTIVITIES AND FOREIGN AND
JOINT VENTURE FISHERIES IN THE NORTHEAST PACIFIC OCEAN
AND EASTERN BERING SEA, 1989

by

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INTRODUCTION

The Alaska Fisheries Science Center administers the U.S. Observer Program, which monitors foreign and joint venture fisheries conducted within the U.S. 200-mile Exclusive Economic Zone (EEZ) in the northeast Pacific Ocean and eastern Bering Sea. The Magnuson Fishery Conservation and Management Act of 1976 requires that, with some exceptions, all foreign fishing vessels and joint venture processing vessels carry a U.S. fisheries observer while conducting fishing operations within the EEZ. Foreign fishing is defined as foreign vessels which catch and process fish against a foreign quota, and joint venture fishing is defined as foreign vessels which process U.S.-caught and -delivered fish taken against a U.S. quota. The primary purposes for the placement of observers are to collect data required for fisheries management and research and to monitor vessel compliance with U.S. fisheries regulations.

The U.S. Observer Program prepares monthly reports that summarize observer coverage, estimates of groundfish catches, and estimates of incidental catches of species whose retention are prohibited by U.S. fishing regulations. The purpose of these reports is to keep those associated with the seasonal management of these fisheries apprised of current conditions. This document provides an annual summary and includes information contained in the monthly reports for 1989. Estimates are provisional at this time. Final statistics for 1989 can be obtained from the U.S. Observer Program of the Alaska Fisheries Science Center, Seattle, Washington.

OBSERVER COVERAGE

(Tables 1-3)

Observer coverage (the percentage of the total foreign vessel days on ground that were sampled by observers) for 1989 was 95.0% in foreign and joint venture fisheries in the northeast Pacific Ocean and Bering Sea. Observers sampled 8,185 cumulative days aboard vessels from Japan, the U.S.S.R., the Republic of Korea (ROK), Poland, and the People's Republic of China (PRC). By region, coverage was 94.4% in the Bering Sea and 96.7% off the Washington-Oregon-California coast (WOC region). Comparative coverage for 1988 was 93.5% in the Bering Sea and 95.8% in the WOC region. For 1989, the total fishing effort of 8,615 days represented a 45.7% decrease from the 1988 effort of 15,866 days.

ALASKA REGION GROUND FISH AND INCIDENTAL CATCHES

In 1989, no groundfish resources were allocated for joint venture or foreign fishing in Gulf of Alaska region.

Bering Sea

(Tables 4-7)

The joint venture fishery in the Bering Sea caught 533,200 metric tons (t) in 1989, a 59.0% decrease from the 1988 catch of 1,301,400 t. During 1989, 119 foreign processing vessels participated in joint venture fisheries with U.S. fisherman: 38 Japanese vessels, 31 ROK vessels, 28 U.S.S.R. vessels, 17 Polish vessels, and 5 PRC vessels.

Despite the decreased groundfish catch in 1989, the incidental catches of prohibited species, with the exception of halibut, were greater than those of 1988. The catches of 3,774,600 Tanner crab, 207,700 king crab, and 14,800 salmon represented increases of 20.9%, 136.0%, and 57.4%, respectively. The catch of 525,700 halibut (874.0 t) represented a 67.0% decrease from the catch taken 1988.

In 1989, the joint venture fishery targeted on pollock, Pacific cod, yellowfin sole, rock sole, and "other" flatfish (primarily Alaska plaice and flathead sole). Joint venture operations began on January 1, with the exception of the pollock fishery, which began on January 15. Closures occurred on January 21 for the pollock fishery, February 11 for the Pacific cod fishery, February 21 for the rock sole fishery, March 1 for the yellowfin sole fishery, and March 13 for the "other" flatfish fishery. The closure on March 13 effectively closed the Bering Sea joint venture fishery until supplemental releases reopened the fishery on September 3. On November 9, the joint venture pollock fishery closed in the Bering Sea and, on the same day, opened in the Aleutian region. The Aleutian fishery closed on November 19. On November 29, the U.S.-Poland joint venture fishery began fishing on an additional allocation of pollock in the Bering Sea/Aleutian region, and on December 7 an additional release reopened joint venture fishing in the Aleutian region.

The expiration of Amendment 10 at the end of 1988 created an absence of regulatory control over the incidental catches of

Chionoecetes bairdi Tanner crab, red king crab, and Pacific halibut in the Bering Sea. Emergency regulations controlled the bycatch of those species until August, 1989, when the implementation of Amendment 12A established bycatch limits by zone and target fishery. (Zones are shown in Figure 1.)

