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ALASKA DEPARTMENT OF FISH AND GAME

STAFF COMMENTS
ON COMMERCIAL, PERSONAL USE, SPORT, AND GUIDED SPORT
FINFISH REGULATORY PROPOSALS

FOR THE LOWER COOK INLET MANAGEMENT AREA

ALASKA BOARD OF FISHERIES MEETING
HOMER, ALASKA

NOVEMBER 15–18, 2010

Regional Information Report No. 2A10-03

The following staff comments were prepared by the Alaska Department of Fish and Game for use at the Alaska Board of Fisheries (board) meeting, November 15–18, 2010 in Homer, Alaska. The comments are forwarded to assist the public and Board. The comments contained herein should be considered preliminary and subject to change, as new information becomes available. Final department positions will be formulated after review of written and oral public testimony presented to the Board.

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Alaska Department of Fish and Game
Division of Commercial Fisheries
333 Raspberry Road, Anchorage, Alaska 99518-1565

October 2010

ABSTRACT

This document contains Alaska Department of Fish and Game (ADF&G) staff comments on commercial, personal use, sport, and guided sport finfish regulatory proposals for the Lower Cook Inlet Management Area. These comments were prepared by ADF&G for use at the Alaska Board of Fisheries meeting, November 15–18, 2010 in Homer, Alaska. The comments are forwarded to assist the public and board. The comments contained herein should be considered preliminary and subject to change, as new information becomes available. Final department positions will be formulated after review of written and oral public testimony presented to the board.

Key words: Alaska Board of Fisheries, staff comments, hatchery, Lower Cook Inlet, finfish, management, regulatory proposals, personal use, sport, guided sport, commercial fisheries.

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S = Support; N = Neutral; O = Oppose; **N/A** = No Action

COMMITTEE A: Lower Cook Inlet Commercial Fishing
(Total proposals: 19)

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	Gear: 7
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PROPOSAL 1 – 5 AAC 21.200 (d) (2). Fishing districts, subdistricts, and sections.

PROPOSED BY: David Chartier.

WHAT WOULD THE PROPOSAL DO? This proposal would alter the northern boundary (western end) of the Seldovia Subdistrict, located in the Southern District of Lower Cook Inlet, thereby marginally increasing the amount of area where commercial salmon fishing can occur when the season is open in waters of that subdistrict (Figures 1-1 – 1-3).

WHAT ARE THE CURRENT REGULATIONS? Seldovia Subdistrict consists of all waters south of a line from Point Naskowhak at 59° 27.20' N lat, 151° 44.57' W long, to Seldovia Point at 59° 28.22' N lat, 151° 42.37' W long.

WHAT WOULD BE THE EFFECT IF THE PROPOSAL WERE ADOPTED? Adoption of this proposal would move the western end of the current boundary line slightly northward and thus, marginally increase the size of Seldovia Subdistrict. It is unlikely there would be any change in harvests or fisheries management (Table 1-1).

BACKGROUND: Prior to 1977, commercial salmon fishing regulations for Cook Inlet contained no definition describing waters of Seldovia Bay Subdistrict. Instead, regulation 5 AAC 21.330. *Gear* (b)(1)(D) stated that set gillnets were allowed along "the west shore of Seldovia Bay from Point Naskowhak to a point at the latitude of Powder Island at 59° 25' 30" N. lat., 151° 44' 15" W. long.". From 1977 through 1990, a provision of 5 AAC 21.200. *Fishing districts, subdistricts, and sections* (d)(2) contained the following description: "Seldovia Bay Subdistrict: all waters south of a line from Point Naskowhak to Seldovia Point" (Table 1-2).

Intending to provide accurate descriptions of prominent headlands and other landmarks found in regulation, the department identified and published coordinates for Point Naskowhak and Seldovia Point beginning with the 1991 season. The new description was listed under 5 AAC 21.200. *Fishing districts, subdistricts, and sections* (d)(2) as follows: "Seldovia Bay Subdistrict: all waters south of a line from Point Naskowhak at 59° 27' 30" N. lat., 151° 44' 30" W. long. to Seldovia Point at 59° 28' 15" N. lat., 151° 42' W. long.". These coordinates were derived from nautical charts that were based on the North American Datum (NAD) of 1927. After the 1995 season, the department updated the coordinates of the two points by utilizing

more recent geographic information contained in the NAD of 1983. From 1996 through 1998, the newly published description and regulatory coordinates were: "Seldovia Bay Subdistrict: all waters south of a line from Point Naskowhak at 59° 27' 12" N. lat., 151° 44' 34" W. long. to Seldovia Point at 59° 28' 13" N. lat., 151° 42' 22" W. long.". Finally, beginning with the 1999 season, the coordinates for the two points were converted from NAD 83 *minutes and seconds* to NAD 83 *decimal minutes* as follows: "Seldovia Bay Subdistrict: all waters south of a line from Point Naskowhak at 59° 27.20' N. lat., 151° 44.57' W. long. to Seldovia Point at 59° 28.22' N. lat., 151° 42.37' W. long.". This description has remained in regulation to the present time.

Responding to a routine request for comments and additional information from the Department of Natural Resources (DNR) regarding a shore fishery lease in Seldovia Bay, the department discovered that a different and totally separate DNR shore fishery lease was issued and actively utilized for commercial salmon set gillnet fishing in waters that were just outside (or north) of the currently published Seldovia Bay Subdistrict boundary line. Further investigation showed that the published NAD 27 coordinates used to delineate Point Naskowhak between 1991 and 1995 actually fell some distance away from the intended physical land point, slightly to the north and in open water. Using the coordinates published from 1991 through 1995, the shore fishery lease in question falls within the legal regulatory description of Seldovia Bay Subdistrict. This shore fishery lease was first issued by DNR in 1991, and has been continuously renewed and actively fished by the same permit holder ever since. When using the presently published NAD 83 coordinates, the shore fishery lease in question lies outside of the regulatory description of Seldovia Bay Subdistrict (Figures 1-1 to 1-3).

The department acknowledges that a mistake was made in identifying and publishing accurate coordinates for Point Naskowhak between 1991 and 1995, during which time the shore fishery lease was issued. After discovering the inconsistency during the winter of 2009/10, the department issued an emergency order for the 2010 fishing season which moved the boundary line slightly northward, thus allowing the referenced shore fishery lease to fall in waters legally open to fishing.

DEPARTMENT COMMENTS: The department **OPPOSES** establishing regulatory coordinates that fall in open water; however, the department **SUPPORTS** modifying the boundary description to allow the referenced shore fishery lease to fall in waters legally open to fishing. The intended, prominent, traditional, and highly visible physical headland is nearby. Such easily identifiable visual cues aid fishermen, as well as enforcement efforts on the grounds, during sometimes hectic commercial fisheries and are highly desirable whenever possible.

COST ANALYSIS: Approval of this proposal is not expected to result in an additional direct cost for a private person to participate in this fishery.

Table 1-1. Salmon catch and effort data for the commercial set gillnet salmon fishery in Seldovia Bay Subdistrict (241-17) of the Southern District, Lower Cook Inlet, Alaska.

Year	No. Permits	No. Landings	King	Sockeye	Coho	Pink	Chum	Total
1990	6	77	370	4,321	249	3,578	572	9,090
1991	4	63	350	4,011	105	265	559	5,290
1992	[a]	[a]	301	3,285	58	1,914	701	6,259
1993	4	51	419	4,435	420	2,389	1,233	8,896
1994	[a]	[a]	407	2,665	81	5,380	1,220	9,753
1995	5	85	770	4,245	53	8,214	1,389	14,671
1996	4	60	322	11,926	319	4,088	627	17,282
1997	4	51	476	12,546	138	12,336	658	26,154
1998	4	87	332	6,038	76	7,398	1,789	15,633
1999	7	41	287	6,291	106	1,463	1,508	9,655
2000	4	38	241	6,388	103	10,199	2,136	19,067
2001	5	51	161	8,965	138	4,885	1,474	15,623
2002	4	39	216	9,500	71	1,303	409	11,499
2003	5	54	99	13,787	72	2,731	905	17,594
2004	5	42	244	4,939	66	87	92	5,428
2005	[a]	[a]	66	3,400	118	0	325	3,909
2006	4	40	78	6,356	48	0	1,151	7,633
2007	[a]	[a]	56	9,189	178	0	549	9,972
2008	[a]	[a]	30	8,451	27	0	772	9,280
2009	4	41	22	14,216	150	0	1,455	15,843
2010	[a]	[a]	9	4,929	11	0	581	5,530
1990-2009 Avg.	4	52	262	7,248	129	3,312	976	11,927
1990-1999 Avg.	4	64	403	5,976	161	4,703	1,026	12,268
2000-2009 Avg.	4	40	121	8,519	97	1,921	927	11,585
2010 Percent of Total			0.2%	89.1%	0.2%	0.0%	10.5%	100.0%

Source: ADF&G fish ticket data *Unpublished.*

[a] To comply with **AS 16.05.815** ***Confidential nature of certain reports and records***, effort data has been masked where fewer than 4 vessels/permits fished in a given area.

Table 1-2. Historic coordinates in commercial fishing regulations for Point Naskowhak (defining boundary line for Seldovia Bay Subdistrict).

YEARS	Latitude	Longitude	Comments
1999-Present	59° 27.20' N Lat	151° 44.57" W Long	source: NAD 83 Decimal Minutes (converted from minutes/seconds, same as 96-98)
1996-1998	59° 27' 12" N Lat	151° 44' 34" W Long	source: NAD 83 Degrees Minutes Seconds (same coordinates as 1999-Present); believed that LCI staff updated coordinates to be more accurate (i.e., points to the land instead of the water)
1991-1995	59° 27' 30" N Lat	151° 44' 30" W Long	Source: Assumed NAD 27, but could be Loran. When plotted; point is offshore (in water)
1977-1990	No coordinates	No coordinates	Listed as "Point Naskowhak" only
Prior to 1977			No published description of Seldovia Bay Subdistrict

Note: Regulatory description of open areas to set gillnetting: "Along the west shore of Seldovia Bay from Pt. Naskowhak to a point……"; this has remained the same in all years to present.

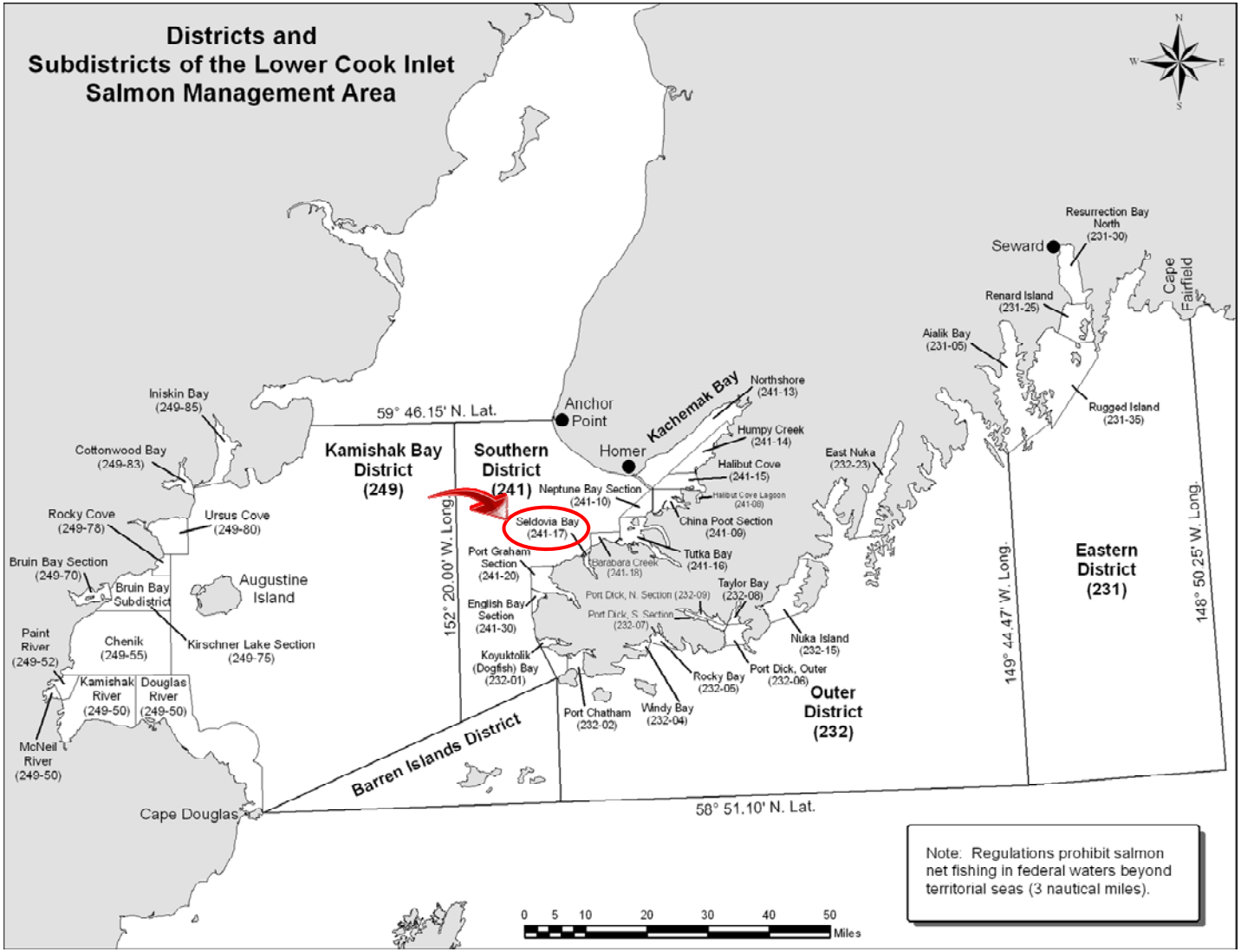

Figure 1-1. Map of the Lower Cook Inlet commercial salmon fishing management area, showing districts and subdistricts.

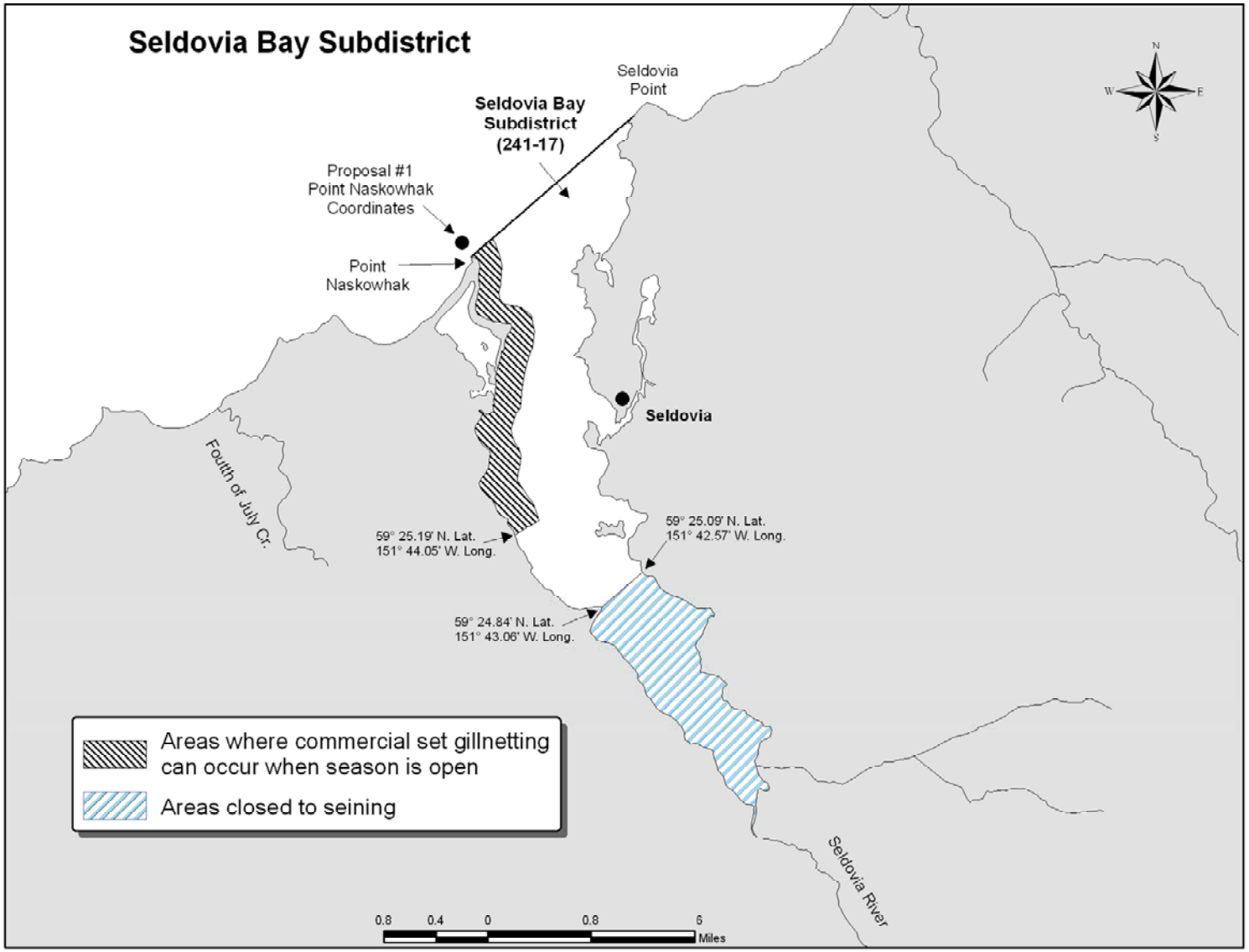

Figure 1-2. Map of Seldovia Bay Subdistrict in the Southern District of Lower Cook Inlet.

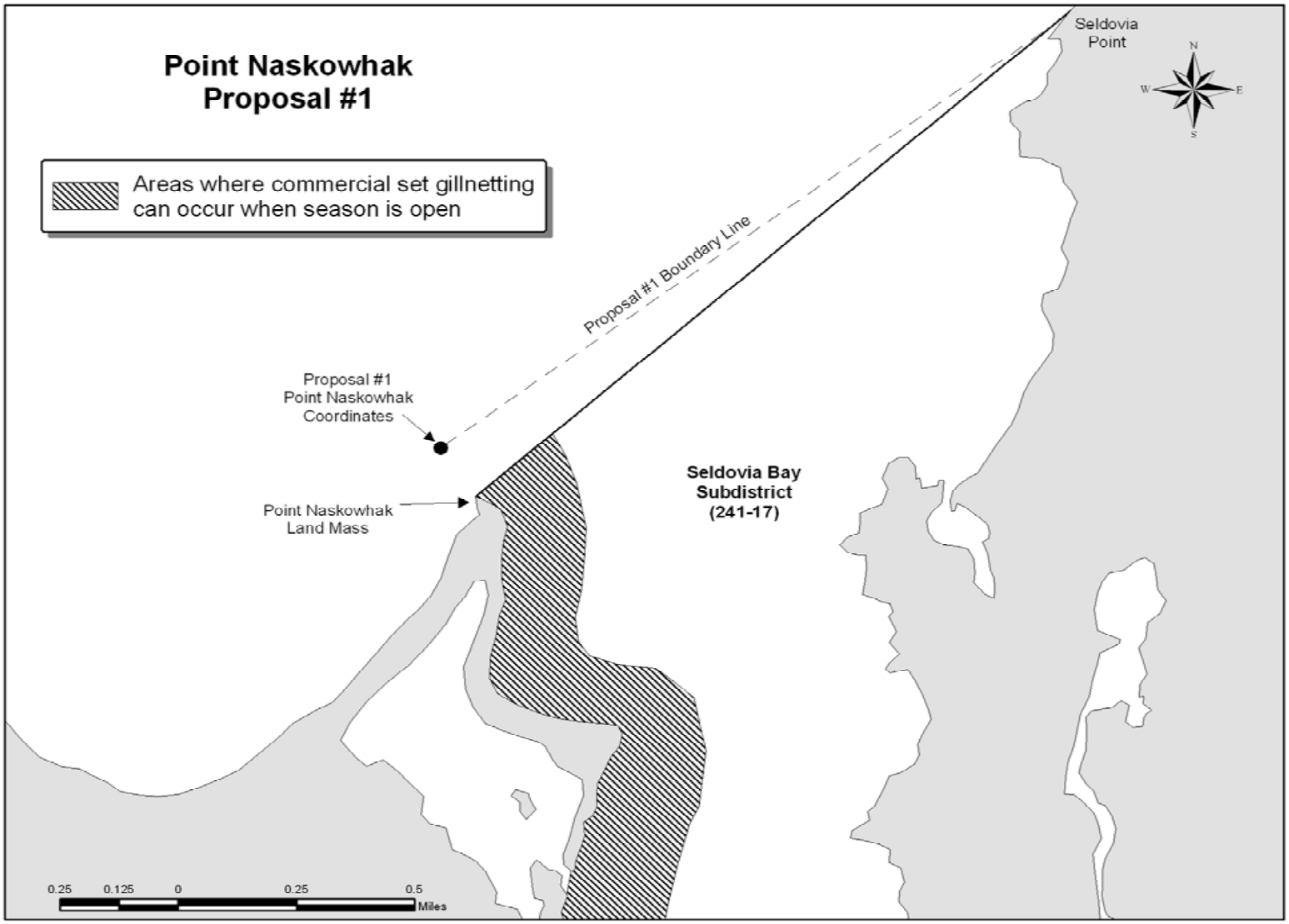

Figure 1-3. Map showing present and proposed boundary line describing Seldovia Bay Subdistrict n the Southern District of Lower Cook Inlet.

PROPOSAL 2 - 5 AAC 21.310 (b) (6). Fishing seasons.

PROPOSED BY: Thomas Buchanan.

WHAT WOULD THE PROPOSAL DO? This proposal would create a season opening date of June 1 for commercial salmon fishing in waters of Lower Cook Inlet's (LCI's) Outer District (Figures 2-1 and 2-2).

WHAT ARE THE CURRENT REGULATIONS? The commercial salmon fishing season in the Outer District is opened and closed by emergency order.

WHAT WOULD BE THE EFFECT IF THE PROPOSAL WERE ADOPTED? If this proposal were adopted, the new regulation, by itself, would have no effect on current management of commercial salmon seine fisheries in the Outer District since weekly fishing periods (5 AAC 21.320(c)(2)) would still require emergency order action in order to prosecute a fishery.

BACKGROUND: The current regulation of opening and closing commercial seine fishing seasons by emergency order in the Outer District of LCI has been in place since 1961. In nearly all waters of this district, the department determines openings based on inseason assessment of salmon abundance, escapement, run strength, and anticipated effort in order to facilitate an orderly harvest of identifiable surpluses while simultaneously attempting to achieve escapement goals. The one exception to this strategy occurs in waters of Port Dick Subdistrict, where since 1992 (except for two seasons), the department has allowed fishing to begin on a pre-determined calendar date in mid July, prior to assessment of run strength. The reason for this is because runs of pink salmon to Port Dick area streams have historically and consistently demonstrated sufficient run strength to withstand some level of commercial exploitation (Table 2-1) without jeopardizing escapement requirements. Assessment of sockeye, pink, and chum salmon runs in this district includes a combination of aerial and ground surveys, a counting weir, and remote video.

Historical information collected by the department since statehood shows that annual salmon runs to the Outer District traditionally begin in late June (sockeye salmon in East Nuka Bay) and mid July (pink salmon). The department has no documentation of salmon runs with earlier run timing in that district.

DEPARTMENT COMMENTS: The department **OPPOSES** this proposal. The intent of this proposal apparently seeks to allow commercial seine fishermen opportunity to harvest salmon at any location throughout the Outer District beginning June 1. This intent, in light of the department's current resources for managing the LCI area, would place stocks of fish, especially smaller ones, at risk of overharvest prior to inseason assessment by the department. The current management strategy of opening most waters of the Outer District based on inseason assessment has resulted in sustained yields to commercial fishermen while providing protection to stocks of returning fish for escapement purposes.

COST ANALYSIS: Approval of this proposal is not expected to result in an additional direct cost for a private person to participate in this fishery.

Table 2-1. Historical commercial salmon catch and effort information for the Outer District of Lower Cook Inlet, 1990-2010.

Year	No. Permits	No. Landings	King	Sockeye	Coho	Pink	Chum	Total
1990	47	265	2	17,404	74	191,320	614	209,414
1991	35	255	2	6,408	12	359,664	14,337	380,423
1992	5	6	0	572	1	146	181	900
1993	21	143	2	4,613	119	159,159	970	164,863
1994	6	17	0	5,930	993	13,200	32	20,155
1995	13	78	12	17,642	1,272	192,098	474	211,498
1996	3	12	0	14,999	96	7,199	3	22,297
1997	9	27	0	6,255	63	128,373	1,575	136,266
1998	10	41	0	15,991	45	102,172	611	118,819
1999	8	29	3	51,117	1,482	32,484	2,062	87,148
2000	11	72	2	21,623	20	306,555	302	328,502
2001	5	23	0	7,339	5	48,559	408	56,311
2002	11	86	0	21,154	74	569,955	3,810	594,993
2003	6	21	1	26,615	4	281,663	137	308,420
2004	9	25	2	11,082	13	42,636	27,911	81,644
2005	5	20	0	1	3	110,195	12,524	122,723
2006	11	162	3	3,198	1,139	1,121,892	12,883	1,139,115
2007	5	31	1	32,461	113	147,409	49	180,033
2008	16	146	0	1,704	0	467,592	100,819	570,115
2009	11	150	1	8	9	853,037	35,126	888,181
2010	10	101	0	3,003	16	272,427	22,463	297,909
1990-2009 Avg.	12	80	2	13,306	277	256,765	10,741	281,091
1990-1999 Avg.	16	87	2	14,093	416	118,582	2,086	135,178
2000-2009 Avg.	9	74	1	12,519	138	394,949	19,397	427,004
2010 Percent of Total			0.0%	1.0%	0.0%	91.4%	7.5%	100.0%

Source: ADF&G fish ticket data *Unpublished.*

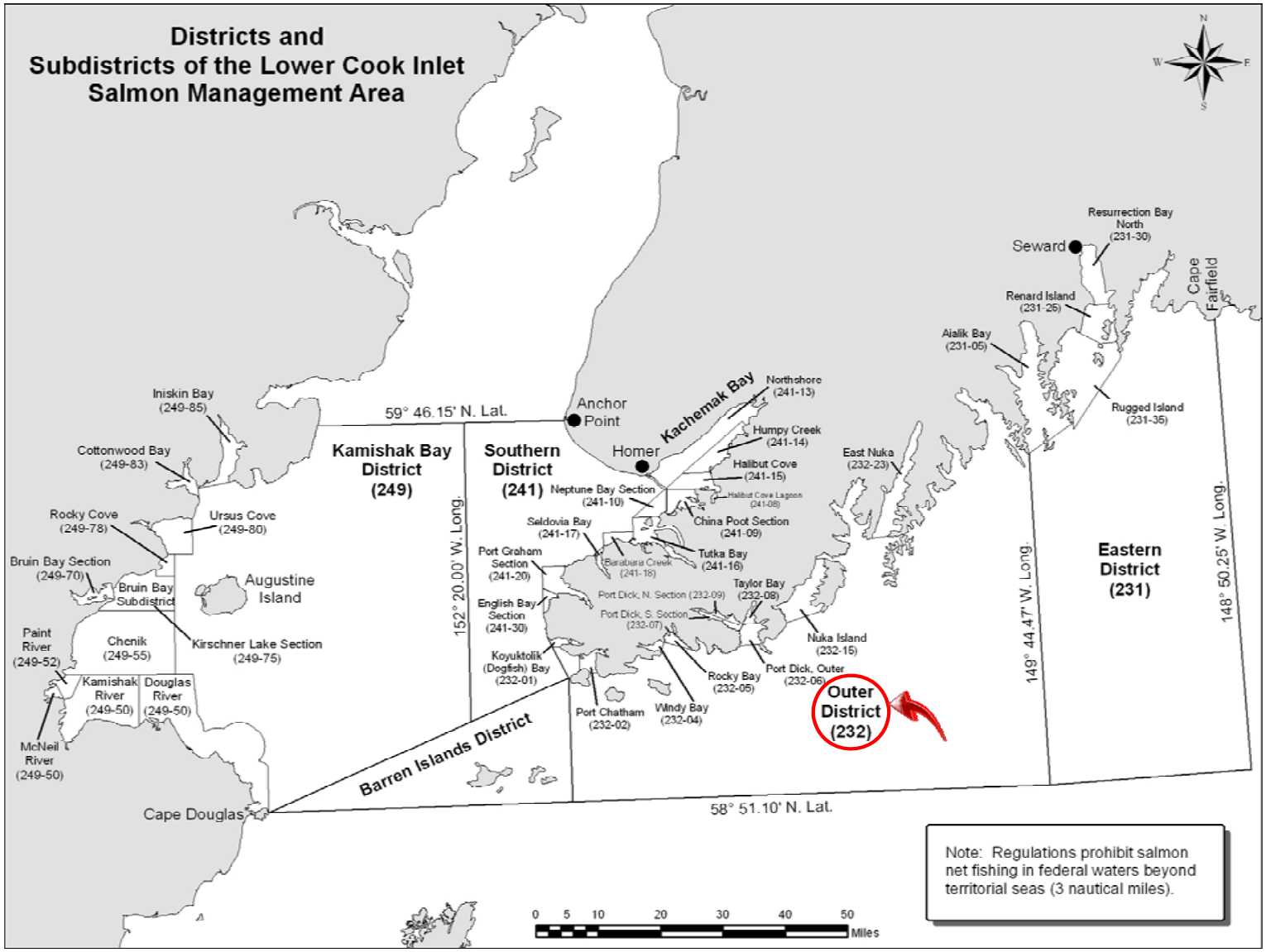

Figure 2-1. Map of the Lower Cook Inlet commercial salmon fishing management area, showing districts and subdistricts.

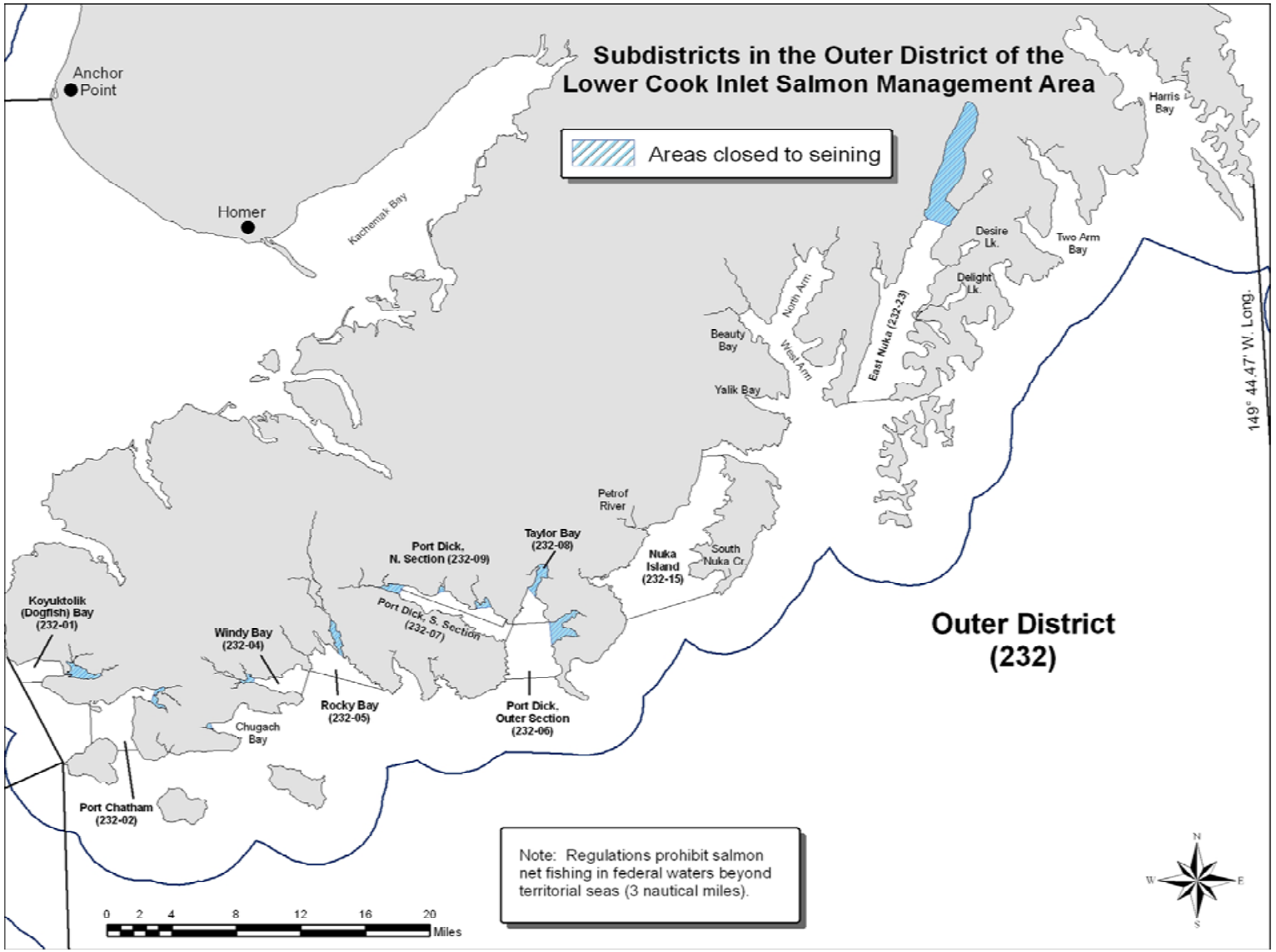

Figure 2-2. Map of the Outer District in Lower Cook Inlet, showing subdistricts used for commercial salmon fisheries management.

PROPOSAL 3 - 5 AAC 21.310 (b) (7). Fishing seasons.

PROPOSED BY: Thomas Buchanan.

WHAT WOULD THE PROPOSAL DO? This proposal would create a season opening date of June 1 for commercial salmon fishing in waters of Lower Cook Inlet's (LCI's) Eastern District (Figures 3-1 and 3-2).

WHAT ARE THE CURRENT REGULATIONS? The commercial salmon fishing season in the Eastern District is opened and closed by emergency order.

WHAT WOULD BE THE EFFECT IF THE PROPOSAL WERE ADOPTED? If this proposal were adopted, the commercial salmon seine fishing season in waters of the Eastern District of LCI would be permitted to open beginning June 1 each year, thus precluding openings earlier than that date. Currently, waters of Resurrection Bay are opened during the latter part of May each season in order to target an early run of sockeye salmon to Bear Lake. Passage of this regulation by itself would still require emergency order action to prosecute a fishery in the Eastern District since weekly fishing periods (5 AAC 21.320. *Weekly fishing periods* (c)(2)) must be established.

BACKGROUND: The current regulation of opening and closing commercial seine fishing seasons by emergency order in the Eastern District of LCI has been in place since 1993. Prior to that season, commercial salmon regulations for waters of the Eastern District stated that: "seine gear season to be opened and closed by emergency order after July 1". At the 1992 Board of Fisheries meeting (board) meeting for LCI, the department submitted a proposal to eliminate the words "after July 1" from the commercial salmon fishing season regulation for the Eastern District in order to allow targeted commercial harvest on the developing enhanced sockeye salmon return to Bear Lake in Resurrection Bay near Seward because of its early run timing (beginning in late May). The proposal was adopted and was deemed at the time to be of a "housekeeping" nature.

At present, in almost all waters of the Eastern District, the department determines appropriate openings based on inseason assessment of salmon abundance, escapement, run strength, and anticipated effort to facilitate an orderly harvest of identifiable surpluses (Table 3-1)while simultaneously attempting to achieve escapement goals. The one exception to this strategy occurs in waters of Resurrection Bay, where the department's management strategy is designed around the targeted run of hatchery-produced sockeye salmon returning to Bear Lake. Openings in those waters are predetermined for the latter part of May and are based on historical run timing for the enhanced Bear Lake sockeye salmon run. Assessment of naturally occurring sockeye salmon elsewhere in this district is accomplished through the use of aerial surveys.

Historical information collected by the department since statehood suggests that the only annual salmon run with "early" run timing to the Eastern District is the sockeye salmon run to Bear Lake in Resurrection Bay, beginning in late May. Other salmon runs to this district begin in late June to early July (sockeye salmon in Aialik Bay) and mid to late July (pink salmon). Other than

sockeye salmon to Bear Lake, the department has no documentation of salmon run timing in early June in the Eastern District.

DEPARTMENT COMMENTS: The department **OPPOSES** this proposal. The intent of this proposal apparently seeks to allow commercial seine fishermen opportunity to harvest salmon at any location throughout the Eastern District beginning June 1. This intent, in light of the department's current resources for managing the LCI area, would place stocks of fish, especially smaller ones, at risk of overharvest prior to inseason assessment by the department. In addition, a regulatory opening of June 1 would prevent commercial fishing in Resurrection Bay in late May, as is presently allowed by emergency order to effectively target the sockeye salmon run to Bear Lake. The current management strategy of opening waters other than Resurrection Bay in the Eastern District based on inseason assessment has resulted in sustained yields to commercial fishermen while providing protection to stocks of returning fish for escapement purposes.

COST ANALYSIS: Approval of this proposal is not expected to result in an additional direct cost for a private person to participate in this fishery.

Table 3-1. Historical commercial salmon catch and effort information for the Eastern District of Lower Cook Inlet, 1990-2010 (includes both common property and hatchery).

Year	No. Permits	No. Landings	King	Sockeye	Coho	Pink	Chum	Total
1990	10	59	0	7,682	7,645	11,815	307	27,449
1991	8	63	1	4,703	7,283	167,250	80	179,317
1992	9	57	0	432	3,136	60,007	86	63,661
1993	8	44	0	1,824	8,924	10,616	9	21,373
1994	8	78	1	9,661	10,410	44,987	2,792	67,851
1995	21	139	0	46,556	5,192	12,000	330	64,078
1996	19	167	0	44,719	3,932	35	223	48,909
1997	11	191	0	33,783	5,344	1	66	39,194
1998	9	186	1	44,274	14,365	38,829	51	97,520
1999	13	194	1	135,305	3,794	1,930	1,232	142,262
2000	15	259	1	64,099	7,408	4,473	1,540	77,521
2001	5	251	0	13,809	3,947	0	6	17,762
2002	9	213	0	17,376	4,432	0	5	21,813
2003	12	200	0	10,352	5,886	0	19	16,257
2004	10	50	0	16,645	5,615	0	1	22,261
2005	17	241	0	56,951	6,309	13,500	385	77,145
2006	15	190	0	67,048	3,786	3,460	270	74,564
2007	13	129	0	23,864	2,850	0	53	26,767
2008	13	210	0	90,096	1,625	0	35	91,756
2009	2[a]	273	0	137,469	1,708	0	0	139,177
2010	2[a]	70	0	21,732	1,100	0	0	22,832
1990-2009 Avg.	11	160	0	41,342	5,680	18,445	375	65,842
1990-1999 Avg.	12	118	0	32,914	7,003	34,747	518	75,181
2000-2009 Avg.	11	202	0	49,771	4,357	2,143	231	56,502
2010 Percent of Total			0.0%	95.2%	4.8%	0.0%	0.0%	100.0%

Source: ADF&G fish ticket data *Unpublished.*

[a] Hatchery permits only.

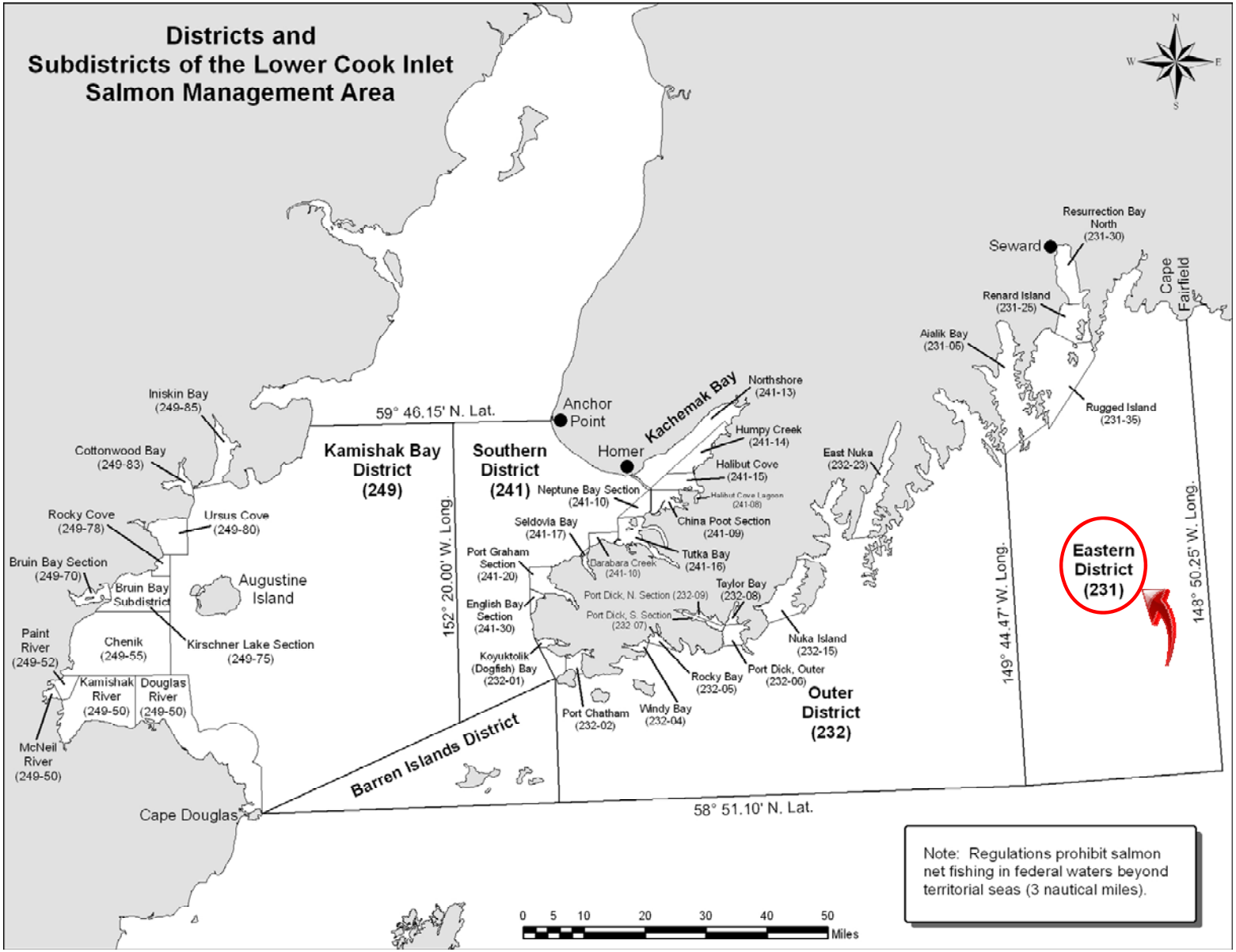

Figure 3-1. Map of the Lower Cook Inlet commercial salmon fishing management area, showing districts and subdistricts.

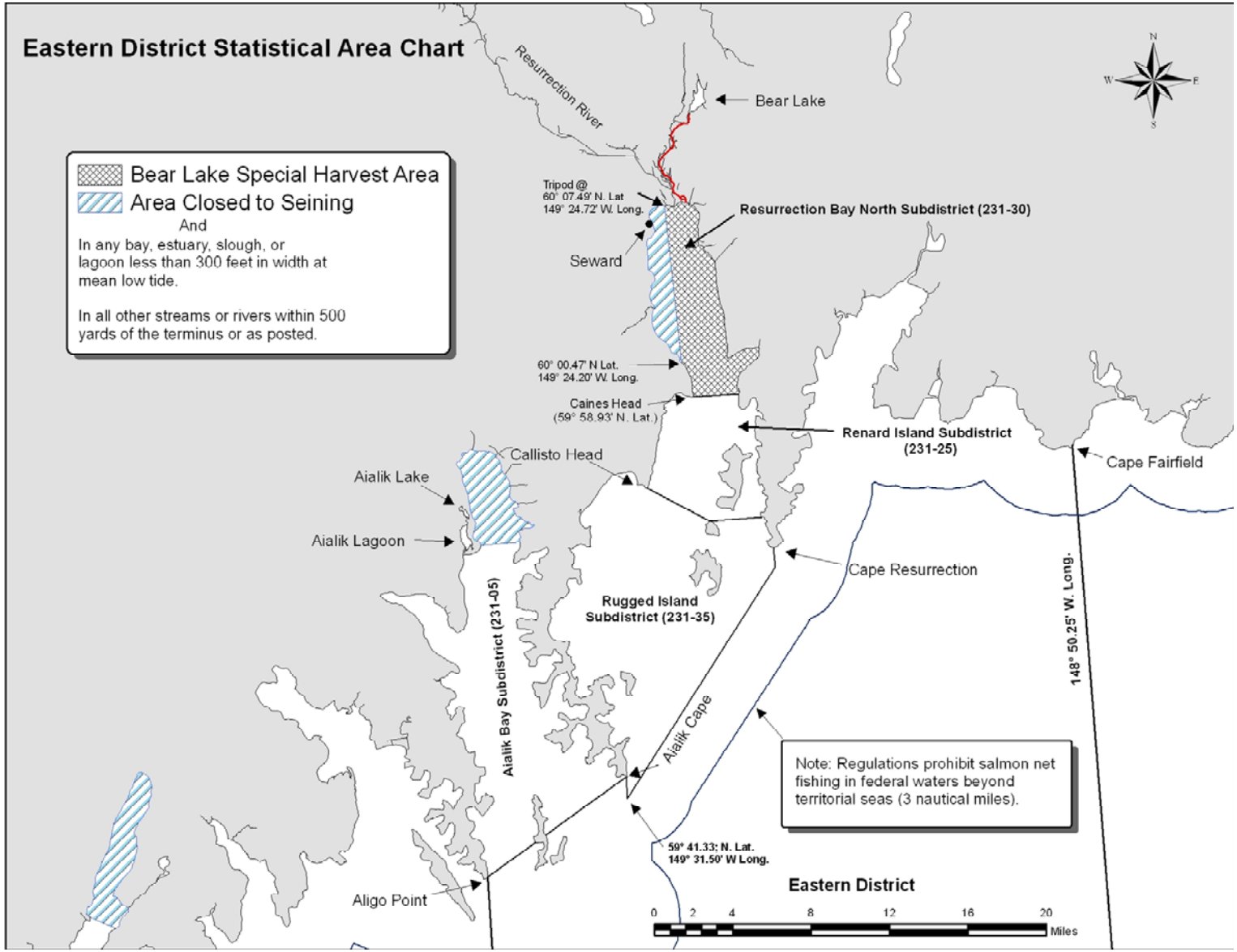

Figure 3-2. Map of the Eastern District in Lower Cook Inlet, showing subdistricts used for commercial salmon fisheries management.