Under Amendment 12A, halibut bycatch is monitored by a primary and a secondary quota. The primary quota applies to Zones 1 and 2H, and the secondary quota applies to the entire Bering Sea. For the yellowfin sole/flatfish fishery, attainment of a quota closes the affected area to the fishery; for the "other species" fishery, attainment of a quota prohibits the use of bottom trawl gear in the affected area. For red king crab and C. bairdi, only the particular zone is affected when the quota is reached.

The joint venture yellowfin sole/flatfish fishery received bycatch limits of 128,410 red king crab and 93,359 C. bairdi in Zone 1 and 563,077 C. bairdi in Zone 2; for halibut, the fishery received a primary quota of 396 t and a secondary quota of 427 t. The joint venture "other species" fishery received bycatch limits of 132 red king crab and 210,152 C. bairdi in Zone 1 and 347,455 C. bairdi in Zone 2; for halibut, a primary quota of 415 t and a secondary quota of 774 t.

Upon the date of implementation of Amendment 12A, the red king crab total had already been exceeded for both the yellowfin sole/flatfish and "other species" fisheries. On September 29,

the primary halibut quota for the joint venture "other fishery" was attained.

By zone, the total groundfish catch for the joint venture fishery was 170,200 t in Zone 1, 326,000 t in Zone 2, 157,600 t in Zone 2H, and 37,100 in Zone 3. The total incidental catch of C. bairdi by zone was 150,300 crab in Zone 1, 609,500 crab in Zone 2, and 156,200 crab in Zone 3. The total catch of red king crab by zone was 179,500 crab in Zone 1, 22,200 crab in Zone 2, and 700 crab in Zone 3. The total catch of halibut by zone was 176.3 t in Zone 1, 662.1 t in Zone 2, 304.7 t in Zone 2H, and 35.4 t in Zone 3. Catches of groundfish and incidentally-taken prohibited species by target fishery, zone, and subarea are provided in Tables 6-7.

Foreign fishing in 1989 consisted only of a pot fishery for sea snails. Two Soviet vessels fished on an allocation of 3,000 t. Operations began on July 9 and ceased on October 28. The fishery took 120 t of snails.

WOC REGION GROUND FISH AND INCIDENTAL CATCHES

(Tables 8-10)

The joint venture fishery targeting on Pacific whiting began on April 11. On June 24, the quota was attained. (The fishery traditionally finishes in October.) The catch of 203,600 t of whiting represented the highest yearly total taken by the joint venture fishery, surpassing by 67,800 t the previous high, which was taken in 1988. Over 99% of the groundfish catch was Pacific

whiting. By International North Pacific Fisheries Commission (INPFC) area, the groundfish catch for 1989 was 8,100 t in the Vancouver area, 94,200 t in the Columbia area, 100,100 t in the Eureka area, and 1,800 t in the Monterey area. During 1989, joint venture operations were conducted with 21 U.S.S.R. vessels, 13 Polish vessels, 6 PRC vessels, 3 Japanese vessels, and 1 ROK vessel.

For 1989, the incidental catch of 9,200 salmon represented a decrease from the 14,000 salmon taken in 1988. The catch of 100 halibut equaled the catch for 1988. By INPFC area, the catch of salmon was less than 100 Chinook salmon and less than 100 other salmon in the Vancouver area, 5,300 Chinook salmon and 200 other salmon in the Columbia area, 3,600 Chinook salmon and less than 100 other salmon in the Eureka area, and 100 Chinook salmon in the Monterey area.

In 1989, no groundfish resources were allocated for foreign fishing in the WOC region.

FIGURE

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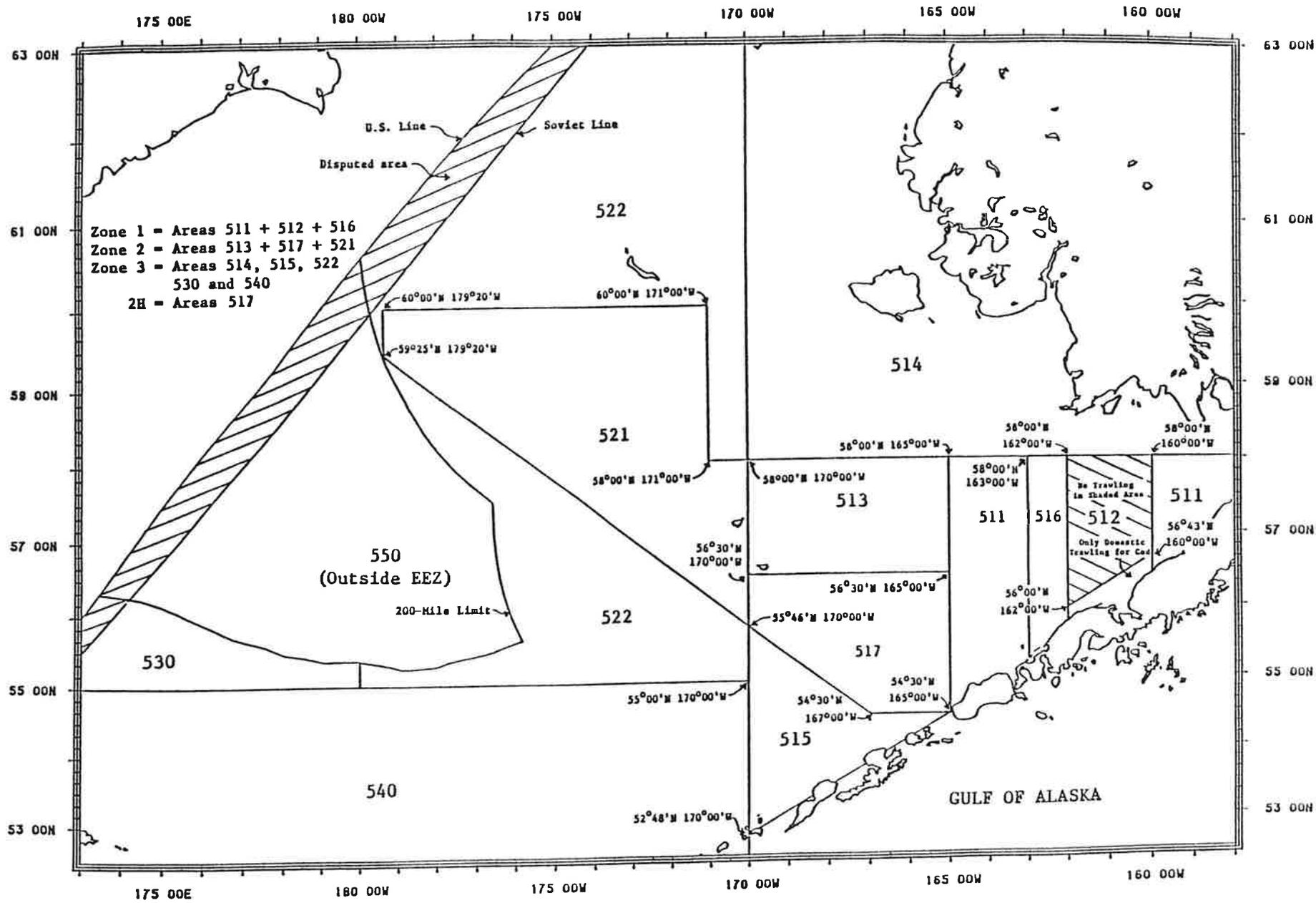


Figure 1.--Bering Sea zones by which the restrictions on the incidental catch of king and Tanner crab apply.

Table 1.--Observer coverage of foreign and joint venture processing vessels by month for 1989.

Region	Foreign days	Observer days	Percent coverage	Foreign vessels	Observer vessels	Percent sampled
January						
Bering Sea	918	845	92.0	69	69	100.0
Wash.-Ore.-Calif.	0	0	0.0	0	0	0.0
Total	918	845	92.0	69	69	100.0
February						
Bering Sea	1837	1780	96.9	87	87	100.0
Wash.-Ore.-Calif.	0	0	0.0	0	0	0.0
Total	1837	1780	96.9	87	87	100.0
March						
Bering Sea	615	554	90.1	56	55	98.2
Wash.-Ore.-Calif.	0	0	0.0	0	0	0.0
Total	615	554	90.1	56	55	98.2
April						
Bering Sea	0	0	0.0	0	0	0.0
Wash.-Ore.-Calif.	317	288	90.9	26	25	96.2
Total	317	288	90.9	26	25	96.2
May						
Bering Sea	0	0	0.0	0	0	0.0
Wash.-Ore.-Calif.	1232	1207	98.0	43	43	100.0
Total	1232	1207	98.0	43	43	100.0
June						
Bering Sea	0	0	0.0	0	0	0.0
Wash.-Ore.-Calif.	843	817	96.9	44	44	100.0
Total	843	817	96.9	44	44	100.0
July						
Bering Sea	41	40	97.6	2	2	100.0
Wash.-Ore.-Calif.	0	0	0.0	0	0	0.0
Total	41	40	97.6	2	2	100.0
August						
Bering Sea	66	66	100.0	2	2	100.0
Wash.-Ore.-Calif.	0	0	0.0	0	0	0.0
Total	66	66	100.0	2	2	100.0

Table 1.--Continued.