PROPOSAL 4 - 5 AAC 21.310. Fishing seasons.

PROPOSED BY: United Cook Inlet Drift Association.

WHAT WOULD THE PROPOSAL DO? This proposal would establish drift and set gillnets as legal gear for commercial salmon fishing in the Southern, Barren Islands, Kamishak Bay, and Outer districts of Lower Cook Inlet (LCI) (Figure 4-1). The proposal seeks to provide fishing seasons for these gear types in the aforementioned fishing districts.

WHAT ARE THE CURRENT REGULATIONS? The only legal gear types allowed in the four subdistricts referenced in this proposal are purse seines (Southern, Kamishak Bay, and Outer districts) and set gillnets (Southern District only). Commercial salmon fishing is not allowed in Barren Islands District; therefore, there are currently no legal gear types or fishing seasons. The regulatory salmon fishing season for set gillnets in the Southern District is established by emergency order on or after June 1. The fishing season for commercial salmon seining in Kamishak Bay District begins June 1 by regulation, while the season for purse seining in the Southern and Outer districts is opened and closed by emergency order.

WHAT WOULD BE THE EFFECT IF THE PROPOSAL WERE ADOPTED? If this proposal were adopted, department management decisions would take into account the potential cumulative harvesting power and effectiveness of the combined gear types as weighed against the available harvestable surplus in these areas. With the additional gear, the harvest of salmon could become more difficult to control and assess, and a more conservative approach towards fishery openings would likely result (i.e., shorter duration, less open area to fish, etc.) in order to effectively control the harvest. It is unknown if use of drift gillnets would create user conflicts.

BACKGROUND: Since statehood, purse seine has been the primary allowable gear type in the commercial salmon fisheries of LCI, while set gillnet gear has traditionally been allowed but only in limited areas of the Southern District (Kachemak Bay) (Tables 4-1 – 4-5). The only area where drift gillnetting had been allowed in LCI was in the Eastern District, but it was eliminated in 1964. Due to two years of expected strong sockeye salmon runs to Bear Lake in Resurrection Bay (Eastern District), drift gillnetting was reinstituted in 1968, with the stipulation that it could only be annually employed prior to July 1. Eastern District (Resurrection Bay) sockeye salmon catches peaked in 1968 and 1969 at 74,000 and 99,000 fish, respectively, while effort peaked at 104 boats in 1969. During those same years, purse seiners took only about 5% of the total harvest. Drift gillnetting continued to remain an allowable gear in the Eastern District (prior to July 1) until 1976, when it was repealed. Drift gillnetting has not been allowed for commercial salmon fishing in any other district of LCI.

Although *5 AAC 21.369. Lower Cook Inlet Seine Fishery Management Plan* does not address potential interception of stocks bound for areas other than Upper Cook Inlet, the department has always interpreted the intent of the plan to include other stocks. Therefore, LCI management strategy has attempted to adhere to this plan and prevent this type of interception by only allowing the mobile fleet to fish nearshore and inside waters (i.e., terminal harvest areas). It should be noted that no anadromous waters have been documented on the Barren Islands; thus, any salmon harvested in adjacent area waters are bound for other areas.

DEPARTMENT COMMENTS: The department is **NEUTRAL** on the allocative aspects of this proposal. However, the department is **OPPOSED** to this proposal if the intent is to allow drift gillnetting to occur in offshore areas (Barren Islands District) or off capes and islands in waters of the Southern, Outer, and Kamishak Bay Districts. Fishing in such areas is likely to produce catches of salmon bound for other management areas and/or other districts within LCI, complicating management to a point where managing for escapement and sustained yields in LCI may be put at risk.

COST ANALYSIS: Approval of this proposal is not expected to result in an additional direct cost for a private person to participate in this fishery.

Table 4-1. Historical commercial salmon catch and effort information for the Outer District of Lower Cook Inlet, 1990-2010 (seine gear only allowed).

Year	No. Permits	No. Landings	King	Sockeye	Coho	Pink	Chum	Total
1990	47	265	2	17,404	74	191,320	614	209,414
1991	35	255	2	6,408	12	359,664	14,337	380,423
1992	5	6	0	572	1	146	181	900
1993	21	143	2	4,613	119	159,159	970	164,863
1994	6	17	0	5,930	993	13,200	32	20,155
1995	13	78	12	17,642	1,272	192,098	474	211,498
1996	[a]	[a]	0	14,999	96	7,199	3	22,297
1997	9	27	0	6,255	63	128,373	1,575	136,266
1998	10	41	0	15,991	45	102,172	611	118,819
1999	8	29	3	51,117	1,482	32,484	2,062	87,148
2000	11	72	2	21,623	20	306,555	302	328,502
2001	5	23	0	7,339	5	48,559	408	56,311
2002	11	86	0	21,154	74	569,955	3,810	594,993
2003	6	21	1	26,615	4	281,663	137	308,420
2004	9	25	2	11,082	13	42,636	27,911	81,644
2005	5	20	0	1	3	110,195	12,524	122,723
2006	11	162	3	3,198	1,139	1,121,892	12,883	1,139,115
2007	5	31	1	32,461	113	147,409	49	180,033
2008	16	146	0	1,704	0	467,592	100,819	570,115
2009	11	150	1	8	9	853,037	35,126	888,181
2010	10	101	0	3,003	16	272,427	22,463	297,909
1990-2009 Avg.	12	80	2	13,306	277	256,765	10,741	281,091
1990-1999 Avg.	16	87	2	14,093	416	118,582	2,086	135,178
2000-2009 Avg.	9	74	1	12,519	138	394,949	19,397	427,004
2010 Percent of Total			0.0%	1.0%	0.0%	91.4%	7.5%	100.0%

Source: ADF&G fish ticket data *Unpublished.*

[a] To comply with **AS 16.05.815** ***Confidential nature of certain reports and records***, effort data has been masked where fewer than 4 vessels fished in a given area.

Table 4-2. Historical commercial salmon catch and effort information for the Kamishak Bay District of Lower Cook Inlet, 1990-2010 (seine gear only allowed).

Year	No. Permits	No. Landings	King	Sockeye	Coho	Pink	Chum	Total
1990	30	318	12	96,397	26	2,448	3,597	102,480
1991	34	482	17	136,612	2,337	47,833	7,853	194,652
1992	24	235	39	68,847	1,488	2,594	20,051	93,019
1993	15	93	4	67,650	3	4,205	600	72,462
1994	9	18	0	35,296	1,897	33	14	37,240
1995	8	29	2	36,427	6,084	169,054	10,302	221,869
1996	[a]	[a]	1	31,604	1	36	27	31,669
1997	4	7	0	11,733	0	293	7	12,033
1998	5	6	0	27,502	0	1,776	29	29,307
1999	7	10	0	46,913	0	807	23	47,743
2000	11	45	1	31,636	7	6,214	66,072	103,930
2001	8	44	2	39,712	9	1,397	84,766	125,886
2002	6	57	0	33,921	54	446,146	34,641	514,762
2003	[a]	[a]	0	51,253	4	12,005	29,800	93,062
2004	8	48	0	51,657	5,367	12,969	177,395	247,388
2005	9	39	0	64,987	92	7,761	83,943	156,783
2006	6	38	0	64,577	24,269	82,477	56,619	227,942
2007	5	27	0	197,228	5	11,451	91	208,775
2008	12	47	2	183,512	21	28,159	73,297	284,991
2009	10	88	0	84,534	0	133,298	36,574	254,406
2010	10	58	10	14,470	573	2,490	70,785	88,328
1990-2009 Avg.	11	83	4	68,100	2,083	48,548	34,285	153,020
1990-1999 Avg.	14	120	8	55,898	1,184	22,908	4,250	84,247
2000-2009 Avg.	8	45	1	80,302	2,983	74,188	64,320	221,793
2010 Percent of Total			0.0%	16.4%	0.6%	2.8%	80.1%	100.0%

Source: ADF&G fish ticket data *Unpublished.*

[a] To comply with **AS 16.05.815** ***Confidential nature of certain reports and records***, effort data has been masked where fewer than 4 vessels fished in a given area.

Table 4-3. Historical commercial salmon catch and effort information for the Southern District of Lower Cook Inlet, 1990-2010 (seine and set gillnet allowed, combined totals).

Year	No. Permits	No. Landings	King	Sockeye	Coho	Pink	Chum	Total
1990	77	1,349	1,546	82,412	1,552	178,087	2,433	266,030
1991	72	1,353	1,399	170,224	9,415	253,962	1,962	436,962
1992	75	1,265	1,852	106,793	1,277	417,021	1,885	528,828
1993	61	1,049	2,162	156,924	4,431	692,786	2,788	859,091
1994	43	951	1,230	64,531	1,373	1,589,709	2,631	1,659,474
1995	64	1,439	2,289	164,798	5,161	2,475,312	4,530	2,652,090
1996	57	1,094	1,180	359,134	9,576	445,520	3,511	818,921
1997	46	1,178	1,261	188,402	5,597	2,685,764	4,260	2,885,284
1998	62	1,151	1,070	196,262	2,243	1,315,042	3,956	1,518,573
1999	60	897	1,760	243,444	2,762	1,105,267	4,624	1,357,857
2000	55	654	1,184	123,574	768	1,070,065	5,340	1,200,931
2001	40	576	986	155,411	2,706	542,975	3,789	705,867
2002	46	550	1,553	218,203	3,769	953,960	4,803	1,182,288
2003	48	916	1,179	556,037	5,408	563,043	5,730	1,131,397
2004	41	407	1,656	50,699	1,431	2,461,950	1,372	2,517,108
2005	43	610	610	110,739	2,722	2,175,386	1,750	2,291,207
2006	40	503	627	89,522	3,036	263,749	2,182	359,116
2007	31	380	466	112,672	3,351	128,551	1,584	246,624
2008	33	292	188	132,279	1,320	9,949	1,579	145,315
2009	21	181	83	58,301	969	3,012	2,274	64,639
2010	22	153	29	52,835	172	3,294	1,507	57,837
1990-2009 Avg.	51	840	1,214	167,018	3,443	966,556	3,149	1,141,380
1990-1999 Avg.	62	1,173	1,575	173,292	4,339	1,115,847	3,258	1,298,311
2000-2009 Avg.	40	507	853	160,744	2,548	817,264	3,040	984,449
2010 Percent of Total			0.1%	91.4%	0.3%	5.7%	2.6%	100.0%

Source: ADF&G fish ticket data *Unpublished.*

Table 4-4. Historical commercial seine only salmon catch and effort information for the Southern District of Lower Cook Inlet, 1990-2010 (includes common property and hatchery).

Year	No. Permits	No. Landings	King	Sockeye	Coho	Pink	Chum	Total
1990	57	781	185	66,549	506	165,441	495	233,176
1991	50	868	556	142,560	4,388	148,143	357	296,004
1992	55	749	564	89,791	429	401,063	198	492,045
1993	42	691	1,073	131,367	1,341	271,303	197	405,281
1994	27	531	127	50,527	300	1,566,088	212	1,617,254
1995	41	892	211	145,392	1,597	2,433,658	572	2,581,430
1996	31	473	126	283,862	3,797	430,707	719	719,211
1997	21	443	126	121,184	1,122	2,621,602	94	2,744,128
1998	37	624	118	163,929	1,186	1,268,779	201	1,434,213
1999	39	675	269	215,138	1,388	1,099,919	289	1,317,003
2000	31	432	165	97,071	147	1,048,220	126	1,145,729
2001	22	334	121	126,908	895	529,582	302	657,808
2002	22	229	40	150,571	1,376	947,219	122	1,099,328
2003	24	466	301	427,327	3,117	555,718	732	987,195
2004	22	205	256	34,612	267	2,461,116	138	2,496,389
2005	26	371	85	95,070	817	2,175,045	424	2,271,441
2006	18	263	47	75,303	610	251,460	163	327,583
2007	15	187	27	83,802	1,735	128,551	147	214,262
2008	15	127	40	105,460	721	8,065	185	114,471
2009	2[a]	8	0	20,081	1	876	0	20,958
2010	1[a]	27	0	38,070	1	188	4	38,263
1990-2009 Avg.	30	467	222	131,325	1,287	925,628	284	1,058,745
1990-1999 Avg.	40	673	336	141,030	1,605	1,040,670	333	1,183,975
2000-2009 Avg.	18	241	98	114,025	881	736,913	213	852,130
2010 Percent of Total			0.0%	99.5%	0.0%	0.5%	0.0%	100.0%

Source: ADF&G fish ticket data *Unpublished.*

[a] Hatchery permits only.

Table 4-5. Historical commercial set gillnet only salmon catch and effort information for the Southern District of Lower Cook Inlet, 1990-2010.

Year	No. Permits	No. Landings	King	Sockeye	Coho	Pink	Chum	Total
1990	20	568	1,361	15,863	1,046	12,646	1,938	32,854
1991	20	472	842	20,525	5,011	3,954	1,577	31,909
1992	20	516	1,288	17,002	848	15,958	1,687	36,783
1993	17	330	1,089	14,791	3,088	12,008	2,591	33,567
1994	16	420	1,103	14,004	1,073	23,621	2,419	42,220
1995	23	547	2,078	19,406	3,564	41,654	3,958	70,660
1996	24	606	1,054	69,338	5,779	14,813	2,792	93,776
1997	25	725	1,135	59,401	4,475	64,162	4,166	133,339
1998	24	518	952	26,131	1,057	24,403	3,754	56,297
1999	20	220	1,491	27,646	1,374	5,348	4,335	40,194
2000	24	222	1,019	26,503	621	21,845	5,214	55,202
2001	18	242	865	28,503	1,811	13,393	3,487	48,059
2002	24	311	1,513	46,812	2,393	6,741	4,681	62,140
2003	24	424	878	81,722	2,291	7,325	4,998	97,214
2004	19	202	1,400	16,087	1,164	834	1,234	20,719
2005	17	239	525	15,669	1,905	341	1,326	19,766
2006	22	240	580	14,219	2,426	12,289	2,019	31,533
2007	16	193	439	28,870	1,616	0	1,437	32,362
2008	18	165	148	26,819	599	1,884	1,394	30,844
2009	19	173	83	38,220	968	2,136	2,274	43,681
2010	21	126	29	14,765	171	3,106	1,503	19,574
1990-2009 Avg.	21	367	992	30,377	2,155	14,268	2,864	50,656
1990-1999 Avg.	21	492	1,239	28,411	2,732	21,857	2,922	57,160
2000-2009 Avg.	20	241	745	32,342	1,579	6,679	2,806	44,152
2010 Percent of Total			0.1%	75.4%	0.9%	15.9%	7.7%	100.0%

Source: ADF&G fish ticket data *Unpublished.*

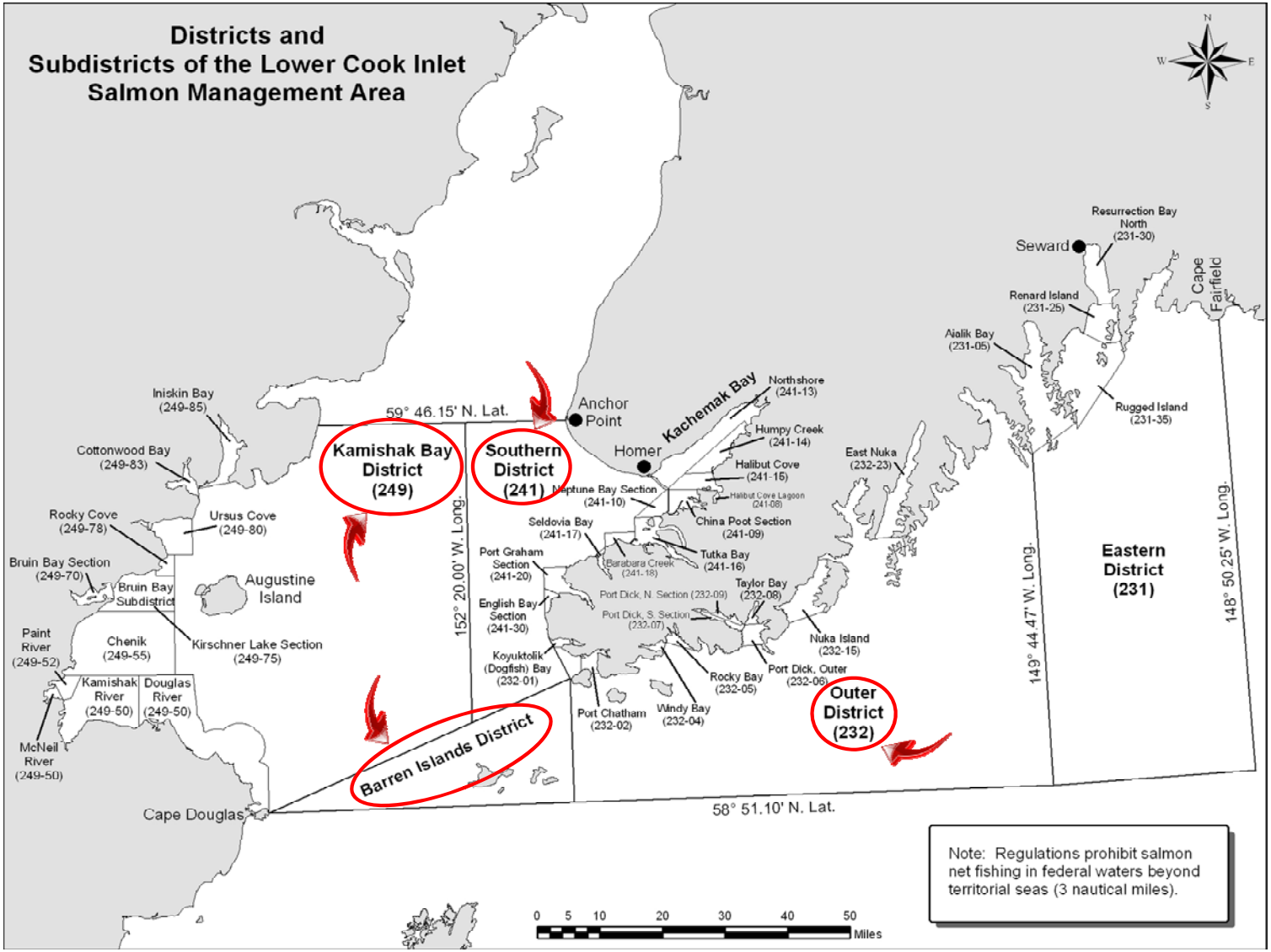

Figure 4-1. Map of the Lower Cook Inlet commercial salmon fishing management area, showing districts and subdistricts.

PROPOSAL 5 - 5 AAC 21.200. Fishing districts, subdistricts, and sections.

PROPOSED BY: John McCombs.

WHAT WOULD THE PROPOSAL DO? This proposal would establish drift gillnets as legal gear for commercial salmon fishing in the Outer District of Lower Cook Inlet (LCI) and in Resurrection Bay of the Eastern District of LCI (Figures 5-1 and 5-2).

WHAT ARE THE CURRENT REGULATIONS? The only legal gear type allowed for commercial salmon fishing in the Outer District and in Resurrection Bay of the Eastern District is purse seine. King and coho salmon are specifically allocated to the recreational fishery in Resurrection Bay (*5 AAC 21.376. Resurrection Bay Salmon Management Plan*). Conservation of these species in the commercial salmon fishery is accomplished through a regulation that prohibits the taking of king and coho salmon by purse seine (5 AAC 21.350 (g)(2)).

WHAT WOULD BE THE EFFECT IF THE PROPOSAL WERE ADOPTED? If this proposal were adopted, department management decisions would take into account the potential cumulative harvesting power and effectiveness of the combined gear types as weighed against the available harvestable surplus in these areas. With the additional gear, the harvest of salmon could become more difficult to control and assess, and a more conservative approach towards fishery openings would likely result (i.e., shorter duration, less open area to fish, etc.) in order to effectively control the harvest. Commercial harvests of king and coho salmon, which are now currently allocated to recreational anglers, would likely occur. It is unknown if use of drift gillnets would create user conflicts in areas outside of Resurrection Bay.

BACKGROUND: Purse seine is the primary gear type in the commercial salmon fisheries of LCI and has been allowed in the Eastern, Outer, Southern, and Kamishak Bay districts, while set gillnet gear has traditionally been allowed only in limited areas of the Southern District (Kachemak Bay) (Tables 5-1 – 5-3). Since the 1960s, keen public interest has directly influenced the salmon management strategy for commercial fishing in Resurrection Bay (Eastern District). Although all commercial fishing gear types, including trolling and drift gillnetting, have been legal at one time or another in Resurrection Bay, all gillnet gear was eliminated from those waters in 1964. Due to two years of expected strong sockeye salmon runs to Bear Lake in Resurrection Bay (Eastern District), drift gillnetting was reinstituted in 1968, with the stipulation that it could only be annually employed prior to July 1. Eastern District (Resurrection Bay) sockeye salmon catches peaked in 1968 and 1969 at 74,000 and 99,000 fish, respectively, while effort peaked at 104 boats in 1969. During those same years, purse seiners took only about 5% of the total harvest. Drift gillnetting continued to remain an allowable gear in the Eastern District (prior to July 1) until 1976, when it was repealed. Drift gillnetting has not been allowed for commercial salmon fishing in any other district of LCI.

Although *5 AAC 21.369. Lower Cook Inlet Seine Fishery Management Plan* does not address potential interception of stocks bound for areas other than Upper Cook Inlet, the department has always interpreted the intent of the plan to include other stocks. Therefore, LCI management strategy has attempted to adhere to this plan and prevent this type of interception by only allowing the mobile fleet to fish nearshore and inside waters (i.e., terminal harvest areas).

DEPARTMENT COMMENTS: The department is **NEUTRAL** on the allocative aspects of this proposal. However, the department is **OPPOSED** to this proposal if the intent is to allow drift gillnetting to occur off capes and islands in waters of Resurrection Bay or the Outer District. Fishing in such areas is likely to produce catches of salmon bound for other management areas and/or other districts within LCI, complicating management to a point where managing for escapement and sustained yields in LCI may be at risk. Protection of non-target species (king and coho salmon) would be impossible in a drift gillnet fishery, resulting in potential conflicts with the recreational fishery in Resurrection Bay.

COST ANALYSIS: Approval of this proposal is not expected to result in an additional direct cost for a private person to participate in this fishery.

Table 5-1. Historical commercial salmon catch and effort information for the Outer District of Lower Cook Inlet, 1990-2010 (seine gear only allowed).

Year	No. Permits	No. Landings	King	Sockeye	Coho	Pink	Chum	Total
1990	47	265	2	17,404	74	191,320	614	209,414
1991	35	255	2	6,408	12	359,664	14,337	380,423
1992	5	6	0	572	1	146	181	900
1993	21	143	2	4,613	119	159,159	970	164,863
1994	6	17	0	5,930	993	13,200	32	20,155
1995	13	78	12	17,642	1,272	192,098	474	211,498
1996	3	12	0	14,999	96	7,199	3	22,297
1997	9	27	0	6,255	63	128,373	1,575	136,266
1998	10	41	0	15,991	45	102,172	611	118,819
1999	8	29	3	51,117	1,482	32,484	2,062	87,148
2000	11	72	2	21,623	20	306,555	302	328,502
2001	5	23	0	7,339	5	48,559	408	56,311
2002	11	86	0	21,154	74	569,955	3,810	594,993
2003	6	21	1	26,615	4	281,663	137	308,420
2004	9	25	2	11,082	13	42,636	27,911	81,644
2005	5	20	0	1	3	110,195	12,524	122,723
2006	11	162	3	3,198	1,139	1,121,892	12,883	1,139,115
2007	5	31	1	32,461	113	147,409	49	180,033
2008	16	146	0	1,704	0	467,592	100,819	570,115
2009	11	150	1	8	9	853,037	35,126	888,181
2010	10	101	0	3,003	16	272,427	22,463	297,909
1990-2009 Avg.	12	80	2	13,306	277	256,765	10,741	281,091
1990-1999 Avg.	16	87	2	14,093	416	118,582	2,086	135,178
2000-2009 Avg.	9	74	1	12,519	138	394,949	19,397	427,004
2010 Percent of Total			0.0%	1.0%	0.0%	91.4%	7.5%	100.0%

Source: ADF&G fish ticket data *Unpublished.*

Table 5-2. Historical commercial salmon catch and effort information for the Eastern District of Lower Cook Inlet, 1990-2010 (includes both common property and hatchery).

Year	No. Permits	No. Landings	King	Sockeye	Coho	Pink	Chum	Total
1990	10	59	0	7,682	7,645	11,815	307	27,449
1991	8	63	1	4,703	7,283	167,250	80	179,317
1992	9	57	0	432	3,136	60,007	86	63,661
1993	8	44	0	1,824	8,924	10,616	9	21,373
1994	8	78	1	9,661	10,410	44,987	2,792	67,851
1995	21	139	0	46,556	5,192	12,000	330	64,078
1996	19	167	0	44,719	3,932	35	223	48,909
1997	11	191	0	33,783	5,344	1	66	39,194
1998	9	186	1	44,274	14,365	38,829	51	97,520
1999	13	194	1	135,305	3,794	1,930	1,232	142,262
2000	15	259	1	64,099	7,408	4,473	1,540	77,521
2001	5	251	0	13,809	3,947	0	6	17,762
2002	9	213	0	17,376	4,432	0	5	21,813
2003	12	200	0	10,352	5,886	0	19	16,257
2004	10	50	0	16,645	5,615	0	1	22,261
2005	17	241	0	56,951	6,309	13,500	385	77,145
2006	15	190	0	67,048	3,786	3,460	270	74,564
2007	13	129	0	23,864	2,850	0	53	26,767
2008	13	210	0	90,096	1,625	0	35	91,756
2009	2[a]	273	0	137,469	1,708	0	0	139,177
2010	2[a]	70	0	21,732	1,100	0	0	22,832
1990-2009 Avg.	11	160	0	41,342	5,680	18,445	375	65,842
1990-1999 Avg.	12	118	0	32,914	7,003	34,747	518	75,181
2000-2009 Avg.	11	202	0	49,771	4,357	2,143	231	56,502
2010 Percent of Total			0.0%	95.2%	4.8%	0.0%	0.0%	100.0%

Source: ADF&G fish ticket data *Unpublished.*

[a] Hatchery permits only.

Table 5-3. Commercial sockeye salmon catches in waters of Resurrection Bay in the Eastern District of Lower Cook Inlet, 1967-1976.

Year	Commercial Catch		
	Purse Seine	Drift Gillnet	Total
1967	90	[a]	
1968	8,734	65,750	74,484
1969	294	99,109	99,403
1970	60	1,598	1,658
1971	0	2,071	2,071
1972	5	77	82
1973	0	0	0
1974	0	0	0
1975	0	0	0
1976	2	[b]	2

Source: ADF&G fish ticket data *Unpublished.*

[a] Use of drift gillnet gear repealed from Resurrection Bay in 1964, but reinstituted in 1968.

[b] Use of drift gillnet gear repealed from Resurrection Bay in 1976.

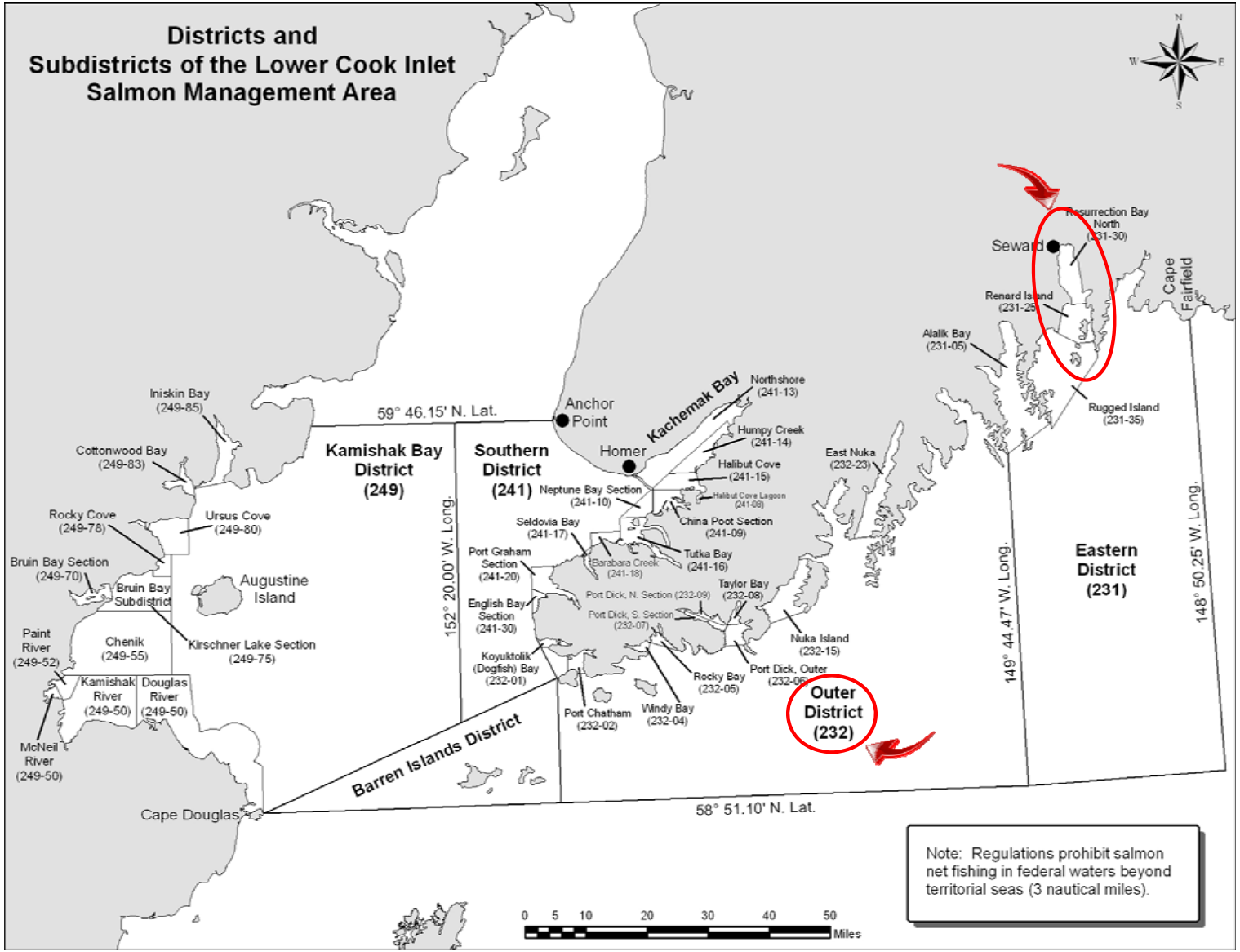

Figure 5-1. Map of the Lower Cook Inlet commercial salmon fishing management area, showing districts and subdistricts.

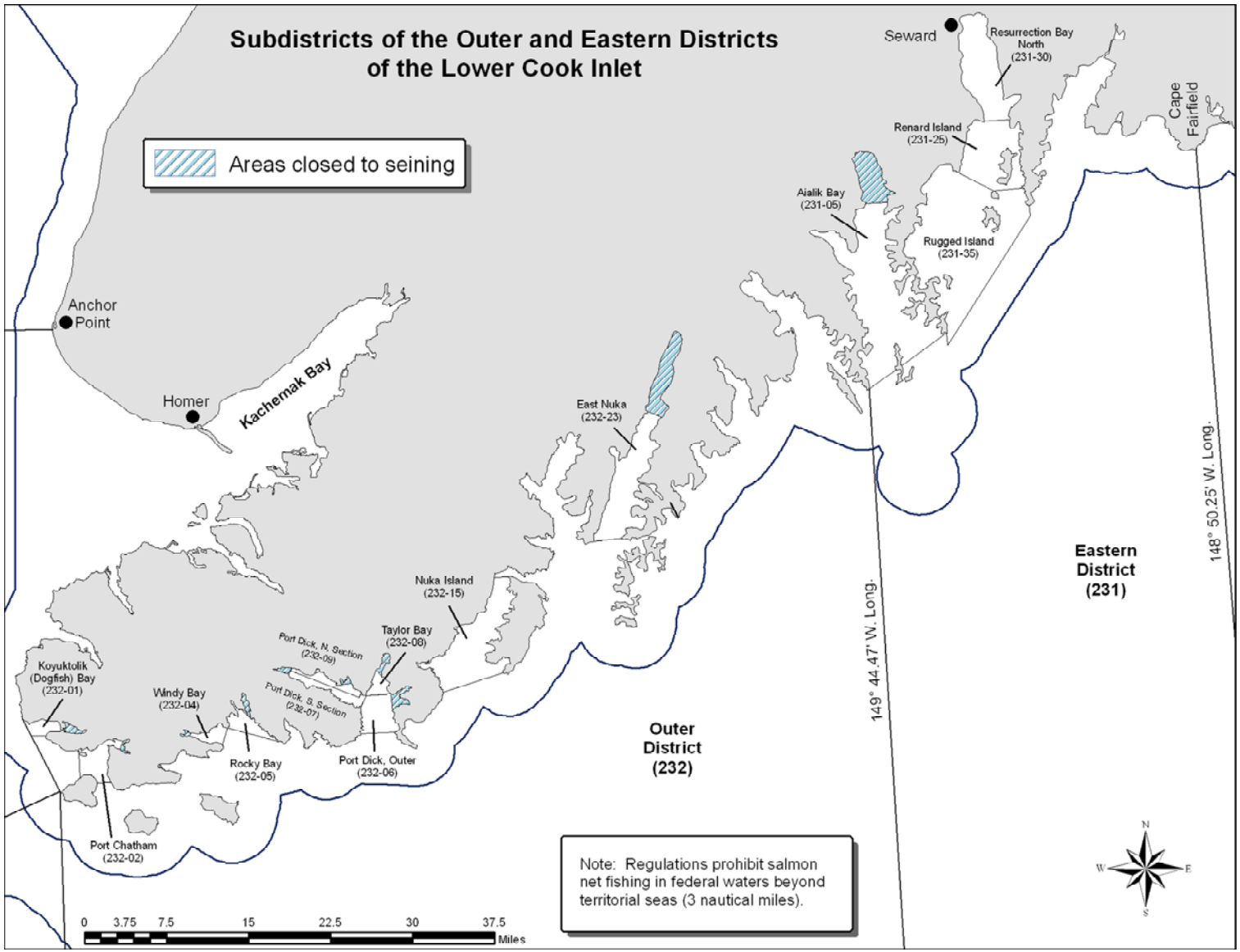

Figure 5-2. Map of the Outer and Eastern Districts of Lower Cook Inlet showing subdistricts used for commercial salmon fisheries management.

PROPOSAL 6 - 5 AAC 21.3XX. New Section.

PROPOSED BY: Leroy Cabana.

WHAT WOULD THE PROPOSAL DO? Adoption of this proposal would create a "terminal harvest area" for commercial salmon fishing in waters of the Kirschner Lake Section of Bruin Bay Subdistrict, located in the Kamishak Bay District of Lower Cook Inlet (LCI) (Figures 6-1 and 6-2). However, via a request for clarification through personal communication with the proponent, the intent of this proposal is to repeal the Kirschner Lake Special Harvest Area (SHA) in regulation (*5 AAC 21.373. Trail Lakes Hatchery Sockeye Salmon Management Plan (e)(3)*), thus allowing the common property fleet to fish these waters whenever circumstances justify commercial openings.

WHAT ARE THE CURRENT REGULATIONS? Waters of the Kirschner Lake SHA are defined in *5 AAC 21.373. Trail Lakes Hatchery Sockeye Salmon Management Plan (e)(3)* as "the marine waters of the Bruin Bay Subdistrict in the Kamishak Bay District northwest and shoreward of a line from 59° 25.17' N. lat., 153° 50.50' W. long. to 59° 23.17' N. lat., 153° 56.90' W. long.". Paragraph *(a)* of that management plan also states that "The department, in consultation with the hatchery operator, shall primarily manage the Lower Cook Inlet Special Harvest Areas salmon fisheries….to achieve the Cook Inlet Aquaculture Association cost recovery harvest goal and the broodstock escapement goals for the Trail Lake Hatchery", while paragraph *(b)* specifies that the Kirschner Lake SHA "will remain closed to commercial fishing until the cost recovery goal and broodstock goal for the Trail Lake Hatchery is achieved or the department projects that the goals will be achieved".

WHAT WOULD BE THE EFFECT IF THE PROPOSAL WERE ADOPTED? If the intent of this proposal is realized (repealing the Kirschner Lake Special Harvest Area in regulation), Cook Inlet Aquaculture Association (CIAA) would no longer retain priority to conduct unimpeded hatchery harvest of salmon within these waters prior to attainment of the hatchery's established annual revenue goal. Common property seine fishing could, therefore, be allowed without conflicting with hatchery fishing in the same waters. Such action would reduce CIAA's ability to harvest hatchery fish returning to the Kirschner Lake enhancement site for cost recovery purposes, but it would increase the common property fleet's opportunity to target natural runs of pink salmon transiting these waters as they return to nearby streams.

BACKGROUND: Kirschner Lake, located about 75 miles from Homer on the west side of LCI in Kamishak Bay District, is a system naturally barren of salmon due to a barrier falls located in the outlet stream at the saltwater tide line. In an effort to boost commercial sockeye salmon harvest opportunities in LCI, the department began a sockeye salmon fry stocking project in Kirschner Lake around 1987. CIAA subsequently took over this project and has continued conducting enhancement activities at this location. Since escapement is not possible, all fish returning to this stocking site are targeted for harvest.

Typical management strategy dictates that waters of Kirschner Lake SHA are opened to continuous hatchery cost recovery fishing beginning in late June, while simultaneously remaining closed to common property seining. Revenue generated from hatchery catches is continuously monitored to measure progress made towards achievement of CIAA's established annual revenue

goal. If the CIAA revenue goal is achieved, or its achievement can be reliably projected, then waters of the Kirschner Lake SHA are closed to hatchery fishing and opened to common property fishing (Tables 6-1 – 6-3).

During the 2009 and 2010 seasons, CIAA ultimately required all sockeye salmon returning to their LCI enhancement sites for cost recovery and/or broodstock purposes; thus, no common property seine openings were allowed in the Kirschner Lake SHA during those two seasons. Sockeye catches from these waters totaled 18,800 fish in 2009 and 8,900 fish in 2010.

In some years, large runs of pink salmon to nearby Bruin Bay may go underutilized or not fished at all as long as waters of the Kirschner Lake SHA remain closed to common property fishing and/or as long as the Kirschner Lake SHA boundaries are maintained. The exceedingly shallow nature of Bruin Bay, coupled with windy conditions and extreme tides that produce treacherous currents, can make seine fishing inside waters of Bruin Bay a dangerous and ineffective undertaking. However, fishermen have historically been able to successfully target pink salmon returning to Bruin Bay River by fishing inside waters of the Kirschner Lake SHA as the fish transit or stage in these waters. On the other hand, opening waters of a portion(s) of Kirschner Lake SHA to common property fishing may result in increased incidental catches of sockeye salmon bound for the Kirschner Lake stocking site, thus diminishing opportunity for CIAA to achieve their annual revenue goal.

Despite encountering difficulty inducing consistent and timely hatchery fishing effort in waters of the Kirschner Lake SHA, CIAA relies on contracted common property seiners to act as "hatchery agents" to harvest fish. Hatchery agents traditionally wait for a sufficient "buildup" of sockeye salmon prior to attempting harvest efforts to minimize the time spent on this endeavor so they can quickly return to common property fishing. At times, this has resulted in delayed harvest of the staging fish, which in turn, has often caused a reduction in product quality and hence, lower prices paid to CIAA.

DEPARTMENT COMMENTS: The department is **NEUTRAL** on this allocative proposal.

COST ANALYSIS: Approval of this proposal is not expected to result in an additional direct cost for a private person to participate in this fishery.

Table 6-1. Historical commercial salmon catch and effort information for the Kamishak Bay District of Lower Cook Inlet, 1990-2010 (seine gear only allowed).

Year	No. Permits	No. Landings	King	Sockeye	Coho	Pink	Chum	Total
1990	30	318	12	96,397	26	2,448	3,597	102,480
1991	34	482	17	136,612	2,337	47,833	7,853	194,652
1992	24	235	39	68,847	1,488	2,594	20,051	93,019
1993	15	93	4	67,650	3	4,205	600	72,462
1994	9	18	0	35,296	1,897	33	14	37,240
1995	8	29	2	36,427	6,084	169,054	10,302	221,869
1996	[a]	[a]	1	31,604	1	36	27	31,669
1997	4	7	0	11,733	0	293	7	12,033
1998	5	6	0	27,502	0	1,776	29	29,307
1999	7	10	0	46,913	0	807	23	47,743
2000	11	45	1	31,636	7	6,214	66,072	103,930
2001	8	44	2	39,712	9	1,397	84,766	125,886
2002	6	57	0	33,921	54	446,146	34,641	514,762
2003	[a]	[a]	0	51,253	4	12,005	29,800	93,062
2004	8	48	0	51,657	5,367	12,969	177,395	247,388
2005	9	39	0	64,987	92	7,761	83,943	156,783
2006	6	38	0	64,577	24,269	82,477	56,619	227,942
2007	5	27	0	197,228	5	11,451	91	208,775
2008	12	47	2	183,512	21	28,159	73,297	284,991
2009	10	88	0	84,534	0	133,298	36,574	254,406
2010	10	58	10	14,470	573	2,490	70,785	88,328
1990-2009 Avg.	11	83	4	68,100	2,083	48,548	34,285	153,020
1990-1999 Avg.	14	120	8	55,898	1,184	22,908	4,250	84,247
2000-2009 Avg.	8	45	1	80,302	2,983	74,188	64,320	221,793
2010 Percent of Total			0.0%	16.4%	0.6%	2.8%	80.1%	100.0%

Source: ADF&G fish ticket data *Unpublished.*

[a] To comply with **AS 16.05.815** ***Confidential nature of certain reports and records***, effort data has been masked where fewer than 4 vessels fished in a given area.

Table 6-2. Historical sockeye salmon returns to the Kirschner Lake enhancement project site in the Kamishak Bay District of Lower Cook Inlet, 1990-2010.

Year	Common Property Harvest	Hatchery Harvest	Unharvested Fish (est.)	Total Return
1990	14,465			14,465
1991	42,654			42,654
1992	40,043			40,043
1993	36,322	3,362		39,684
1994	14,465	16,787		31,252
1995	11,110	5,350		16,460
1996	18,093	13,511		31,604
1997	2,842	6,125	1,750	10,717
1998	8,112	19,390	2,000	29,502
1999	22,256	17,504	800	40,560
2000	10,236	21,391		31,627
2001	9,198	29,740		38,938
2002	0	32,492		32,492
2003	11,671	38,741		50,412
2004	0	16,372	700	17,072
2005	0	14,969	1,500	16,469
2006	24,130	26,310		50,440
2007	7,725	27,719	2,000	37,444
2008	0	11,588	2,000	13,588
2009	0	18,771	350	19,121
2010	0	8,858		8,858
1990-2009 Avg.	13,666	18,831	1,388	30,227
1990-1999 Avg.	21,036	11,718	1,517	29,694
2000-2009 Avg.	5,724	22,450	1,310	28,769

Table 6-3. Historical commercial catches of pink salmon in Bruin Bay Subdistrict (includes both Bruin Bay and Kirschner Lake sections) and pink salmon escapements, in thousands of fish, into Bruin Bay River in the Kamishak Bay District of Lower Cook Inlet, 1990-2010.

	Commercial Pink Salmon Catch			Est. Pink Salmon Escapement
Year	No. Permits	No. Landings	No. Fish	into Bruin Bay River (Esc. Goal: 18,650-155,750)
1990	11	21	1,722	19,000
1991	18	160	45,059	74,900
1992	16	106	1,851	3,200
1993	10	39	4,082	86,400
1994	[a]	[a]	29	5,900
1995	6	17	131,748	307,300
1996	[a]	[a]	36	27,500
1997	[a]	[a]	293	162,700
1998	5	6	1,776	134,900
1999	[a]	[a]	807	2,900
2000	[a]	[a]	5,452	176,700
2001	[a]	[a]	1,266	18,500
2002	5	33	333,703	1,598,500
2003	[a]	[a]	12,005	138,700
2004	[a]	[a]	1,453	66,500
2005	[a]	[a]	2,993	98,300
2006	4	14	52,811	515,100
2007	[a]	[a]	9,818	350,400
2008	[a]	[a]	1,762	150,700
2009	6	12	13,165	1,067,400
2010	1[b]	1	58	40,300
1990-2009 Avg.	5	23	31,092	250,300
1990-1999 Avg.	7	36	18,740	82,500
2000-2009 Avg.	3	9	43,443	418,100

Source: ADF&G fish ticket data *Unpublished.*

[a] To comply with **AS 16.05.815** ***Confidential nature of certain reports and records***, effort data has been masked where fewer than 4 vessels fished in a given area.

[b] Hatchery permit only.