Region	Foreign days	Observer days	Percent coverage	Foreign vessels	Observer vessels	Percent sampled
September						
Bering Sea	963	894	92.8	46	46	100.0
Wash.-Ore.-Calif.	0	0	0.0	0	0	0.0
Total	963	894	92.8	46	46	100.0
October						
Bering Sea	1052	1026	97.5	45	45	100.0
Wash.-Ore.-Calif.	0	0	0.0	0	0	0.0
Total	1052	1026	97.5	45	45	100.0
November						
Bering Sea	509	455	89.4	32	31	96.9
Wash.-Ore.-Calif.	0	0	0.0	0	0	0.0
Total	509	455	89.4	32	31	96.9
December						
Bering Sea	222	213	95.9	12	12	100.0
Wash.-Ore.-Calif.	0	0	0.0	0	0	0.0
Total	222	213	95.9	12	12	100.0
Totals for the year						
Bering Sea	6223	5873	94.4	121	121	100.0
Wash.-Ore.-Calif.	2392	2312	96.7	44	44	100.0
Total	8615	8185	95.0	165	165	100.0

Table 2.--Observer coverage of foreign and joint venture fisheries in the Bering Sea/Aleutian region by month for 1989.

Nation	Foreign days	Observer days	Percent coverage	Foreign vessels	Observer vessels	Percent sampled
January						
Foreign fishery						
No fishery in January.						
Joint venture fishery						
US-China	37	35	94.6	3	3	100.0
US-Japan	296	267	90.2	25	25	100.0
US-Korea	251	237	94.4	20	20	100.0
US-Poland	48	38	79.2	5	5	100.0
US-USSR	286	268	93.7	16	16	100.0
Total	918	845	92.0	69	69	100.0
GRAND TOTAL	918	845	92.0	69	69	100.0
February						
Foreign fishery						
No fishery in February.						
Joint venture fishery						
US-China	112	112	100.0	5	5	100.0
US-Japan	494	471	95.3	27	27	100.0
US-Korea	658	639	97.1	28	28	100.0
US-Poland	72	70	97.2	3	3	100.0
US-USSR	501	488	97.4	24	24	100.0
Total	1837	1780	96.9	87	87	100.0
GRAND TOTAL	1837	1780	96.9	87	87	100.0
March						
Foreign fishery						
No fishery in March						
Joint venture fishery						
US-China	16	15	93.8	5	5	100.0
US-Japan	139	131	94.2	22	22	100.0
US-Korea	109	80	73.4	24	23	95.8
US-Poland	50	45	90.0	5	5	100.0
US-USSR	301	283	94.0	25	25	100.0
Total	615	554	90.1	56	55	98.2
GRAND TOTAL	615	554	90.1	56	55	98.2
April-June						
Foreign fishery						
No fishery during April-June.						
Joint venture fishery						
No fishery during April-June.						

Table 2.--Continued.

Nation	Foreign days	Observer days	Percent coverage	Foreign vessels	Observer vessels	Percent sampled
July						
Foreign fishery						
USSR	41	40	97.6	2	2	100.0
Joint venture fishery						
No fishery in July.						
GRAND TOTAL	41	40	81.8	2	2	100.0
August						
Foreign fishery						
USSR	66	66	81.8	2	2	100.0
Joint venture fishery						
No fishery in August.						
GRAND TOTAL	66	66	81.8	2	2	100.0
September						
Foreign fishery						
USSR	39	38	97.4	2	2	100.0
Joint venture fishery						
US-China	22	18	81.8	1	1	100.0
US-Japan	278	264	95.0	14	14	100.0
US-Korea	242	237	97.9	12	12	100.0
US-Poland	137	120	87.6	6	6	100.0
US-USSR	245	217	88.6	11	11	100.0
Total	924	856	92.6	44	44	100.0
GRAND TOTAL	963	894	92.8	46	46	100.0
October						
Foreign fishery						
USSR	44	43	97.7	2	2	100.0
Joint venture fishery						
US-China	13	12	92.3	1	1	100.0
US-Japan	381	368	96.6	15	15	100.0
US-Korea	278	277	99.6	12	12	100.0
US-Poland	83	82	98.8	4	4	100.0
US-USSR	253	244	96.4	11	11	100.0
Total	1008	983	97.5	43	43	100.0
GRAND TOTAL	1052	1026	97.5	45	45	100.0

Table 2.--Continued.