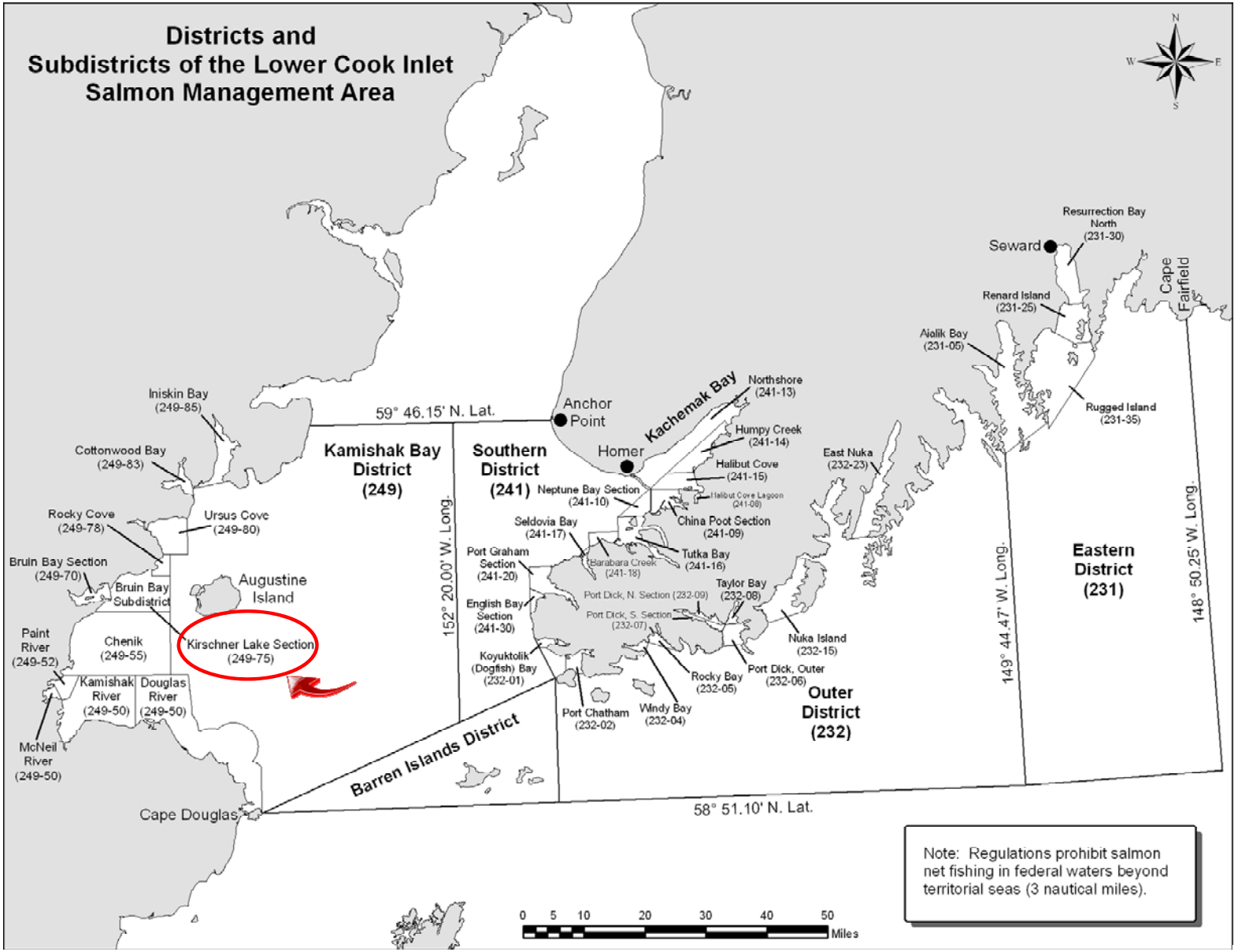

Figure 6-1. Map of the Lower Cook Inlet commercial salmon fishing management area, showing districts and subdistricts.

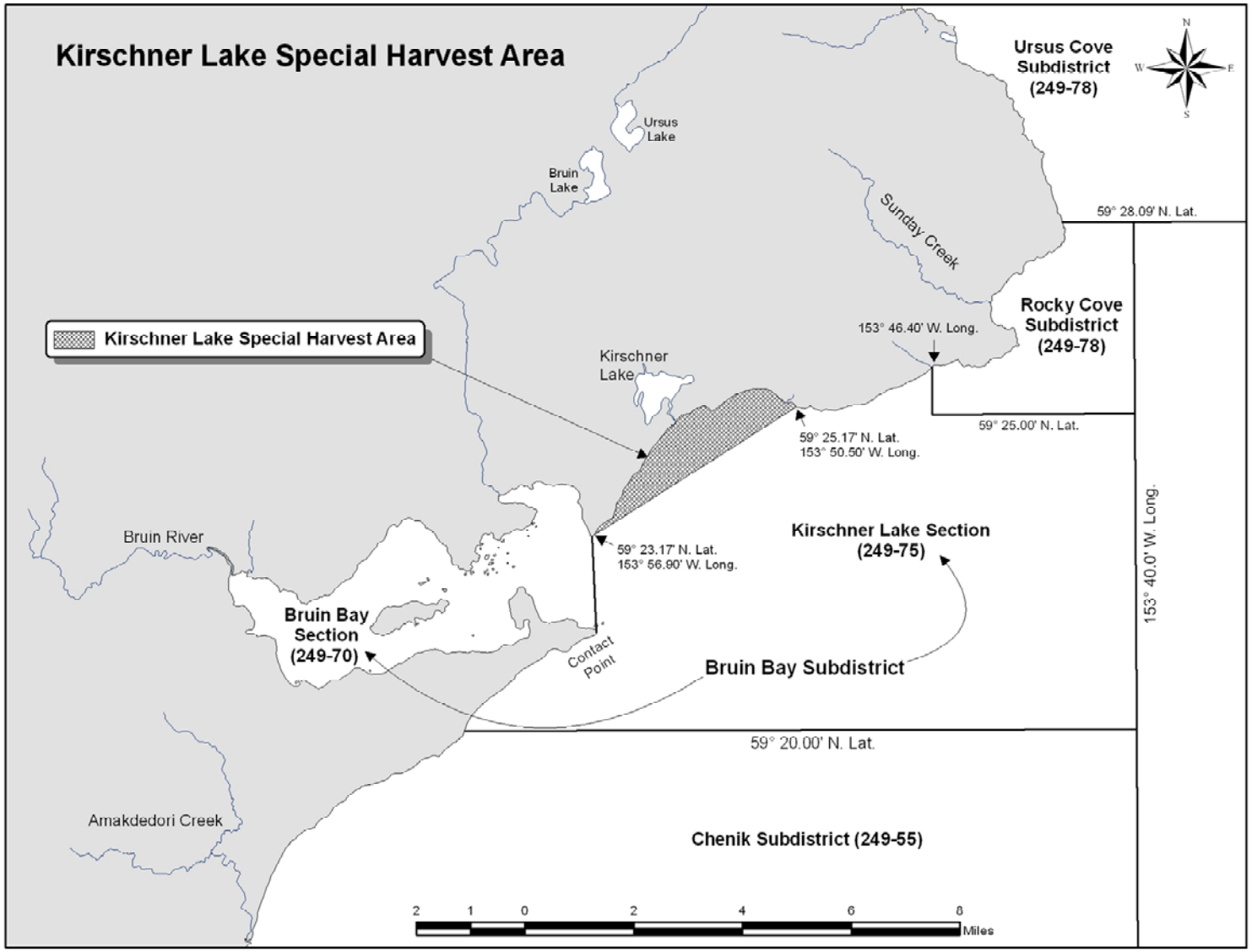

Figure 6-2. Map of the Kirschner Lake Special Harvest Area for Cook Inlet Aquaculture Association hatchery fishing in the Bruin Bay Subdistrict of the Kamishak Bay District in Lower Cook Inlet.

PROPOSAL 7 - 5 AAC 21.330. Gear.

PROPOSED BY: United Cook Inlet Drift Association.

WHAT WOULD THE PROPOSAL DO? Adoption of this proposal would establish gillnets, presumably both drift and set, as legal gear for commercial salmon fishing in the Southern, Barren Islands, Outer, and Eastern districts of Lower Cook Inlet (LCI), and in the Chinitna Bay Subdistrict of Upper Cook Inlet (UCI) (Figure 7-1).

WHAT ARE THE CURRENT REGULATIONS? Purse seines are the only legal gear type allowed for commercial salmon fishing in the Outer and Eastern Districts of LCI. In the Southern District, both purse seine and set gillnet are legal gear types for commercial salmon fishing, though the latter is restricted to relatively small beach areas. Commercial salmon fishing is not allowed in Barren Islands District; therefore, there are currently no legal gear types or fishing seasons. Purse seine, drift gillnet, and set gillnet are already legal gear types within Chinitna Bay Subdistrict, which is located in the UCI management area's Central District. It is unknown if use of drift gillnets would create user conflicts in areas outside of Resurrection Bay.

King and coho salmon are specifically allocated to the recreational fishery in Resurrection Bay of the Eastern District (*5 AAC 21.376. Resurrection Bay Salmon Management Plan*). Conservation of these species in the commercial salmon fishery is accomplished through a regulation that prohibits the taking of king and coho salmon by purse seine (5 AAC 21.350 (g)(2)).

WHAT WOULD BE THE EFFECT IF THE PROPOSAL WERE ADOPTED? If this proposal were adopted, department management decisions would take into account the potential cumulative harvesting power and effectiveness of the combined gear types as weighed against the available harvestable surplus in these areas. With the additional gear, the harvest of salmon could easily become more difficult to control and assess, and a more conservative approach towards fishery openings would likely result (i.e., shorter duration, less open area to fish, etc.) in order to effectively control the harvest. Commercial harvests of king and coho salmon, which are now currently allocated to recreational anglers, would likely occur.

BACKGROUND: Since statehood, purse seine has been the primary allowable gear type in the commercial salmon fisheries of LCI, while set gillnet gear has traditionally been allowed, but only in limited areas of the Southern District (Kachemak Bay). The only area where drift gillnetting had been allowed in LCI was in the Eastern District, but it was eliminated in 1964. Due to two years of expected strong sockeye salmon runs to Bear Lake in Resurrection Bay (Eastern District), drift gillnetting was reinstituted in those waters in 1968, with the stipulation that it could only be annually employed prior to July 1. Eastern District (Resurrection Bay) sockeye salmon catches peaked in 1968 and 1969 at 74,000 and 99,000 fish, respectively, while effort peaked at 104 boats in 1969. During those same years, purse seiners took only about 5% of the total harvest. Drift gillnetting continued to remain an allowable gear in the Eastern District (prior to July 1) until 1976, when it was closed. Drift gillnetting has not been allowed for commercial salmon fishing in any other district of LCI. Harvests since 1990 are found in Tables 7-1 – 7-7.

Although *5 AAC 21.369. Lower Cook Inlet Seine Fishery Management Plan* does not address potential interception of stocks bound for areas other than UCI, the department has always interpreted the intent of the plan to include other stocks. Therefore, LCI management strategy has attempted to adhere to this plan and prevent this type of interception by only allowing the mobile fleet to fish inside and nearshore waters (i.e., terminal harvest areas). It should be noted that no anadromous waters have been documented on the Barren Islands; thus, any salmon harvested in adjacent area waters are bound for other areas.

DEPARTMENT COMMENTS: The department is **NEUTRAL** on the allocative aspects of this proposal. However, the department is **OPPOSED** to this proposal if the intent is to allow drift gillnetting to occur in offshore areas (Barren Islands District) or off capes and islands in waters of the Southern, Outer, and Eastern districts. Fishing in such areas is likely to produce catches of salmon bound for other management areas and/or other districts within LCI. Protection of non-target species (king and coho salmon) would be impossible in a drift gillnet fishery, resulting in conflicts with the recreational fishery in Resurrection Bay.

Wording of this proposal also seeks to establish both drift and set gillnets as legal gear types in waters of Chinitna Bay Subdistrict. Both are already legal gear for that area. Any public discussion and alternative action considered for these specific waters is more appropriately taken up at the February 2011 UCI Board of Fisheries meeting.

COST ANALYSIS: Approval of this proposal is not expected to result in an additional direct cost for a private person to participate in this fishery.

Table 7-1. Historical commercial salmon catch and effort information for the Outer District of Lower Cook Inlet, 1990-2010 (only seine gear allowed).

Year	No. Permits	No. Landings	King	Sockeye	Coho	Pink	Chum	Total
1990	47	265	2	17,404	74	191,320	614	209,414
1991	35	255	2	6,408	12	359,664	14,337	380,423
1992	5	6	0	572	1	146	181	900
1993	21	143	2	4,613	119	159,159	970	164,863
1994	6	17	0	5,930	993	13,200	32	20,155
1995	13	78	12	17,642	1,272	192,098	474	211,498
1996	[a]	[a]	0	14,999	96	7,199	3	22,297
1997	9	27	0	6,255	63	128,373	1,575	136,266
1998	10	41	0	15,991	45	102,172	611	118,819
1999	8	29	3	51,117	1,482	32,484	2,062	87,148
2000	11	72	2	21,623	20	306,555	302	328,502
2001	5	23	0	7,339	5	48,559	408	56,311
2002	11	86	0	21,154	74	569,955	3,810	594,993
2003	6	21	1	26,615	4	281,663	137	308,420
2004	9	25	2	11,082	13	42,636	27,911	81,644
2005	5	20	0	1	3	110,195	12,524	122,723
2006	11	162	3	3,198	1,139	1,121,892	12,883	1,139,115
2007	5	31	1	32,461	113	147,409	49	180,033
2008	16	146	0	1,704	0	467,592	100,819	570,115
2009	11	150	1	8	9	853,037	35,126	888,181
2010	10	101	0	3,003	16	272,427	22,463	297,909
1990-2009 Avg.	12	80	2	13,306	277	256,765	10,741	281,091
1990-1999 Avg.	16	87	2	14,093	416	118,582	2,086	135,178
2000-2009 Avg.	9	74	1	12,519	138	394,949	19,397	427,004
2010 Percent of Total			0.0%	1.0%	0.0%	91.4%	7.5%	100.0%

Source: ADF&G fish ticket data *Unpublished.*

[a] To comply with **AS 16.05.815** ***Confidential nature of certain reports and records***, effort data has been masked where fewer than 4 vessels fished in a given area.

Table 7-2. Historical commercial salmon catch and effort information for the Kamishak Bay District of Lower Cook Inlet, 1990-2010 (only seine gear allowed).

Year	No. Permits	No. Landings	King	Sockeye	Coho	Pink	Chum	Total
1990	30	318	12	96,397	26	2,448	3,597	102,480
1991	34	482	17	136,612	2,337	47,833	7,853	194,652
1992	24	235	39	68,847	1,488	2,594	20,051	93,019
1993	15	93	4	67,650	3	4,205	600	72,462
1994	9	18	0	35,296	1,897	33	14	37,240
1995	8	29	2	36,427	6,084	169,054	10,302	221,869
1996	[a]	[a]	1	31,604	1	36	27	31,669
1997	4	7	0	11,733	0	293	7	12,033
1998	5	6	0	27,502	0	1,776	29	29,307
1999	7	10	0	46,913	0	807	23	47,743
2000	11	45	1	31,636	7	6,214	66,072	103,930
2001	8	44	2	39,712	9	1,397	84,766	125,886
2002	6	57	0	33,921	54	446,146	34,641	514,762
2003	[a]	[a]	0	51,253	4	12,005	29,800	93,062
2004	8	48	0	51,657	5,367	12,969	177,395	247,388
2005	9	39	0	64,987	92	7,761	83,943	156,783
2006	6	38	0	64,577	24,269	82,477	56,619	227,942
2007	5	27	0	197,228	5	11,451	91	208,775
2008	12	47	2	183,512	21	28,159	73,297	284,991
2009	10	88	0	84,534	0	133,298	36,574	254,406
2010	10	58	10	14,470	573	2,490	70,785	88,328
1990-2009 Avg.	11	83	4	68,100	2,083	48,548	34,285	153,020
1990-1999 Avg.	14	120	8	55,898	1,184	22,908	4,250	84,247
2000-2009 Avg.	8	45	1	80,302	2,983	74,188	64,320	221,793
2010 Percent of Total			0.0%	16.4%	0.6%	2.8%	80.1%	100.0%

Source: ADF&G fish ticket data *Unpublished.*

[a] To comply with **AS 16.05.815** ***Confidential nature of certain reports and records***, effort data has been masked where fewer than 4 vessels fished in a given area.

Table 7-3. Historical commercial salmon catch and effort information for the Southern District of Lower Cook Inlet, 1990-2010 (seine and set gillnet allowed; combined totals).

Year	No. Permits	No. Landings	King	Sockeye	Coho	Pink	Chum	Total
1990	77	1,349	1,546	82,412	1,552	178,087	2,433	266,030
1991	72	1,353	1,399	170,224	9,415	253,962	1,962	436,962
1992	75	1,265	1,852	106,793	1,277	417,021	1,885	528,828
1993	61	1,049	2,162	156,924	4,431	692,786	2,788	859,091
1994	43	951	1,230	64,531	1,373	1,589,709	2,631	1,659,474
1995	64	1,439	2,289	164,798	5,161	2,475,312	4,530	2,652,090
1996	57	1,094	1,180	359,134	9,576	445,520	3,511	818,921
1997	46	1,178	1,261	188,402	5,597	2,685,764	4,260	2,885,284
1998	62	1,151	1,070	196,262	2,243	1,315,042	3,956	1,518,573
1999	60	897	1,760	243,444	2,762	1,105,267	4,624	1,357,857
2000	55	654	1,184	123,574	768	1,070,065	5,340	1,200,931
2001	40	576	986	155,411	2,706	542,975	3,789	705,867
2002	46	550	1,553	218,203	3,769	953,960	4,803	1,182,288
2003	48	916	1,179	556,037	5,408	563,043	5,730	1,131,397
2004	41	407	1,656	50,699	1,431	2,461,950	1,372	2,517,108
2005	43	610	610	110,739	2,722	2,175,386	1,750	2,291,207
2006	40	503	627	89,522	3,036	263,749	2,182	359,116
2007	31	380	466	112,672	3,351	128,551	1,584	246,624
2008	33	292	188	132,279	1,320	9,949	1,579	145,315
2009	21	181	83	58,301	969	3,012	2,274	64,639
2010	22	153	29	53,859	174	3,294	1,507	58,863
1990-2009 Avg.	51	840	1,214	167,018	3,443	966,556	3,149	1,141,380
1990-1999 Avg.	62	1,173	1,575	173,292	4,339	1,115,847	3,258	1,298,311
2000-2009 Avg.	40	507	853	160,744	2,548	817,264	3,040	984,449
2010 Percent of Total			0.1%	91.5%	0.3%	5.6%	2.6%	100.0%

Source: ADF&G fish ticket data *Unpublished.*

Table 7-4. Historical commercial seine only salmon catch and effort information for the Southern District of Lower Cook Inlet, 1990-2010 (includes common property and hatchery combined).

Year	No. Permits	No. Landings	King	Sockeye	Coho	Pink	Chum	Total
1990	57	781	185	66,549	506	165,441	495	233,176
1991	50	868	556	142,560	4,388	148,143	357	296,004
1992	55	749	564	89,791	429	401,063	198	492,045
1993	42	691	1,073	131,367	1,341	271,303	197	405,281
1994	27	531	127	50,527	300	1,566,088	212	1,617,254
1995	41	892	211	145,392	1,597	2,433,658	572	2,581,430
1996	31	473	126	283,862	3,797	430,707	719	719,211
1997	21	443	126	121,184	1,122	2,621,602	94	2,744,128
1998	37	624	118	163,929	1,186	1,268,779	201	1,434,213
1999	39	675	269	215,138	1,388	1,099,919	289	1,317,003
2000	31	432	165	97,071	147	1,048,220	126	1,145,729
2001	22	334	121	126,908	895	529,582	302	657,808
2002	22	229	40	150,571	1,376	947,219	122	1,099,328
2003	24	466	301	427,327	3,117	555,718	732	987,195
2004	22	205	256	34,612	267	2,461,116	138	2,496,389
2005	26	371	85	95,070	817	2,175,045	424	2,271,441
2006	18	263	47	75,303	610	251,460	163	327,583
2007	15	187	27	83,802	1,735	128,551	147	214,262
2008	15	127	40	105,460	721	8,065	185	114,471
2009	2[a]	8	0	20,081	1	876	0	20,958
2010	1[a]	27	0	39,094	3	188	4	39,289
1990-2009 Avg.	30	467	222	131,325	1,287	925,628	284	1,058,745
1990-1999 Avg.	40	673	336	141,030	1,605	1,040,670	333	1,183,975
2000-2009 Avg.	20	262	108	121,621	969	810,858	234	933,516
2010 Percent of Total			0.0%	99.5%	0.0%	0.5%	0.0%	100.0%

Source: ADF&G fish ticket data *Unpublished.*

[a] Hatchery permits only.

Table 7-5. Historical commercial set gillnet only salmon catch and effort information for the Southern District of Lower Cook Inlet, 1990-2010.

Year	No. Permits	No. Landings	King	Sockeye	Coho	Pink	Chum	Total
1990	20	568	1,361	15,863	1,046	12,646	1,938	32,854
1991	20	472	842	20,525	5,011	3,954	1,577	31,909
1992	20	516	1,288	17,002	848	15,958	1,687	36,783
1993	17	330	1,089	14,791	3,088	12,008	2,591	33,567
1994	16	420	1,103	14,004	1,073	23,621	2,419	42,220
1995	23	547	2,078	19,406	3,564	41,654	3,958	70,660
1996	24	606	1,054	69,338	5,779	14,813	2,792	93,776
1997	25	725	1,135	59,401	4,475	64,162	4,166	133,339
1998	24	518	952	26,131	1,057	24,403	3,754	56,297
1999	20	220	1,491	27,646	1,374	5,348	4,335	40,194
2000	24	222	1,019	26,503	621	21,845	5,214	55,202
2001	18	242	865	28,503	1,811	13,393	3,487	48,059
2002	24	311	1,513	46,812	2,393	6,741	4,681	62,140
2003	24	424	878	81,722	2,291	7,325	4,998	97,214
2004	19	202	1,400	16,087	1,164	834	1,234	20,719
2005	17	239	525	15,669	1,905	341	1,326	19,766
2006	22	240	580	14,219	2,426	12,289	2,019	31,533
2007	16	193	439	28,870	1,616	0	1,437	32,362
2008	18	165	148	26,819	599	1,884	1,394	30,844
2009	19	173	83	38,220	968	2,136	2,274	43,681
2010	21	126	29	14,765	171	3,106	1,503	19,574
1990-2009 Avg.	21	367	992	30,377	2,155	14,268	2,864	50,656
1990-1999 Avg.	21	492	1,239	28,411	2,732	21,857	2,922	57,160
2000-2009 Avg.	20	241	745	32,342	1,579	6,679	2,806	44,152
2010 Percent of Total			0.1%	75.4%	0.9%	15.9%	7.7%	100.0%

Source: ADF&G fish ticket data *Unpublished.*

Table 7-6. Historical commercial salmon catch and effort information for the Eastern District of Lower Cook Inlet, 1990-2010 (includes both common property and hatchery).

Year	No. Permits	No. Landings	King	Sockeye	Coho	Pink	Chum	Total
1990	10	59	0	7,682	7,645	11,815	307	27,449
1991	8	63	1	4,703	7,283	167,250	80	179,317
1992	9	57	0	432	3,136	60,007	86	63,661
1993	8	44	0	1,824	8,924	10,616	9	21,373
1994	8	78	1	9,661	10,410	44,987	2,792	67,851
1995	21	139	0	46,556	5,192	12,000	330	64,078
1996	19	167	0	44,719	3,932	35	223	48,909
1997	11	191	0	33,783	5,344	1	66	39,194
1998	9	186	1	44,274	14,365	38,829	51	97,520
1999	13	194	1	135,305	3,794	1,930	1,232	142,262
2000	15	259	1	64,099	7,408	4,473	1,540	77,521
2001	5	251	0	13,809	3,947	0	6	17,762
2002	9	213	0	17,376	4,432	0	5	21,813
2003	12	200	0	10,352	5,886	0	19	16,257
2004	10	50	0	16,645	5,615	0	1	22,261
2005	17	241	0	56,951	6,309	13,500	385	77,145
2006	15	190	0	67,048	3,786	3,460	270	74,564
2007	13	129	0	23,864	2,850	0	53	26,767
2008	13	210	0	90,096	1,625	0	35	91,756
2009	2[a]	273	0	137,469	1,708	0	0	139,177
2010	2[a]	70	0	21,732	1,100	0	0	22,832
1990-2009 Avg.	11	160	0	41,342	5,680	18,445	375	65,842
1990-1999 Avg.	12	118	0	32,914	7,003	34,747	518	75,181
2000-2009 Avg.	11	202	0	49,771	4,357	2,143	231	56,502
2010 Percent of Total			0.0%	95.2%	4.8%	0.0%	0.0%	100.0%

Source: ADF&G fish ticket data *Unpublished.*

[a] Hatchery permits only.

Table 7-7. Historical commercial salmon catch and effort information for Chinitna Bay Subdistrict in Upper Cook Inlet, 1990-2010 (combined drift and set gillnet).

Year	No. Permits	No. Landings	King	Sockeye	Coho	Pink	Chum	Total
1990	40	112	7	1,554	7,253	164	10,650	19,628
1991	10	49	2	2,464	3,302	236	14,943	20,947
1992	14	41	3	1,002	4,932	114	3,562	9,613
1993	8	30	6	1,572	2,104	103	537	4,322
1994	18	55	6	1,054	6,715	110	6,775	14,660
1995	21	99	75	1,816	10,611	655	11,095	24,252
1996	[a]	[a]	0	345	230	1	140	716
1997	[a]	[a]	0	172	11	11	102	296
1998	[a]	[a]	0	163	329	46	550	1,088
1999	[a]	[a]	9	709	45	75	121	959
2000	[b]	[b]	[b]					
2001	[b]	[b]	[b]					
2002	[b]	[b]	[b]					
2003	[b]	[b]	[b]					
2004	[b]	[b]	[b]					
2005								
2006	9	10	3	108	1,800	41	34	1,986
2007	[a]	[a]	0	0	414	0	0	414
2008	12	18	0	4	3,079	15	430	3,528
2009	8	12	1	18	3,085	11	372	3,487
2010 [c]	[c]	[c]	0	10	1,339	9	511	1,869
1990-2009 Avg.	11	33	8	784	3,136	113	3,522	7,564
1990-1999 Avg.	12	41	11	1,085	3,533	152	4,848	9,648
2000-2009 Avg.	8	11	1	33	2,095	17	209	2,354
2010 Percent of Total			0.0%	0.6%	71.6%	0.5%	27.3%	100.0%

Source: ADF&G fish ticket data *Unpublished.*

[a] To comply with **AS 16.05.815** ***Confidential nature of certain reports and records***, effort data has been masked where fewer than 4 vessels fished in a given area.

[b] Waters of Chinitna Bay were closed to commercial drift gillnet fishing, but open to commercial set gillnet fishing; no harvest reported.

[c] Preliminary; effort figures not available.

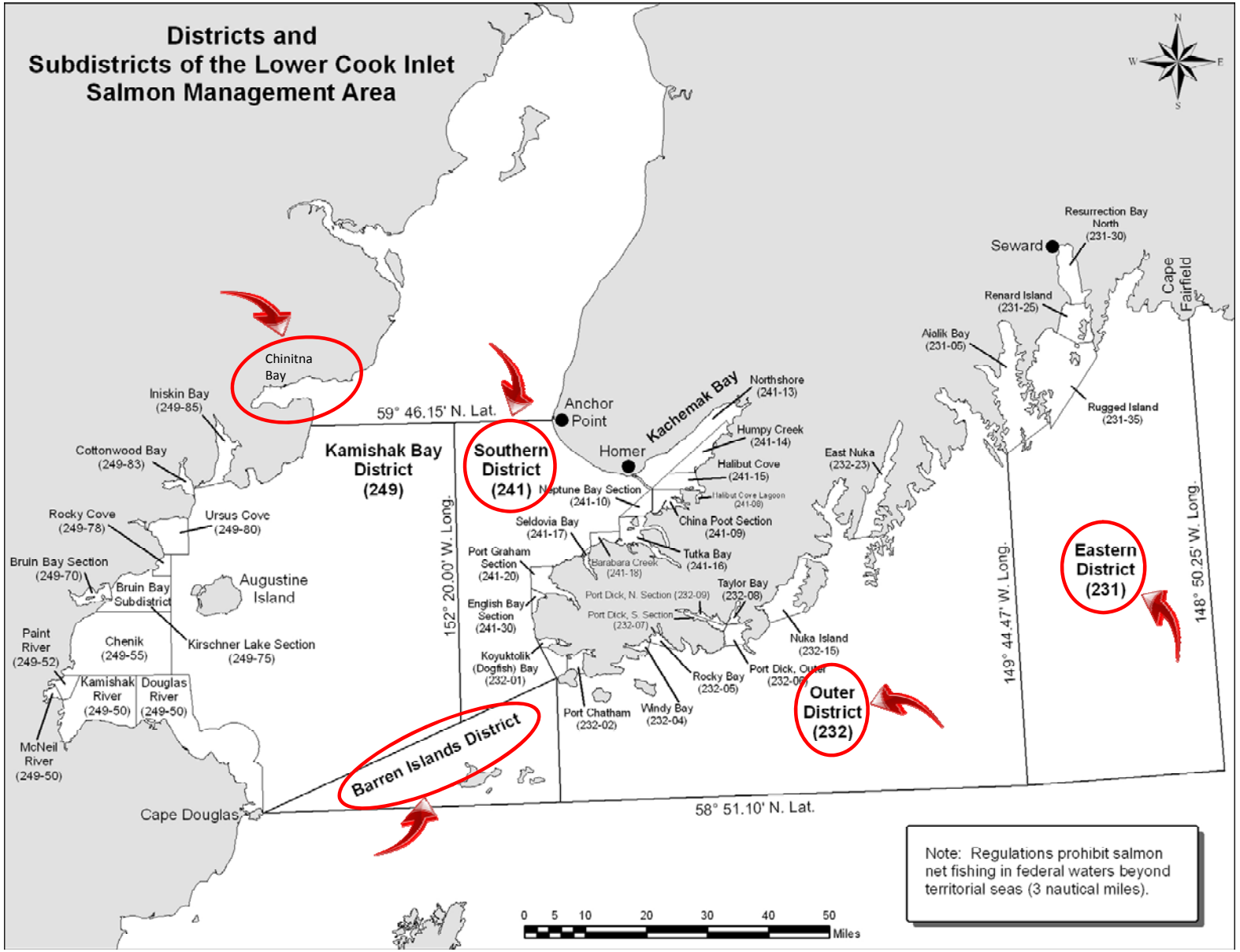

Figure 7-1. Map of the Lower Cook Inlet commercial salmon fishing management area, showing districts and subdistricts.

PROPOSAL 8 - 5 AAC 21.350 (g). Eastern District Closed waters.

PROPOSED BY: United Cook Inlet Drift Association.

WHAT WOULD THE PROPOSAL DO? Although the regulation cited in this proposal suggests the repeal of specific closed waters in the Eastern District of Lower Cook Inlet (LCI), as well as to repeal the regulation that prohibits the taking of king and coho salmon when commercial salmon fishing in Resurrection Bay, the described intent apparently seeks to allow gillnets as a legal gear type for commercial salmon fishing in the Eastern District (Figure 8-1), with emphasis on Resurrection Bay.

WHAT ARE THE CURRENT REGULATIONS? The only legal gear type allowed for commercial salmon fishing in the Eastern District of LCI is purse seine. King and coho salmon are specifically allocated to the recreational fishery in Resurrection Bay (*5 AAC 21.376. Resurrection Bay Salmon Management Plan*). Conservation of these species in the commercial salmon seine fishery is accomplished through a regulation that prohibits the taking of king and coho salmon by purse seine (5 AAC 21.350(g)(2)).

WHAT WOULD BE THE EFFECT IF THE PROPOSAL WERE ADOPTED? If this proposal were adopted, department management decisions would take into account the potential cumulative harvesting power and effectiveness of the combined gear types as weighed against the available harvestable surplus in these areas. With the additional gear, the harvest of salmon could easily become more difficult to control and assess, and a more conservative approach towards fishery openings would likely result (i.e., shorter duration, less open area to fish, etc.) in order to effectively control the harvest. Repealing 5 AAC 21.350(g)(2) would conflict with 5 AAC 21.373. *Trail Lakes Sockeye Salmon Management Plan* and 5 AAC 21.376. *Resurrection Bay Salmon Management Plan*. Commercial harvests of king and coho salmon, which are now currently allocated to recreational anglers, would likely occur. It is unknown if use of drift gillnets would create user conflicts in areas outside of Resurrection Bay.

BACKGROUND: Purse seine is the primary gear type in the commercial salmon fisheries of LCI and has been allowed in the Eastern, Outer, Southern, and Kamishak Bay districts, while set gillnet gear has traditionally been allowed only in limited areas of the Southern District (Kachemak Bay). Historical commercial salmon catch can be found in Table 8-1. Since the 1960s, keen public interest has directly influenced the salmon management strategy for commercial fishing in Resurrection Bay (Eastern District). Although all commercial fishing gear types, including trolling and drift gillnetting, have been legal at one time or another in Resurrection Bay, all gillnet gear was eliminated from those waters in 1964. Due to two years of expected strong sockeye salmon runs to Bear Lake in Resurrection Bay (Eastern District), drift gillnetting was reinstituted in 1968, with the stipulation that it could only be annually employed prior to July 1. Eastern District (Resurrection Bay) sockeye salmon catches peaked in 1968 and 1969 at 74,000 and 99,000 fish, respectively, while effort peaked at 104 boats in 1969 (Table 8-2). During those same years, purse seiners took only about 5% of the total harvest. Drift gillnetting continued to remain an allowable gear in the Eastern District (prior to July 1) until 1976, when it was repealed. Drift gillnetting has not been allowed for commercial salmon fishing in any other district of LCI.

DEPARTMENT COMMENTS: The department is **NEUTRAL** on this allocative proposal. However, protection of non-target species (king and coho salmon) would be impossible in a drift gillnet fishery, resulting in conflicts with the recreational fishery in Resurrection Bay.

COST ANALYSIS: Approval of this proposal is not expected to result in an additional direct cost for a private person to participate in this fishery.

Table 8-1. Historical commercial salmon catch and effort information for the Eastern District of Lower Cook Inlet, 1990-2010 (includes both common property and hatchery).

Year	No. Permits	No. Landings	King	Sockeye	Coho	Pink	Chum	Total
1990	10	59	0	7,682	7,645	11,815	307	27,449
1991	8	63	1	4,703	7,283	167,250	80	179,317
1992	9	57	0	432	3,136	60,007	86	63,661
1993	8	44	0	1,824	8,924	10,616	9	21,373
1994	8	78	1	9,661	10,410	44,987	2,792	67,851
1995	21	139	0	46,556	5,192	12,000	330	64,078
1996	19	167	0	44,719	3,932	35	223	48,909
1997	11	191	0	33,783	5,344	1	66	39,194
1998	9	186	1	44,274	14,365	38,829	51	97,520
1999	13	194	1	135,305	3,794	1,930	1,232	142,262
2000	15	259	1	64,099	7,408	4,473	1,540	77,521
2001	5	251	0	13,809	3,947	0	6	17,762
2002	9	213	0	17,376	4,432	0	5	21,813
2003	12	200	0	10,352	5,886	0	19	16,257
2004	10	50	0	16,645	5,615	0	1	22,261
2005	17	241	0	56,951	6,309	13,500	385	77,145
2006	15	190	0	67,048	3,786	3,460	270	74,564
2007	13	129	0	23,864	2,850	0	53	26,767
2008	13	210	0	90,096	1,625	0	35	91,756
2009	2[a]	273	0	137,469	1,708	0	0	139,177
2010	2[a]	70	0	21,732	1,100	0	0	22,832
1990-2009 Avg.	11	160	0	41,342	5,680	18,445	375	65,842
1990-1999 Avg.	12	118	0	32,914	7,003	34,747	518	75,181
2000-2009 Avg.	11	202	0	49,771	4,357	2,143	231	56,502
2010 Percent of Total			0.0%	95.2%	4.8%	0.0%	0.0%	100.0%

Source: ADF&G fish ticket data *Unpublished.*

[a] Hatchery permits only.

Table 8-2. Commercial sockeye salmon catches in waters of Resurrection Bay in the Eastern District of Lower Cook Inlet, 1967-1976.

Year	Commercial Catch		
	Purse Seine	Drift Gillnet	Total
1967	90	[a]	
1968	8,734	65,750	74,484
1969	294	99,109	99,403
1970	60	1,598	1,658
1971	0	2,071	2,071
1972	5	77	82
1973	0	0	0
1974	0	0	0
1975	0	0	0
1976	2	[b]	2

Source: ADF&G fish ticket data *Unpublished.*

[a] Drift gillnet gear repealed from waters of Resurrection Bay in 1964, but reinstituted in 1968.

[b] Drift gillnet gear repealed from waters of Resurrection Bay in 1976.

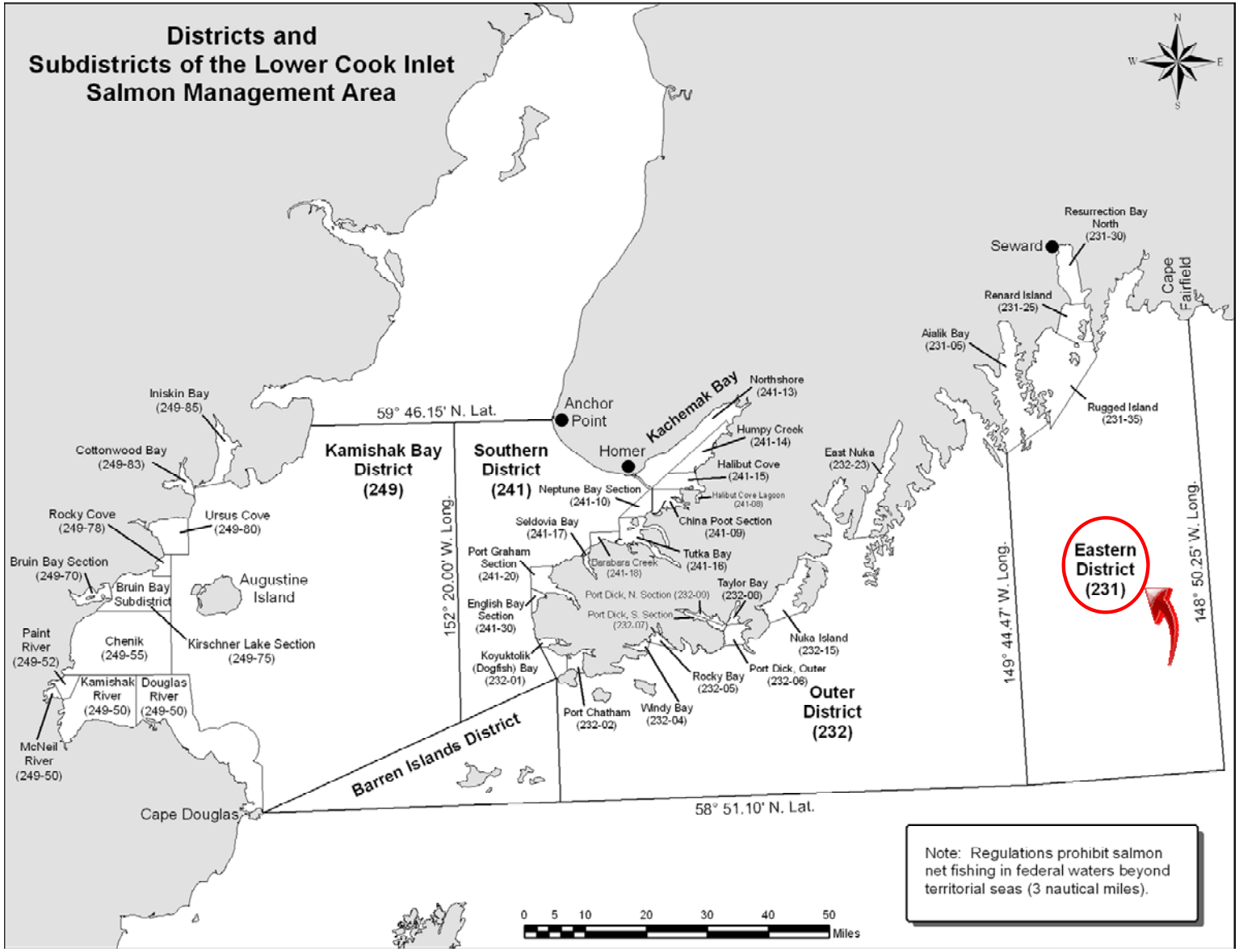

Figure 8-1. Map of the Lower Cook Inlet commercial salmon fishing management area, showing districts and subdistricts.

PROPOSAL 9 - 5 AAC 21.350. Closed waters.

PROPOSED BY: Alaska Department of Fish and Game.

WHAT WOULD THE PROPOSAL DO? This proposal would provide updated and accurate endpoint coordinates for commercial salmon fishing regulatory closed waters boundary lines in three subdistricts of Lower Cook Inlet (LCI): Seldovia Bay Subdistrict in the Southern District, Port Chatham Subdistrict in the Outer District, and Cottonwood Bay Subdistrict in Kamishak Bay District (Figures 9-1 – 9-4).

WHAT ARE THE CURRENT REGULATIONS? Cook Inlet Area commercial salmon fishing regulations describe two regulatory closed waters boundary lines (Seldovia Bay Subdistrict in the Southern District and Port Chatham in the Outer District) as straight-line latitudes or longitudes. In Kamishak Bay District, separate coordinates are listed in regulation for closed waters markers serving as endpoints of a boundary line in Cottonwood Bay.

WHAT WOULD BE THE EFFECT IF THE PROPOSAL WERE ADOPTED? Adoption of this proposal will accurately correspond to the actual on-grounds location of department markers and boundary lines used to delineate waters closed to commercial salmon fishing in the three described subdistricts. There would be no changes in fisheries management.

BACKGROUND: With the advent and widespread use of electronic global positioning system (GPS) units, the department has made a concerted effort to review coordinates of boundaries for regulatory closed waters governing the LCI commercial salmon fishery and to provide updated, accurate coordinates whenever possible. The staff has identified three inaccurate coordinates and proposes to update regulations to reflect the more accurate coordinates.

Current Cook Inlet Area regulations characterize two regulatory closed waters areas (in Seldovia Bay of the Southern District and in Port Chatham of the Outer District) as bounded by straight line latitudes or longitudes, which do not specifically and accurately describe the actual on-grounds markers designating these waters. In Kamishak Bay District, coordinates listed in regulation for closed waters markers in Cottonwood Bay are simply inaccurate. In each of these cases, the on-grounds markers have been in place and utilized for at least the past 15 years; thus, no movement of any recently used closure line would be affected by this proposal. Additionally, the Southern District is inappropriately labeled as "Kachemak Bay" in regulation (5 AAC 21.350(d)), while the word "District" has been inadvertently omitted from 5 AAC 21.350(e) *Kamishak Bay*.

DEPARTMENT COMMENTS: The department submitted and **SUPPORTS** this proposal and considers it housekeeping in nature. The proposal is intended to clarify and more accurately describe on-grounds markers used in the management and enforcement of commercial salmon fisheries in LCI. Published regulatory descriptions that are consistent with physical landmarks or department markers create less confusion for users and enforcement personnel.

COST ANALYSIS: Approval of this proposal is not expected to result in an additional direct cost for a private person to participate in this fishery.

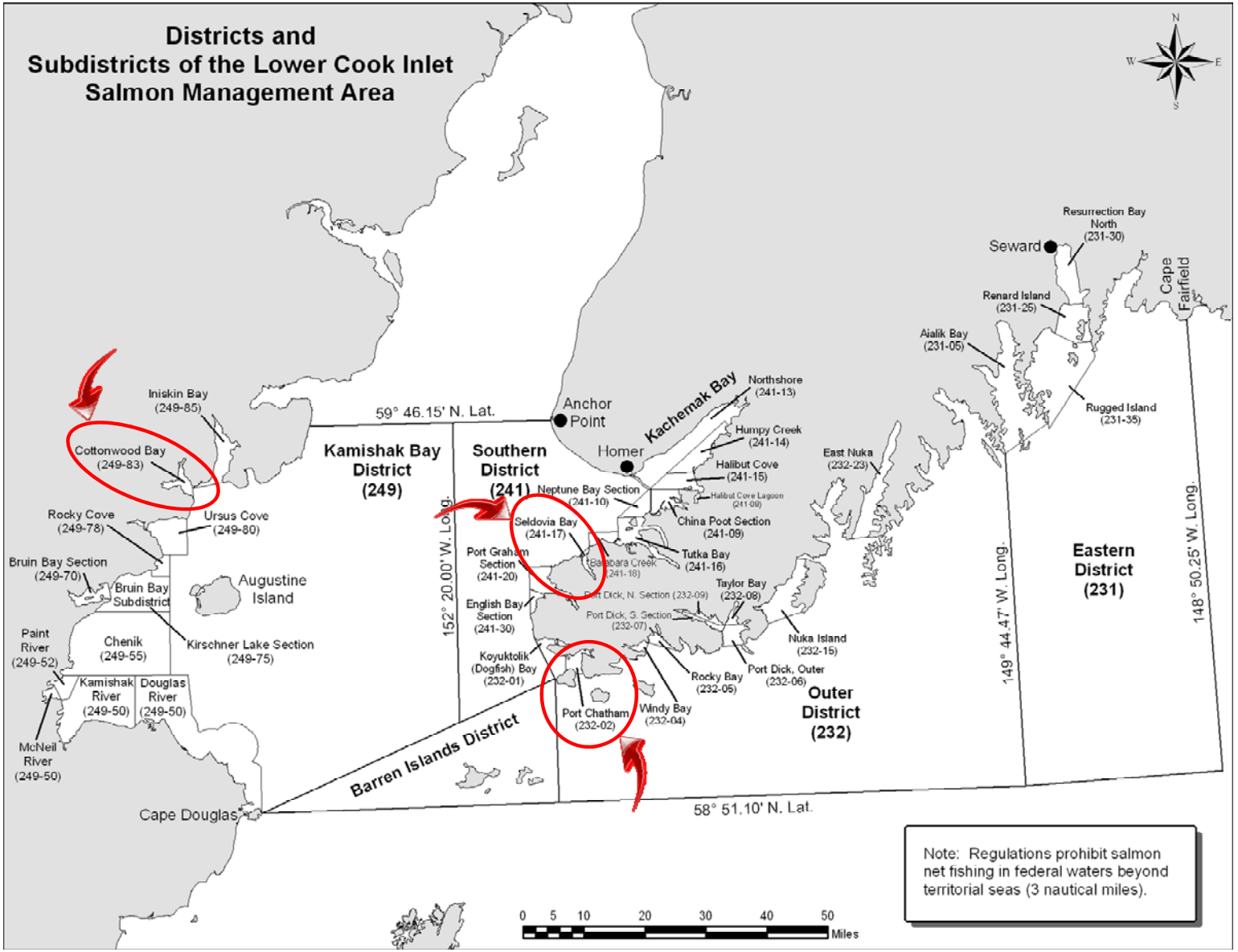

Figure 9-1. Map of the Lower Cook Inlet commercial salmon fishing management area, showing districts and subdistricts.