Nation	Foreign days	Observer days	Percent coverage	Foreign vessels	Observer vessels	Percent sampled
November						
Foreign fishery						
No fishery in November						
Joint venture fishery						
US-China	0	0	0.0	0	0	0.0
US-Japan	253	225	88.9	14	14	100.0
US-Korea	162	147	90.7	10	10	100.0
US-Poland	57	49	86.0	8	7	87.5
US-USSR	37	34	91.9	3	3	100.0
Total	509	455	89.4	32	31	96.9
GRAND TOTAL	509	455	89.4	32	31	96.9
December						
Foreign fishery						
No fishery in December						
Joint venture fishery						
US-China	0	0	0.0	0	0	0.0
US-Japan	79	78	98.7	5	5	100.0
US-Korea	26	25	96.2	1	1	100.0
US-Poland	117	110	94.0	6	6	100.0
US-USSR	0	0	0.0	0	0	0.0
Total	222	213	95.9	12	12	100.0
GRAND TOTAL	222	213	95.9	12	12	100.0
Totals for the year						
Foreign fishery						
USSR	190	187	98.4	2	2	100.0
Joint venture fishery						
US-China	200	192	96.0	5	5	100.0
US-Japan	1920	1804	94.0	38	38	100.0
US-Korea	1726	1642	95.1	31	31	100.0
US-Poland	564	514	91.1	17	17	100.0
US-USSR	1623	1534	94.5	28	28	100.0
Total	6033	5686	94.2	119	119	100.0
GRAND TOTAL	6223	5873	94.4	121	121	100.0

Table 3.--Observer coverage of joint venture fisheries in the Washington-Oregon-California region by month for 1989.

Nation	Foreign days	Observer days	Percent coverage	Foreign vessels	Observer vessels	Percent sampled
April						
US-China	25	24	96.0	2	2	100.0
US-Poland	22	20	90.9	7	7	100.0
US-USSR	270	244	90.4	17	16	94.1
Total	317	288	90.9	26	25	96.2
May						
US-China	122	120	98.4	6	6	100.0
US-Japan	76	75	98.7	3	3	100.0
US-Poland	349	345	98.9	13	13	100.0
US-USSR	685	667	97.4	21	21	100.0
Total	1232	1207	98.0	43	43	100.0
June						
US-China	118	115	97.5	6	6	100.0
US-Japan	61	58	95.1	3	3	100.0
US-Korea	20	18	90.0	1	1	100.0
US-Poland	224	213	95.1	13	13	100.0
US-USSR	420	413	98.3	21	21	100.0
Total	843	817	96.9	44	44	100.0
Totals for the year						
US-China	265	259	97.7	6	6	100.0
US-Japan	137	133	97.1	3	3	100.0
US-Korea	20	18	90.0	1	1	100.0
US-Poland	595	578	97.1	13	13	100.0
US-USSR	1375	1324	96.3	21	21	100.0
Total	2392	2312	96.7	44	44	100.0

Note: No fishing January-march and July-December.

Table 4.--Joint venture prohibited species catches (by number) in the Bering Sea/Aleutian region by month for 1989.

	(1,000's t)		Numbers (1000's)							
	Groundfish catch		Halibut		Salmon		King Crab		Tanner Crab	
	1988	1989	1988	1989	1988	1989	1988	1989	1988	1989
January	160.3	74.4	339.8	198.1	1.6	1.8	5.2	14.8	59.7	96.0
February	216.8	128.7	349.5	231.6	2.0	0.1	26.1	123.9	103.0	110.9
March	195.2	44.3	258.7	27.9	0.2	<0.1	25.0	43.0	498.4	169.4
April	196.0	0.0	367.4	0.0	0.6	0.0	2.7	0.0	499.8	0.0
May	272.5	0.0	99.8	0.0	0.2	0.0	11.3	0.0	185.8	0.0
June	72.0	0.0	64.7	0.0	0.1	0.0	7.5	0.0	538.2	0.0
July	15.3	0.0	7.0	0.0	<0.1	0.0	0.6	0.0	718.9	0.0
August	0.5	0.0	0.8	0.0	0.0	0.0	0.2	0.0	89.4	0.0
September	94.5	117.5	12.4	24.3	3.2	6.6	0.9	0.5	102.6	1468.0
October	43.7	98.3	35.1	20.4	0.5	2.2	1.2	18.7	185.3	1239.1
November	23.6	55.7	34.2	16.2	0.7	2.8	5.6	3.7	92.3	481.1
December	11.1	14.3	21.2	7.2	0.3	1.3	1.7	3.2	47.5	210.1
Total	1301.4	533.2	1590.7	525.7	9.4	14.8	88.0	207.7	3120.9	3774.6

Table 5.--Joint venture prohibited species catches (by weight) in the Bering Sea/Aleutian region by month for 1989.