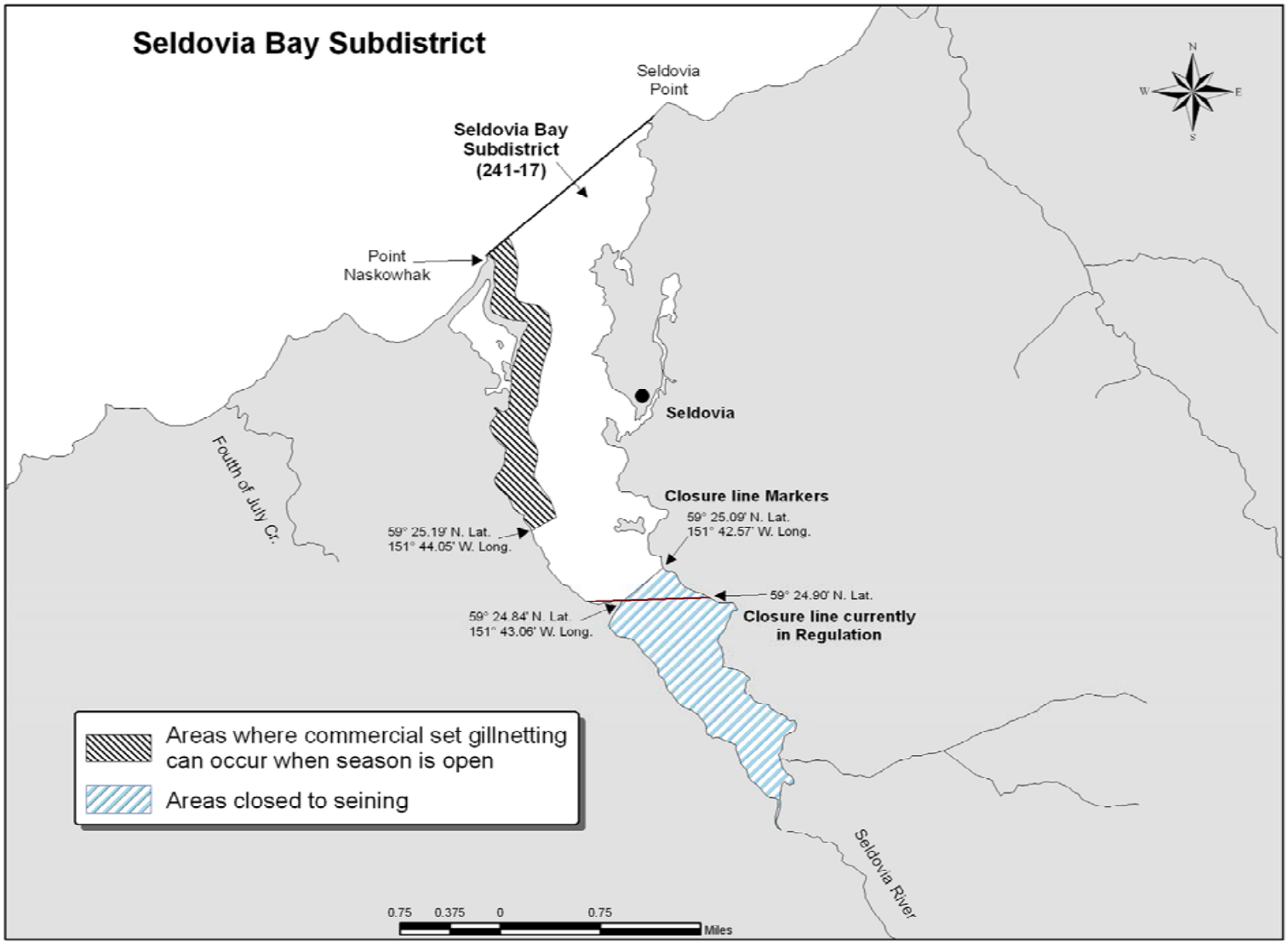

Figure 9-2. Map of Seldovia Bay Subdistrict in the Southern District of Lower Cook Inlet, showing the area closed to commercial salmon fishing at the head (south) end of Seldovia Bay..

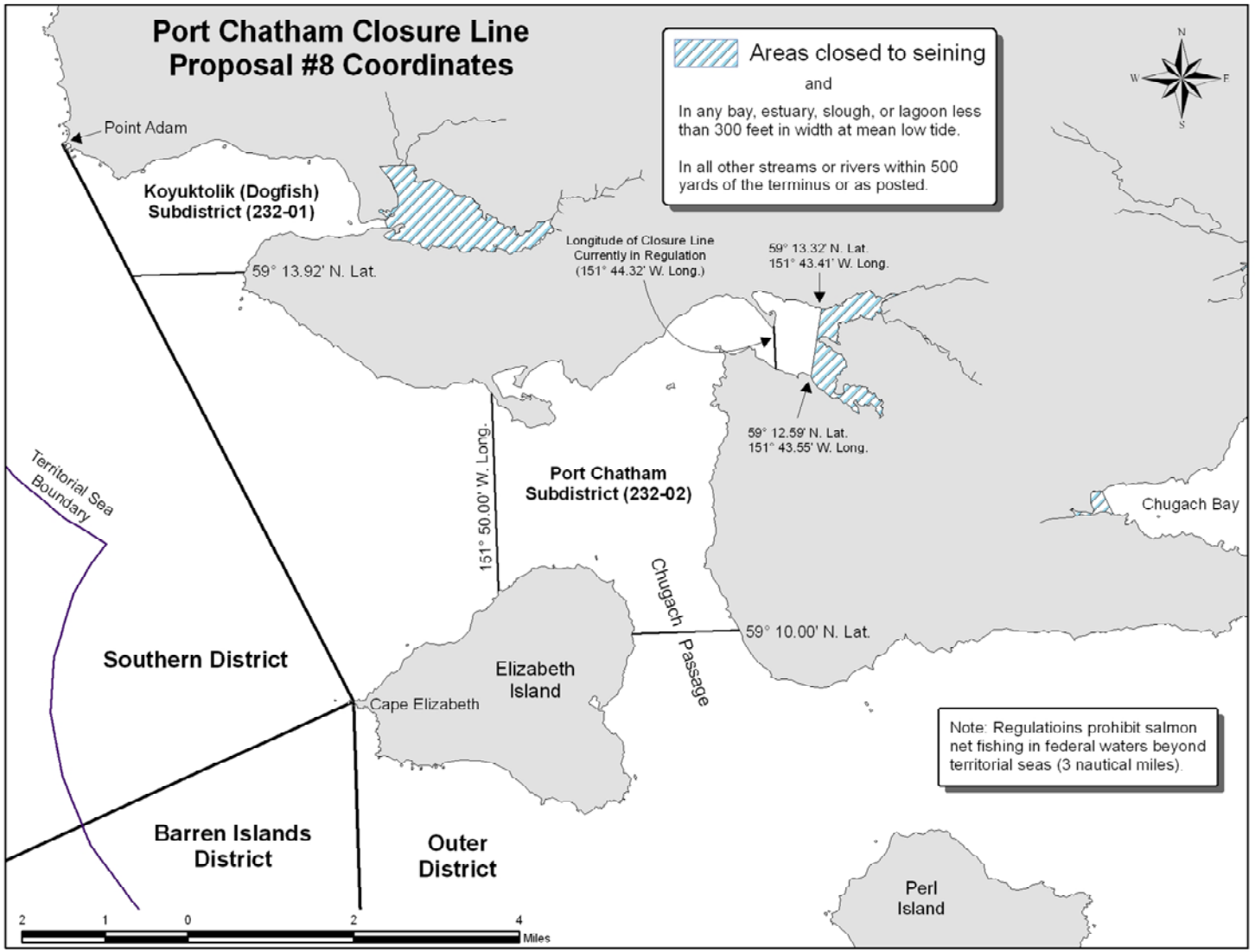

Figure 9-3. Map of Port Chatham Subdistrict in the Outer District of Lower Cook Inlet, showing the area closed to commercial salmon fishing at the head (east) end of Port Chatham Bay.

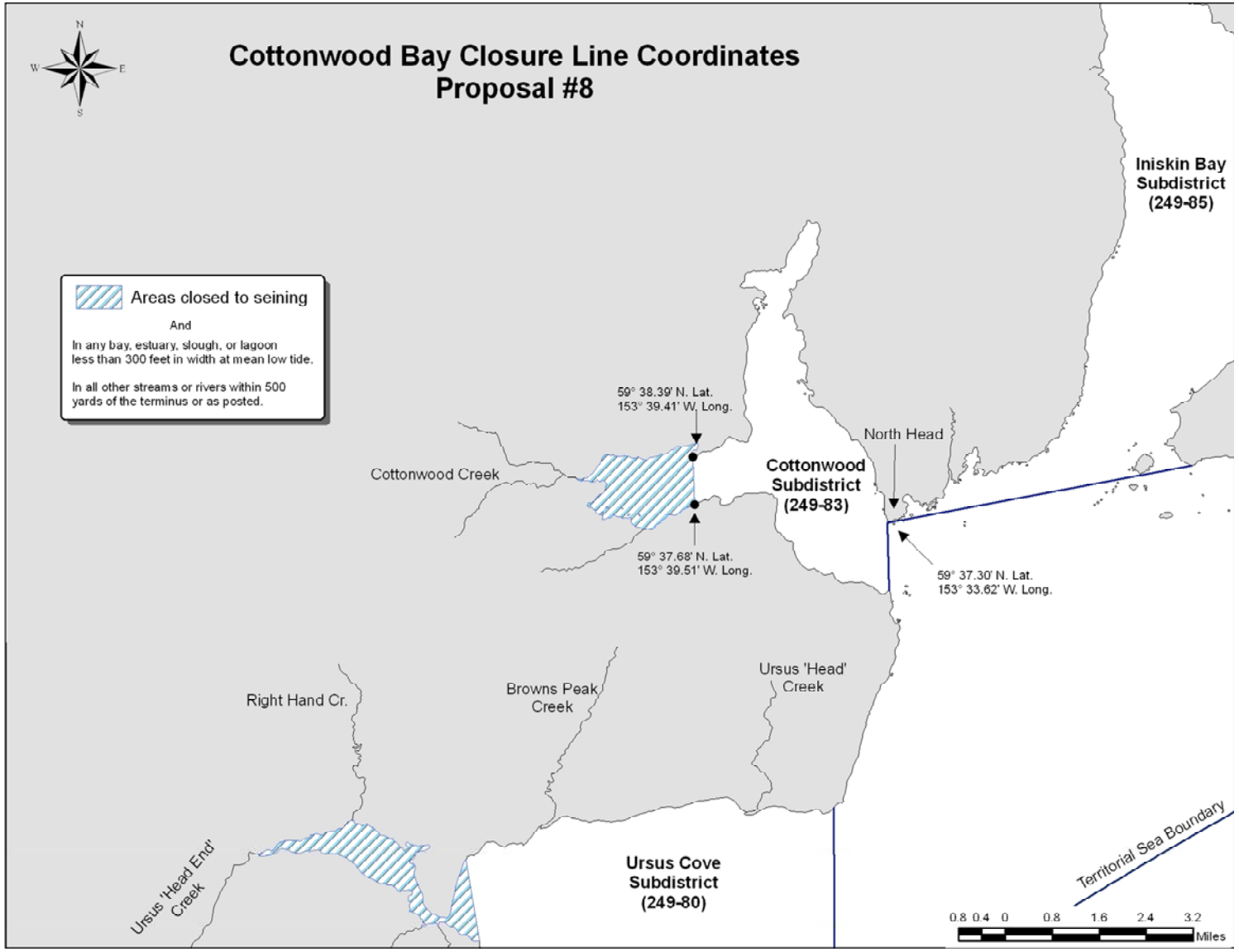

Figure 9-4. Map of Cottonwood Bay Subdistrict in the Kamishak Bay District of Lower Cook Inlet, showing the area of waters closed to commercial salmon fishing near the head (west) end of Cottonwood Bay.

PROPOSAL 10 - 5 AAC 21.350. Closed waters.

PROPOSED BY: Alaska Department of Fish and Game.

WHAT WOULD THE PROPOSAL DO? This proposal would amend the definition of a regulatory closed waters boundary line for commercial salmon fishing in Resurrection Bay of the Eastern District in Lower Cook Inlet (LCI) (Figures 10-1 – 10-3).

WHAT ARE THE CURRENT REGULATIONS? Regulatory closed waters in Resurrection Bay of LCI's Eastern District are located at the extreme north end of Resurrection Bay and were originally designed to protect streams draining into the bay at that location during commercial fisheries targeting pink and chum salmon.

WHAT WOULD BE THE EFFECT IF THE PROPOSAL WERE ADOPTED? Adoption of this proposal will more accurately correspond to the actual on-grounds location of the department markers and boundary lines used to delineate waters closed to commercial salmon fishing in Resurrection Bay. There would be no changes in fisheries management.

BACKGROUND: Since the early 1990s, the commercial salmon seine fishery in Resurrection Bay has targeted an enhanced sockeye salmon run to Bear Lake near Seward (Table 10-1). Because only a limited number of sockeye salmon are required for escapement and spawning purposes, the department found that the published regulatory closed waters at the head of Resurrection Bay were not appropriate for conducting an orderly fishery targeting this enhanced run of sockeye salmon. In addition, the commercial sockeye salmon fishery in Resurrection Bay held the potential to create unnecessary conflicts with the heavily utilized recreational fishery in area waters. Because *5 AAC 21.376. Resurrection Bay Salmon Management Plan* directs the department to conduct a commercial fishery in Resurrection Bay in a manner that does not interfere with the recreational fishery, and in an effort to preclude conflicts between the two user groups, the department has issued an emergency order each year amending the regulatory closed waters there. Beginning with the 1996 season, the proposed area of closed waters has been annually implemented by emergency order prior to the start of commercial fishery openings targeting Bear Lake sockeye salmon, and therefore, is not considered new to this particular fishery. The amended boundary line runs in a north/south direction and effectively eliminates commercial fishing from waters along the west shore of Resurrection Bay from the Seward Airport at the north end of the bay to Caines Head, approximately 8 miles south. This area traditionally experiences heavy vessel traffic from users transiting to and from the Seward small boat harbor, as well as those recreational users actively fishing for king salmon.

DEPARTMENT COMMENTS: The department submitted and **SUPPORTS** this proposal and considers it housekeeping in nature. The proposal is intended to align the published regulatory description for closed waters in Resurrection Bay to correspond to that actually used during the active commercial sockeye salmon fishery, creating less confusion for the public and for enforcement personnel.

COST ANALYSIS: Approval of this proposal is not expected to result in an additional direct cost for a private person to participate in this fishery.

Table 10-1. Historical catch and escapement of sockeye salmon ("early run") at Bear Lake in Resurrection Bay of the Eastern District of Lower Cook Inlet, 1991 - 2010.

Year	Commercial Seine Fishery No. Permits	Commercial Seine Fishery Harvest	Hatchery Cost Recovery Harvest	Total Combined Harvest	Escapement plus Broodstock	Total Adult Return
1991					748	748
1992					1,921	1,921
1993	[a]	[a]	[a]	1,654	5,033	6,687
1994	[a]	987	8,051	9,038	8,592	17,630
1995	18	23,655	20,930	44,585	8,328	52,913
1996	17	35,944	7,944	43,888	8,004	51,892
1997	9	8,933	10,056	18,989	7,945	26,934
1998	[a]	1,229	21,000	22,229	8,431	30,660
1999	11	22,630	8,600	31,230	7,814	39,044
2000	13	19,145	1,670	20,815	11,904	32,719
2001	[a]	2,629	400	3,029	12,801	15,830
2002	7	13,447	2,729	16,176	12,473	28,649
2003	10	7,341	3,011	10,352	13,233	23,585
2004	8	16,645	0	16,645	11,923	28,568
2005	15	19,018	37,654	56,672	13,407	70,079
2006	13	27,793	34,655	62,448	12,398	74,846
2007	11	15,407	8,457	23,864	12,841	36,705
2008	11	57,060	33,036	90,096	13,444	103,540
2009	CLOSED	CLOSED	137,469	137,469	13,318	150,787
2010	CLOSED	CLOSED	21,732	21,732	12,884	34,616
All Years Average	10	16,992	19,947	35,051	9,872	41,418

Source: ADF&G fish ticket data *Unpublished.*

[a] To comply with **AS 16.05.815** ***Confidential nature of certain reports and records***, effort data has been masked where fewer than 4 vessels fished in a given area.

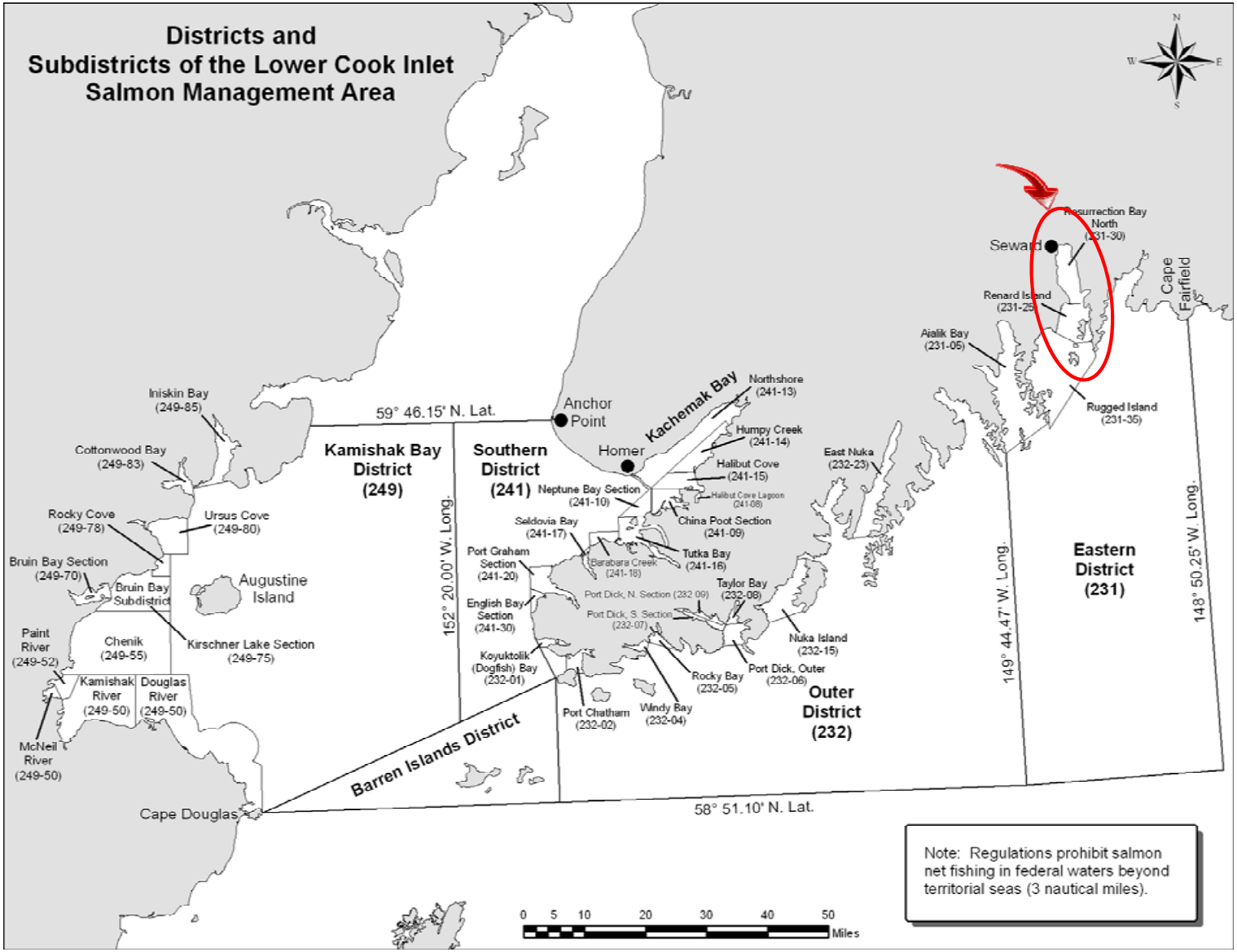

Figure 10-1. Map of the Lower Cook Inlet commercial salmon fishing management area, showing districts and subdistricts.

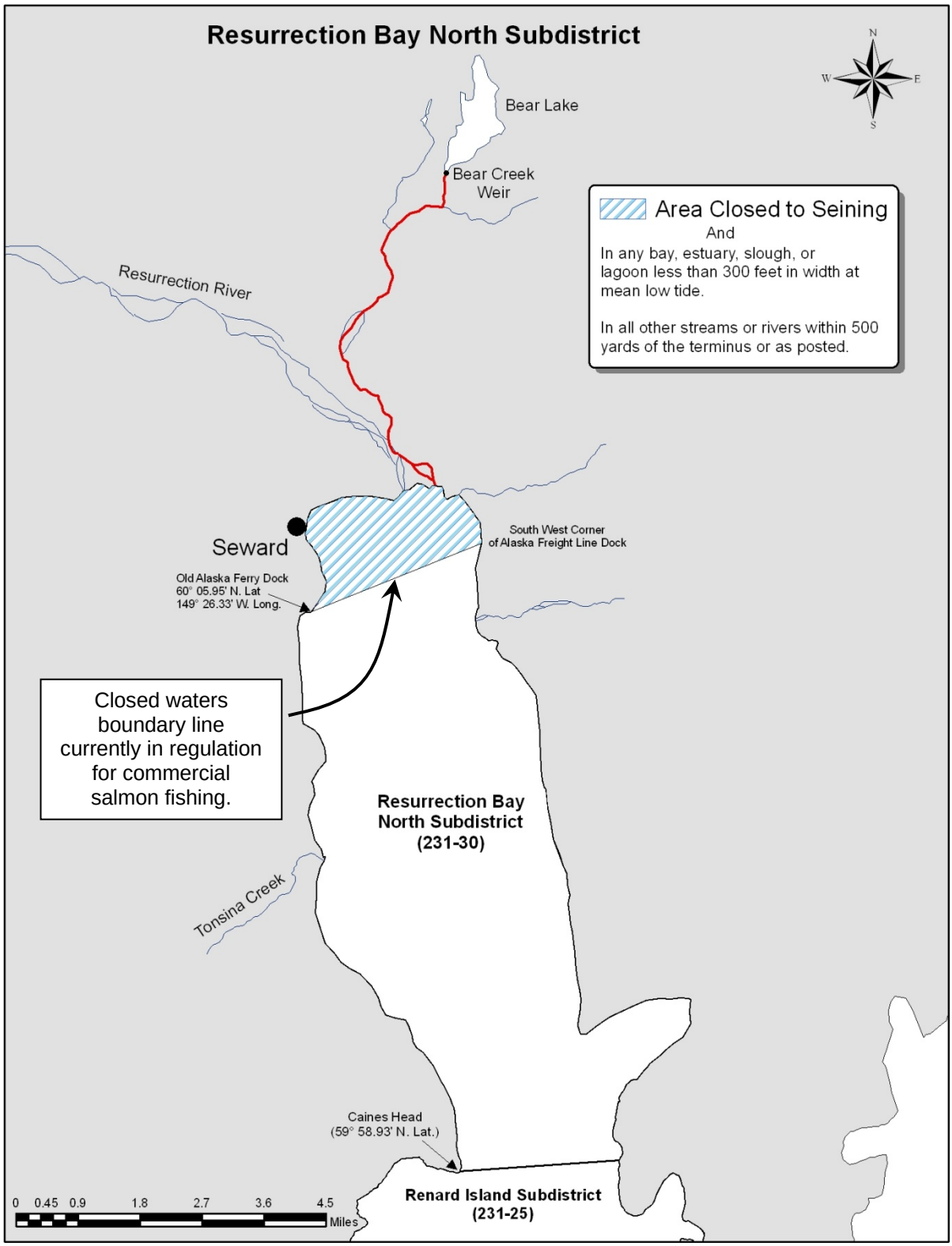

Figure 10-2. Map of Resurrection Bay North Subdistrict in the Eastern District of Lower Cook Inlet, showing the present regulatory area of waters closed to commercial salmon fishing near the head (north) end of Resurrection Bay.

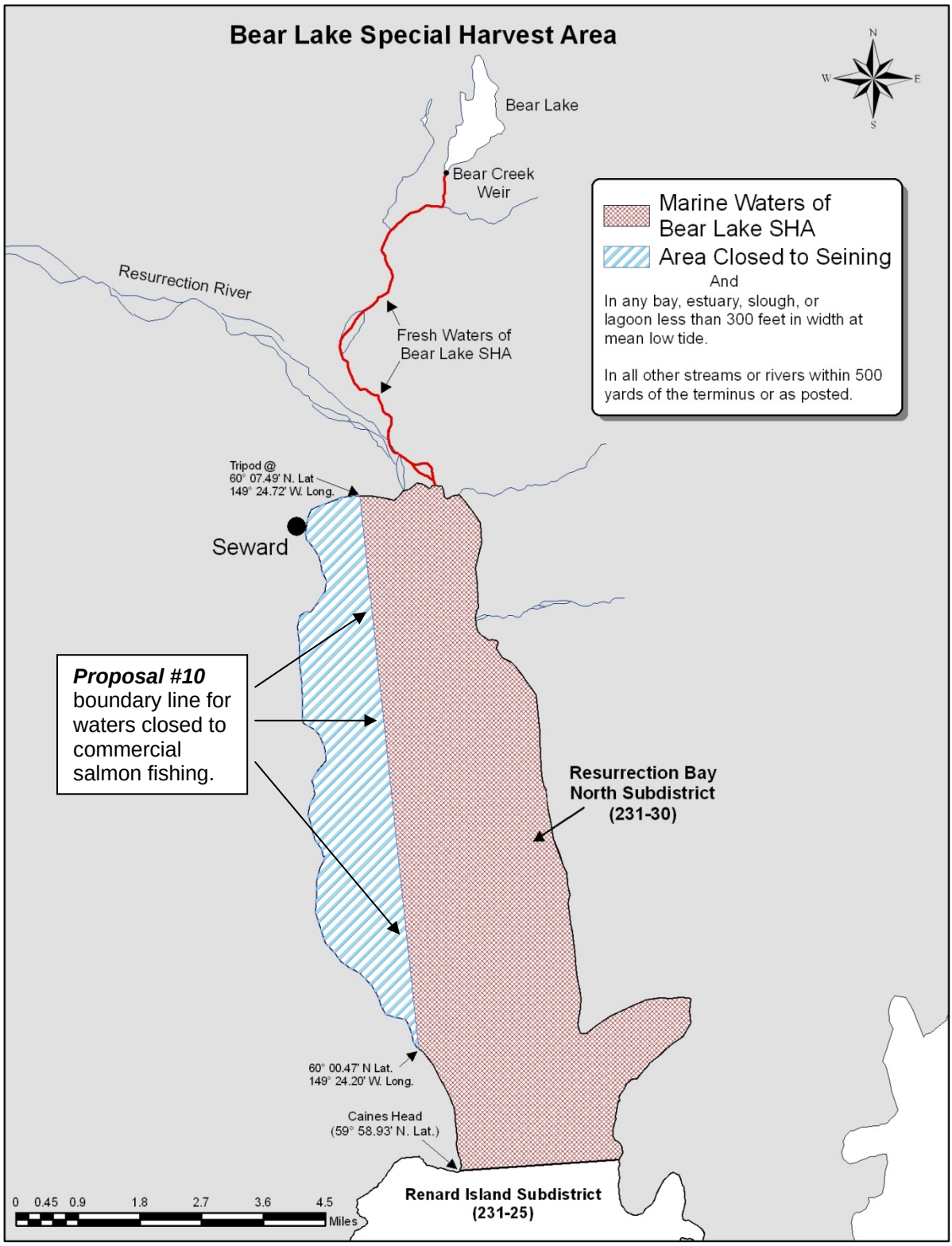

Figure 10-3. Map of Resurrection Bay North Subdistrict in the Eastern District of Lower Cook Inlet, showing the proposed area of waters closed to commercial salmon fishing along the west shore of Resurrection Bay.

PROPOSAL 11 - 5 AAC 77.549. Personal use coho salmon fishery management plan.

PROPOSED BY: Alaska Department of Fish and Game.

WHAT WOULD THE PROPOSAL DO? This proposal would provide accurate endpoint coordinates for a regulatory closed waters boundary line utilized in the personal use coho salmon fishery in the Southern District (Kachemak Bay) of Lower Cook Inlet (LCI) (Figures 11-1 and 11-2).

WHAT ARE THE CURRENT REGULATIONS? An area of closed waters in the Southern District coho salmon personal use set gillnet fishery, locally known as "Mud Bay", is delineated by department regulatory markers on or near the shoreline. Coordinates are published in regulation for only one of these two marker locations, and personal use fishing is not allowed inshore of the line connecting the two markers.

WHAT WOULD BE THE EFFECT IF THE PROPOSAL WERE ADOPTED? Adoption of this proposal would more accurately correspond to the actual on-grounds location of the department markers and boundary line used to delineate waters closed to personal use salmon fishing in the area known as Mud Bay on the Homer Spit. There would be no changes in fisheries management.

BACKGROUND: With the advent and widespread use of electronic global positioning system (GPS) units, the department has made a concerted effort to review coordinates of boundaries for regulatory closed waters governing the LCI personal use fishery and to provide updated, accurate coordinates whenever possible. The staff has identified inaccurate coordinates and proposes to update regulations to reflect the more accurate coordinates. The latitude and longitude coordinates for these closure markers at Mud Bay, near the base of the Homer Spit, are presently absent (airport marker; north side of Mud Bay) or inaccurate (Green Timbers marker; south side of Mud Bay) in the subsistence and personal use statewide fisheries regulations. Personal use/subsistence set gillnet salmon catches can be found in Table 11-1.

DEPARTMENT COMMENTS: The department submitted and **SUPPORTS** this proposal, and considers it housekeeping in nature. Adoption of this proposal would create accurate published coordinates in the personal use regulations and therefore, cause less confusion for participants and enforcement personnel.

COST ANALYSIS: Approval of this proposal is not expected to result in an additional direct cost for a private person to participate in this fishery.

Table 11-1. Personal use/subsistence set gillnet salmon catches, in numbers of fish by species, and effort, Southern District (excluding the Port Graham/Nanwalek subsistence fishery and the Seldovia subsistence fishery), Lower Cook Inlet, 1969–2010.

Year	Permits Issued	Permits Returned		Permits		Harvest by Species						
		Number	%	Did Fish	Not Fished	King	Sockeye	Coho	Pink	Chum	Other	Total
1969	47	44	93.6	35	9	0	9	752	38	0	17	816
1970	78	73	93.6	55	18	0	12	1,179	143	13	39	1,386
1971	112	95	84.8	53	42	2	16	1,549	44	7	20	1,638
1972	135	105	77.8	64	41	1	11	975	48	69	19	1,123
1973	143	128	89.5	82	46	0	18	1,304	84	40	9	1,455
1974	148	118	79.7	52	66	0	16	376	43	77	27	539
1975	292	276	94.5	221	55	4	47	1,960	632	61	95	2,799
1976	242	221	91.3	138	83	16	46	1,962	1,513	56	75	3,668
1977	197	179	90.9	137	42	12	46	2,216	639	119	84	3,116
1978	311	264	84.9	151	113	4	35	2,482	595	34	89	3,239
1979	437	401	91.8	238	163	6	37	2,118	2,251	41	130	4,583
1980	533	494	92.7	299	195	43	32	3,491	1,021	25	153[a]	4,765
1981	384	374	97.4	274	100	25	64	4,314	732	89	100	5,324
1982	395	378	95.7	307	71	39	46	7,303	955	123	8	8,474
1983	360	328	91.1	210	118	4	21	2,525	330	40	2	2,922
1984	390	346	88.7	219	127	4	25	3,666	821	87	25	4,628
1985	316	302	95.6	205	97	5	43	3,372	166	35	3	3,624
1986	338	310	91.7	247	63	7	68	3,831	3,132	56	0	7,094
1987	361	338	93.6	249	89	5	50	3,977	279	61	0	4,372
1988	438	404	92.2	287	117	14	60	4,877	1,422	75	0	6,448
1989	466	452	97.0	332	120	41	156	7,215	882	53	49	8,396
1990	578	543	93.9	420	123	12	200	8,323	1,846	69	0	10,450
1991	472	459	97.2	295	164	8	47	4,931	366	23	0	5,375
1992	365	350	95.9	239	111	5	63	2,277	643	21	0	3,009
1993	326	317	97.2	215	102	6	44	1,992	463	18	0	2,523
1994	286	284	99.3	224	60	66	80	4,097	1,178	18	0	5,439
1995	235	232	98.7	178	54	118	108	2,916	343	7	0	3,492
1996	299	293	98.0	213	80	302	102	3,347	1,022	24	0	4,797
1997	276	264	95.7	185	79	383	191	1,814	252	12	0	2,652
1998	227	214	94.3	142	72	135	20	1,461	167	5	0	1,788
1999	146	141	96.6	111	30	276	119	1,803	168	3	0	2,369
2000	213	206	96.7	151	55	104	28	2,064	304	4	0	2,504
2001	154	148	96.1	112	34	86	27	1,579	150	16	0	1,858
2002	122	113	92.6	93	20	61	33	1,521	251	12	0	1,878
2003	104	96	92.3	72	24	17	57	1,071	170	9	0	1,324
2004	91	83	91.2	65	18	7	56	1,554	172	16	0	1,805
2005	108	96	88.9	69	27	8	57	833	296	13	0	1,207
2006	89	82	92.1	62	20	15	41	1,295	221	5	0	1,577
2007	141	133	94.3	95	38	10	113	1,431	641	34	0	2,229
2008	146	142	97.3	107	35	2	92	1,844	687	14	0	2,639
2009	145	142	97.9	90	52	9	273	646	101	4	1	1,034
2010	*Data not available*											
69–09 Avg.	260	244	93.6	171	72	46	64	2,649	614	37	20	3,430
2000–09 Avg.	131	124	94.5	92	32	32	78	1,384	299	13	0	1,806

Note: Figures after 1991 include information from both returned permits and inseason oral reports.
[a]Steelhead trout *Oncorhynchus mykiss*.

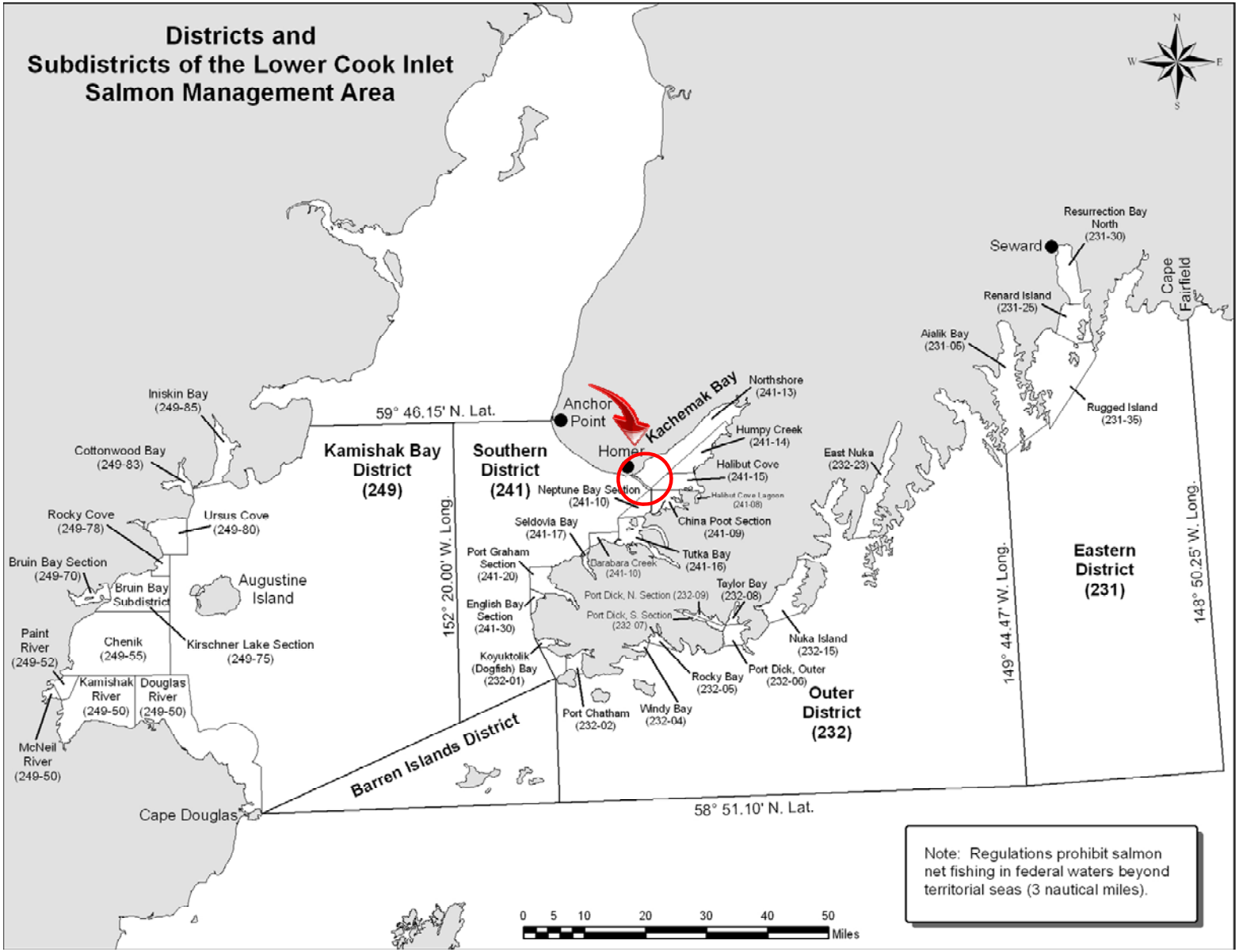

Figure 11-1. Map of the Lower Cook Inlet commercial salmon fishing management area, showing districts and subdistricts.

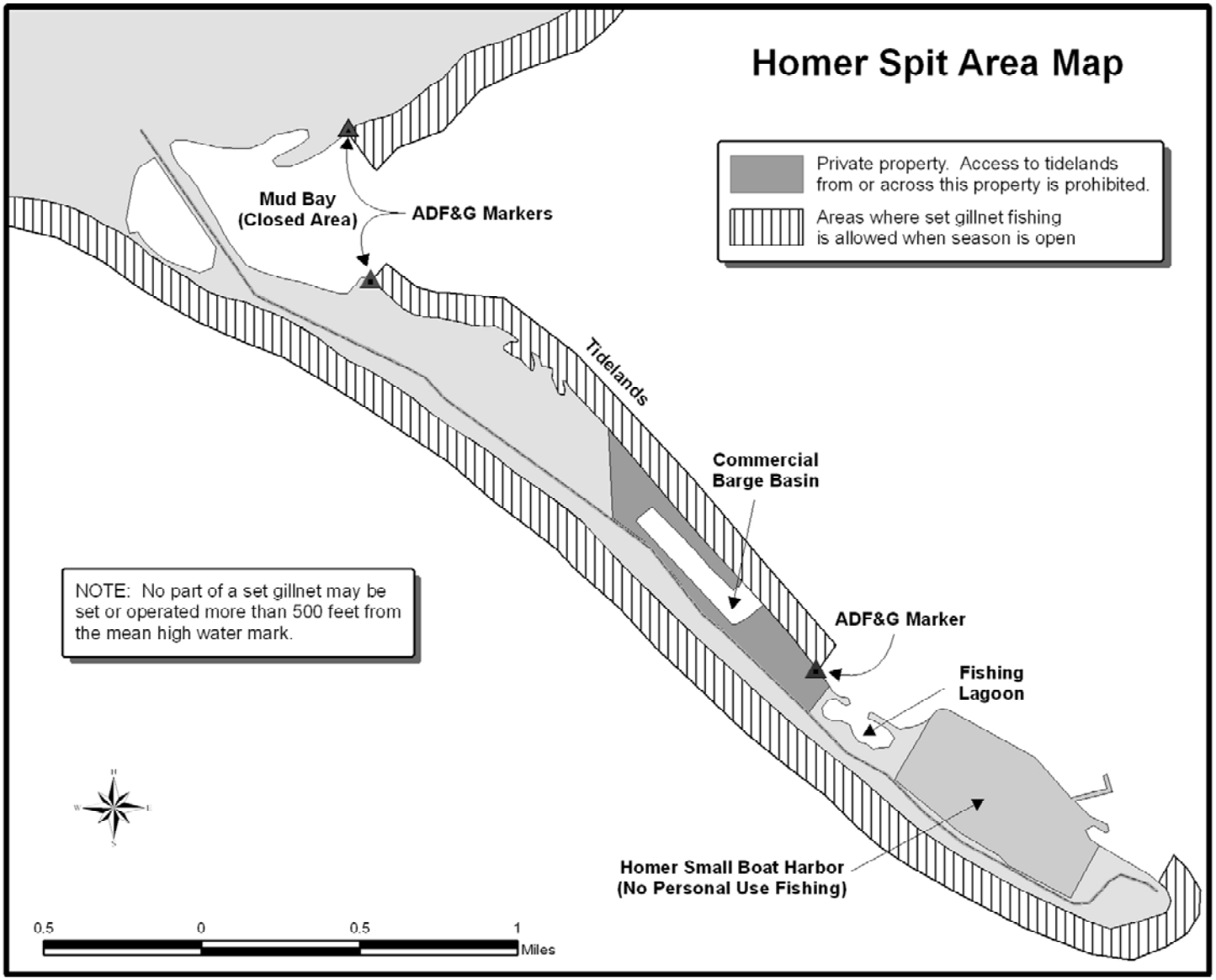

Figure 11-2. Map of the Homer Spit in the Southern District (Kachemak Bay) of Lower Cook Inlet, showing the area of Mud Bay closed to personal use salmon gillnet fishing.

PROPOSAL 12 - 5 AAC 21.373. Trail Lakes Hatchery Sockeye Salmon Management Plan.

PROPOSED BY: Gary Fandrei, Cook Inlet Aquaculture Association (CIAA).

WHAT WOULD THE PROPOSAL DO? This proposal would remove the sunset clause from regulation and would allow the current provisions of *5 AAC 21.373. Trail Lakes Hatchery Sockeye Salmon Management Plan* to continue.

WHAT ARE THE CURRENT REGULATIONS? *5 AAC 21.373. Trail Lakes Hatchery Sockeye Salmon Management Plan* states:

(a) The purpose of the management plan in this section is to provide an equitable distribution of the harvest of hatchery-produced salmon among seine and set gillnet commercial fisheries and the cost recovery fishery conducted by the Trail Lakes Hatchery operator. The department, in consultation with the hatchery operator, shall primarily manage the Lower Cook Inlet Special Harvest Areas salmon fisheries in the Southern District to achieve the Cook Inlet Aquaculture Association cost recovery harvest goal and the broodstock escapement goals for the Trail Lake Hatchery.

(b) The Cook Inlet Aquaculture Association, or the association's agent or contractor, may harvest salmon within the China Poot and Hazel Lake Special Harvest Area, Tutka Bay Special Harvest Area, Kirschner Lake Special Harvest Area, and Bear Lake Special Harvest Area during periods established by emergency order on or after the third Monday in May, using purse seines, hand purse seines, beach seines, and weirs. The China Poot and Hazel Lake Special Harvest Area, Tutka Bay Special Harvest Area, Kirschner Lake Special Harvest Area, and Bear Lake Special Harvest Area will remain closed to commercial fishing until the cost recovery goal and broodstock goal for the Trail Lake Hatchery is achieved or the department projects that the goals will be achieved.

(c) It is the intent of the Board of Fisheries that

(1) any enhancement of sockeye salmon will not cause a net loss of coho salmon smolt production from Bear Lake;

(2) any enhancement of sockeye salmon in Bear Lake will maintain the early run timing of the indigenous stocks;

(3) the prime objective of any Bear Lake sockeye salmon enhancement is to provide the opportunity for a commercial sockeye salmon fishery conducted with minimal conflict with the noncommercial fisheries.

(d) No management restrictions will be imposed on the noncommercial fisheries in order to achieve the Trail Lakes Hatchery objectives for sockeye salmon.

(f) The provisions of this section do not apply after May 1, 2011.

WHAT WOULD BE THE EFFECT IF THE PROPOSAL WERE ADOPTED? Adoption of this proposal would effectively make provisions of *5 AAC 21.373. Trail Lakes Hatchery Sockeye Salmon Management Plan* permanent. As such, CIAA hatchery special harvest areas (SHAs)

(Figures 12-1 - 12-5) described in the regulation would continue to be managed to achieve the hatchery's financial and broodstock objectives. Common property commercial salmon fishing within these waters would be precluded until hatchery objectives were achieved or until their achievement could be reliably projected.

BACKGROUND: At the November 2004 Alaska Board of Fisheries (board) meeting, CIAA proposed an amendment to *5 AAC 21.375. Bear Lake Management Plan*, requesting that the sockeye salmon harvestable surplus annually returning as a result of the Bear Lake enhancement project be managed to achieve an equal split (in numbers of fish) between the common property seine user group and the Trail Lakes Hatchery. The board adopted this provision, which became effective in time for the 2005 fishing season. Knowing that CIAA traditionally harvested significant numbers of fish that escaped the commercial fishery, at its freshwater Bear Creek weir site, and also harvested fish near the end of the run after fishermen had dispersed to other areas, the department generally allowed more opportunity for the common property fleet at the beginning of each year's run. Despite inter-annual variability from the desired 50/50 apportionment that was somewhat large, the cumulative division of harvest over the four seasons during which this provision of the *Bear Lake Management Plan* was in place showed that CIAA harvested approximately 49% of the available sockeye salmon while common property seiners accounted for 51%. However, because a significant portion of CIAA's harvest came from freshwater or from later stages of the run, the value of their harvest was considerably less than that of the common property fleet.