	(1,000's t)		Weights (t)							
	Groundfish catch		Halibut		Salmon		King Crab		Tanner Crab	
	1988	1989	1988	1989	1988	1989	1988	1989	1988	1989
January	160.3	74.4	326.9	190.8	*	*	*	*	*	*
February	216.8	128.7	372.7	249.7	*	*	*	*	*	*
March	195.2	44.3	435.6	46.3	*	*	*	*	*	*
April	196.0	0.0	641.2	0.0	*	*	*	*	*	*
May	272.5	0.0	222.8	0.0	*	*	*	*	*	*
June	72.0	0.0	199.0	0.0	*	*	*	*	*	*
July	15.3	0.0	28.4	0.0	*	*	*	*	*	*
August	0.5	0.0	1.1	0.0	*	*	*	*	*	*
September	94.5	117.5	71.0	144.3	*	*	*	*	*	*
October	43.7	98.3	141.7	135.4	*	*	*	*	*	*
November	23.6	55.7	114.2	86.3	*	*	*	*	*	*
December	11.1	14.3	24.7	21.2	*	*	*	*	*	*
Total	1301.4	533.2	2579.3	874.0	*	*	*	*	*	*

Note: * indicates weight not taken.

Table 6.--Joint venture prohibited species catches in the Bering Sea/Aleutian region by target fishery and zone for 1989.

	(1000's t)		Numbers (1000's)					(t)	
	Groundfish catch	C. bairdi Tanner crab	Other Tanner crab	Red king crab	Other king crab	Chinook salmon	Other salmon	Pacific halibut	Pacific halibut
Yellowfin sole/flatfish									
Zone 1	151.2	130.6	3.8	179.4	0.7	0.1	0.0	126.9	127.7
Zone 2	50.2	454.0	959.6	22.1	4.0	<0.1	0.1	54.8	182.2
(Zone 2H)	7.4							20.5	31.9) ²
Zone 3	20.4	150.2	565.9	0.7	0.1	0.0	0.6	8.0	27.0
Totals	221.8	734.8	1529.3	202.2	4.9	0.1	0.7	189.8	336.9
Pollock mid-water									
Zone 1	11.9	0.0	0.0	0.0	0.0	0.6	1.5	<0.1	0.1
Zone 2	147.3	3.6	17.4	0.0	<0.1	6.6	2.3	2.1	13.5
(Zone 2H)	108.2							1.9	10.8) ²
Zone 3	12.7	0.4	<0.1	0.0	0.0	<0.1	<0.1	<0.1	<0.1
Totals	171.9	4.0	17.5	0.0	<0.1	7.2	3.8	2.2	13.6
Pollock bottom									
Zone 1	0.2	0.0	0.0	0.0	0.0	<0.1	0.4	0.0	0.0
Zone 2	40.7	15.6	343.3	<0.1	0.1	0.7	0.4	5.1	35.5
(Zone 2H)	35.6	11.2	329.3	0.0	0.0	0.1	0.3	4.6	32.2) ²
Zone 3	1.7	0.1	0.0	<0.1	0.0	0.0	<0.1	0.4	0.8
Totals	42.6	15.7	343.3	<0.1	0.1	0.7	0.9	5.5	36.3
Atka mackerel									
Zone 1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Zone 2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
(Zone 2H)	0.0							0.0	0.0) ²
Zone 3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Totals	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Non-specific									
Zone 1	6.9	19.6	3.3	0.1	0.0	0.1	<0.1	47.5	48.5
Zone 2	87.7	136.3	860.1	<0.1	0.3	0.5	0.6	276.5	430.9
(Zone 2H)	36.2							231.6	258.7) ²
Zone 3	2.4	5.5	105.1	0.0	0.0	<0.1	0.1	4.2	7.6
Totals	96.9	161.5	968.5	0.1	0.3	0.6	0.7	328.2	487.0
Total catch									
Zone 1	170.2	150.3	7.1	179.5	0.7	0.8	1.9	174.4	176.3
Zone 2	326.0	609.5	2180.4	22.2	4.5	7.8	3.5	338.6	662.1
(Zone 2H)	157.6							254.5	304.7) ²
Zone 3	37.1	156.2	671.0	0.7	0.1	0.1	0.7	12.7	35.4
Totals	533.2	916.0	2858.6	202.4	5.3	8.6	6.1	525.7	873.8

¹Target fisheries are defined in the following way: the target is "yellowfin sole/flatfish" if the combination of yellowfin sole, rock sole, and other flatfish is at least 20% of a vessel's weekly catch, "pollock mid-water" if pollock constitutes at least 95% of the catch, "pollock bottom" if pollock and cod combined is at least 50% and cod is less than 5%, "non-specific" if pollock and cod combined is at least 50% and cod is greater than 5%, and "Atka mackerel" if Atka mackerel is at least 20%. If a vessel's weekly catch fails to meet any of the above conditions, the target is "non-specific."