CIAA petitioned the board in early 2009 to adopt a new management plan for the organization's Trail Lakes Hatchery, citing the need for a more effective and appropriate tool to meet the facility's financial objectives. The petition was ultimately converted into a proposal which, after amending, was passed into regulation in the spring of 2009, in time for that year's fishing season. Because the new plan contained a number of provisions taken directly from *5 AAC 21.375 Bear Lake Management Plan* and thus carried over the basic intent of that plan, the Bear Lake plan was rescinded from regulation.

In 2009, the plan's first season of implementation, CIAA stated that all sockeye salmon produced by Trail Lakes Hatchery would be required as hatchery harvest in order to achieve financial and broodstock objectives, based on preseason prices and forecasted returns. As a result, no common property openings directed at CIAA-produced sockeye salmon occurred that year. CIAA Special Harvest Areas (SHAs) remained closed to common property fishing all season and CIAA harvested a cumulative total of approximately 176,300 sockeye salmon (for sale), worth an estimated $1.4 million (after accounting for harvester costs). The estimated value represented approximately 94% of CIAA's established revenue goal of $1.5 million for the 2009 season. CIAA's broodstock objectives at Bear Lake in Resurrection Bay were achieved, but broodstock collected from the Tutka Bay SHA were all lost due to an equipment failure.

CIAA established a preseason revenue goal of $1.4 million for 2010, while simultaneously forecasting a harvest of 296,500 sockeye salmon resulting from Trail Lakes Hatchery production. Using preseason prices, CIAA estimated that not all fish resulting from its enhancement projects would be required to achieve the hatchery revenue and broodstock goals, and that some amount of common property fishing opportunity was likely possible at the Bear Lake, China Poot/Hazel

Lake, and Kirschner Lake SHAs. Unfortunately, actual inseason runs of CIAA-produced sockeye salmon proved far less than the projection, with the most pronounced shortfall occurring at Bear Lake in Resurrection Bay of the Eastern District. Approximately 175,000 sockeye salmon were forecasted as harvestable surplus at that location, but catch figures show a total of less than 22,000 fish taken, all for hatchery cost recovery (Table 12-1). Once the virtual failure of this early run was confirmed, CIAA announced that all sockeye salmon returning to its remaining SHAs would once again be required in pursuit of their established objectives. As a result, no common property openings to target sockeye salmon returning to the China Poot/Hazel Lake SHA, the Tutka Bay SHA, and the Kirschner Lake SHA were allowed during 2010. Similar to the situation in Resurrection Bay, sockeye salmon runs to the China Poot/Hazel Lake and Kirschner Lake SHAs were significantly below preseason expectations, while the Tutka Bay run met projections. CIAA's cumulative hatchery cost recovery harvest in 2010 totaled only 68,000 sockeye salmon throughout the entire management area (Tables 12-2 – 12-4). This figure generated a value of approximately $482,000 and represented just 39% of CIAA's preseason revenue goal. The sockeye salmon broodstock goals for Bear Lake and Tutka Bay SHA were achieved in 2010.

Historically, sockeye salmon enhancement programs have contributed significantly to Lower Cook Inlet (LCI) commercial salmon harvests. On average since 1980, hatchery programs have produced approximately two-thirds of the commercial sockeye salmon harvests in LCI, although percentages have ranged as high as 90% annually. Of the two private non-profit organizations conducting enhancement efforts in LCI, CIAA has consistently contributed the largest annual percentage of sockeye salmon to harvests in LCI.

DEPARTMENT COMMENTS: The department is **NEUTRAL** on this primarily allocative proposal. However, absent *5 AAC 21.373. Trail Lakes Hatchery Sockeye Salmon Management Plan*, the department will refer to *5 AAC 40.840 (b)*, which states: "The PNP coordinator will organize the appropriate department staff and the permit holder in preparing a draft annual management plan. The appropriate regional planning team and the Department of Commerce, Community, and Economic Development may also review the plan. This plan must organize and guide the hatchery's operations, for each calendar year, regarding production goals, broodstock development, and harvest management of hatchery returns." The board has additional latitude under *5 AAC 40.005 (b)*, which states: "The harvest of salmon returning to a private nonprofit salmon hatchery will be governed by regulations adopted by the Board of Fisheries. The board will, in its discretion, develop harvesting regulations after review of the harvest plans or other materials, information, and testimony, if any, presented by the regional associations, hatchery operators, the Department of Commerce, Community, and Economic Development, the Department of Fish and Game, fishermen, and other interested parties."

COST ANALYSIS: Approval of this proposal is not expected to result in an additional direct cost for a private person to participate in this fishery.

Table 12-1. Historical catch and escapement of sockeye salmon ("early run") at Bear Lake in Resurrection Bay of the Eastern District of Lower Cook Inlet, 1991 – 2010 (area includes Bear Lake Special Harvest Area).

	Commercial Seine Fishery		Hatchery Cost Recovery	Total Combined	Escapement plus	Total Adult
Year	No. of Permits	Harvest	Harvest	Harvest	Broodstock	Return
1991					748	748
1992					1,921	1,921
1993	[a]	[a]	[a]	1,654	5,033	6,687
1994	[a]	987	8,051	9,038	8,592	17,630
1995	18	23,655	20,930	44,585	8,328	52,913
1996	17	35,944	7,944	43,888	8,004	51,892
1997	9	8,933	10,056	18,989	7,945	26,934
1998	[a]	1,229	21,000	22,229	8,431	30,660
1999	11	22,630	8,600	31,230	7,814	39,044
2000	13	19,145	1,670	20,815	11,904	32,719
2001	[a]	2,629	400	3,029	12,801	15,830
2002	7	13,447	2,729	16,176	12,473	28,649
2003	10	7,341	3,011	10,352	13,233	23,585
2004	8	16,645	0	16,645	11,923	28,568
2005	15	19,018	37,654	56,672	13,407	70,079
2006	13	27,793	34,655	62,448	12,398	74,846
2007	11	15,407	8,457	23,864	12,841	36,705
2008	11	57,060	33,036	90,096	13,444	103,540
2009	CLOSED	CLOSED	137,469	137,469	13,318	150,787
2010	CLOSED	CLOSED	21,732	21,732	12,884	34,616
Average	10	16,992	19,947	35,051	9,872	41,418

Source: ADF&G fish ticket data *Unpublished.*

[a] To comply with **AS 16.05.815** ***Confidential nature of certain reports and records***, effort data has been masked where fewer than 4 vessels fished in a given area.

Table 12-2. Historical catch of sockeye salmon at China Poot and Neptune Bays in the Southern District of Lower Cook Inlet, 1990 – 2010 (area includes China Poot and Hazel Lake Special Harvest Area).

Year	Commercial Seine Fishery		Hatchery Cost Recovery	Total Combined
	No. of Permits	Harvest	Harvest	Harvest
1990	46	49,900		49,900
1991	50	109,625	7,105	116,730
1992	50	68,643	7,336	75,979
1993	38	114,002	10,758	124,760
1994	20	35,704	3,025	38,729
1995	32	120,590	12,497	133,087
1996	29	211,716	14,235	225,951
1997	17	116,094		
1998	28	79,642	20,579	100,221
1999	36	154,424	16,188	170,612
2000	29	60,199	18,103	78,302
2001	19	90,649	27,037	117,686
2002	19	96,996	29,517	126,513
2003	21	330,642	35,557	366,199
2004	18	20,379	12,991	33,370
2005	23	60,848	29,737	90,585
2006	16	50,474	23,283	73,757
2007	13	61,193	22,586	83,779
2008	13	62,175	1,907	64,082
2009	CLOSED	CLOSED	205	205
2010	CLOSED	CLOSED	1,007	1,007
1990-2009 Avg.	27	99,679	15,455	115,134
1990-1999 Avg.	35	106,034	11,465	117,499
2000-2009 Avg.	19	92,617	20,092	112,709

Source: ADF&G fish ticket data *Unpublished.*

Table 12-3. Historical hatchery catch of sockeye salmon at Tutka Bay in the Southern District of Lower Cook Inlet since inception of CIAA's remote release program at that location (area consists of Tutka Bay Special Harvest Area).

YEAR	Hatchery Cost Recovery Harvest	Hatchery Broodstock	Total Estimated Run
2008	14,604	150[a]	20,104[b]
2009	11,584	3,067	14,651
2010[c]	38,087	5,000[c]	43,087
Average	21,425	2,739	24,164

[a] First year test phase.

[b] 2008 includes 5,350 sockeye salmon informally estimated by hatchery personnel as unharvested at end of season.

[c] Preliminary estimate from hatchery personnel.

Table 12-4. Historical catch of sockeye salmon in the Kirschner Lake Section of Bruin Bay Subdistrict in the Kamishak Bay District of Lower Cook Inlet, 1990 – 2010 (area includes Kirschner Lake Special Harvest Area).

Year	Commercial Seine Fishery		Hatchery Cost Recovery	Total Combined
	No. of Permits	Harvest	Harvest	Harvest
1990	9	14,465		14,465
1991	19	42,654		42,654
1992	15	40,043		40,043
1993	10	36,322	3,326	39,648
1994	4	14,465	16,787	31,252
1995	[a]	8,772	5,350	14,122
1996	[a]	18,093	13,511	31,604
1997	[a]	2,842	6,125	8,967
1998	4	8,112	19,390	27,502
1999	[a]	22,256	17,504	39,760
2000		10,236	21,391	31,627
2001	[a]	9,198	29,740	38,938
2002		0	32,492	32,492
2003	[a]	11,671	38,741	50,412
2004		0	16,372	16,372
2005	CLOSED	CLOSED	14,969	14,969
2006	[a]	24,130	26,310	50,440
2007	[a]	7,725	27,719	35,444
2008	CLOSED	CLOSED	11,588	11,588
2009	CLOSED	CLOSED	18,771	18,771
2010	CLOSED	CLOSED	8,858	8,858
1990-2009 Avg.	5	15,940	18,829	29,554
1990-1999 Avg.	7	20,802	11,713	29,002
2000-2009 Avg.	2	8,994	23,809	30,105

Source: ADF&G fish ticket data *Unpublished.*

[a] To comply with **AS 16.05.815** ***Confidential nature of certain reports and records***, effort data has been masked where fewer than 4 vessels fished in a given area.

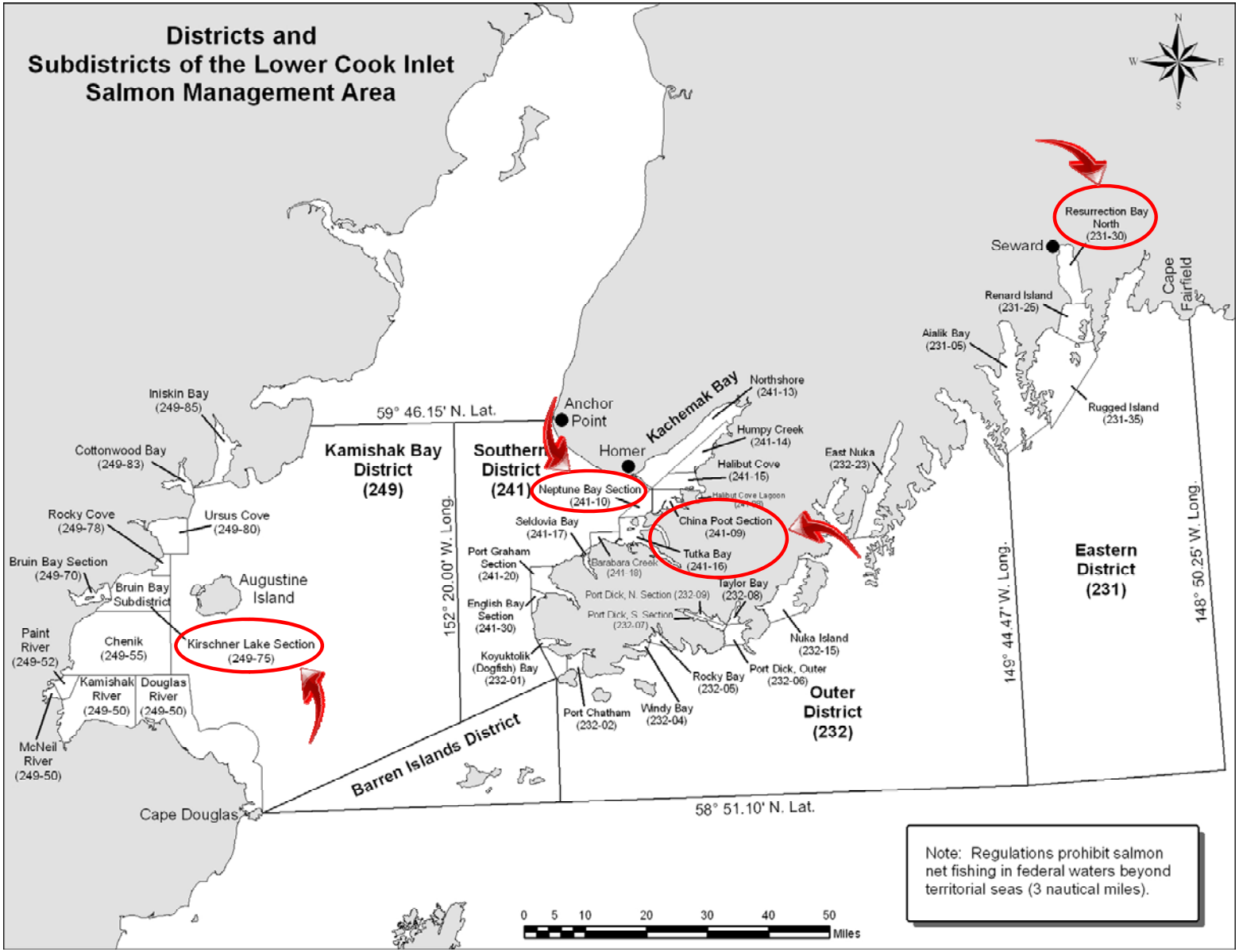

Figure 12-1. Map of the Lower Cook Inlet commercial salmon fishing management area, showing districts and subdistricts.

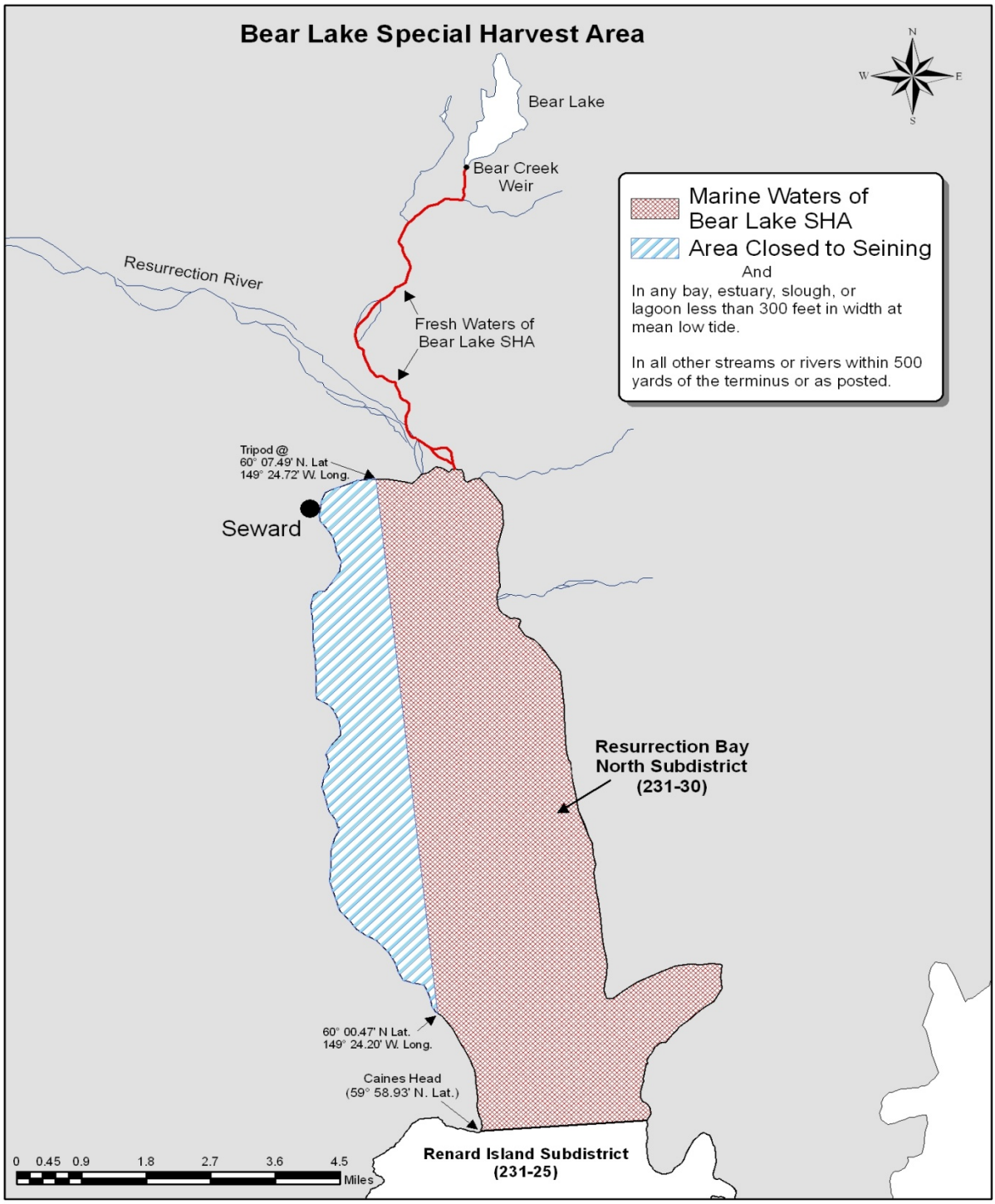

Figure 12-2. Map of the Bear Lake Special Harvest Area for Cook Inlet Aquaculture Association hatchery fishing in the Resurrection Bay North Subdistrict of the Eastern District in Lower Cook Inlet.

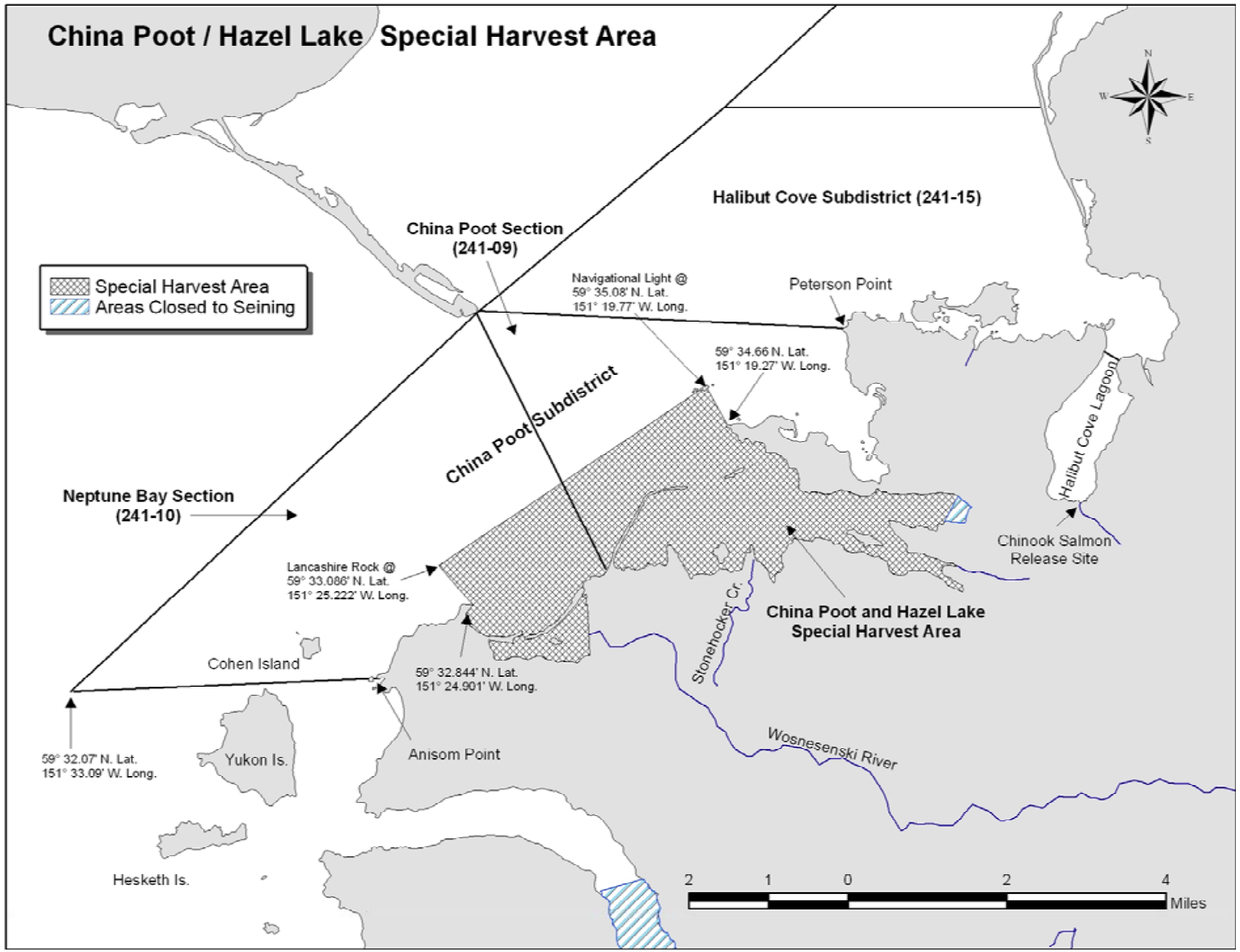

Figure 12-3. Map of the China Poot/Hazel Lake Special Harvest Area for Cook Inlet Aquaculture Association hatchery fishing in the China Poot Subdistrict of the Southern District in Lower Cook Inlet.

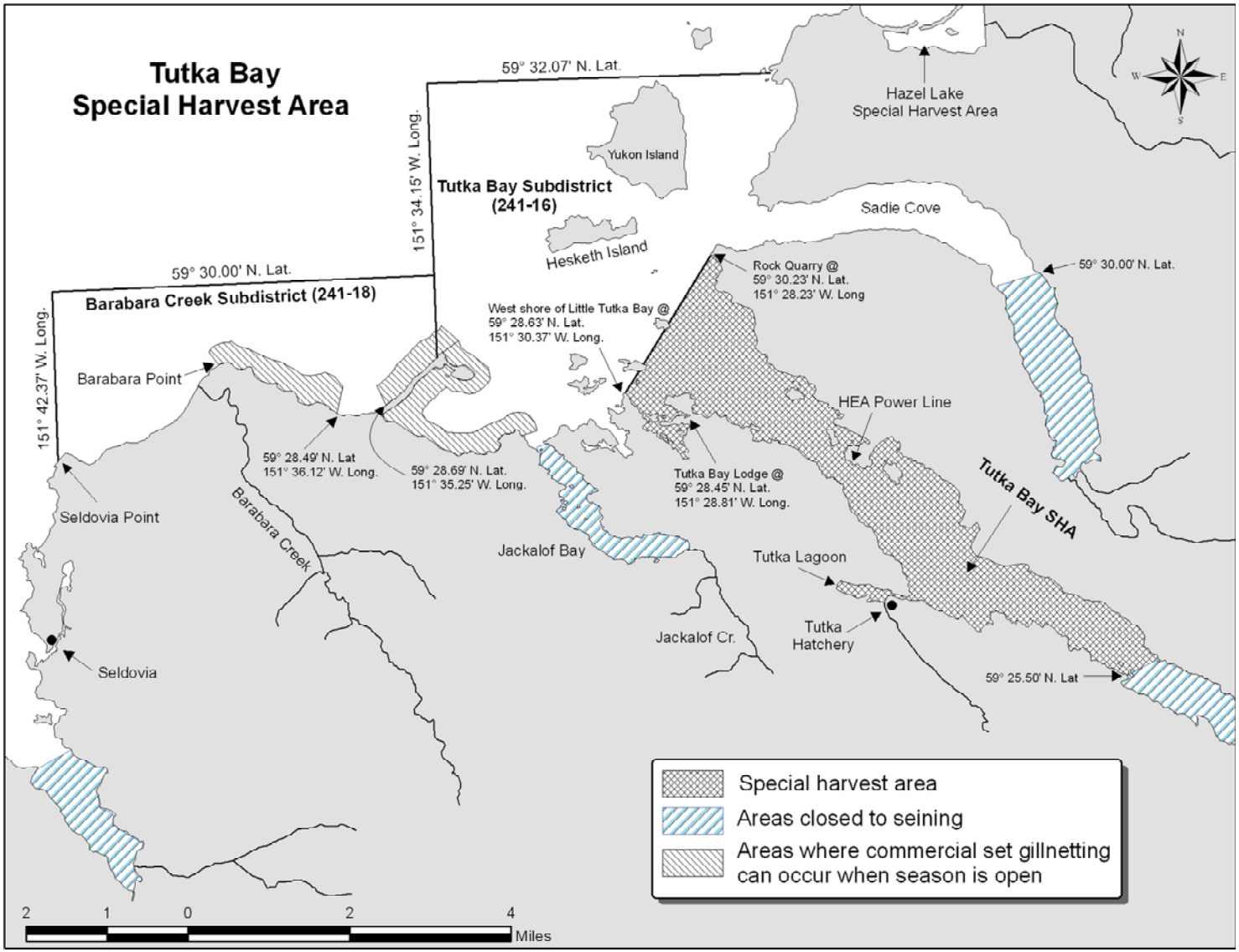

Figure 12-4. Map of the Tutka Bay Special Harvest Area for Cook Inlet Aquaculture Association hatchery fishing in the Tutka Bay Subdistrict of the Southern District in Lower Cook Inlet.

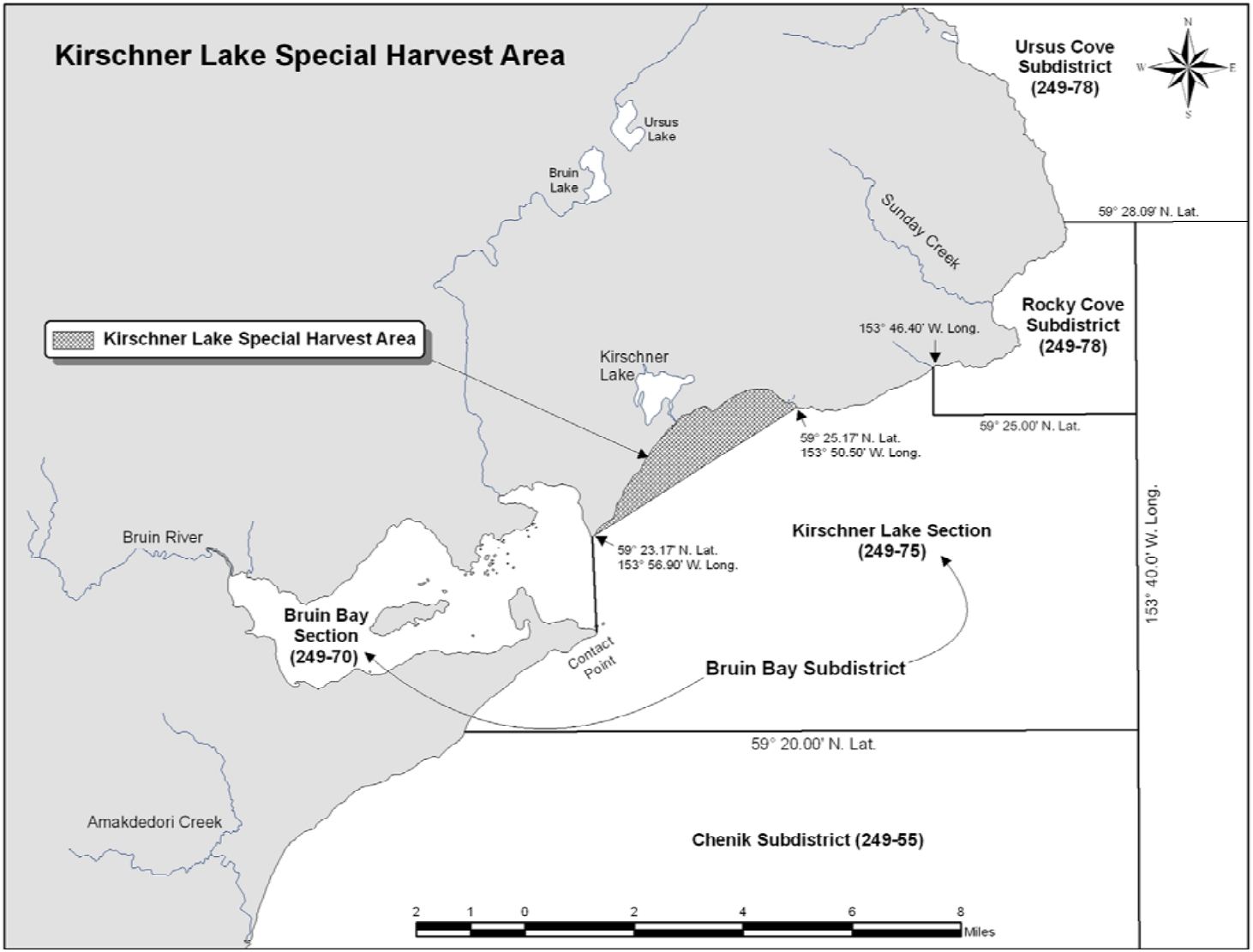

Figure 12-5. Map of the Kirschner Lake Special Harvest Area for Cook Inlet Aquaculture Association hatchery fishing in the Bruin Bay Subdistrict of the Kamishak Bay District in Lower Cook Inlet.

PROPOSAL 13 – 5AAC 21.373(d) Trail Lakes Hatchery Sockeye Salmon Management Plan and 5AAC 21.376(4) Resurrection Bay Salmon Management Plan.

PROPOSED BY: David Martin.

WHAT WOULD THE PROPOSAL DO? This proposal would require the sockeye salmon sport fishery in Resurrection Bay to be restricted in order to achieve Trail Lakes Hatchery broodstock objectives for sockeye and coho salmon. Achievement of broodstock and cost recovery goals would be a management directive for the noncommercial fishery.

WHAT ARE THE CURRENT REGULATIONS? *Trail Lakes Hatchery Sockeye Salmon Management Plan* addresses sockeye salmon allocation and Cook Inlet Aquaculture Association (CIAA) cost recovery. This plan is scheduled to sunset after May 1, 2011.

Trail Lakes Hatchery Sockeye Salmon Management Plan (5 AAC 21.373)

(c)(3) the prime objective of any Bear Lake sockeye salmon enhancement is to provide the opportunity for a commercial sockeye salmon fishery conducted with minimal conflict with the noncommercial fisheries.

(d) No management restrictions will be imposed on the noncommercial fisheries in order to achieve the Trail Lakes Hatchery objectives for sockeye salmon.

Resurrection Bay Salmon Management Plan (5 AAC 21.376)

(a) Since the beginning of significant commercial harvests of pink and chum salmon in Resurrection Bay, there have been some conflicts between recreational and commercial fishermen. The issues are the protection of coho and king salmon for the recreational fishery, and the management of surplus pink and chum salmon stocks in a manner that provides for a commercial fishery while minimizing the incidental catch of coho and king salmon.

(b) The commissioner shall, by emergency order,

(1) manage Resurrection Bay coho and king salmon stocks primarily for recreational use;

(2) manage the indigenous pink and chum salmon stocks primarily for commercial use, insofar as that harvest does not interfere in time or area with the recreational fishery;

(3) manage the commercial fishery in Resurrection Bay in a manner that does not interfere with the recreational fishery.

Saltwater bag limits in Resurrection Bay are 6 salmon per day, all of which can be sockeye or coho salmon. Fishing is allowed year round in saltwater, and snagging is a legal method. Sport fishing in freshwaters of Resurrection Bay is open downstream of Nash Road and the Seward Highway from June 16-December 31 with single-hook artificial lures only. The bag limit is 3 salmon per day; all 3 can be sockeye, but only 2 per day can be coho salmon.

WHAT WOULD BE THE EFFECT IF THE PROPOSAL WERE ADOPTED? If adopted, the salmon sport fisheries in Kachemak Bay and in Resurrection River and in the salt waters near the mouth of Resurrection River would closed or restricted until sockeye salmon broodstock and cost recovery goals were met. Based upon past cost recovery efforts, the sport fishery may not open in some years.

BACKGROUND: CIAA petitioned the Alaska Board of Fisheries in early 2009 to adopt a new management plan for the organization's Trail Lakes Hatchery, citing the need for a more effective and appropriate tool to meet the facility's financial objectives. The petition was ultimately converted into a proposal which, after amending, was passed into regulation in spring 2009, in time for that year's fishing season. Highlights of *5 AAC 21.373. Trail Lakes Hatchery Sockeye Salmon Management Plan* include:

- a regulatory description of 4 hatchery Special Harvest Areas (SHA) in Lower Cook Inlet (LCI);
- a provision directing the department to prioritize management efforts by keeping the SHAs closed to commercial common property fishing until CIAA's financial and broodstock objectives are achieved;
- a provision precluding management restrictions on non-commercial fisheries in order to attain hatchery objectives;
- a sunset date of May 1, 2011.

The SHAs in LCI (Bear Lake, China Poot/Hazel Lake, Tutka Bay, and Kirschner Lake) are managed to achieve cost recovery and broodstock goals for Trail Lakes Hatchery, and to provide an equitable harvest of hatchery-produced salmon among commercial users with minimal impact to noncommercial users. Prior to 2009, the only location within LCI where CIAA conducted sockeye salmon broodstock collection was Bear Lake in Resurrection Bay. The *Trail Lakes Hatchery Management Plan* calls for a sockeye salmon escapement range of 5,600 to 13,200 fish into Bear Lake to provide for broodstock and wild sockeye salmon spawning needs. Since 2000, an average of 12,744 sockeye salmon has been allowed to enter Bear Lake through the Bear Creek weir (Table 13-1). The last time this goal was not achieved was in 1992 (prior to the freshwater sport fishery) when 5,033 sockeye salmon were passed into Bear Lake. CIAA collects cost recovery fish in Resurrection Bay and at the weir, while also allowing fish to pass into the lake for wild spawning and to collect fish in the lake for broodstock. The freshwater drainage of Resurrection River, downstream of the Seward Highway and Nash Road (Figure 13-1), has been open to sport fishing since 2007 for sockeye salmon and since 2004 for coho salmon. Due to the relatively small number of anglers reporting in the Statewide Harvest Survey that they fish this freshwater area, reliable estimates of catch and harvest cannot be generated.

Reliable estimates can be estimated for sport harvest in the North Gulf Coast marine waters. Since 2000, the average sport harvest of sockeye salmon in the North Gulf Coast has been 4,347 fish. Estimates for sport fisheries in Kachemak Bay marine waters that harvest Southern District enhanced sockeye salmon runs are not available. Cost recovery by CIAA has averaged 25,908 sockeye and the average commercial harvest has been 17,249 sockeye (Table 13-1). In 2009 and 2010, commercial harvest was closed so CIAA could use all returning sockeye salmon for cost recovery. In 2009, 13,318 sockeye salmon were passed through the weir and 15,864 fish were passed in 2010.

DEPARTMENT COMMENTS: The department is **NEUTRAL** on this allocative proposal.

COST ANALYSIS: Approval of this proposal is not expected to result in an additional direct cost for a private person to participate in this fishery.

Table 13-1. Harvest, cost recovery, and brood data for sockeye salmon (2000-2009).

Year	Commercial Harvest[a]	CIAA Cost Recovery[a]	Sport Saltwater Harvest[b]	Total Harvest	Brood and Escapement[a]	Total Run
2000	19,145	1,670	1,485	22,300	11,904	34,204
2001	2,629	400	1,263	4,292	12,801	17,093
2002	13,447	2,729	3,112	19,288	12,473	31,761
2003	1,341	3,011	2,077	6,429	13,233	19,662
2004	16,645	0	2,984	19,629	11,923	31,552
2005	19,018	37,654	5,460	62,132	13,407	75,539
2006	27,793	34,655	4,977	67,425	12,398	79,823
2007	15,407	8,457	5,761	29,625	12,841	42,466
2008	57,060	33,036	5,732	95,828	13,444	109,272
2009	Closed	137,469	10,619	148,088	13,318	161,406
Average	19,165	25,908	4,347	47,504	12,774	60,278

[a]data from FMR No. 10-17 by Hammerstrom and Ford

[b]sport harvest from North Gulf Coast AMR and Statewide Harvest Survey. Only includes saltwater harvest estimates.

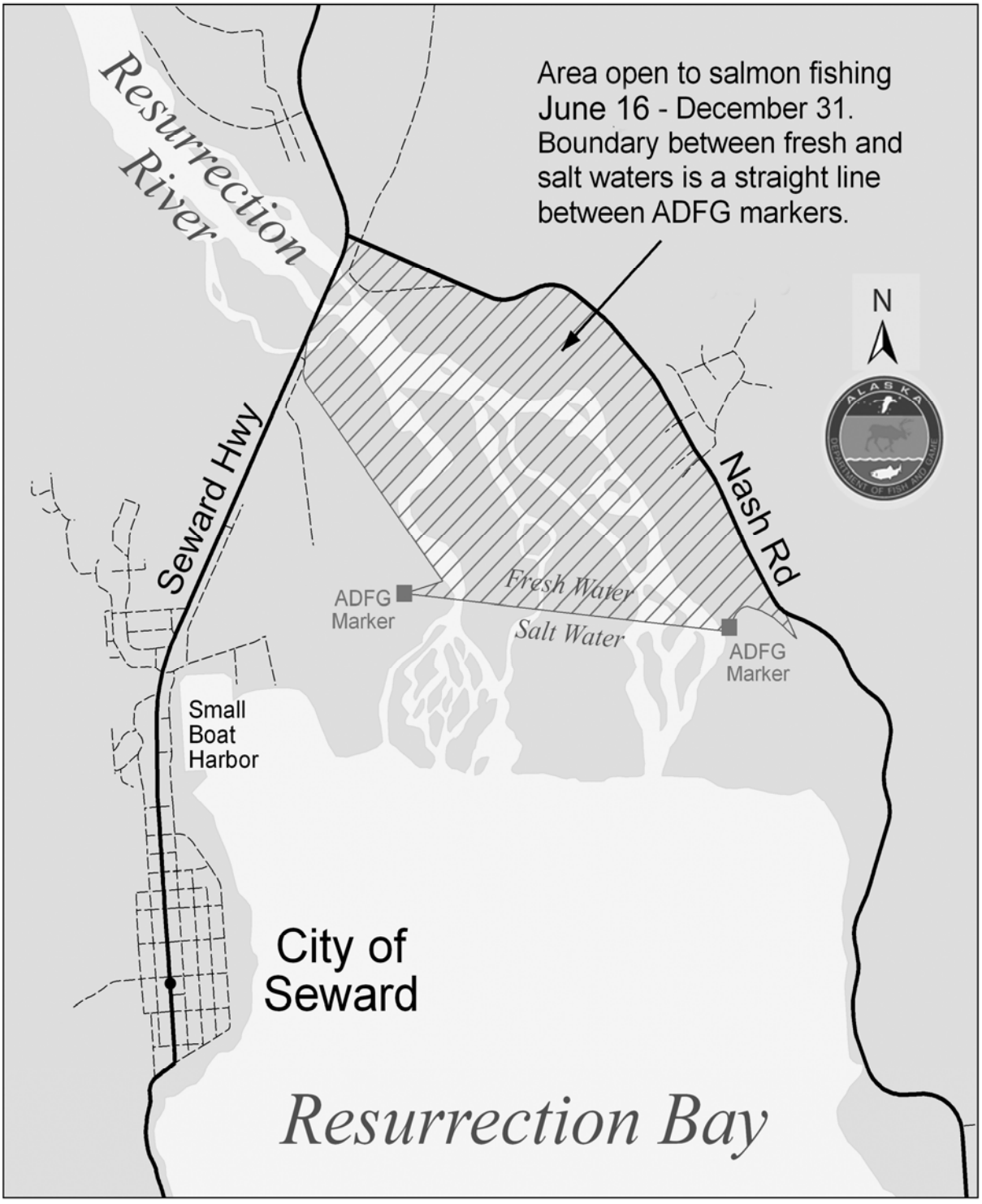

Figure 13-1. Map of Resurrection Bay and freshwater fishery.

PROPOSAL 14 - 5 AAC 77.545. Kachemak Bay Personal Use Salmon Fishery Management Plan.

PROPOSED BY: United Cook Inlet Drift Association.

WHAT WOULD THE PROPOSAL DO? This proposal would open the Kachemak Bay personal use fishery in China Poot Creek by emergency order only after Cook Inlet Aquaculture Association (CIAA) has met its cost recovery goals and a reasonable commercial fishery has occurred.

WHAT ARE THE CURRENT REGULATIONS? In China Poot Creek, upstream from a department marker, sockeye salmon may be taken by dip net from July 1 through August 7, with a bag and possession limit of 6 fish and prohibition on retention of other species.

WHAT WOULD BE THE EFFECT IF THE PROPOSAL WERE ADOPTED? Based on recent years' cost recovery attempts, it is unlikely that the personal use fishery would be allowed to open. In years when the cost recovery goal would not be met and/or opportunity for commercial harvest would be limited, the hatchery sockeye salmon that accumulate in the creek would mature and die.

BACKGROUND: Leisure Lake, at the headwaters of China Poot Creek, has been stocked with sockeye salmon since 1976 (Figure 14-1). The lake has been stocked with an average of 1.7 million sockeye salmon fry since 1984 to supplement commercial harvests in Kachemak Bay. Due to the presence of barrier falls upstream from the intertidal area of China Poot Creek, adult sockeye salmon returning to Leisure Lake are harvested in a terminal fishery. Sockeye salmon that escape the commercial fishery are available for harvest in the personal use fishery which occurs along 200 yards of China Poot Creek between the intertidal area and the barrier falls. The personal use harvest has been reported in the Statewide Harvest Survey from 1983-1995 and has averaged 3,680 sockeye salmon.

Until 1995, the personal use season was July 1 through July 31. In some years, sockeye salmon continued to enter China Poot Creek after the close of the season. Harvest of these fish was accomplished by extending the fishery by emergency order through early August. The decision to extend the season was determined by index counts of sockeye salmon present in the stream in late July. Extended openings for personal use dipnetting were allowed by department emergency order in August from 1983 through1985, in 1989, and in 1994 to completely harvest fish that had entered China Poot Creek. The board extended the regulatory season through August 7 in 1995 to maximize the opportunity to harvest stocked sockeye salmon while minimally impacting wild pink salmon that spawn in China Poot Creek; no inseason extensions have been required since.

Prior to 2009, CIAA established an annual cost recovery goal specific to the China Poot Special Harvest Area (SHA). The China Poot SHA was then opened to CIAA hatchery fishing only, which proceeded until the cost recovery goal for that area was achieved, at which time the SHA was closed to hatchery fishing and opened to commercial common property fishing for the remainder of the run. In 2009, the board adopted the *Trail Lakes Hatchery Sockeye Salmon Management Plan* (5 AAC 21.373). The plan included provisions to prioritize management efforts

by keeping all CIAA SHAs throughout the Lower Cook Inlet Management Area (LCIMA) closed to common property fishing until CIAA's Trail Lakes Hatchery cost recovery and broodstock objectives for sockeye salmon were achieved. Under this new plan, the formerly separate cost recovery goals for each SHA were combined into a single overall goal for Trail Lakes Hatchery, thus giving CIAA additional flexibility in meeting its overall goal. In 2009 and 2010, CIAA failed to meet the established hatchery cost recovery goals, and as a result, no common property fishing was allowed in the China Poot Subdistrict or in any SHA in LCIMA.

DEPARTMENT COMMENTS: The department **OPPOSES** this proposal because the personal use fishery is within a terminal harvest area and harvests fish after they have passed the cost recovery fishery.

COST ANALYSIS: Approval of this proposal is not expected to result in an additional direct cost for a private person to participate in this fishery.

Figure 14-1. Map of China Poot Bay personal use dip net fishery.

PROPOSAL 15 - 5 AAC 27.430. Lawful gear for Cook Inlet Area. *(This proposal should be cited as 5 AAC 77.531. Personal use herring fishery.)*

PROPOSED BY: Dave Lyon.

WHAT WOULD THE PROPOSAL DO? This proposal would allow use of cast nets when fishing for herring for personal use in the Cook Inlet management area. This proposal would personal use herring fishing in both Upper Cook Inlet (UCI) and Lower Cook Inlet (LCI) management areas (Figure 14-1).

WHAT ARE THE CURRENT REGULATIONS? Herring may be taken in the Northern and Central Districts from April 1 through May 31 and in the Southern (Kachemak Bay), Kamishak Bay, Barren Island, Outer, and Eastern Districts from January 1 through December 31. Only gillnets or dip nets may be used. Gillnets may not be used in Turnagain Arm east of a line from Point Possession to Point Campbell. No gillnet may exceed 20 feet in length and two inches in mesh size, except in the Southern District no gillnet may exceed 50 feet in length and two inches in mesh size. Each gillnet must be attended by the fisherman at all times when it is being used to take fish. There are no bag or possession limits for herring.

WHAT WOULD BE THE EFFECT IF THE PROPOSAL WERE ADOPTED? If this proposal were adopted, the change in effort and resultant catch in Cook Inlet is somewhat difficult to predict since utilization of the new gear could result in simple replacement of some amount of the currently allowable gear and the resultant harvest. Addition of this gear type, given no replacement of currently allowed gears, is not expected to increase personal use herring harvests to levels that would produce biological concerns.

BACKGROUND: Regulations for personal use herring fishing in the Cook Inlet management area contain very few restrictions other than the previously mentioned allowable gears, a maximum gillnet length of 20 feet (50 feet in the Southern District only), and a maximum gillnet mesh size of two inches. Seasons run from April 1 through May 31 in the Northern and Central Districts, while fishing is allowed year round in the Southern, Kamishak Bay, Barren Islands, Outer, and Eastern districts. There are no bag and possession limits, but each deployed gillnet must be attended by the fisherman at all times. No permit is required to participate in the Cook Inlet personal use herring fishery, but each participant must possess an Alaska resident sport fishing license. The department does not collect harvest information on the Cook Inlet personal use herring fishery; thus, no historical catch information is available. Current gear restrictions are intended to allow reasonable opportunity for users while simultaneously keeping harvests at a non-threatening level and discouraging localized depletions.