²Zone 2H totals are included in Zone 2 totals, and Zone 2H totals apply only to the incidental catch of halibut.

Table 7.--Joint venture prohibited species catches in the Bering Sea/Aleutian region by target fishery and subarea for 1989.¹

Subarea	(1000's t)		Numbers (1000's)					(t)	
	Groundfish catch	<u>C. bairdi</u> Tanner crab	Other Tanner crab	Red king crab	Other king crab	Chinook salmon	Other salmon	Pacific halibut	Pacific halibut
Yellowfin sole/flatfish									
511	62.8	102.1	3.2	106.9	<0.1	0.1	0.0	85.5	82.7
513	42.2	424.1	923.1	21.9	4.0	<0.1	0.1	34.0	148.8
514	20.1	127.2	562.0	0.5	<0.1	0.0	0.6	5.2	21.6
515	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
516	88.5	28.6	0.6	72.6	0.7	<0.1	0.0	41.4	45.0
517	7.9	27.9	36.4	0.2	<0.1	<0.1	0.0	20.5	31.9
521	0.1	2.0	0.1	0.1	<0.1	0.0	0.0	0.4	1.5
522	0.2	23.1	3.9	0.2	0.1	0.0	0.0	2.8	5.4
530	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
540	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Totals	221.8	734.8	1529.3	202.2	4.9	0.1	0.7	189.8	336.9
Pollock mid-water									
511	11.9	0.0	0.0	0.0	0.0	0.6	1.5	<0.1	0.1
513	7.8	<0.1	0.3	0.0	0.0	0.2	<0.1	0.1	2.2
514	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
515	0.9	0.4	0.0	0.0	0.0	<0.1	<0.1	<0.1	<0.1
516	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
517	108.2	2.4	4.4	0.0	<0.1	6.2	1.9	1.9	10.8
521	31.3	1.2	12.7	0.0	0.0	0.2	0.3	0.1	0.5
522	1.4	0.0	<0.1	0.0	0.0	<0.1	<0.1	0.0	0.0
530	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
540	10.4	0.0	0.0	0.0	0.0	<0.1	<0.1	0.0	0.0
Totals	171.9	4.0	17.5	0.0	<0.1	7.2	3.8	2.2	13.6
Pollock bottom									
511	0.2	0.0	0.0	0.0	0.0	<0.1	0.4	0.0	0.0
513	0.3	0.2	2.4	0.0	0.0	0.0	0.0	<0.1	<0.1
514	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
515	0.3	0.1	0.0	<0.1	0.0	<0.1	<0.1	0.4	0.8
516	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
517	4.8	4.2	11.6	<0.1	0.0	0.5	0.2	0.5	3.3
521	35.6	11.2	329.3	0.0	0.1	0.1	0.3	4.6	32.2
522	1.4	0.0	0.0	0.0	0.0	0.0	<0.1	0.0	0.0
530	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
540	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Totals	42.6	15.7	343.3	<0.1	0.1	0.7	0.9	5.5	36.3

¹Target fisheries are defined in the following way: the target is "yellowfin sole/flatfish" if the combination of yellowfin sole, rock sole, and other flatfish is at least 20% of a vessel's weekly catch, "pollock mid-water" if pollock constitutes at least 95% of the catch, "pollock bottom" if pollock and cod combined is at least 50% and cod is less than 5%, "non-specific" if pollock and cod combined is at least 50% and cod is greater than 5%, and "Atka mackerel" if Atka mackerel is at least 20%. If a vessel's weekly catch fails to meet any of the above conditions, the target is "non-specific."

Table 7.--Continued.