DEPARTMENT COMMENTS: The department is **NEUTRAL** on this proposal. Although little documentation on past participation and harvest in the Cook Inlet personal use herring fishery exists, the department believes figures for both to be modest. The department's limited experience using cast net gear to capture herring in Kamishak Bay suggests that this particular gear type is rather inefficient, except when used on herring that are actively spawning in shallow water, or on fish that are located in water with high turbidity levels.

Because this proposal will affect both Lower and Upper Cook Inlet, the board may wish to defer action until the UCI board meeting in February, 2011.

COST ANALYSIS: Approval of this proposal is expected to result in an additional direct cost, equivalent to the initial purchase price of a cast net, for a private person to participate in this fishery.

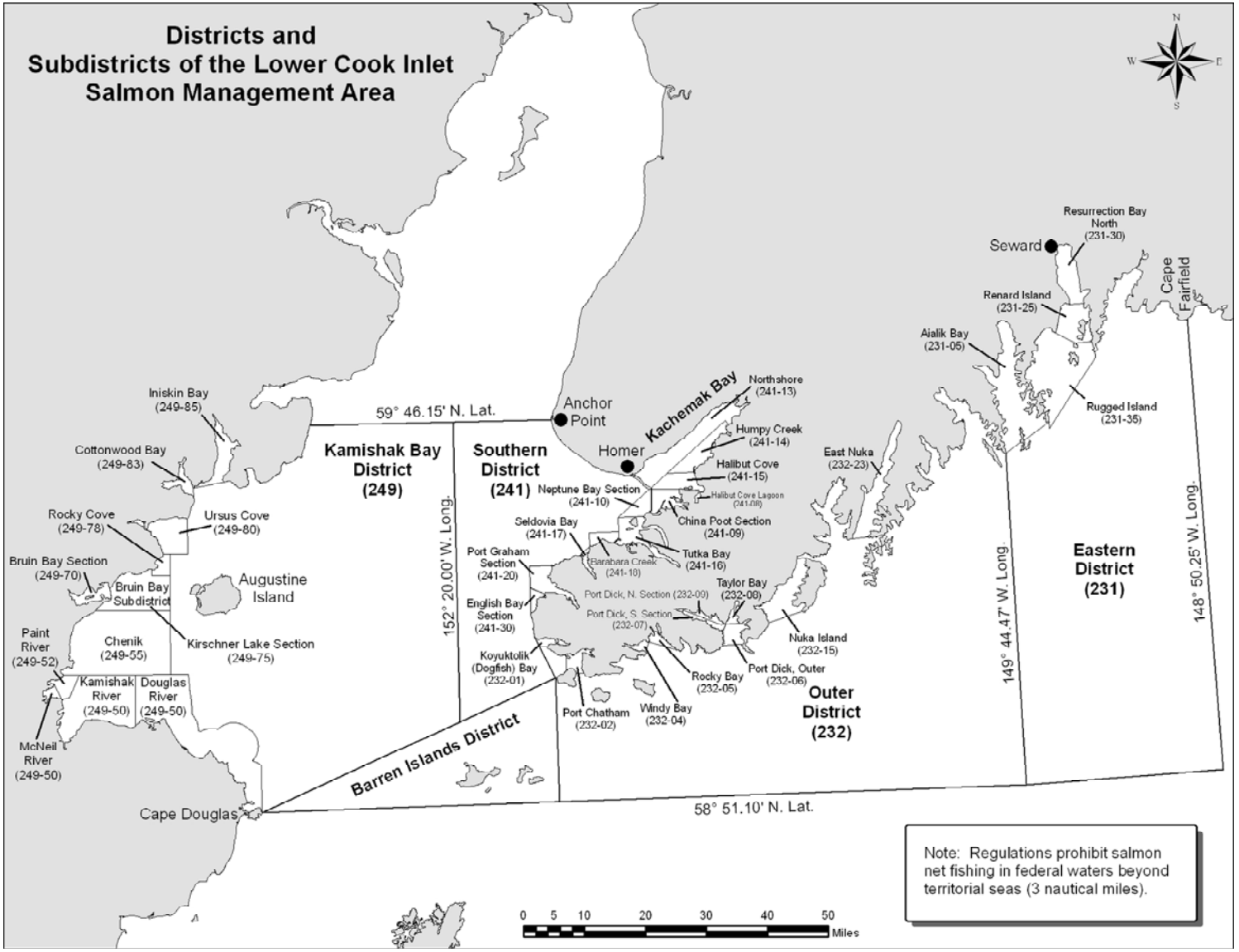

Figure 15-1. Map of the Lower Cook Inlet commercial salmon fishing management area, showing districts and subdistricts.

PROPOSAL 16 – 5AAC 28.310. Fishing Seasons for Cook Inlet Area (d)(1), (2), and (3); 5 AAC 28.365 Cook Inlet Rockfish Management Plan; and 5 AAC 28.367 Cook Inlet Area Pacific cod Management Plan (i).

PROPOSED BY: Alaska Department of Fish and Game.

WHAT WOULD THE PROPOSAL DO? The proposal will centralize all references to allowable Cook Inlet rockfish bycatch in a single location (**5 AAC 28.365. Cook Inlet Rockfish Management Plan)** and set rockfish bycatch levels of 10% to groundfish and halibut, and 20% to directed rockfish in order to make rockfish bycatch allowances less confusing to users.

WHAT ARE THE CURRENT REGULATIONS? Regulations stipulate a 5% bycatch allowance of rockfish to Pacific cod (both parallel and state waters), 10% to halibut and other groundfish, and 20% non-pelagic rockfish to directed (pelagic) rockfish.

WHAT WOULD BE THE EFFECT IF THE PROPOSAL WERE ADOPTED? If adopted, the proposal would combine references to rockfish retention and bycatch under the *Cook Inlet Rockfish Management Plan.* This should make references to the bycatch limits more accessible to both public and agency staff. There would be no change to current management strategies.

BACKGROUND: The *Cook Inlet Rockfish Management Plan* was adopted in 1993 and has been modified numerous times. As other groundfish fisheries developed it became necessary to address rockfish bycatch for a variety of target species and gear types. Regulatory references to bycatch allowances for these fisheries were written in several locations and can be difficult to locate. Additionally, the 5% bycatch level for Pacific cod has proven unnecessary and can be standardized to the 10% level set for other groundfish and halibut.

DEPARTMENT COMMENTS: The department submitted and **SUPPORTS** this proposal that will make regulations more available to users and reduce confusion in calculating allowable bycatch levels. Both industry and agency staff will benefit from a simple and accessible regulation.

COST ANALYSIS: Approval of this proposal is not expected to result in an additional direct cost for a private person to participate in this fishery.

PROPOSAL 17 – 5AAC 28.330. Lawful gear for Cook Inlet Area (i)(2).

PROPOSED BY: Alaska Department of Fish and Game.

WHAT WOULD THE PROPOSAL DO? This proposal would repeal the Cook Inlet Area definition of mechanical jigging gear that provides for "a single continuous line with not more than 150 hooks".

WHAT ARE THE CURRENT REGULATIONS? In the Cook Inlet Area, mechanical jigging machines used to take groundfish must have no more than 5 lines, with no more than 30 hooks per line, or a single continuous line with not more than 150 hooks.

WHAT WOULD BE THE EFFECT IF THE PROPOSAL WERE ADOPTED? If adopted, this proposal would restrict mechanical jig gear limits to a maximum of 5 machines with a maximum of 30 hooks per line. Use of a single line with up to 150 hooks would be prohibited. The change would have little effect because this gear has never been used in the Cook Inlet Area.

BACKGROUND: When the board adopted the state waters Pacific cod season in 1997, it also amended the definition of jig gear in response to a user that testified to the board, describing a continuous loop of line with 150 hooks that was fished across the deck and under the hull amidships. This gear has not been adopted into common use and the definition has proven misleading to some users who have interpreted "a single continuous line" with 150 hooks in a configuration more like to longlining than jigging.

DEPARTMENT COMMENTS: The department submitted and **SUPPORTS** this proposal. Amending the jigging machine definition for groundfish in the Cook Inlet Area will result in clear and consistent definition of the gear type.

COST ANALYSIS: Approval of this proposal is not expected to result in an additional direct cost for a private person to participate in this fishery.

PROPOSAL 18 – 5AAC 28.350. Closed waters in Cook Inlet Area.(b)(2). (*NOTE: The regulatory reference of this proposal to Chinitna Bay and Cape Douglas conflicts with the text in the proposal. Based upon a conversation with the proposer, the department has provided comment to his original intent.)*

PROPOSED BY: Al Ray Carroll.

WHAT WOULD THE PROPOSAL DO? The proposal would open an area that is now closed in Kachemak Bay to commercial fishing with groundfish pot gear.

WHAT ARE THE CURRENT REGULATIONS? Current regulation prohibits use of groundfish pot gear in the described waters of Kachemak Bay.

WHAT WOULD BE THE EFFECT IF THE PROPOSAL WERE ADOPTED? If adopted, the proposal would expand the area currently available for fishing Pacific cod with groundfish pots by eliminating the current groundfish pot closure area in Kachemak Bay (Figures 18-1 and 18-2). It is unknown if opening this closed area would increase the efficiency of the cod fleet. Allowing groundfish pot gear in this area may also increase user conflicts with noncommercial Tanner crab fishermen.

BACKGROUND: The Kachemak Bay groundfish pot closure area was first established via emergency order in 1990 and adopted into regulation in 1996. Designed to reduce Tanner crab trapping and handling mortality during the Pacific cod fishery, the closure area encompasses the majority of current Tanner crab habitat in Kachemak Bay. Tanner crab distribution outside of this area is typically sparse.

Targeting Pacific cod with pot gear in Kachemak Bay began in earnest during the early 1990s and coincided with the decline of Tanner crab fishing opportunities. Currently, there are two Pacific cod seasons identified in regulation. A "parallel" season opens January 1 and closes concurrent with the adjacent federal waters and a "state waters" season opens 24 hours after the parallel season and closes when either the guideline harvest level or the gear specific allocation is achieved. There are no limits on the amount of gear that may be fished during the parallel season. During the state waters season, gear is restricted 60 pots or 5 jigs until October 30, at which time gear limits may be lifted by emergency order. This occurs during most years.

The state waters Pacific cod season first opened in 1997 and has resulted in a regular fishery within Kachemak Bay with harvest occurring over more months of the year than previously, particularly during the fall months of October through December. However, since 1997, approximately 81% of the annual Pacific cod harvest has occurred January through April. In the state waters season, pot gear is allocated up to 75% of the annual guideline harvest level. The pot allocation has been achieved in 7 of the past 9 years (Figure 18-3). In the two years the allocation was not achieved, all harvest during the September through December period was accounted under a parallel season.

The state waters Pacific cod season first opened in 1997 and has resulted in a regular fishery within the bay with harvest occurring over more months of the year than previously, particularly during the fall months of October through December. However, since 1997, approximately 81% of the annual Pacific cod harvest has occurred during the period January through April. In the state waters season, pot gear is allocated up to 75% of the annual guideline harvest level. The pot allocation has been achieved in 7 of the past 9 years. In the two years the allocation was not achieved, all harvest during the September through December period was accounted under a parallel season.

The last commercial Tanner crab fishery in Kachemak Bay occurred in 1994 and harvested approximately 285,000 pounds of Tanner crab. Continued population declines, documented by department trawl surveys resulted in closure of the non-commercial Tanner crab fisheries in the bay during 2002 – 2007. By 2008 legal male Tanner crab abundance estimates (Figure 18-4) increased and achieved the minimum threshold required to reopen the non-commercial fisheries and they have remained open since. However, rebuilding of Tanner crab continues as estimates of legal male abundance remain far below the 500,000-crab minimum threshold required to reopen a commercial fishery. Current non-commercial fishery season dates are July 15 – March 15 with a two-week closure January 1-15. The groundfish pot closure area reduces the potential for gear conflicts when both fisheries are being prosecuted. Because the Pacific cod pot fishery occurs primarily during winter months, bycatch of Tanner crab results in crab injury including cold weather damage and handling mortality.

DEPARTMENT COMMENTS: The department **OPPOSES** elimination of the groundfish pot closure area in Kachemak Bay. Reducing or eliminating bycatch, particularly on a rebuilding resource such as Tanner crab, is a long-standing goal of fishery management. Tanner crab bycatch has been documented by department observers and although it has been generally low in areas outside the closed area, it is very likely that crab bycatch rates would be high in areas of higher crab abundance. It is important to conserve available Tanner crab resources to allow the population to rebuild.

COST ANALYSIS: Approval of this proposal is not expected to result in an additional direct cost for a private person to participate in this fishery.

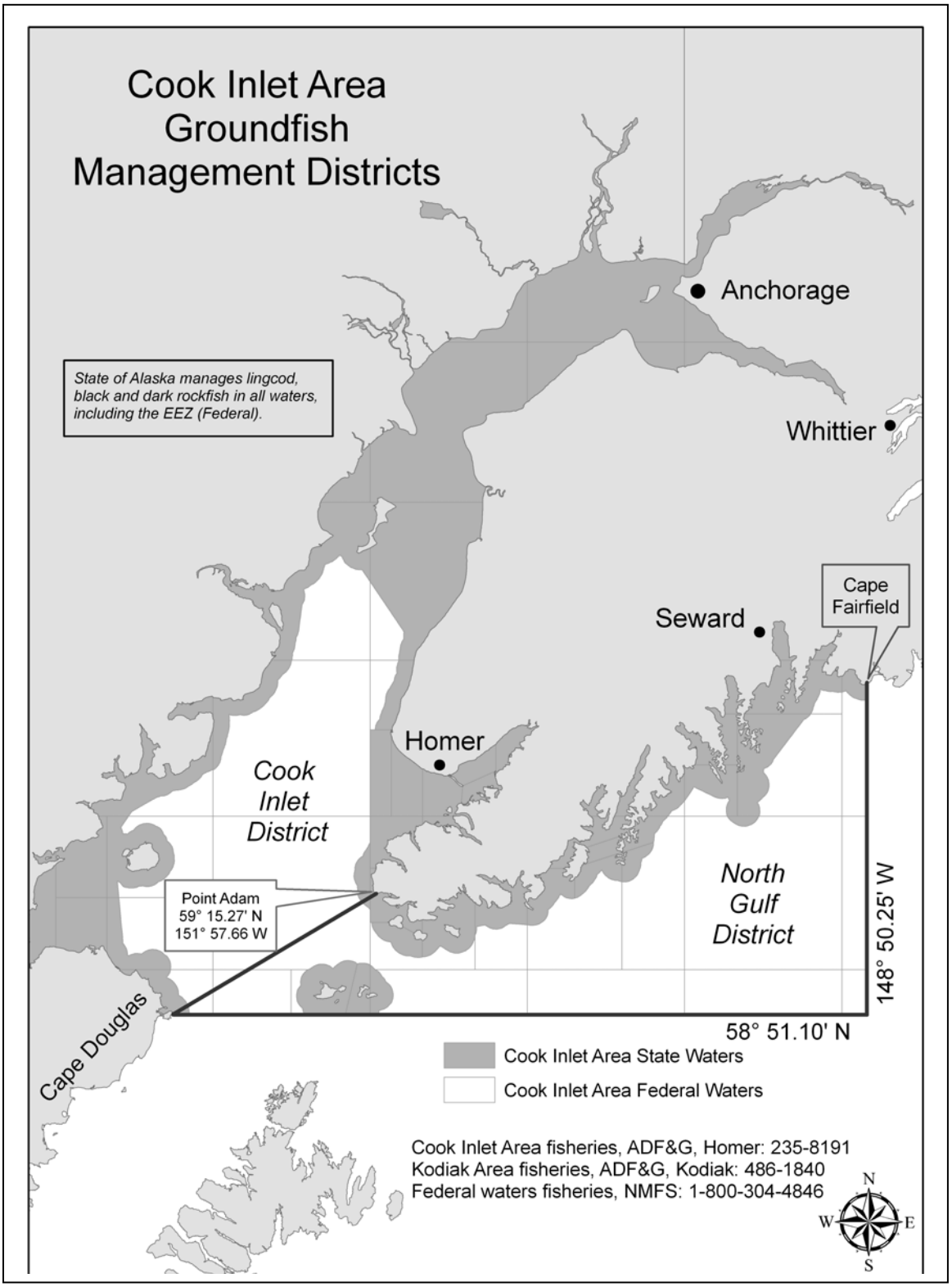

Figure 18-1. Cook Inlet Management Area boundaries and districts

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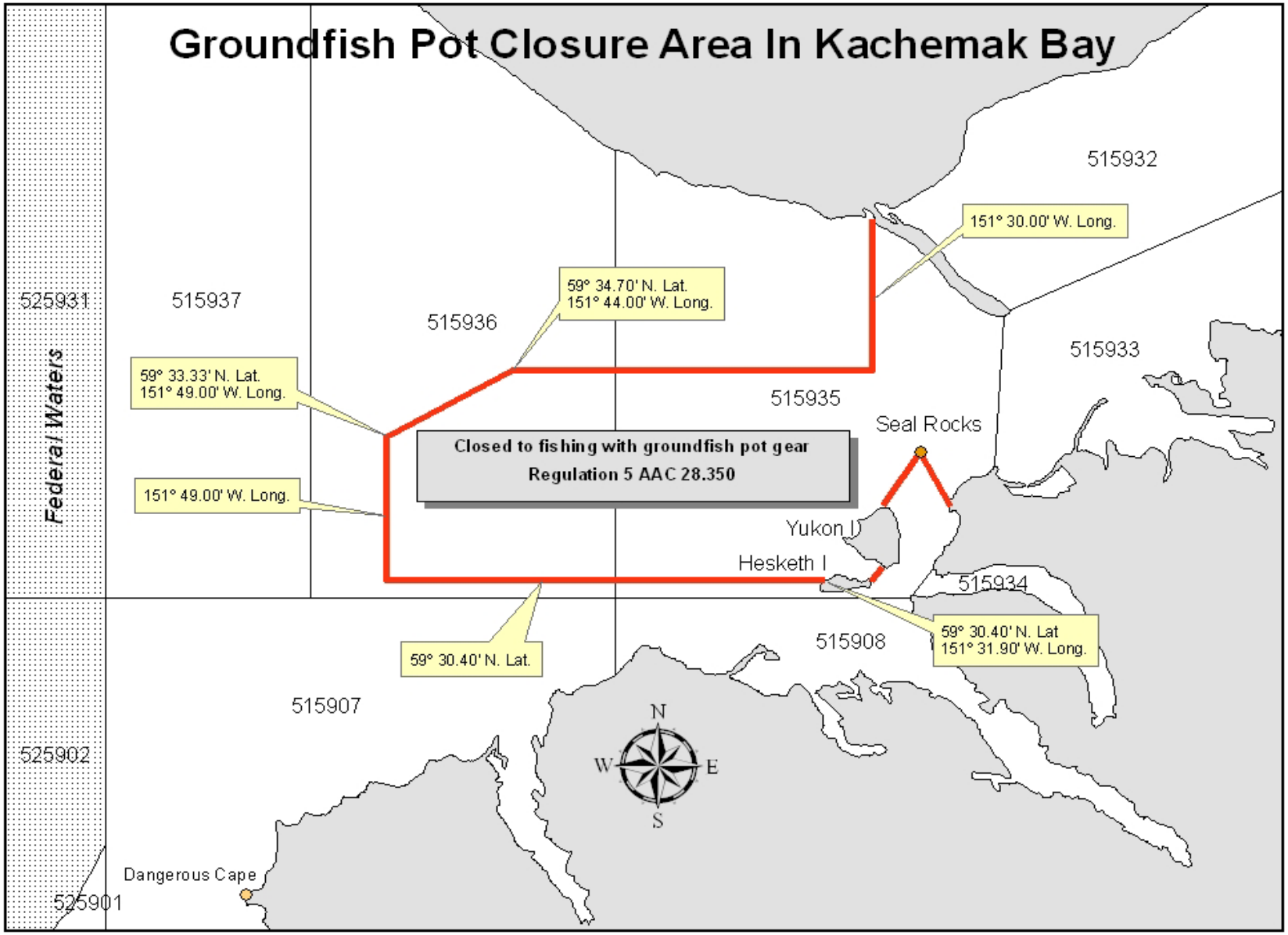

Figure 18-2. Kachemak Bay groundfish pot closure area with statistical areas and boundary location points.

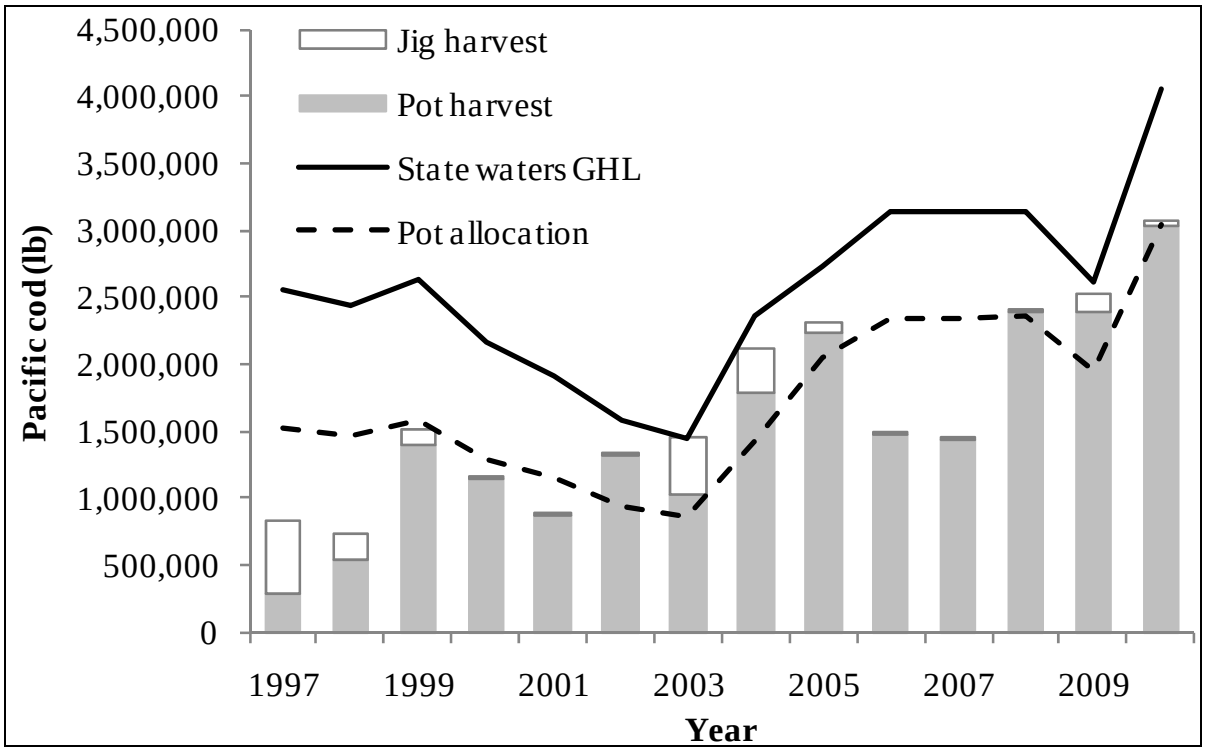

Figure 18-3. Cook Inlet state waters season Pacific cod commercial harvest (lb) and allocation by gear type, 1997 - 2010.

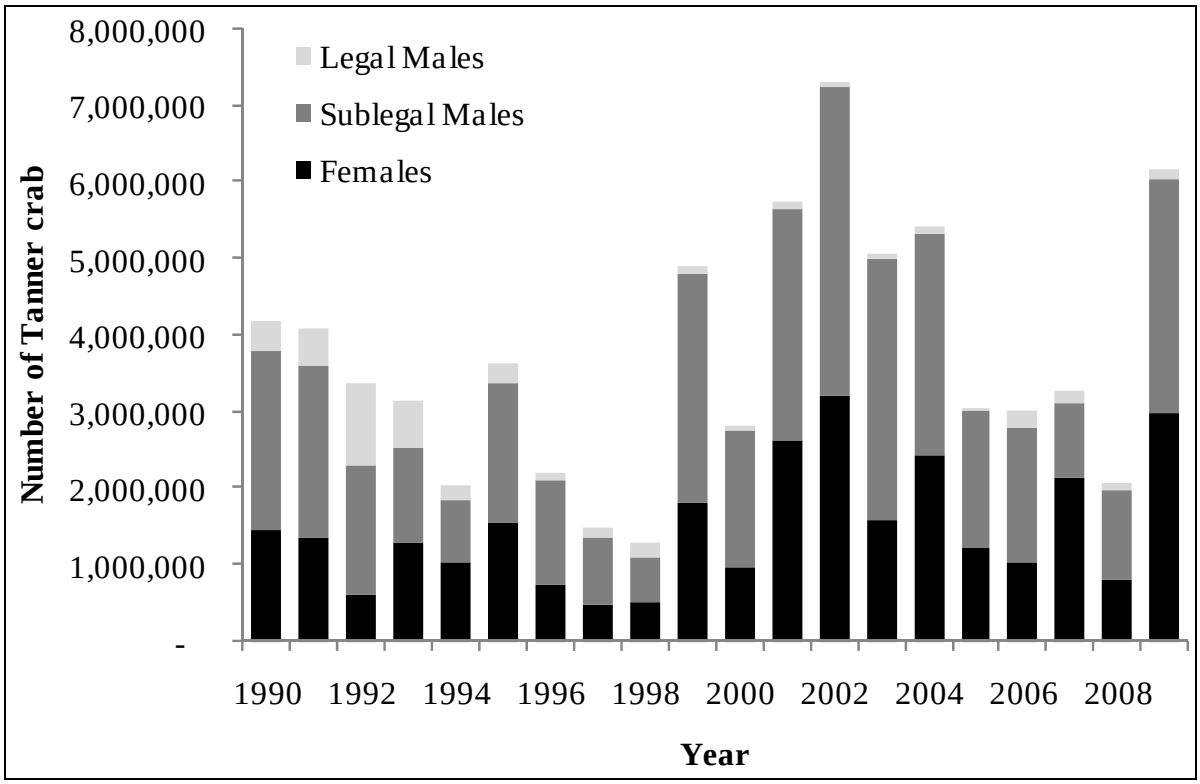

Figure 18-4. Cook Inlet Southern District Tanner crab abundance estimates by sex and legal males, 1990-2009.

PROPOSAL 19 – 5AAC 28.367. Cook Inlet Pacific Cod Management Plan (c).

PROPOSED BY: Al Ray Carrol.

WHAT WOULD THE PROPOSAL DO? The proposal would reallocate the Cook Inlet state waters Pacific cod guideline harvest level (GHL) between pot and jig gears.

WHAT ARE THE CURRENT REGULATIONS? Current regulations allocate the state waters Pacific cod GHL 75% to pots and 25% to jig gear. In addition, there is a 25% cap on the harvest by vessels larger than 58' in overall length.

WHAT WOULD BE THE EFFECT IF THE PROPOSAL WERE ADOPTED? If adopted, this proposal would change the harvest allocations between pot and jig gear. However, it would have little or no effect on actual jig or pot harvests that have occurred since 2005.

BACKGROUND: There are two Pacific cod seasons in the Cook Inlet Area. The "parallel" season occurs in state waters and coincides with seasons in adjacent federal waters. The "state waters" season opens 24 hours following the parallel season with a guideline harvest level calculated as 3.75% of the federal Central Gulf of Alaska acceptable biological catch and has gear-specific allocation. Gear allocations for the Cook Inlet state waters Pacific cod fishery were originally set at 60% pot and 40% jig, and modified to the current 75% pot and 25% jig levels in 2005. The pot gear harvest allocation was first reached in 2002 and has been achieved in 7 of the recent 9 years (Tables 19-1 and 19-2, Figure 19-1). In the 2 years the allocation was not achieved, all harvest during the September through December period was accounted under a parallel season. Jig harvest has been consistently low in recent years because of a lack of jig fishermen participating in the fishery, except for seasons in which the pot allocation was achieved and pot vessels transitioned to jig gear. The years 2003 and 2004 are examples of this transition between gear types.

DEPARTMENT COMMENTS: The department is **NEUTRAL** on this allocative proposal.

COST ANALYSIS: Approval of this proposal is not expected to result in an additional direct cost for a private person to participate in this fishery.

Table 19-1. Cook Inlet state waters season commercial Pacific cod effort and harvest (lb) by gear type, 1997-2010.

Year	Vessels	Jig Harvest	Percent of GHL	Vessels	Pot Harvest	Percent of GHL	Total Harvest	State GHL (lb)	Percent of GHL
1997	46	561,947	22.0%	10	276,966	10.9%	838,913	2,549,646	32.9 %
1998	29	188,209	7.7%	13	542,260	22.3%	730,469	2,434,565	30.0 %
1999	14	127,229	4.8%	24	1,390,678	52.7%	1,517,907	2,637,445	57.5 %
2000	5	13,885	0.6%	17	1,135,903	52.6%	1,149,788	2,160,255	53.2 %
2001	5	19,428	1.0%	9	875,923	45.7%	895,351	1,917,195	46.7 %
2002	6	18,163	1.2%	9	1,310,684	83.4%	1,328,847	1,571,455	84.6 %
2003	15	429,684	29.9%	10	1,023,854	71.2%	1,453,538	1,438,516	101.0%
2004	18	326,298	13.8%	12	1,785,386	75.4%	2,111,684	2,367,765	89.2%
2005	8	90,734	3.3%	10	2,227,417	81.4%	2,318,151	2,737,893	84.7%
2006	1	1,406	0.0%	11	1,476,115	47.1%	1,477,521	3,131,088	47.2%
2007	4	5,545	0.2%	13	1,436,804	45.9%	1,442,349	3,131,088	46.1%
2008	3	14,456	0.5%	13	2,379,085	75.9%	2,393,541	3,133,403	76.4%
2009	9	138,960	5.3%	13	2,393,574	91.8%	2,532,535	2,606,393	97.2%
2010	4	45,802	1.1%	9	3,033,924	74.8%	3,079,726	4,054,466	76.0%

Table 19-2. Cook Inlet state waters commercial Pacific cod jig harvest, allocation, and percent of the allocation harvested, 1997 - 2010.

	Pot (lb)		Percent Allocation	Jig (lb)		Percent Allocation
Year	Harvest	Allocation	Harvested	Harvest	Allocation	harvested
1997	276,966	1,529,788	18.1%	561,947	1,019,858	55.1%
1998	542,260	1,460,739	37.1%	188,209	973,826	19.3%
1999	1,390,678	1,582,467	87.9%	127,229	1,054,978	12.1%
2000	1,135,903	1,296,153	87.6%	13,885	864,102	1.6%
2001	875,923	1,150,317	76.1%	19,428	766,878	2.5%
2002	1,310,684	942,873	139.0%	18,163	628,582	2.9%
2003	1,023,854	863,110	118.6%	429,684	575,407	74.7%
2004	1,785,386	1,420,659	125.7%	326,298	947,106	34.5%
2005	2,227,417	2,053,420	108.5%	90,734	684,473	13.3%
2006	1,476,115	2,348,316	62.9%	1,406	782,772	0.2%
2007	1,436,804	2,348,316	61.2%	5,545	782,772	0.7%
2008	2,379,085	2,350,052	101.2%	14,456	783,351	1.8%
2009	2,393,574	1,954,795	122.4%	138,960	651,598	21.3%
2010	3,033,924	3,040,850	99.8%	45,802	1,013,617	4.5%

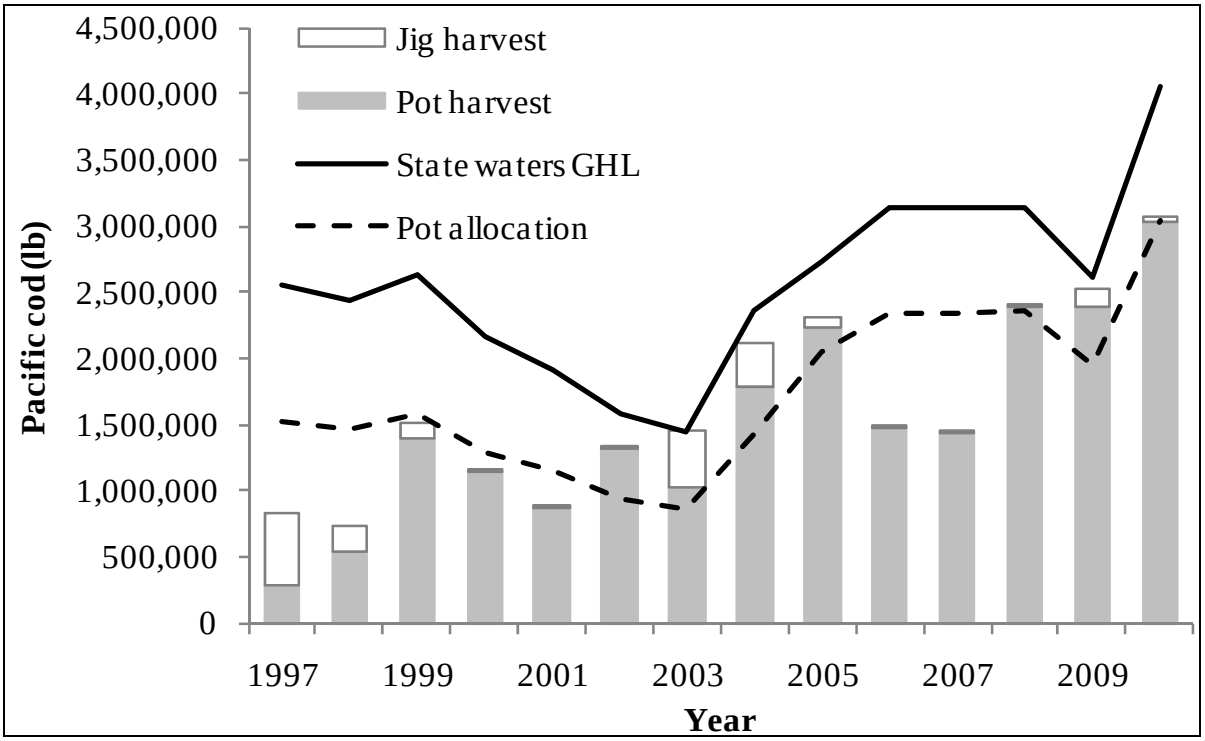

Figure 19-1. Cook Inlet state waters season Pacific cod commercial harvest and allocation by gear type, 1997-2010.

COMMITTEE B: Sport Fisheries
(Total proposals: 32)

West Cook Inlet: 20, 21, 22

Lower Cook Inlet Freshwater Salmon Fisheries: 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42

Lower Cook Inlet Freshwater Salmon Fisheries: 43, 44, 45, 46, 47, 48, 49, 50

Rockfish: 51

PROPOSAL 20 - 5 AAC 62.122. Special provisions and localized additions and exceptions to the seasons, bag, possession, and size limits, and methods and means for the West Cook Inlet Area.

PROPOSED BY: David Coray.

WHAT WOULD THE PROPOSAL DO? This proposal would designate a fly-fishing-only area in a 0.4 mile corridor of Silver Salmon Creek between N 59°58'50.7, W152°39'33.0"and N 59°58'50.7", E 152°40'04.6". Within fly-fishing-only waters, anglers may fish with not more than 1 unweighted, single-hook fly with a gap between point and shank of 3/8 inch or less. Weights could be used only 18 inches or more ahead of the fly.

WHAT ARE THE CURRENT REGULATIONS? In flowing waters, sport fishing for coho salmon is allowed January 1 through September 30. The bag limit for salmon (other than king salmon) 16 inches or greater in length is 3 per day and 6 in possession, of which all may be coho salmon.

A person who takes a daily bag limit of coho salmon 16 inches or more in length in West Cook Inlet freshwaters may not fish for any species in West Cook Inlet waters for the remainder of that day.

In flowing waters from the latitude of the southern tip of Chisik Island to Cape Douglas, only unbaited, artificial lures are allowed July 15 through May 15.

WHAT WOULD BE THE EFFECT IF THE PROPOSAL WERE ADOPTED? Anglers who wished to fish with lures could not fish in this section of Silver Salmon Creek. Hooking mortality is related more to the use of bait and location of the hook wound than the size and number of points of the hook used. Bait use increases hooking of fish in vital areas and therefore, mortality. Bait use is already prohibited during the timing of coho salmon migration; therefore, it is unlikely the proposal would significantly reduce fish hooking mortality.

BACKGROUND: Silver Salmon Creek is located on the west side of Cook Inlet on the mainland approximately 8 miles south of the southern tip of Chisik Island (Figure 20-1). The stream is most commonly accessed by plane from across Cook Inlet. Regularly scheduled flights from Soldotna land on the beach adjacent to the creek during the summer months. Approximately 3 lodges support sport fishing and bear viewing activities in the area.

The stream is fished primarily for coho salmon in August and early September. An average (1983–2006) of 1,000 angler days were spent catching approximately 3,200 coho salmon, of which approximately 1,000 were kept annually. In recent years (2007–2009), the coho salmon annual harvest has averaged 850 fish and the catch has averaged 1,900 fish. Harvest and catch are variable, but stable, in Silver Salmon Creek—there is no increasing trend.

Silver Salmon Creek coho salmon abundance was indexed opportunistically during aerial fixed-wing surveys for chum salmon in late August during 2000–2005 and 2010. The estimates were minimums since the surveys occurred before the peak of coho salmon migration. The average count was roughly 3,000 coho salmon with a range of 350 in 2010 to 6,900 in 2000.

In areas throughout the state where there have been concerns of catch and release mortality on salmon or trout, the board has considered the alternative of prohibiting anglers from removing fish from the water before releasing the fish.

DEPARTMENT COMMENTS: The department **OPPOSES** this proposal because there is no sustainability concern with this fishery. Participation, harvest, and catch are stable, and opportunistic aerial survey counts of escapement are comparable in magnitude to other coho salmon fisheries that sustain similar levels of fishing pressure.

COST ANALYSIS: Approval of this proposal is not expected to result in an additional direct cost for a private person to participate in this fishery.

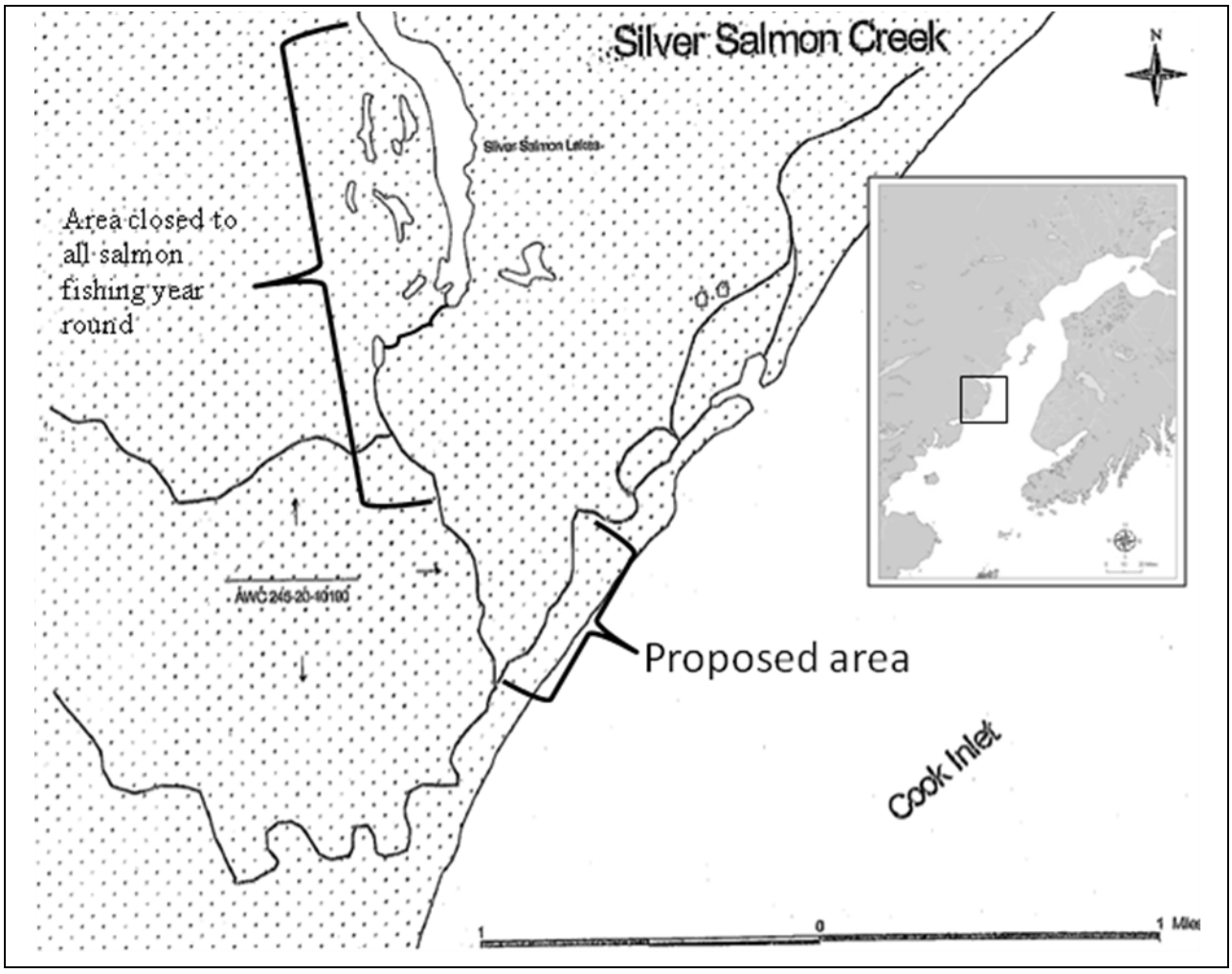

Figure 20-1. Map of Silver Salmon Creek.

PROPOSAL 21 - 5 AAC 62.122. Special provisions and localized additions and exceptions to the seasons, bag possession, and size limits, and methods and means for the West Cook Inlet Area.

PROPOSED BY: David Coray.

WHAT WOULD THE PROPOSAL DO? This proposal would lower the coho salmon bag limit from 3 fish to 2 fish in waters south of West Forelands to, and including, Chinitna Bay.

WHAT ARE THE CURRENT REGULATIONS? In flowing waters between the Susitna River and West Foreland, the bag limit for coho salmon 16 inches or greater in length is 2 per day and 4 in possession. In flowing waters between West Foreland and Cape Douglas the bag limit for coho salmon 16 inches or greater in length is 3 per day and 6 in possession (Figure 21-1).

A person who takes a daily bag limit of coho salmon 16 inches or more in length in the West Cook Inlet waters may not fish for any species in West Cook Inlet waters for the remainder of that day.

WHAT WOULD BE THE EFFECT IF THE PROPOSAL WERE ADOPTED? This proposal may or may not result in a decrease in the overall harvest. Adoption of this proposal may decrease angler effort by some small, but unknown amount, simply because, given the choice, anglers would probably prefer to participate in a fishery where they could harvest 3 fish rather than 2.

BACKGROUND: The department has limited information regarding the status of coho salmon stocks returning to the West Cook Inlet area south of the West Foreland. The majority of coho salmon sport harvest occurs in the Kustatan River (previous 5 year average of approximately 3,500 fish) and Silver Salmon Creek (previous 5 year average of approximately 1,000), with harvests of a few to a few hundred occurring in some of the smaller streams such as Shelter Creek. Harvest estimates from the Statewide Harvest Survey are relatively stable (Table 21-1). Additionally, commercial fishing effort directed at Westside Cook Inlet coho salmon is currently at a low level.

Coho salmon return to numerous small systems throughout the area, making stock assessment of all drainages difficult. However, returns to the Kustatan River and Silver Salmon Creek since 2000 appear to be good.

DEPARTMENT COMMENTS: The department **OPPOSES** this proposal. There appear to be no coho salmon conservation problems in the proposed area and the current harvest levels appear sustainable. This proposal is also listed for consideration during the Upper Cook Inlet Finfish meeting, therefore, the department recommends tabling this proposal until that meeting.

COST ANALYSIS: Approval of this proposal is not expected to result in an additional direct cost for a private person to participate in this fishery.