Subarea	(1000's t)		Numbers (1000's)					(t)	
	Groundfish catch	<u>C. bairdi</u> Tanner crab	Other Tanner crab	Red king crab	Other king crab	Chinook salmon	Other salmon	Pacific halibut	Pacific halibut
Atka mackerel									
511	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
513	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
514	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
515	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
516	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
517	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
521	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
522	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
530	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
540	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Totals	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Non-specific									
511	6.9	19.6	3.3	0.1	0.0	0.1	<0.1	47.5	48.5
513	12.7	15.1	147.2	0.0	0.0	<0.1	0.1	26.9	48.3
514	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
515	0.2	0.6	0.0	0.0	0.0	0.0	0.0	3.8	5.3
516	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
517	36.2	52.5	65.4	<0.1	0.0	0.3	0.1	231.6	258.7
521	38.8	68.7	647.5	0.0	0.3	0.2	0.4	18.0	123.9
522	2.2	4.9	105.1	0.0	0.0	<0.1	0.1	0.4	2.3
530	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
540	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Totals	96.9	161.5	968.5	0.1	0.3	0.6	0.7	328.2	487.0
Total catch									
511	81.7	121.7	6.5	107.0	<0.1	0.8	1.9	133.0	131.3
513	63.0	439.4	1073.0	21.9	4.0	0.3	0.3	61.0	199.3
514	20.1	127.2	562.0	0.5	<0.1	0.0	0.6	5.2	21.6
515	1.4	1.1	0.0	<0.1	0.0	<0.1	<0.1	4.2	6.1
516	88.5	28.6	0.6	72.5	0.7	<0.1	0.0	41.4	45.0
517	157.2	87.0	117.9	0.2	<0.1	7.0	2.2	254.5	304.7
521	105.8	83.1	989.5	0.1	0.4	0.5	1.0	23.1	158.1
522	5.1	28.0	109.0	0.2	0.1	<0.1	0.1	3.2	7.7
530	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
540	10.4	0.0	0.0	0.0	0.0	<0.1	<0.1	0.0	0.0
Totals	533.2	916.0	2858.5	202.4	5.3	8.6	6.1	525.7	873.8

Table 8.--Joint venture prohibited species catches (by number) in the Washington-Oregon-California region by month for 1989.

Month	Numbers (1000's)					
	Groundfish catch		Halibut		Salmon	
	1988	1989	1988	1989	1988	1989
April	3.6	21.4	<0.1	0.0	0.4	0.4
May	11.5	104.9	<0.1	0.1	0.8	5.7
June	31.0	78.0	<0.1	<0.1	1.2	3.1
July	34.4	0.0	<0.1	0.0	3.0	0.0
August	41.4	0.0	<0.1	0.0	8.2	0.0
September	13.5	0.0	<0.1	0.0	0.8	0.0
October	1.5	0.0	0.0	0.0	<0.1	0.0
Total	136.9	204.2	0.1	0.1	14.0	9.2

Note: In 1989, no fishing occurred January-March and July-December.

Table 9.--Joint venture prohibited species catches (by weight) in the Washington-Oregon-California region by month for 1989.

Month	(1000's t)		Weights (t)			
	Groundfish catch		Halibut		Salmon	
	1988	1989	1988	1989	1988	1989
April	3.6	21.4	<0.1	0.0	*	*
May	11.5	104.9	<0.1	0.5	*	*
June	31.0	78.0	0.2	0.5	*	*
July	34.4	0.0	0.1	0.0	*	*
August	41.4	0.0	0.5	0.0	*	*
September	13.5	0.0	0.1	0.0	*	*
October	1.5	0.0	0.0	0.0	*	*
Total	136.9	204.2	0.9	1.0	*	*

Note: In 1989, no fishing occurred January-March and July-December.

Table 10.--Joint venture incidental catches of salmon in the Washington-Oregon-California region by month and area for 1989.

Area	(1000's t)	Numbers (1000's)		
	Groundfish catch	Chinook salmon	Other salmon	Total salmon
April				
Vancouver	0.0	0.0	0.0	0.0
Columbia	3.2	0.2	<0.1	0.2
Eureka	18.2	0.2	<0.1	0.3
Monterey	0.0	0.0	0.0	0.0
Total	21.4	0.4	<0.1	0.4
May				
Vancouver	3.9	<0.1	<0.1	<0.1
Columbia	61.2	4.0	0.1	4.1
Eureka	39.4	1.6	<0.1	1.6
Monterey	0.4	<0.1	0.0	<0.1
Total	104.9	5.6	0.1	5.7
June				
Vancouver	4.1	<0.1	<0.1	<0.1
Columbia	30.0	1.1	0.1	1.2
Eureka	42.5	1.8	<0.1	1.8
Monterey	1.5	0.1	0.0	0.1
Total	78.1	3.0	0.1	3.1
Total				
Vancouver	8.1	<0.1	<0.1	<0.1
Columbia	94.2	5.3	0.2	5.4
Eureka	100.1	3.6	<0.1	3.6
Monterey	1.8	0.1	0.0	0.1
Total	204.2	8.9	0.2	9.2

Note: No fishing occurred during January-March or July-December.