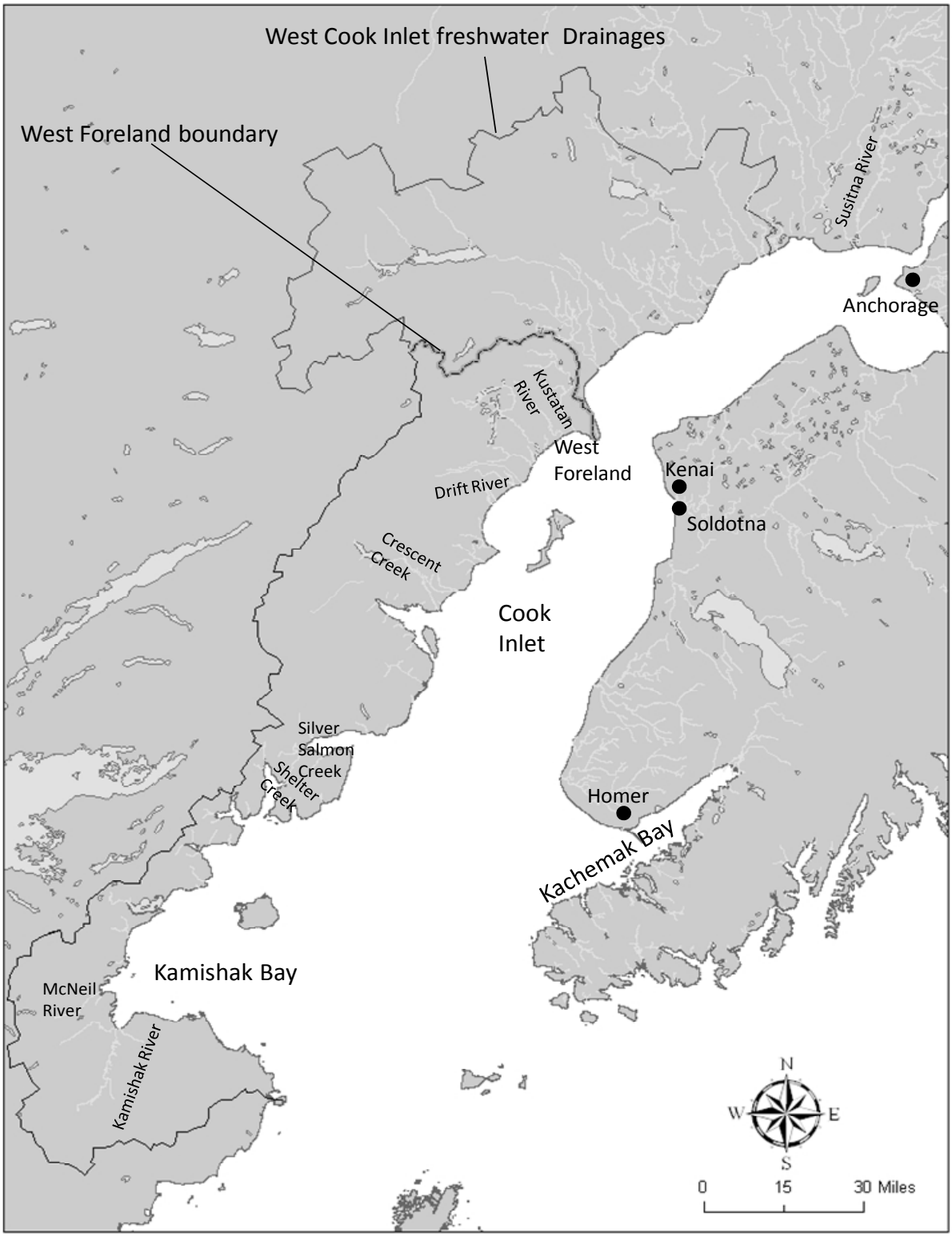

Figure 21-1. Map of West Cook Inlet freshwater drainages.

Table 21-1. Coho salmon catch and harvest from Western Cook Inlet freshwater drainages, 1996-2009.

	North of West Forelands						South of West Forelands							
	Theodore River		Chuitna River		Total		Kustatan River		Big River System		Silver Salmon Creek		Total	
Year	Catch	Harvest	Catch	Harvest	Catch	Harvest	Catch	Harvest	Catch	Harvest	Catch	Harvest	Catch	Harvest
1996	460	361	2,088	1,254	4,350	2,732	10,600	6,266	924	600	6,066	1,979	22,741	11,025
1997	256	187	2,388	1,156	4,159	1,979	6,750	3,605	698	305	935	408	10,721	5,071
1998	411	380	3,551	2,384	5,286	3,526	6,369	3,999	601	264	1,104	422	9,898	5,429
1999	473	290	2,492	1,579	5,609	3,352	3,908	3,178	1,306	463	2,082	590	10,492	6,161
2000	2,678	1,161	4,318	1,872	10,712	4,525	9,725	5,699	566	325	2,293	1,013	15,626	8,200
2001	1,322	1,029	6,334	3,284	11,299	6,178	8,353	4,920	857	508	3,178	2,054	16,579	9,825
2002	2,455	1,208	5,170	2,586	11,389	5,910	11,463	5,795	1,633	497	2,598	942	20,920	8,034
2003	313	225	2,635	1,467	4,912	2,790	6,263	3,967	7,393	2,876	7,377	2,269	26,676	10,867
2004	1,299	645	2,719	1,655	7,409	3,161	7,698	3,984	7,426	2,648	10,902	1,389	32,944	11,505
2005	317	229	2,223	972	5,001	2,336	6,201	3,551	11,144	3,916	7,053	1,568	27,867	9,948
2006	1,327	282	1,409	531	5,323	1,888	5,251	3,556	6,128	3,997	5,234	997	22,837	9,892
2007	936	811	2,129	1,577	5,131	3,749	5,249	4,057	5,120	2,981	1,998	1,041	14,531	8,771
2008	50	31	3,263	1,401	4,631	2,340	5,345	3,868	8,922	7,124	776	356	17,469	12,333
2009	1,643	313	2,485	707	6,775	2,302	3,960	2,639	4,085	3,032	2,812	1,133	12,548	7,412
Average 1996-2009	996	511	3,086	1,602	6,570	3,341	6,938	4,220	4,057	2,110	3,886	1,154	18,704	8,891

PROPOSAL 22 - 5 AAC 62.120(2). General provisions for season, bag, possession, and size limits, and methods and means for the West Cook Inlet Area.

PROPOSED BY: Kenai River Sportfishing Association and Mayor's Blue Ribbon Sportsmen's Committee, Matanuska-Susitna Borough.

WHAT WOULD THE PROPOSAL DO? This proposal would increase the daily limit of coho salmon from 2 to 3 in West Cook Inlet (WCI) streams between the Susitna River and West Foreland.

WHAT ARE THE CURRENT REGULATIONS? In flowing waters between the Susitna River and West Foreland, the bag limit for coho salmon 16 inches or greater in length is 2 per day and 4 in possession. In flowing waters between West Foreland and Cape Douglas, the bag limit for coho salmon 16 inches or greater in length is 3 per day and 6 in possession (Figure 22-1).

A person who takes a daily bag limit of coho salmon 16 inches or more in length in the WCI waters may not fish for any species in WCI waters for the remainder of that day.

WHAT WOULD BE THE EFFECT IF THE PROPOSAL WERE ADOPTED? This proposal could increase the overall harvest of coho salmon in that area by approximately 200–500 fish. Given low angler effort compared to road accessible areas, increasing limits from 2 fish per day to 3 fish per day for WCI streams would likely not increase the harvest above sustainable levels.

BACKGROUND: Poor returns of coho salmon to Upper Cook Inlet (UCI) in 1997 and 1999, in concert with not meeting escapement objectives, prompted the board to restrict sport fisheries on select Knik Arm and Susitna River streams to allow more coho salmon on the spawning grounds. In 2000, the board conducted a special out-of-cycle session to address Cook Inlet coho salmon. Because of the broad decline in coho salmon abundance, restrictive action was taken in a wide geographic range (i.e., Anchorage, Kenai, Susitna River, Knik Arm, and parts of WCI). Coho salmon restrictions were placed on both sport and commercial fisheries throughout most of the UCI area. In the sport fishery, coho salmon limits were reduced from 3 fish per day to 2 fish per day. Possession limits were reduced from 6 to 4 in some areas, while in other cases, possession limits were equal to the bag limit. In addition to these restrictions, the board took action to close Wasilla Creek to salmon fishing. Commercial fishing restrictions consisted of reducing time, net lengths, and number of nets in selected areas as described in the *Northern District Salmon Management Plan* (5AAC 21.358).

However, in remote systems that experienced relatively low angler use and that had good to above average returns, restrictions implemented in 2000 may not have been necessary. In recent years (2005, 2010), coho salmon returns to the several systems in the WCI area have experienced above average returns. In 2005, the board extended the commercial fishing season for the Central District. Sport fish restrictions were also relaxed on some Westside Susitna River streams where coho bag and possession limits were increased from 2 per day and 4 in possession to 3 per day 6 in possession. Some remote Northern Cook Inlet areas could likely support an

increase in harvest, such as Westside Susitna River and WCI streams. Others, such as Eastside Susitna River tributaries and Knik Arms systems, which are road accessible and receive high angler use, may not be able to sustain an increase in harvest during years with low or below average returns. For example, in 1999, sport harvests of coho salmon for the Little Susitna River and Cottonwood, Fish, and Jim creeks were 8,964; 537; 233; and 2,612, respectively, while escapements objectives were only met for 1 of these 4 systems despite inseason restrictions (Table 22-1). In the case of the Little Susitna River in 1999, sport harvest was nearly three times the escapement.

DEPARTMENT COMMENTS: The department is **NEUTRAL** on the allocative aspects of this proposal. However, staff believes that an increase in bag and possession limits of 1 fish in the WCI Area would likely be sustainable since the average overall coho salmon sport harvest in WCI streams north of West Forelands is fewer than 3,500 fish. This proposal is also listed for consideration during the Upper Cook Inlet Finfish meeting, therefore, the department recommends tabling this proposal until that meeting.

COST ANALYSIS: Approval of this proposal is not expected to result in an additional direct cost for a private person to participate in this fishery.

Table 22-1. Coho salmon harvest and escapement from Knik Arm sport fisheries, 1981-2009.

	Little Susitna River		Wasilla Creek		Cottonwood Creek		Fish Creek		Jim Creek		
										Escapement (foot survey)	
Year	Harvest	Escapement (weir)	Harvest	Escapement (foot survey)	Harvest	Escapement (foot survey)	Harvest	Escapement (weir)	Harvest	McRoberts Creek	Jim Creek Drainage
1981	5,940		814	302	1,373	423		2,382	1,801		
1982	7,116		1,624	276	1,886	737		5,201 [a]	2,306		
1983	2,835		345	32	518	506		2,342 [a]	774		
1984	14,253		1,920	966	1,895	935		4,510 [a]	3,429		
1985	7,764		1,900	247	1,005	334	284	5,089 [a]	2,523	662	662
1986	6,039	6,999	944	288	690	121	364	2,166 [a]	2,948	439	439
1987	13,003		1,195	403	1,159	360	833	3,871 [a]	3,676	667	667
1988	19,009	20,491	1,273	112	746	293	1,637	2,162 [a]	11,078	1,911	1,911
1989	14,129	15,232	975	106	876	147	784	3,479 [a]	4,220	597	597
1990	7,497	14,310	1,012	84	286	167	398	2,719 [a]	6,184	599	1,188
1991	16,450	37,601	844	139	176	158	486	1,297 [a]	2,920	484	902
1992	20,033	20,393	413	14	348	6	526	1,705	3,409	11	70
1993	27,610	33,378	1,133	136	736	265	741	2,328	2,878	503	1,038
1994	17,665	27,820	1,390	418	1,100	232	492	350 [a]	3,946	506	2,625
1995	14,451	11,817	445	104	340	242	435	390 [a]	3,549	702	1,990
1996	16,753	15,803	872	143	762	168	607	682 [a]	3,911	72	511
1997	7,756	9,894 [b]	708	229	372	386	148	2,578 [a]	1,786	701	1,264
1998	14,469	15,159	970	176	1,098	537	1,334	5,463	4,197	922	1,482
1999	8,864	3,017 [b]	313	267	537	131	233	1,766	2,612	12	332
2000	20,357	15,436	0	654	282	876	470	5,218	5,653	657	3,218
2001	17,071	30,587	0	505	647	983	361	9,247	8,374	1,019	1,594
2002	19,278	47,938	664	1,196	561	1,191	1,233	14,651	14,707	2,473	4,103
2003	13,672	10,877	261	294	665	229	112	1,231	6,415	1,421	1,814
2004	15,307	40,199	488	1,148	532	430	774	1,415 [a]	11,766	4,652	5,697
2005	10,203	16,839 [b]	347	130	668	619	535	3,011 [a]	10,114	1,464	3,347
2006	12,399	8,786 [b]	857	737	789	912	281	4,967 [a]	19,259	2,389	4,139
2007	11,089	17,573	324	430	856	1,024	120	6,868 [a]	11,848	725	1,875
2008	13,498	18,485	1,086	1,536	308	1,821	993	4,868 [a]	17,545	1,890	2,919
2009	8,346	9,523	1,002	978	1,503	942	1,178	8,214	18,414	1,331	2,524
Average 2005-2009	11,107	14,241	723	762	825	1,064	621	5,586	15,436	1,560	2,961
BEG 1999-2001		9,600-19,200		300		300		2,700			830
SEG 2002-2010		10,100-17,700						1,200-4,400 [c]		450-700	

[a] 1982-1991 weir count, plus stream survey; 1994-1996 and 2004-2008 weir was removed on August 15 before the majority of the coho run. In 1997, the weir was out on September 1.

[b] Incomplete or partial count due to submersion of the weir during high water.

[c] Fish Creek SEG discontinued in 2004.

PROPOSAL 23 - 5 AAC 56.120. General provisions for seasons, bag, possession, and size limits, and methods and means for the Kenai Peninsula Area.

PROPOSED BY: Kenai River Sportfishing Association and Mayor's Blue Ribbon Sportsmen's Committee, Matanuska-Susitna Borough.

WHAT WOULD THE PROPOSAL DO? This proposal would increase the coho salmon bag limit in the Kenai Peninsula Area from 2 fish to 3 fish.

WHAT ARE THE CURRENT REGULATIONS? In flowing waters on the Kenai Peninsula, the bag limit for coho salmon 16 inches or greater in length is 2 per day and 4 in possession.

WHAT WOULD BE THE EFFECT IF THE PROPOSAL WERE ADOPTED? This proposal would increase the overall harvest of coho salmon in that area by an unknown amount. In Kenai Peninsula streams (excluding the Kenai River), the increased harvest may be unsustainable, particularly in streams with small runs or in years with below average runs.

BACKGROUND: All road accessible streams on the Kenai Peninsula support popular coho salmon sport fisheries. The Kasilof River drainage, Swanson River drainage, Anchor River, and Deep Creek are thought to have larger runs than the Ninilchik River and Bishop, Resurrection, and Stariski creeks. Sport fishing for salmon is open only in the lower sections (upstream 2 miles from the mouth) of Lower Cook Inlet Management Area (LCIMA) streams of Anchor and Ninilchik rivers, and Deep and Stariski creeks.

Coho salmon escapement has been periodically monitored with weirs in the Anchor River and Deep Creek, while runs in other streams have not been monitored as frequently. Weir count information indicates run sizes fluctuate widely across years. In the Anchor River, coho salmon escapement has been monitored from 1987 through 1992 and from 2004 through 2010. For both periods, coho salmon escapement has ranged from fewer than 3,000 (1987 and 2009) to more than 18,000 fish (1989 and 2005). From 1996 through 2001, annual coho salmon escapement in Deep Creek has ranged from 1,537 in 1997 to 6,164 in 2001 (Table 23-1). In the Swanson River the number of coho salmon enumerated at a weir in 1988 and 1989 was 23,514 and 20,841, respectively. In the Kasilof River, abundance of coho salmon estimated by a tagging project was 16,000 in 2009. A feature of the Kasilof and Swanson rivers fisheries is the directed coho fisheries that occur within tributaries of each drainage. These include fisheries in the Swanson River Canoe Trail lakes and Crooked Creek, a tributary of the Kasilof River. There are no coho salmon escapement goals for any Kenai Peninsula area streams.

The annual harvest of coho salmon from streams on the Kenai Peninsula varies between streams and years. From 1977–2006, the average annual coho salmon harvest is higher in Anchor River (2,692) and Deep Creek (1,414) than Ninilchik River (961) and Stariski Creek (271). The annual harvest of coho salmon in each system has approximately ranged from 1,000–5,000 in the Anchor River, 300–3,500 in Deep Creek, 100–3,000 in Ninilchik River and 25–1,000 in Stariski Creek (Table 23-2). The average annual sport harvest from Anchor River, Deep Creek, and Ninilchik River has slightly increased since 2000 when the bag limit was reduced from 3 to 2 coho salmon. Since the bag limit reduction in other streams on the Kenai Peninsula, the average

coho salmon harvest has increased compared to those observed prior to the bag limit reduction. For instance, in the Kasilof and Swanson river drainages, harvests averaged approximately 2,900 and 1,900 fish, respectively, prior to 2000 (Table 23-3). Harvests in the Kasilof River drainage now average 3,700 fish, and those from the Swanson River drainage now average about 2,200 fish. Six Mile and Resurrection creeks support coho salmon fisheries with harvests that now average about 472 and 130 fish, respectively, more than double previous harvests estimated for these locations. The larger harvest is likely due to a combination of factors, including an increase in participation in these coho salmon fisheries and favorable coho salmon production. The variation in the annual coho salmon harvest from Kenai Peninsula streams is not well understood but is likely due in part to the wide fluctuation in run strength and angler effort, as well as the bag limit.

Based on escapement data and harvest estimates, harvest rates in the Anchor River and Deep Creek have been high in some years. The average annual inriver harvest rate of coho salmon has ranged from 11.5% in 1989 to 59% in 2009. From 1997–2002, the inriver harvest rate of coho salmon in Deep Creek ranged from 27% in 1999 to 60% in 1998. Generally, smaller runs are harvested at a higher rate than large runs.

DEPARTMENT COMMENTS: The department **OPPOSES** this proposal due to the wide range of differences in coho salmon production among streams of the Kenai Peninsula. The uncertainty surrounding the volatile nature of annual coho salmon run strength greatly increases the likelihood that coho salmon stocks will be exploited at unsustainable harvest rates during periods of low coho salmon productivity if the bag limit were increased for streams of the Kenai Peninsula. This proposal is also listed for consideration during the Upper Cook Inlet Finfish meeting, therefore, the department recommends tabling this proposal until that meeting.

COST ANALYSIS: Approval of this proposal is not expected to result in an additional direct cost for a private person to participate in this fishery.

Table 23-1. Anchor River and Deep Creek coho salmon harvest, catch and escapement, 1977-2009.

	Anchor River					Deep Creek				
Year	Effort (days fished)	Harvest	Catch	Escapement	Exploitation rate (%)	Effort (days fished)	Harvest	Catch	Escapement	Exploitation rate (%)
1977	31,515	1,339				11,399	306			
1978	42,671	1,559				13,872	1,383			
1979	44,220	4,006				12,560	362			
1980	33,272	2,649				8,796	478			
1981	34,257	2,949				10,127	464			
1982	24,709	2,379				12,149	366			
1983	28,881	1,395				13,505	545			
1984	26,919	1,135				15,760	1,197			
1985	31,715	2,239				19,802	2,301			
1986	34,938	1,021				17,354	588			
1987	39,045	2,010		2,409	45.5	16,734	1,050			
1988	24,356	2,219		2,805	44.2	12,115	1,528			
1989	19,145	2,635		20,187	11.5	13,414	2,254			
1990	28,829	2,782	4,666			23,567	1,111	2,039		
1991	22,187	3,169	3,980			17,048	1,290	1,710		
1992	24,028	2,267	4,850	4,596	33.0	15,226	737	1,239		
1993	29,338	4,003	6,657			19,535	1,722	2,790		
1994	27,856	3,360	5,136			18,357	1,895	2,970		
1995	25,888	3,080	5,141			12,727	1,014	1,636		
1996	16,016	1,762	4,025			9,629	2,313	3,818		
1997	17,020	1,636	4,017			9,712	1,115	1,943	2,017	35.6
1998	14,310	2,386	3,949			9,206	2,035	3,635	1,537	57.0
1999	21,184	1,780	3,807			11,367	2,651	3,991	2,267	53.9
2000	22,971	2,604	4,807			12,174	2,018	3,660	3,425	37.1
2001	19,195	2,960	6,327			7,834	1,828	2,529	3,747	32.8
2002	19,245	3,830	7,510			8,925	1,832	3,663	6,164	37.3
2003	17,482	3,999	12,133			8,959	1,751	3,179		
2004	20,452	4,383	10,194	5,728	43.3	10,575	2,474	4,624		
2005	20,079	5,314	11,639	18,977	21.9	10,182	2,202	4,631		
2006	17,065	3,920	7,634	10,181	27.8	7,128	1,606	3,302		
2007	34,390	3,962	9,881	8,226	32.5	9,382	1,932	3,158		
2008	26,182	4,790	7,658	5,951	44.6	9,332	1,631	3,174		
2009	22,057	3,882	6,332	2,692	59.1	8,367	1,323	2,341		
Averages										
1977-2009	26,104	2,830	6,517	8,175	28.5	12,631	1,433	3,002	3,193	37.5

Table 23-2. Ninilchik River and Stariski Creek coho salmon harvest and catch, 1977-2009.

	Ninilchik River		Stariski Creek	
Year	Harvest	Catch	Harvest	Catch
1977	122		133	
1978	88		201	
1979	200		275	
1980	321		155	
1981	432		410	
1982	241		119	
1983	210		251	
1984	549		0	
1985	697		25	
1986	336		187	
1987	924		127	
1988	709		146	
1989	379		396	
1990	368	633	169	287
1991	789	899	280	339
1992	785	1,433	97	138
1993	845	1,636	392	602
1994	1,089	1,486	446	464
1995	620	971	72	72
1996	1,071	1,332	426	482
1997	402	948	111	178
1998	836	963	1,168	1,289
1999	2,980	5,127	153	436
2000	1,724	3,354	419	534
2001	708	1,196	270	328
2002	1,655	3,238	367	384
2003	2,526	4,596	309	470
2004	3,425	4,440	374	915
2005	1,339	2,663	379	475
2006	2,472	3,069	280	407
2007	1,591	2,225	385	502
2008	692	986	283	1,386
2009	895	1,853	139	265
Averages				
1977-2006	961	2,234	271	459
2007-2009	1,059	1,688	269	718

Table 23-3. Northern Kenai Peninsula Management Area (except Kenai River drainage) coho salmon sport harvest, 1981-2009.

	Kasilof River Drainage				Swanson River Drainage			Other NKPMA Drainages				
Year	Tustumena Lake[a]	Kasilof River	Crooked Creek	Total	Swanson River	Swanson Canoe Route Lakes	Total	Six Mile Creek	Resurrection Creek	Chickaloon River	Other[b]	Total
1981	NA	335	NA	335	NA	NA	NA	NA	NA	NA	NA	NA
1982	NA	325	NA	325	NA	NA	NA	NA	NA	NA	NA	NA
1983	NA	409	NA	409	525	NA	525	NA	NA	NA	NA	NA
1984	NA	1,085	NA	1,085	1,484	NA	1,484	NA	NA	NA	NA	NA
1985	NA	560	NA	560	NA	187	187	NA	NA	NA	NA	NA
1986	NA	1,783	497	2,280	NA	969	969	45	13	NA	0	58
1987	36	3,785	NA	3,821	NA	1,485	1,485	72	36	NA	0	108
1988	200	2,928	291	3,419	5,603	546	6,149	236	18	NA	55	309
1989	111	4,222	1,952	6,285	6,379	127	6,506	79	127	NA	0	206
1990	236	1,590	486	2,312	1,501	0	1,501	316	125	NA	0	441
1991	52	4,754	265	5,071	811	81	892	125	29	NA	0	154
1992	32	3,304	251	3,587	1,984	49	2,033	49	89	154	97	389
1993	258	3,698	867	4,823	3,477	10	3,487	344	171	439	0	954
1994	30	4,457	1,026	5,513	1,876	0	1,876	534	81	18	27	660
1995	218	5,349	98	5,665	1,132	0	1,132	472	39	0	0	511
1996	144	2,612	471	3,227	2,578	76	2,654	551	224	155	0	930
1997	345	1,286	0	1,631	1,153	0	1,153	381	84	20	56	541
1998	119	2,107	0	2,226	2,371	123	2,494	470	274	115	0	859
1999	48	3,269	0	3,317	2,054	0	2,054	92	233	0	0	325
2000	229	2,965	0	3,194	2,506	0	2,506	429	52	136	0	617
2001	90	3,173	110	3,373	1,959	117	2,076	459	125	19	86	689
2002	93	6,046	35	6,174	2,467	0	2,467	1,025	114	22	163	1,324
2003	46	4,082	0	4,128	3,087	80	3,167	262	125	23	0	410
2004	338	4,217	270	4,825	1,466	45	1,511	582	138	0	0	720
2005	117	3,124	117	3,358	2,367	0	2,367	146	39	120	72	377
2006	85	3,782	54	3,921	2,028	32	2,060	545	121	0	0	666
2007	15	1,740	0	1,755	1,660	10	1,670	252	289	0	0	541
2008	252	3,613	0	3,865	2,814	0	2,814	354	195	0	0	549
2009	61	2,725	63	2,849	1,790	0	1,790	664	103	0	0	767
Avg. (1981-1999)	96	2,519	327	2,942	1,733	192	1,925	198	81	47	12	339
Avg. (2000-2009)	133	3,547	65	3,744	2,214	28	2,243	472	130	32	32	666
Avg. (1981-2009)	109	2,873	236	3,218	1,899	136	2,035	293	98	42	19	452

Source: All harvest estimates from Statewide Harvest Survey (Mills 1982-1994; Howe et al. 1995-1996, 2001a-d; Walker et al. 2003; Jennings et al. 2004, 2006a-b, 2007, 2009a-b, *In prep* .a-b.).

[a] Tustumena Lake data includes harvests from creeks draining into Tustumena Lake (Nikolai Creek 1998, 2000; Glacier Creek 2004).

[b] Harvest data from Ingram Creek (1988, 2001, 2002), Otter Creek (1992, 1994, 1997), Sunrise Creek (2005).

PROPOSAL 24 - 5 AAC 56.1XX. New Section.

PROPOSED BY: Kenai Area Fisherman's Coalition.

WHAT WOULD THE PROPOSAL DO? This proposal would change the Anchor River king salmon escapement goal from a lower bound sustainable escapement goal to a goal that is bounded by a range.

WHAT ARE THE CURRENT REGULATIONS? Two policies govern escapement goals: the *Policy for the Management of Sustainable Salmon Fisheries* (sustainable salmon fisheries policy; SSFP) (5 AAC 39.222) and the *Policy for Statewide Salmon Escapement Goals* (escapement goal policy; EGP) (5 AAC 39.223). Under section (b)(3) of the escapement goal policy, the department is to:

> (3) establish sustainable escapement goals (SEG) for salmon stocks for which the department can reliably estimate escapement levels when there is not sufficient information to enumerate total annual returns and the range of escapements that are used to develop a BEG.

Section (f) of the SSFP provides definitions that are more detailed, as follows:

> (36) "sustainable escapement goal" or "(SEG)" means a level of escapement, indicated by an index or an escapement estimate, that is known to provide for sustained yield over a 5 to 10 year period, used in situations where a BEG cannot be estimated or managed for; the SEG is the primary management objective for the escapement, unless an optimal escapement or inriver run goal has been adopted by the board, the SEG will be developed from the best available biological information and should be scientifically defensible on the basis of that information; the SEG will be determined by the department and will be stated as a range "(SEG Range)" or a lower bound "(Lower Bound SEG)"that takes into account data uncertainty; the department will seek to maintain escapements within the bounds of the SEG Range or above the level of a Lower Bound SEG.

WHAT WOULD BE THE EFFECT IF THE PROPOSAL WERE ADOPTED? This proposal would allow the department to use emergency order authority to liberalize the Anchor River king salmon sport fishery in years when the escapement goal is projected to be exceeded.

BACKGROUND: The *Policy for the Management of Sustainable Salmon Fisheries*, established in 2001 (5 AAC 39.222), defines 2 primary escapement goals: biological escapement goals (BEG) and sustainable escapement goals (SEG). The definition of an SEG in the policy was amended by the board in March 2010 to include not only goals established as ranges but as lower bound SEGs. The change formalized in regulation the practice of the department to establish lower bound SEG's in situations where: 1) there are low or unknown harvest rates, 2) there are limited data and there is a concern about changes to fishing power that might be occurring, 3) a stock is harvested in fisheries that are managed based on abundance of another stock(s), or 4) there is a lack of available fishing power. The SEG definition allows flexibility, as needed, for maintaining sustainable yields in the context of available data and the needs of fishery management. Lower bound SEGs are considered to be scientifically defensible and aligned with the overall principles of the policy and the Alaska Constitution in that they provide for sustained

yields, are practical from a management standpoint, but are precautionary to data uncertainty. As of February 2010, there were 288 established escapement goals; of these 288 goals, 225 are SEGs, of which 182 are SEGs expressed as range and 43 are SEGs expressed as a lower bound. Lower bound SEGs have been established in all 4 management regions and for the 5 species of Pacific salmon that occur there.

The current Anchor River lower bound SEG of 5,000 king salmon, established in 2007, was the point estimate (posterior median) of S_{MSY} (S_{MSY} = the number of spawners needed to produce the maximum sustained yield) determined from a full probability spawner-recruit model that used 31 years (1977–2007) of aerial survey escapement indices, inriver recreational harvest estimates (1977–2007), plus 5 years (2003–2007) of weir/sonar estimates of escapement and age composition data. Marine harvests were estimated from harvest rates of nearby stocks. Sufficient production data were unavailable to determine the upper extent of the range.

A full probability spawner-recruit analysis was updated using escapement, age composition and harvest data collected through 2009. Department staff is recommending a modification of the lower-bound SEG of 5,000 to an SEG range of 3,800 to 10,000 to the directors of Commercial Fisheries and Sport Fish. The recommended lower end of the SEG, 3,800, is the point estimate of S_{MSY} from the model. The upper end of the range, 10,000, is the point estimate of carrying capacity from the updated model. The change is the result of availability of more actual return data (2003–2009), but is conservative because production data are still unavailable for escapements near the lower bound of the SEG. An SEG range of 3,800 to 10,000 minimizes the risk of overfishing by establishing the lower end at the point that maximizes the likelihood of achieving maximum sustained yield and allows liberalization of harvest when escapements are large.

DEPARTMENT COMMENTS: The department recommends **NO ACTION** on this proposal. Under the *Policy for Management of Sustainable Salmon Fisheries*, the department, not the board, has the responsibility of establishing biological and sustainable escapement goals. The department is recommending an SEG range of 3,800–10,000 king salmon based on available data. The board, may establish an optimal escapement goal, if deemed appropriate, which considers biological and allocative factors and which may differ from the BEG or SEG.

COST ANALYSIS: Approval of this proposal is not expected to result in an additional direct cost for a private person to participate in this fishery.

PROPOSAL 25 - 5 AAC 56.122. Special provisions and localized additions and exceptions to the seasons, bag, possession, and size limits, and methods and means for the Kenai Peninsula Area.

PROPOSED BY: Allen Tigery, Phil Brna and John Martin.

WHAT WOULD THE PROPOSAL DO? This proposal would require management actions taken for fish populations on the Anchor River to be duplicated for fish stocks in Deep Creek, based on available Anchor River data.

WHAT ARE THE CURRENT REGULATIONS?

King salmon 20 inches or greater:

Season: Anchor River – Five 3-day weekends (Saturday–Monday) and each Wednesday beginning the weekend before Memorial Day.

Deep Creek – Three 3-day weekends beginning Memorial Day.

Bag and possession limit: 1 per day/1 in possession both rivers.

Annual limit: Anchor River – 5

Deep Creek – 2

WHAT WOULD BE THE EFFECT IF THE PROPOSAL WERE ADOPTED? Deep Creek fish stocks would be managed using criteria that could be unrelated to Deep Creek fish stock status. The sport fishery in Deep Creek could be unnecessarily liberalized or restricted resulting in unsustainable harvests or loss of fishing opportunity. Management flexibility would be diminished.

BACKGROUND: The Anchor River supports the largest run of king salmon, and Deep Creek the second largest run, within the Lower Cook Inlet Management Area (LCIMA). Regulations for fish species other than king salmon in central Kenai Peninsula drainages (Anchor River, Deep Creek, Ninilchik River, and Stariski Creek) are the same and have been changed through the board process simultaneously, based upon information gathered from the Anchor River, or for consistency when no individual stream data exist on a particular species.

As more information has become available, management of king salmon fisheries in each stream has diverged. Total king salmon escapement in Anchor River or Deep Creek could not be estimated due to high spring water flows, but escapement was indexed with a single annual aerial survey at the peak of spawning from 1976 until 2003. In 2003, Anchor River king salmon escapement was estimated using a Dual-frequency Identification Sonar (DIDSON). DIDSON has been used in conjunction with a weir since 2004 to estimate total king salmon spawning escapement. King salmon escapement in Anchor River has ranged from 3,455 in 2009 to 12,016 in 2004. Freshwater harvests from 2004–2009 averaged 1,447 Anchor River king salmon, and the estimated percentage of the total run that was harvested by users in fresh water during that time ranged from 11.4% to 20.4% (Table 25-1). Marine recreation harvest rates are unknown, but are assumed to be 3%, similar to marine harvest rates of nearby stocks (Table 25-2).

The Anchor River is managed to achieve a lower bound sustainable escapement goal (SEG) of 5,000 king salmon counted by sonar/weir located immediately upstream of the fishery. Based

upon the low harvest rate of Anchor River king salmon during 2004–2007, the king salmon sport fishery regulations were liberalized in 2007 by allowing fishing on Wednesdays following each open weekend, increased annual limit from 2 to 5 king salmon, and decreased saltwater closed waters on either side of the river mouth from 2 miles to 1 mile. King salmon regulations in the Anchor River are also modified inseason based upon real time fish counts to achieve the lower bound SEG. During the 2009 fishing season, the Anchor River king salmon run was projected to be below the escapement goal and the inriver king salmon fishery was closed by emergency order after the third regulatory opening. Simultaneously, the closed saltwater area on either side of the Anchor River mouth was increased from 1 to 2 miles. In 2010, low escapement prompted prohibiting the use of bait and increasing the marine closed area after the second regulatory opening. Retention of king salmon was prohibited after the third regulatory weekend and the closure of the saltwater area was extended through July 12 in an effort to achieve the escapement goal.

Deep Creek is managed to achieve an SEG of 350–800 king salmon counted during a single aerial survey conducted at the peak of king salmon spawning in late July after the fishery is closed. In 1996, a 2 fish annual limit, a prohibition on fishing after harvesting a king salmon 20 inches or greater in length, a reduction in 3-day weekend king salmon open periods from 5 to 3, and a suite of saltwater king salmon fishing restrictions were implemented when low king salmon aerial index counts indicated Deep Creek king salmon harvests were unsustainable.

Assessment of the Deep Creek king salmon regulations are made post season based on upon consistent achievement of the SEG over several years. With the exception of 2008, Deep Creek king salmon escapement index counts have been within or above the SEG since 1998 (Table 25-3). The only inseason restriction to Deep Creek occurred in 2010, when bait was prohibited for the second and third regulatory openings as a precautionary measure to prevent overharvest of king salmon resulting from increased sport fishing effort due to emergency closures of the Kenai and Kasilof rivers, and restrictions in the Anchor River.

DEPARTMENT COMMENTS: The department **OPPOSES** this proposal because it could lead to unsustainable harvests or unnecessary loss of fishing opportunity if Deep Creek fish stocks were not managed independently based on the available data from Deep Creek. The department is recommending modifying the Anchor River lower-bound SEG of 5,000 to an SEG range of 3,800 to 10,000. An SEG range of 3,800 to 10,000 minimizes the risk of overfishing by establishing the lower end at a point that maximizes the likelihood of achieving maximum sustained yield, while still allowing liberalization of harvest when escapements are large.

COST ANALYSIS: Approval of this proposal is not expected to result in an additional direct cost for a private person to participate in this fishery.

Table 25-1. Anchor River king salmon escapement, harvest and exploitation, 2003-2009.

Year	Project dates	Escapement	Harvest	Exploitation rate (%)	Fishing Days
2003	May 30–Jul 09	9,238	1,011	9.9	12
2004	May 15–Sep 15	12,016	1,561	11.5	15
2005	May 13–Sep 09	11,156	1,432	11.4	15
2006	May 15–Aug 24	8,945	1,394	13.5	15
2007	May 14–Sep 12	9,622	2,081	17.8	15
2008	May 13–Sep 12	5,806	1,612	21.7	20
2009	May 12–Sep 11	3,455	737	17.6	12
Average 2003-2009		8,605	1,404	14.0	15

Table 25-2. Contribution statistics from coded-wire tagged king salmon recovered in the early-run Central Cook Inlet marine recreational fisheries north of Bluff Point, 1996-2002.

Year	Harvest	Number Examined	Number of Tags Decoded	Harvest Explained	Cook Inlet Hatchery		Deep Creek	Other Cook Inlet Wild	Non-Cook Inlet
					Other	Ninilchik			
1996	4,702	1,470	24	543 (11.5%)	13 (0.3%)	[a] 183 (3.9%)		[a]	348 (7.4%)
1997	5,646	2,442	49	687 (12.2%)	137 (2.4%)	[a] 167 (3.0%)	149 (2.6%)	[a]	234 (4.1%)
1998	5,783	2,789	60	1,270 (22.0%)	61 (1.1%)	54 (0.9%)	281 (4.9%)		874 (15.1%)
1999	4,907	2,019	60	607 (12.4%)	137 (2.8%)	73 (1.5%)	155 (3.2%)		241 (4.9%)
2000	4,773	1,839	66	603 (12.6%)	181 (3.8%)	63 (1.3%)	77 (1.6%)		282 (5.9%)
2001	3,671	1,552	78	815 (22.2%)	159 (4.3%)	45 (1.2%)		[a]	611 (16.6%)
2002	3,368	1,609	32	396 (11.8%)	42 (1.2%)	9 (0.3%)		[a]	345 (10.2%)
Mean				703 (14.9%)	104 (2.3%)	85 (1.7%)	166 (3.1%)		419 (9.2%)

[a] Not all age classes represented.

Table 25-3. Deep Creek king salmon harvest and aerial escapement, 1976-2010.

Year	Harvest	Aerial escapement
1976	220	1075
1977	425	848
1978	804	582
1979	703	726
1980	182	
1981	604	427
1982	791	977
1983	1,154	550
1984	761	380
1985	249	644
1986	944	976
1987	604	968
1988	777	409
1989	843	561
1990	1,411	347
1991	1,776	294
1992	1,379	63
1993	2,503	486
1994	2,379	364
1995	1,161	229
1996	886	193
1997	1,249	136
1998	539	676
1999	741	1,190
2000	937	556
2001	593	551
2002	507	696
2003	775	1,008
2004	823	1,075
2005	642	1,076
2006	451	507
2007	628	553
2008	602	205
2009	124	483
2010		387
Average	858	594

PROPOSAL 26 - 5 AAC 56.122. Special provisions and localized additions and exceptions to the seasons, bag, possession, and size limits, and methods and means for the Kenai Peninsula Area.

PROPOSED BY: Lynn Whitmore.

WHAT WOULD THE PROPOSAL DO? This proposal would eliminate the fifth (final) regulatory king salmon 3-day weekend opening on the Anchor River and eliminate all 5 regulatory Wednesday openings on the Anchor River. The proposal would allow an additional fifth weekend opening on the Anchor River if the escapement goal were met prior to that final opening. The proposal would also liberalize the Deep Creek king salmon fishery by adding a fourth weekend fishing period and by allowing a fifth 3-day weekend opening if the Anchor River escapement goal were met.

WHAT ARE THE CURRENT REGULATIONS?

King salmon 20 inches or greater:

Season: Anchor River – Five 3-day weekends (Saturday – Monday) and each Wednesday beginning the weekend before Memorial Day.

Deep Creek – Three 3-day weekends beginning Memorial Day.

WHAT WOULD BE THE EFFECT IF THE PROPOSAL WERE ADOPTED? This proposal would result in king salmon harvest rates well below sustainable levels in the Anchor River when the SEG is met. This proposal would have little to no effect on achievement of the Anchor River escapement goal in years of low abundance because the department already uses emergency orders to close or restrict this fishery. It is also likely that harvest opportunity would be lost because the Anchor River SEG would not be met prior to the fifth opening unless escapements were significantly over the SEG. Therefore, there would be years when the proposed fifth opening could not be implemented despite the SEG being achieved by the end of the run. The increase in king salmon harvest from Deep Creek would not be sustainable.

Incidental or intentional capture of steelhead trout in the Anchor River would decrease by an unknown and variable amount depending on water conditions and with the elimination of the first 4 Wednesday fishery openings. Closure of the last weekend fishing period, including the final Wednesday opening, in the Anchor River would likely have less effect because the peak of steelhead trout outmigration is past.

BACKGROUND: The Anchor River supports the largest run of king salmon, and Deep Creek the second largest run, within the Lower Cook Inlet Management Area (LCIMA). Regulations for fish species other than king salmon in central Kenai Peninsula drainages (Anchor River, Deep Creek, Ninilchik River, and Stariski Creek) are the same and have been changed through the board process simultaneously, based upon information gathered from the Anchor River, or for consistency when no individual stream data exist on a particular species.

As more information has become available, management of king salmon fisheries in each stream has diverged. Total king salmon escapement in Anchor River or Deep Creek could not be estimated due to high spring water flows, but escapement was indexed with a single annual aerial

survey at the peak of spawning from 1976 until 2003. In 2003, Anchor River king salmon escapement was estimated using a Dual-frequency Identification Sonar (DIDSON). DIDSON has been used in conjunction with a weir since 2004 to estimate total king salmon spawning escapement. King salmon escapement in Anchor River has ranged from 3,455 in 2009 to 12,016 in 2004. Freshwater harvests from 2004–2009 averaged 1,447 Anchor River king salmon and the estimated percentage of the total run that was harvested by users in fresh water during that time ranged from 11.4% to 20.4% (Table 26-1). Marine recreation harvest rates are unknown, but are assumed to be 3%, similar to marine harvest rates of nearby stocks (Table 26-2).

The Anchor River is managed to achieve a lower bound sustainable escapement goal (SEG) of 5,000 king salmon counted by sonar/weir located immediately upstream of the fishery. Based upon the low harvest rate of Anchor River king salmon during 2004-2007, the king salmon sport fishery regulations were liberalized in 2007 by allowing fishing on Wednesdays following each open weekend, increased annual limit from 2 to 5 king salmon, and decreased saltwater closed waters on either side of the river mouth from 2 miles to 1 mile. King salmon regulations in the Anchor River are also modified inseason based upon real time fish counts to achieve the lower bound SEG. During the 2009 fishing season, the Anchor River king salmon run was projected to be below the escapement goal and the inriver king salmon fishery was closed by emergency order after the third regulatory opening. Simultaneously, the closed saltwater area on either side of the Anchor River mouth was increased from 1 to 2 miles. In 2010, low escapement prompted prohibiting the use of bait use and increasing the marine closed area after the second regulatory opening. Retention of king salmon was prohibited after the third regulatory weekend, and the closure of the saltwater area was extended through July 12 in an effort to achieve the escapement goal.

Deep Creek is managed to achieve an SEG of 350–800 king salmon counted during a single aerial survey conducted at the peak of king salmon spawning in late July after the fishery is closed. In 1996, a 2 fish annual limit, a prohibition on fishing after harvesting a king salmon 20 inches or greater in length, a reduction in 3-day weekend king salmon open periods from 5 to 3, and a suite of saltwater king salmon fishing restrictions were implemented when low king salmon aerial index counts indicated Deep Creek king salmon harvests were unsustainable.

Assessment of the Deep Creek king salmon regulations are made post season based on upon consistent achievement of the SEG over several years. With the exception of 2008, Deep Creek king salmon escapement index counts have been within or above the SEG since 1998 (Table 26-3). The only inseason restriction to Deep Creek occurred in 2010, when bait was prohibited for the second and third regulatory openings as a precautionary measure to prevent overharvest of king salmon resulting from increased sport fishing effort due to emergency closures of the Kenai and Kasilof rivers and restrictions in the Anchor River.

In 2009, the Anchor River weir was installed on May 13 and outmigrating steelhead/rainbow trout were enumerated by direct observation and video. The first steelhead trout was observed migrating downstream on May 14. Approximately 50% of the run had outmigrated by June 7, which was during the fourth regulatory king salmon fishery opening, and 90% had migrated by June 15, during the fifth regulatory king salmon opening. A total of 605 outmigrating steelhead trout were counted.

The Anchor River and Deep Creek are routinely subject to high spring flows and turbidity from runoff, which decreases harvest success significantly until after the Memorial Day weekend, reducing the king salmon harvest further below sustainable levels, and reducing the incidental hooking of steelhead trout.

DEPARTMENT COMMENTS: The department **OPPOSES** this proposal because it unnecessarily restricts the Anchor River king salmon fishery and would likely also increase Deep Creek king salmon harvest to an unsustainable level. Current regulations provide sustainable harvests when escapement falls within the SEG. Anchor River king salmon regulations can be adjusted by emergency order inseason to respond to anticipated shortfalls in king salmon escapement. Reduced fishing opportunity during the king salmon run will have limited effect on steelhead trout management since the majority of the steelhead trout catch occurs during the fall catch and release fishery.

COST ANALYSIS: Approval of this proposal is not expected to result in an additional direct cost for a private person to participate in this fishery.

Table 26-1. Anchor River king salmon escapement, harvest and exploitation, 2003-2009.

Year	Project dates	Escapement	Harvest	Exploitation rate (%)	Fishing Days
2003	May 30–Jul 09	9,238	1,011	9.9	12
2004	May 15–Sep 15	12,016	1,561	11.5	15
2005	May 13–Sep 09	11,156	1,432	11.4	15
2006	May 15–Aug 24	8,945	1,394	13.5	15
2007	May 14–Sep 12	9,622	2,081	17.8	15
2008	May 13–Sep 12	5,806	1,612	21.7	20
2009	May 12–Sep 11	3,455	737	17.6	12
Average 2003-2009		8,605	1,404	14.0	15

Table 26-2. Contribution statistics from coded-wire tagged king salmon recovered in the early-run Central Cook Inlet marine recreational fisheries north of Bluff Point, 1996-2002.

Year	Harvest	Number Examined	Number of Tags Decoded	Harvest Explained	Cook Inlet Hatchery		Deep Creek	Other Cook Inlet Wild	Non-Cook Inlet
					Other	Ninilchik			
1996	4,702	1,470	24	543 (11.5%)	13 (0.3%)	[a] 183 (3.9%)		[a]	348 (7.4%)
1997	5,646	2,442	49	687 (12.2%)	137 (2.4%)	[a] 167 (3.0%)	149 (2.6%)	[a]	234 (4.1%)
1998	5,783	2,789	60	1,270 (22.0%)	61 (1.1%)	54 (0.9%)	281 (4.9%)		874 (15.1%)
1999	4,907	2,019	60	607 (12.4%)	137 (2.8%)	73 (1.5%)	155 (3.2%)		241 (4.9%)
2000	4,773	1,839	66	603 (12.6%)	181 (3.8%)	63 (1.3%)	77 (1.6%)		282 (5.9%)
2001	3,671	1,552	78	815 (22.2%)	159 (4.3%)	45 (1.2%)		[a]	611 (16.6%)
2002	3,368	1,609	32	396 (11.8%)	42 (1.2%)	9 (0.3%)		[a]	345 (10.2%)
Mean				703 (14.9%)	104 (2.3%)	85 (1.7%)	166 (3.1%)		419 (9.2%)

[a] Not all age classes represented.

Table 26-3. Deep Creek king salmon harvest and aerial escapement, 1976-2010.

Year	Harvest	Aerial escapement
1976	220	1075
1977	425	848
1978	804	582
1979	703	726
1980	182	
1981	604	427
1982	791	977
1983	1,154	550
1984	761	380
1985	249	644
1986	944	976
1987	604	968
1988	777	409
1989	843	561
1990	1,411	347
1991	1,776	294
1992	1,379	63
1993	2,503	486
1994	2,379	364
1995	1,161	229
1996	886	193
1997	1,249	136
1998	539	676
1999	741	1,190
2000	937	556
2001	593	551
2002	507	696
2003	775	1,008
2004	823	1,075
2005	642	1,076
2006	451	507
2007	628	553
2008	602	205
2009	124	483
2010		387
Average	858	594

PROPOSAL 27 - 5 AAC 56.122. Special provisions and localized additions and exceptions to the seasons, bag, possession, and size limits, and methods and means for the Kenai Peninsula Area.

PROPOSED BY: John L. Martin.

WHAT WOULD THE PROPOSAL DO? This proposal would eliminate the first regulatory king salmon 3-day weekend opening on the Anchor River (prior to Memorial Day weekend) and eliminate all 5 regulatory Wednesday openings on the Anchor River. The proposal would allow an additional fifth weekend opening on the Anchor River if the escapement goal were met prior to that final opening. The proposal would also liberalize the Deep Creek king salmon fishery by adding a fourth weekend fishing period and by allowing a fifth 3-day weekend opening if the Anchor River escapement goal were met.

WHAT ARE THE CURRENT REGULATIONS?

King salmon 20 inches or greater:

Season: Anchor River – Five 3-day weekends (Saturday – Monday) and each Wednesday beginning the weekend before Memorial Day.

Deep Creek – Three 3-day weekends beginning Memorial Day.

WHAT WOULD BE THE EFFECT IF THE PROPOSAL WERE ADOPTED? This proposal would result in king salmon harvest rates well below sustainable levels in the Anchor River when the SEG is met. This proposal would have little to no effect on achievement of the Anchor River escapement goal in years of low abundance because the department already uses emergency orders to close or restrict this fishery. It is also likely that harvest opportunity would be lost because the Anchor River SEG would not be met prior to the fifth opening unless escapements were significantly over the SEG. Therefore, there would be years when the proposed fifth opening could not be implemented despite achievement of the SEG by the end of the run. The increase in king salmon harvest from Deep Creek would not be sustainable.

Incidental or intentional capture of steelhead trout in the Anchor River would decrease by an unknown and variable amount depending on water conditions and with the elimination of the first 4 Wednesday fishery openings. Closure of the last weekend fishing period, including the final Wednesday opening in the Anchor River, would likely have less effect because the peak of steelhead trout outmigration is past.

BACKGROUND: The Anchor River supports the largest run of king salmon, and Deep Creek the second largest run, within the Lower Cook Inlet Management Area (LCIMA). Regulations for fish species other than king salmon in central Kenai Peninsula drainages (Anchor River, Deep Creek, Ninilchik River, and Stariski Creek) are the same, and have been changed through the board process simultaneously, based upon information gathered from the Anchor River, or for consistency when no individual stream data exist on a particular species.

As more information has become available, management of king salmon fisheries in each stream has diverged. Total king salmon escapement in Anchor River or Deep Creek could not be estimated due to high spring water flows, but escapement was indexed with a single annual aerial

survey at the peak of spawning from 1976 until 2003. In 2003, Anchor River king salmon escapement was estimated using a Dual-frequency Identification Sonar (DIDSON). DIDSON has been used in conjunction with a weir since 2004 to estimate total king salmon spawning escapement. King salmon escapement in Anchor River has ranged from 3,455 in 2009 to 12,016 in 2004. Freshwater harvests from 2004–2009 averaged 1,447 Anchor River king salmon, and the estimated percentage of the total run that was harvested by users in fresh water during that time ranged from 11.4% to 20.4% (Table 27-1). Marine recreation harvest rates are unknown, but are assumed to be 3%, similar to marine harvest rates of nearby stocks (Table 27-2).

The Anchor River is managed to achieve a lower bound sustainable escapement goal (SEG) of 5,000 king salmon counted by sonar/weir located immediately upstream of the fishery. Based upon the low harvest rate of Anchor River king salmon during 2004-2007, the king salmon sport fishery regulations were liberalized in 2007 by allowing fishing on Wednesdays following each open weekend, increased annual limit from 2 to 5 king salmon, and decreased saltwater closed waters on either side of the river mouth from 2 miles to 1 mile. King salmon regulations in the Anchor River are also modified inseason based upon real time fish counts to achieve the lower bound SEG. During the 2009 fishing season, the Anchor River king salmon run was projected to be below the escapement goal and the inriver king salmon fishery was closed by emergency order after the third regulatory opening. Simultaneously, the closed saltwater area on either side of the Anchor River mouth was increased from 1 to 2 miles. In 2010, low escapement prompted prohibiting the use of bait and increasing the marine closed area after the second regulatory opening. Retention of king salmon was prohibited after the third regulatory weekend and the closure of the saltwater area was extended through July 12 in an effort to achieve the escapement goal.

Deep Creek is managed to achieve an SEG of 350–800 king salmon counted during a single aerial survey conducted at the peak of king salmon spawning in late July after the fishery is closed. In 1996, a 2 fish annual limit, a prohibition on fishing after harvesting a king salmon 20 inches or greater in length, a reduction in 3-day weekend king salmon open periods from 5 to 3, and a suite of saltwater king salmon fishing restrictions were implemented when low king salmon aerial index counts indicated Deep Creek king salmon harvests were unsustainable.

Assessment of the Deep Creek king salmon regulations are made post season based on upon whether or not the SEG is achieved consistently over several years. With the exception of 2008, Deep Creek king salmon escapement index counts have been within or above the SEG since 1998 (Table 27-3). The only inseason restriction to Deep Creek occurred in 2010, when bait was prohibited for the second and third regulatory openings as a precautionary measure to prevent overharvest of king salmon resulting from increased sport fishing effort due to emergency closures of the Kenai and Kasilof rivers and restrictions in the Anchor River.

In 2009, the Anchor River weir was installed on May 13 and outmigrating steelhead/rainbow trout were enumerated by direct observation and video. The first steelhead trout was observed migrating downstream on May 14. Approximately 50% of the run had outmigrated by June 7, which was during the fourth regulatory king salmon fishery opening, and 90% had migrated by June 15, during the fifth regulatory king salmon opening. A total of 605 outmigrating steelhead trout were counted.

The Anchor River and Deep Creek are routinely subject to high spring flows and turbidity from runoff that decreases harvest success significantly until after the Memorial Day weekend, which reduces the king salmon harvest further below sustainable levels, and which reduces the incidental hooking of steelhead trout.

DEPARTMENT COMMENTS: The department **OPPOSES** this proposal because it unnecessarily restricts the Anchor River king salmon fishery and would likely also increase Deep Creek king salmon harvest to an unsustainable level. Current regulations provide sustainable harvests when escapement falls within the SEG. Anchor River king salmon regulations can be adjusted by emergency order inseason to respond to anticipated shortfalls in king salmon escapement.

COST ANALYSIS: Approval of this proposal is not expected to result in an additional direct cost for a private person to participate in this fishery.

Table 27-1. Anchor River king salmon escapement, harvest and exploitation, 2003-2009.

Year	Project dates	Escapement	Harvest	Exploitation rate (%)	Fishing Days
2003	May 30–Jul 09	9,238	1,011	9.9	12
2004	May 15–Sep 15	12,016	1,561	11.5	15
2005	May 13–Sep 09	11,156	1,432	11.4	15
2006	May 15–Aug 24	8,945	1,394	13.5	15
2007	May 14–Sep 12	9,622	2,081	17.8	15
2008	May 13–Sep 12	5,806	1,612	21.7	20
2009	May 12–Sep 11	3,455	737	17.6	12
Average 2003-2009		8,605	1,404	14.0	15

Table 27-2. Contribution statistics from coded-wire tagged king salmon recovered in the early-run Central Cook Inlet marine recreational fisheries north of Bluff Point, 1996-2002.

Year	Harvest	Number Examined	Number of Tags Decoded	Harvest Explained	Cook Inlet Hatchery		Deep Creek	Other Cook Inlet Wild	Non-Cook Inlet
					Other	Ninilchik			
1996	4,702	1,470	24	543 (11.5%)	13 (0.3%)	[a] 183 (3.9%)		[a]	348 (7.4%)
1997	5,646	2,442	49	687 (12.2%)	137 (2.4%)	[a] 167 (3.0%)	149 (2.6%)	[a]	234 (4.1%)
1998	5,783	2,789	60	1,270 (22.0%)	61 (1.1%)	54 (0.9%)	281 (4.9%)		874 (15.1%)
1999	4,907	2,019	60	607 (12.4%)	137 (2.8%)	73 (1.5%)	155 (3.2%)		241 (4.9%)
2000	4,773	1,839	66	603 (12.6%)	181 (3.8%)	63 (1.3%)	77 (1.6%)		282 (5.9%)
2001	3,671	1,552	78	815 (22.2%)	159 (4.3%)	45 (1.2%)		[a]	611 (16.6%)
2002	3,368	1,609	32	396 (11.8%)	42 (1.2%)	9 (0.3%)		[a]	345 (10.2%)
Mean				703 (14.9%)	104 (2.3%)	85 (1.7%)	166 (3.1%)		419 (9.2%)

[a] Not all age classes represented.

Table 27-3. Deep Creek king salmon harvest and aerial escapement, 1976-2010.

Year	Harvest	Aerial escapement
1976	220	1075
1977	425	848
1978	804	582
1979	703	726
1980	182	
1981	604	427
1982	791	977
1983	1,154	550
1984	761	380
1985	249	644
1986	944	976
1987	604	968
1988	777	409
1989	843	561
1990	1,411	347
1991	1,776	294
1992	1,379	63
1993	2,503	486
1994	2,379	364
1995	1,161	229
1996	886	193
1997	1,249	136
1998	539	676
1999	741	1,190
2000	937	556
2001	593	551
2002	507	696
2003	775	1,008
2004	823	1,075
2005	642	1,076
2006	451	507
2007	628	553
2008	602	205
2009	124	483
2010		387
Average	858	594

PROPOSALS 28, 29, and 30 - 5 AAC 56.122. Special provisions and localized additions and exceptions to the seasons, bag, possession, and size limits, and methods and means for the Kenai Peninsula Area.

PROPOSED BY: Lynn Whitmore (Proposal 28).
Mike Priebe (Proposal 29).
John L. Martin (Proposal 30).

WHAT WOULD THE PROPOSAL DO? These proposals would reduce the annual limit of king salmon on Anchor River from 5 to 2 per year and combine the annual limit with Deep Creek.

WHAT ARE THE CURRENT REGULATIONS?
King salmon 20 inches or greater:
Bag and possession limit: 1 per day/1 in possession both rivers.
Annual limit: Anchor River – 5
Deep Creek – 2

WHAT WOULD BE THE EFFECT IF THE PROPOSAL WERE ADOPTED? These proposals would result in decreased sport fishing opportunity to harvest king salmon in the Anchor River. These proposals would also result in king salmon harvest rates well below sustainable levels in the Anchor River.

BACKGROUND: The Anchor River supports the largest run of king salmon, and Deep Creek the second largest run, within the Lower Cook Inlet Management Area (LCIMA). King salmon escapement in Anchor River has ranged from 3,455 in 2009 to 12,016 in 2004. Freshwater harvests from 2004–2009 averaged 1,447 Anchor River king salmon, and the estimated percentage of the total run that was harvested by users in fresh water during that time ranged from 11.4% to 20.4% (Table 28-1). These harvest rates for king salmon in the Anchor River are lower than other king salmon stocks in LCIMA area and support a harvestable surplus of king salmon.

In 2003, Anchor River king salmon escapement was estimated using a Dual-frequency Identification Sonar (DIDSON). DIDSON has been used in conjunction with a weir since 2004 to estimate total king salmon spawning escapement. The Anchor River is managed to achieve a lower bound sustainable escapement goal (SEG) of 5,000 king salmon counted by sonar/weir located immediately upstream of the fishery. Department staff is recommending a modification of the lower-bound SEG of 5,000 to an SEG range of 3,800 to 10,000 to the directors of Commercial Fisheries and Sport Fish. King salmon regulations in the Anchor River can be modified inseason based upon real time fish counts to achieve the lower bound sustainable escapement goal.

Because of below average index aerial escapement counts to the Anchor River and Deep Creek, a suite of changes were made to the sport fishing regulations governing these streams and the adjacent marine fishery in 1996. The king salmon fishery in Deep Creek was reduced from 5 to 3 weekends, and the combined annual limit in Deep Creek and the Anchor River was reduced

from 5 to 2 king salmon 16 inches or larger. In both the Anchor River and Deep Creek, an angler could no longer fish for the remainder of the day after harvesting a king salmon.

Based upon the low harvest rate of Anchor River king salmon during 2004–2007, the king salmon sport fishery was liberalized in 2007 by allowing fishing on Wednesdays following each open weekend, separating the annual limit from Deep Creek, increased the annual limit from 2 to 5 king salmon, and decreasing the saltwater closed waters on either side of the river mouth from 2 miles to 1 mile.

During the 2009 fishing season, the Anchor River king salmon run was projected to be below the escapement goal and the inriver king salmon fishery was closed by emergency order after the third regulatory opening. Simultaneously, the closed saltwater area on either side of the Anchor River mouth was increased from 1 to 2 miles. In 2010, low escapement prompted prohibiting the use of bait and increasing the marine closed area after the second regulatory opening. Retention of king salmon was prohibited after the third regulatory weekend, and the closure of the saltwater area was extended through July 12 in an effort to achieve the escapement goal.

Deep Creek is managed to achieve an SEG of 350–800 king salmon counted during a single aerial survey conducted at the peak of king salmon spawning in late July after the fishery is closed. Assessment of the Deep Creek king salmon regulations are made postseason based on upon whether or not the SEG has been achieved consistently over several years. With the exception of 2008, Deep Creek king salmon escapement index counts have been within or above the SEG since 1998 (Table 28-2). The only inseason restriction to Deep Creek occurred in 2010, when bait was prohibited for the second and third regulatory openings as a precautionary measure to prevent overharvest of king salmon resulting from increased sport fishing effort due to emergency order closures of the Kenai and Kasilof rivers and restrictions in the Anchor River.

DEPARTMENT COMMENTS: The department **OPPOSES** these proposals because they unnecessarily restrict the Anchor River king salmon fishery. Anchor River king salmon regulations can be adjusted by emergency order in season to respond to anticipated shortfalls in king salmon escapement, and the current regulations will result in sustainable harvests when escapement falls within the SEG.

COST ANALYSIS: Approval of this proposal is not expected to result in an additional direct cost for a private person to participate in this fishery.

Table 28-1. Anchor River king salmon escapement, harvest and exploitation, 2003-2009.

Year	Project dates	Escapement	Harvest	Exploitation rate (%)	Fishing Days
2003	May 30–Jul 09	9,238	1,011	9.9	12
2004	May 15–Sep 15	12,016	1,561	11.5	15
2005	May 13–Sep 09	11,156	1,432	11.4	15
2006	May 15–Aug 24	8,945	1,394	13.5	15
2007	May 14–Sep 12	9,622	2,081	17.8	15
2008	May 13–Sep 12	5,806	1,612	21.7	20
2009	May 12–Sep 11	3,455	737	17.6	12
Average	2003-2009	8,605	1,404	14.0	15

Table 28-2. Deep Creek king salmon harvest and aerial escapement, 1976-2010.

Year	Harvest	Aerial escapement
1976	220	1075
1977	425	848
1978	804	582
1979	703	726
1980	182	
1981	604	427
1982	791	977
1983	1,154	550
1984	761	380
1985	249	644
1986	944	976
1987	604	968
1988	777	409
1989	843	561
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2000	937	556
2001	593	551
2002	507	696
2003	775	1,008
2004	823	1,075
2005	642	1,076
2006	451	507
2007	628	553
2008	602	205
2009	124	483
2010		387
Average	858	594

PROPOSALS 31 and 32 - 5 AAC 56.122. Special provisions and localized additions and exceptions to the seasons, bag, possession, and size limits, and methods and means for the Kenai Peninsula area.

PROPOSED BY: Mike Priebe (Proposal 31).
Allen Tigert and Phil Brna (Proposal 32).

WHAT WOULD THE PROPOSAL DO? Proposal 31 would require only 1 unbaited, single hook, artificial lure in Anchor River and Deep Creek August 20–December 31, and Memorial Day–June 30.

Proposal 32 would allow bait in Anchor River and Deep Creek only after escapement goals have been met and until August 20 instead of September 1 and would require only single hook artificial lures in Anchor River and Deep Creek August 20 – December 31.

WHAT ARE THE CURRENT REGULATIONS?

King salmon:

Season: Anchor River – Five 3-day weekends (Saturday – Monday) and each Wednesday beginning the weekend before Memorial Day.
Deep Creek – Three 3-day weekends beginning Memorial Day.

Only 1 unbaited, single-hook, artificial lure is allowed September 1–December 31 in the Anchor River and Deep Creek. Retention of rainbow/steelhead trout is not allowed year round. Rainbow/steelhead trout may not be removed from the water. Waters upstream from the confluence of the North and South forks of Anchor River and upstream from department markers on Deep Creek are open to fishing for rainbow/steelhead trout August 1–December 31.

WHAT WOULD BE THE EFFECT IF THE PROPOSAL WERE ADOPTED? These proposals would reduce angler success at harvesting king salmon and result in king salmon harvest rates well below sustainable levels in the Anchor River (Table 31-1). It would reduce (by an unknown amount), but not eliminate, the incidental catch and associated mortality of steelhead trout by anglers targeting king salmon. The proposal may limit angler success harvesting coho salmon from August 20–31. The proposal would likely have little impact on steelhead trout during August 20–31 because few steelhead trout are present in the fishery at that time. The proposed single-hook restriction is likely to increase the ease of releasing fish. Hooking mortality has been related more to the use of bait than the size and number of points of the hook used. This proposal may also shift angling effort to the Ninilchik River and Stariski Creek where bait is allowed, but which contain a lower abundance of coho salmon.

BACKGROUND: Most anglers in Lower Cook Inlet Management Area (LCIMA) streams use bait to target both king and coho salmon, since it is highly effective at catching both species. Other gear used for catching salmon in LCIMA streams includes spinners, spoons, and artificial flies. When water flows are high and slightly turbid, bait is likely more effective for king salmon in the Anchor River and Deep Creek than other gear. Restricting use of bait in king salmon fisheries is known to reduce the harvest in fisheries, and is used as a tool by the department during poor runs to reduce harvest and achieve escapement goals. In 2010, the department

prohibited bait use by emergency order in the Anchor River after the third regulatory opening of the king salmon fishery to reduce harvest, in an effort to achieve the escapement goal. Bait was also prohibited in Deep Creek in 2010 for the second and third regulatory openings as a precautionary measure to prevent potential overharvest of king salmon resulting from increased sport fishing effort due to emergency closures of the Kenai and Kasilof rivers and restrictions in the Anchor River.

The regulatory framework for LCIMA steelhead trout evolved over a period of nearly 2 decades during which angler participation and harvest in the steelhead trout fishery were generally increasing, and numbers of returning steelhead trout enumerated each fall at a weir in the Anchor River were declining. Specifically, in 1977, the bag and possession limit was 2 steelhead trout daily with no seasonal limit. The season was closed from May 1 to June 30. By 1984, the bag and possession limit had been reduced to 1 fish daily, a seasonal limit of 2 fish was imposed, and a harvest record required. Beginning in 1984, fishing was permitted only from July 1 through December 31. From 1984 through 1988, bait was prohibited after September 15. In 1989 and 1990, bait was prohibited beginning August 16. Since 1991, bait has been prohibited beginning September 1. The rainbow/steelhead trout fisheries in Anchor River and Deep Creek have been catch and release since 1989.

Steelhead trout begin entering LCIMA streams in late July and early August. Steelhead trout spawn in April to early June. Steelhead trout often spawn more than once, and fish over 28 inches are usually repeat spawners. After spawning, some fish die and others outmigrate to the ocean in the spring and early summer. Steelhead trout rarely return to fresh water within a few months of having spawned and most repeat spawners spend at least 1 winter in the sea between spawning migrations. Anchor River studies in 1989 and 1990 found about 19% of the spawning steelhead trout population are repeat spawners.

The overlap in run timing between king salmon and emigrating steelhead trout, and coho salmon and immigrating steelhead trout exposes steelhead trout to being caught by anglers targeting salmon. During this time, an unknown, but assumed low, number of steelhead trout is harvested when anglers mistake them for king or coho salmon. There is also an unknown level of hooking mortality of steelhead trout associated with all catch and release fishing, regardless of gear type. Hooking mortality has been related more to the use of bait than the size and number of points of the hook used. Bait use increases hooking of fish in vital areas, and therefore, mortality.

In 2009, the first count of the entire emigration of steelhead trout was collected for the Anchor River. In 2009, the Anchor River weir was installed on May 13, and outmigrating steelhead/rainbow trout were enumerated by direct observation and video. The first steelhead trout was observed migrating downstream on May 14. Approximately 50% of the run had outmigrated by June 7, which was during the fourth regulatory king salmon fishery opening, and 90% had migrated by June 15, during the fifth regulatory king salmon opening. A total of 605 outmigrating steelhead trout were counted.

Anchor River steelhead trout immigration was enumerated during 3 years of the weir operation (1988, 1989, and 1992) and 878, 769, and 1,261 fish were counted, respectively (Table 31-2). Steelhead trout counts have occurred in other years while the weir was operated for assessing

coho salmon, but the counts were incomplete because they assessed only a portion of the steelhead trout immigration. Cumulative counts of immigrating steelhead trout at a weir operated in the Anchor River through at least August 31 in 1987–1989 and 1992 averaged 96, and ranged from 21 and 251. Cumulative steelhead trout weir counts through August 31 during 2004–2010 averaged 38, and ranged from four to 81. Significant numbers of steelhead trout begin passing the weir starting in late August and early September. The midpoint of the steelhead trout migration occurred from September 15–25 during 1988, 1989, and 1992, when the weirs were operated throughout the immigration, and immigration was 90% complete by October 2.

From 1989 through 2009, the steelhead trout catch in the Anchor River and Deep Creek was variable, but generally stable. The annual variation in catch estimates is influenced by run size, amount of days the stream conditions are conducive to fishing, shifts in effort between streams, and potentially, increased angler effort. In recent years (2006–2009), the annual steelhead trout catch estimates for the Anchor River have averaged 6,500, almost double the historical average of 3,700 (Table 31-3). The estimated Anchor River steelhead trout stock size is thought to be approximately 1,500 fish. If this estimate of abundance is accurate, it would indicate that a large fraction of the population was exposed to multiple hookings. Studies on delayed hooking mortality for steelhead trout estimated a range of 0% to 10%; however, these studies were not based on multiple hooking. Most Lower 48 and British Columbia fishery managers use a catch-release mortality in their modeling of 10% with bait and 5% for all other gear types.

What little that is known about steelhead trout movements during their freshwater residence in the Anchor River comes from the 9 of 22 steelhead trout implanted with radio tags in the Anchor River in 1982 that survived a significant period of time with their tags operational. The data suggest that the fish remained in the road-accessible portion of the lower Anchor River throughout their freshwater residency. Steelhead trout overwintered near the North and South fork confluence in deeper areas of the river and moved to spawning areas in April and May. After spawning, the surviving fish emigrated downstream and arrived at the North and South Fork confluence during the first 2 weeks in June.

Based on run timing at the Anchor River weir (just above the sport fishery), an average (2004–2009) of approximately 46% of the coho salmon run escaped the fishery by August 31. Approximately 83% of the coho salmon escapement to Deep Creek passed upstream of the weir by August 31 during operations from 1997–2002 (Table 31-4).

Past regulatory changes to bait closure dates in the Anchor River and Deep Creek, from September 16–December 31 (1984–1988) to August 16–December 31 (1989 and 1990), were associated with an increase of coho harvests in both streams.

DEPARTMENT COMMENTS: The department **OPPOSES** these proposals. The proposed regulation may reduce the harvest of king salmon by up to 50%, and unnecessarily restrict the opportunity to harvest king salmon in the Anchor River and Deep Creek. Existing regulations on the Anchor River and Deep Creek are associated with sustainable harvests rates for king and coho salmon. Further restricting bait regulations in the Anchor River and Deep Creek would be inconsistent with other LCIMA area streams, including streams with smaller coho salmon runs

(Ninilchik River and Stariski Creek), and would likely provide minimal protection to steelhead trout due to run timing of the stock. Existing steelhead trout sport fishing regulations are conservative and current run assessment indicates the stock is within the historical range of abundance.

COST ANALYSIS: Approval of these proposals is not expected to result in an additional direct cost for a private person to participate in this fishery.

Table 31-1. Anchor River king salmon escapement, harvest and exploitation, 2003-2009.

Year	Project dates	Escapement	Harvest	Exploitation rate (%)	Fishing Days
2003	May 30–Jul 09	9,238	1,011	9.9	12
2004	May 15–Sep 15	12,016	1,561	11.5	15
2005	May 13–Sep 09	11,156	1,432	11.4	15
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2007	May 14–Sep 12	9,622	2,081	17.8	15
2008	May 13–Sep 12	5,806	1,612	21.7	20
2009	May 12–Sep 11	3,455	737	17.6	12
Average 2003-2009		8,605	1,404	14.0	15

Table 31-2. Anchor River coho salmon and steelhead trout weir counts, 1987-1992 and 2004-2010.

		Coho salmon			Rainbow/ Steelhead trout		
Year	Project dates	Total count	Cumulative counts by 8/31	Percent of total count by 8/31	Total count [a]	Cumulative counts by 8/31	Percent of total count by 8/31
1987	7/4 - 9/10	2,409	844	35	136	21	
1988	7/3 - 10/5	2,805	2,309	82	878	95	11
1989	7/6 - 11/5	20,187	9,537	47	769	183	24
1992	7/4 - 10/1	4,596	3,579	78	1,261	251	20
2004	5/16 - 9/13	5,728	1,078	19	20	4	20
2005	5/13 - 9/9	18,977	7,148	38	107	28	26
2006	5/15 - 8/24	10,181			4		
2007	5/14 - 9/12	8,226	3,549	43	325	62	19
2008	5/13 - 9/11	5,951	4,411	74	258	76	30
2009	5/12 - 9/11	2,692	1,518	56	85	6	7
2010 [b]	5/13 - 9/29	6,014	4,669	78	586	59	10
Averages							
1987-1992		7,499	4,067	61	969	176	20
2004-2009		8,626	3,541	46	133	35	20

[a] Standardized to start run on July 1 to exclude kelts counted in May and June.

[b] Preliminary data.

Table 31-3. Harvest and catch of steelhead trout in Lower Kenai Peninsula roadside streams, 1977-2009.

	Anchor River		Stariski Creek		Deep Creek		Ninilchik River		All	
Year	Harvest	Catch[a]	Harvest	Catch[a]	Harvest	Catch[a]	Harvest	Catch[a]	Harvest	Catch
1977	2,099		294		569		230		3,192	
1978	2,305		352		498		307		3,462	
1979	1,782		236		263		509		2,790	
1980	1,186		105		236		381		1,908	
1981	928		118		248		464		1,758	
1982	698		59		239		179		1,175	
1983	1,605		42		315		157		2,119	
1984	985		137		311		137		1,570	
1985	475		50		179		501		1,205	
1986	520		31		688		275		1,514	
1987	643		62		85		291		1,081	
1988	200		18		291		272		781	
1989		2,066		10		409		505		2,990
1990		1,978		104		1,291		177		3,550
1991		2,349		12		425		512		3,298
1992		2,720		70		740		1,008		4,538
1993		4,156		31		1,448		442		6,077
1994		4,035		75		1,156		804		6,070
1995		2,232				520		178		2,930
1996		7,570		47		1,079		522		9,218
1997		3,103				384		380		3,867
1998		3,878		71		1,350		576		5,875
1999		3,920		305		689		694		5,608
2000		8,693		329		1,805		760		11,587
2001		3,045		51		627		283		4,006
2002		3,501		203		954		468		5,126
2003		3,409		46		2,456		952		6,863
2004		3,710		39		4,365		400		8,514
2005		2,524		106		1,355		934		4,919
2006		4,525		13		1,234		563		6,335
2007		8,365		23		2,668		725		11,781
2008		8,733		195		3,672		1,465		14,065
2009		4,170		115		1,479		1,195		6,959
Average	1,119	3,699	125	95	327	1,238	309	564	1,880	5,590

Source: Statewide Harvest Survey Mills 1979-1980, 1981a-b, 1982-1994, Howe et al. 1995, 1996, 2001 a-d, Walker et al. 2003, Jennings et al. 2004, 2006a-b, 2007, 2009 a-b, 2010 a-b and In prep).

[a] Catch first estimated by SHS during 1989. 1989 catch estimates from unpublished Statewide Harvest Survey data.

Table 31-4. Deep Creek coho salmon weir counts, 1997-2002.

		Coho salmon	
Year	Project dates	Total count	Percent of total count by 8/31
1997	5/24 to 9/21	2,017	75
1998	6/17 to 9/15	1,537	97
1999	6/18 to 9/12	2,267	77
2000	6/15 to 9/7	3,425	95
2001	8/2 to 9/10	3,747	78
2002	7/31 to 9/12	6,164	77
Averages 1997-2002		3,193	83

PROPOSAL 33, 34, and 35 - 5 AAC 56.122(2)-(5). Special provisions and localized additions and exceptions to the seasons, bag, possession, and size limits, and methods and means for the Kenai Peninsula Area.

PROPOSED BY: Allen Tigert and Phil Brna (Proposal 33).
Mike Priebe (Proposal 34).
Allen Tigert and Phil Brna (Proposal 35.

WHAT WOULD THE PROPOSAL DO? These proposals would prohibit the use of bait in Anchor River or Deep Creek year round.

Proposal 34 would require only 1 unbaited, single-hook artificial lure with gap 3/4" or less, year round in Anchor River and Deep Creek.

Proposal 35 would require only 1 unbaited, single hook artificial lure with gap of 3/4" or less year round in Anchor River and Deep Creek, except that the use of bait could be allowed by emergency order.

WHAT ARE THE CURRENT REGULATIONS? Bait is allowed during open fishing periods except from September 1–December 31 when only 1 unbaited, single-hook, artificial lure is allowed. Retention of rainbow/steelhead trout is not allowed year round. Rainbow/steelhead trout may not be removed from the water. Waters upstream from the confluence of the North and South forks of Anchor River and upstream from department markers on Deep Creek are open to fishing for rainbow/steelhead trout August 1–December 31.

WHAT WOULD BE THE EFFECT IF THE PROPOSAL WERE ADOPTED? This proposal would reduce angler success at harvesting king salmon, result in king salmon harvest rates well below sustainable levels in the Anchor River (Table 31-1), and significantly limit angler effectiveness at harvesting king salmon in Deep Creek. The proposal may limit angler success harvesting coho salmon in both streams. It may reduce, but not eliminate, the incidental catch and associated mortality of steelhead trout by anglers targeting other fish species.

BACKGROUND: Most anglers in Lower Cook Inlet Management Area (LCIMA) streams use bait to target both king and coho salmon because it is highly effective at catching both species. Other gear used for catching salmon in LCIMA streams includes spinners, spoons, and artificial flies. When water flows are high and slightly turbid, bait is likely more effective for king salmon in the Anchor River and Deep Creek than other gear. Restricting use of bait in king salmon fisheries is known to reduce the harvest in fisheries, and is used as a tool by the department during poor runs to reduce harvest and achieve escapement goals. In 2010, the department prohibited bait use by emergency order in the Anchor River after the third regulatory opening of the king salmon fishery to reduce harvest, in an effort to achieve the escapement goal. Bait was also prohibited in Deep Creek in 2010 for the second and third regulatory openings as a precautionary measure to prevent potential overharvest of king salmon resulting from increased sport fishing effort due to emergency closures of the Kenai and Kasilof rivers, and restrictions in the Anchor River.

The regulatory framework for LCIMA steelhead trout evolved over a period of nearly two decades during which angler participation and harvest in the steelhead trout fishery were generally increasing, and numbers of returning steelhead trout enumerated each fall at a weir in place at the Anchor River were declining. Specifically, in 1977, the bag and possession limit was 2 steelhead trout daily with no seasonal limit. The season was closed from May 1 to June 30. By 1984, the bag and possession limit had been reduced to 1 fish daily, a seasonal limit of 2 fish was imposed and a harvest record required. Beginning in 1984, fishing was permitted only from July 1 through December 31. From 1984 through 1988, bait was prohibited after September 15. In 1989 and 1990, bait was prohibited beginning August 16. Since 1991, bait has been prohibited beginning September 1. The rainbow/steelhead trout fisheries in Anchor River and Deep Creek have been catch and release since 1989.

Steelhead trout begin entering LCIMA streams in late July and early August. Steelhead trout spawn in April to early June. Steelhead trout often spawn more than once, and fish over 28 inches are usually repeat spawners. After spawning, some fish die and others outmigrate to the ocean in the spring and early summer. Steelhead trout rarely return to fresh waters within a few months of having spawned and most repeat spawners spend at least 1 winter at sea between spawning migrations. Anchor River studies in 1989 and 1990 found about 19% of the spawning steelhead trout population are repeat spawners.

The overlap in run timing between king salmon and emigrating steelhead trout, and coho salmon and immigrating steelhead trout, exposes steelhead trout to being caught by anglers targeting salmon. During this time, an unknown, but assumed low, number of steelhead trout is harvested when anglers mistake them for king or coho salmon. There is also an unknown level of hooking mortality of steelhead trout associated with all catch and release fishing, regardless of gear type. Hooking mortality has been related more to the use of bait than the size and number of points of the hook used. Bait use increases hooking of fish in vital areas, and therefore, mortality.

In 2009, the first count of the entire emigration of steelhead trout was collected for the Anchor River. In 2009, the Anchor River weir was installed on May 13 and outmigrating steelhead/rainbow trout were enumerated by direct observation and video. The first steelhead trout was observed migrating downstream on May 14. Approximately 50% of the run had outmigrated by June 7, which was during the fourth regulatory king salmon fishery opening, and 90% had migrated by June 15, during the fifth regulatory king salmon opening. A total of 605 outmigrating steelhead trout were counted.

Anchor River steelhead trout immigration was enumerated during 3 years of weir operation (1988, 1989, and 1992) and 878, 769, and 1,261 fish were counted, respectively (Table 31-2). Steelhead trout counts have occurred in other years while the weir was operated for assessing coho salmon, but the counts are incomplete because they assessed only a portion of the steelhead trout immigration. Cumulative counts of immigrating steelhead trout at a weir operated in the Anchor River through at least August 31 in 1987-1989 and 1992 averaged 96, and ranged from 21 and 251. Cumulative steelhead trout weir counts through August 31 during 2004–2010 averaged 38, and ranged from four to 81. Significant numbers of steelhead trout begin passing the weir starting in late August and early September. The midpoint of the steelhead trout

migration occurred from September 15-25 during 1988, 1989, and 1992, when the weirs were operated throughout the immigration, and immigration was 90% complete by October 2.

From 1989 through 2009, the steelhead trout catch in the Anchor River and Deep Creek was variable, but generally stable. The annual variation in catch estimates is influenced by run size, amount of days the stream conditions are conducive to fishing, shifts in effort between streams, and potentially, increased angler effort. In recent years (2006–2009), the annual steelhead trout catch estimates for the Anchor River have averaged 6,500, almost double the historical average of 3,700 (Table 31-3). The estimated Anchor River steelhead trout stock size is thought to be approximately 1,500 fish. If this estimate of abundance is accurate, it would indicate that a large fraction of the population has been exposed to multiple hookings. Studies on delayed hooking mortality for steelhead trout estimated a range of 0% to 10%; however, these studies were not based on multiple hooking. Most Lower 48 and British Columbia fishery managers use a catch-release mortality in their modeling of 10% with bait and 5% for all other gear types.

What little that is known about steelhead trout movements during their freshwater residence in the Anchor River comes from the 9 of 22 steelhead trout implanted with radio tags in the Anchor River in 1982 that survived a significant period of time with their tags operational. The data suggest that the fish remained in the road-accessible portion of the lower Anchor River throughout their freshwater residency. Steelhead trout overwintered near the North and South fork confluence in deeper areas of the river and moved to spawning areas in April and May. After spawning, the surviving fish emigrated downstream and arrived at the North and South Fork confluence during the first 2 weeks in June.

Based on run timing at the Anchor River weir (just above the sport fishery), an average (2004–2009) of approximately 46% of the coho salmon run escaped the fishery by August 31. Approximately 83% of the coho salmon escapement to Deep Creek passed upstream of the weir by August 31 during operations from 1997–2002 (Table 31-4).

Past regulatory changes to bait closure dates in the Anchor River and Deep Creek, from September 16–December 31 (1984–1988) to August 16–December 31 (1989 and 1990), were associated with an increase of coho harvest in both streams.

DEPARTMENT COMMENTS: The department **OPPOSES** these proposals. The proposed regulation may reduce the harvest of king salmon by up to 50%, and unnecessarily restrict the opportunity to harvest king salmon in the Anchor River and Deep Creek. Existing regulations on the Anchor River and Deep Creek are associated with sustainable harvests rates for king and coho salmon. Further restricting bait regulations in the Anchor River and Deep Creek would be inconsistent with other LCIMA area streams, including streams with smaller coho salmon runs (Ninilchik River and Stariski Creek), and would likely provide minimal protection to steelhead trout due to run timing of the stock. Existing steelhead trout sport fishing regulations are conservative and current run assessment indicates the stock is within the historical range of abundance.

COST ANALYSIS: Approval of these proposals is not expected to result in an additional direct cost for a private person to participate in this fishery.

Table 33-1. Anchor River king salmon escapement, harvest and exploitation, 2003-2009.

Year	Project dates	Escapement	Harvest	Exploitation rate (%)	Fishing Days
2003	May 30–Jul 09	9,238	1,011	9.9	12
2004	May 15–Sep 15	12,016	1,561	11.5	15
2005	May 13–Sep 09	11,156	1,432	11.4	15
2006	May 15–Aug 24	8,945	1,394	13.5	15
2007	May 14–Sep 12	9,622	2,081	17.8	15
2008	May 13–Sep 12	5,806	1,612	21.7	20
2009	May 12–Sep 11	3,455	737	17.6	12
Average 2003-2009		8,605	1,404	14.0	15

Table 33-2. Anchor River coho salmon and steelhead trout weir counts, 1987-1992 and 2004-2010.

		Coho salmon			Rainbow/ Steelhead trout		
Year	Project dates	Total count	Cumulative counts by 8/31	Percent of total count by 8/31	Total count [a]	Cumulative counts by 8/31	Percent of total count by 8/31
1987	7/4 - 9/10	2,409	844	35	136	21	
1988	7/3 - 10/5	2,805	2,309	82	878	95	11
1989	7/6 - 11/5	20,187	9,537	47	769	183	24
1992	7/4 - 10/1	4,596	3,579	78	1,261	251	20
2004	5/16 - 9/13	5,728	1,078	19	20	4	20
2005	5/13 - 9/9	18,977	7,148	38	107	28	26
2006	5/15 - 8/24	10,181			4		
2007	5/14 - 9/12	8,226	3,549	43	325	62	19
2008	5/13 - 9/11	5,951	4,411	74	258	76	30
2009	5/12 - 9/11	2,692	1,518	56	85	6	7
2010 [b]	5/13 - 9/29	6,014	4,669	78	586	59	10
Averages							
1987-1992		7,499	4,067	61	969	176	20
2004-2009		8,626	3,541	46	133	35	20

[a] Standardized to start run on July 1 to exclude kelts counted in May and June.

[b] Preliminary data.

Table 33-3. Harvest and catch of steelhead trout in Lower Kenai Peninsula roadside streams, 1977-2009.

	Anchor River		Stariski Creek		Deep Creek		Ninilchik River		All	
Year	Harvest	Catch[a]	Harvest	Catch[a]	Harvest	Catch[a]	Harvest	Catch[a]	Harvest	Catch
1977	2,099		294		569		230		3,192	
1978	2,305		352		498		307		3,462	
1979	1,782		236		263		509		2,790	
1980	1,186		105		236		381		1,908	
1981	928		118		248		464		1,758	
1982	698		59		239		179		1,175	
1983	1,605		42		315		157		2,119	
1984	985		137		311		137		1,570	
1985	475		50		179		501		1,205	
1986	520		31		688		275		1,514	
1987	643		62		85		291		1,081	
1988	200		18		291		272		781	
1989		2,066		10		409		505		2,990
1990		1,978		104		1,291		177		3,550
1991		2,349		12		425		512		3,298
1992		2,720		70		740		1,008		4,538
1993		4,156		31		1,448		442		6,077
1994		4,035		75		1,156		804		6,070
1995		2,232				520		178		2,930
1996		7,570		47		1,079		522		9,218
1997		3,103				384		380		3,867
1998		3,878		71		1,350		576		5,875
1999		3,920		305		689		694		5,608
2000		8,693		329		1,805		760		11,587
2001		3,045		51		627		283		4,006
2002		3,501		203		954		468		5,126
2003		3,409		46		2,456		952		6,863
2004		3,710		39		4,365		400		8,514
2005		2,524		106		1,355		934		4,919
2006		4,525		13		1,234		563		6,335
2007		8,365		23		2,668		725		11,781
2008		8,733		195		3,672		1,465		14,065
2009		4,170		115		1,479		1,195		6,959
Average	1,119	3,699	125	95	327	1,238	309	564	1,880	5,590

Source: Statewide Harvest Survey Mills 1979-1980, 1981a-b, 1982-1994, Howe et al. 1995, 1996, 2001 a-d, Walker et al. 2003, Jennings et al. 2004, 2006a-b, 2007, 2009 a-b, 2010 a-b and In prep).

[a] Catch first estimated by SHS during 1989. 1989 catch estimates from unpublished Statewide Harvest Survey data.

Table 33-4. Deep Creek coho salmon weir counts, 1997-2002.

		Coho salmon	
Year	Project dates	Total count	Percent of total count by 8/31
1997	5/24 to 9/21	2,017	75
1998	6/17 to 9/15	1,537	97
1999	6/18 to 9/12	2,267	77
2000	6/15 to 9/7	3,425	95
2001	8/2 to 9/10	3,747	78
2002	7/31 to 9/12	6,164	77
Averages 1997-2002		3,193	83

PROPOSAL 36 - 5 AAC 56.122. Special provisions and localized additions and exceptions to the seasons, bag, possession, and size limits, and methods and means for the Kenai Peninsula Area.

PROPOSED BY: Don Flynn and Lynn Whitmore.

WHAT WOULD THE PROPOSAL DO? This proposal would require use of circle hooks in the Anchor River with no more than 2 hooks in tandem.

WHAT ARE THE CURRENT REGULATIONS? Beginning May 22 through August 31 during open fishing periods, sport fishing may be conducted only by use of a single line attached to not more than 1 plug, spoon, spinner, or series of spinners, or 2 flies, or 2 hooks. Only 1 unbaited, single-hook, artificial lure is allowed September 1–December 31.

WHAT WOULD BE THE EFFECT IF THE PROPOSAL WERE ADOPTED? This proposal may reduce the incidence of snagged fish and may reduce mortality of released fish by anglers using bait. The efficiency of circle hooks on hooking, landing, and capture is not well understood in freshwater salmon fisheries, especially when used without bait.

BACKGROUND: King salmon harvest in the Anchor River has been relatively stable. On average (1977–2006) approximately 1,300 king salmon are harvested from the Anchor River annually. Based on escapement data and harvest estimates (both marine and fresh water) from 2004 through 2009, Anchor River king salmon have a low harvest rate (range from 11.4% to 20.4%) compared to other king salmon stocks in Lower Cook Inlet Management Area (LCIMA). Based on the available coho salmon escapement data and the annual Statewide Harvest Survey (SWHS) harvest estimates, coho salmon harvest rates in the Anchor River have been high in some years, but are sustainable.

There is an unknown level of hooking mortality associated with all catch and release fishing in all sport fisheries in LCIMA streams, regardless of gear type. Hooking mortality is often higher for fish that have been hooked in vital areas, such the esophagus or gills. Other factors, such as fish size, gear type (treble hooks), bleeding, and elapsed time to unhook the fish, can influence survival to a lesser degree than hook location. The use of bait does increase the likelihood of a fish being hooked in vital areas and therefore, has a higher mortality rate. The department has used single-hook regulations, which facilitate quicker fish release, in sport fisheries where fish are intended for release. The use of treble hooks has also been restricted to control harvest in intense king salmon sport fisheries such as the Kenai River.

For circle hooks to perform as designed, anglers must alter the method by which they set the hook. Instead of "setting" the hook by jerking the rod, the angler must apply gentle, steady pressure to the hook with their rod. To function properly, the entire circle hook needs to be ingested by a fish prior to "setting the hook". The angler must provide the fish with sufficient time to actually ingest the entire hook into the oral cavity. If the angler jerks the rod to set the hook, the hook will often be pulled out of the fish's mouth. This is why the use of circle hooks is generally combined with bait.

DEPARTMENT COMMENTS: The department **OPPOSES** this proposal. Current sport fishing regulations in the Anchor River provide sustainable harvest levels of king and coho salmon. Existing steelhead trout sport fishing regulations are conservative and current run assessment indicates the stock is within the historical range of abundance. Further restricting gear regulations in the Anchor River would be inconsistent with other area streams, including streams with smaller king and coho salmon runs (Ninilchik River). This could result in a shift in angler effort by those anglers who prefer to use other gear. There is also a lack of information to properly assess the effects of this gear. There is presently no definition in regulation as to what a circle hook is and there is a large variation in actual design among and within different manufacturer's product lines, both of which may lead to enforcement challenges.

COST ANALYSIS: Approval of this proposal is not expected to result in an additional direct cost for a private person to participate in this fishery.

PROPOSAL 37 - 5 AAC 56.122(2). Special provisions and localized additions and exceptions to the seasons, bag, possession, and size limits, and methods and means for the Kenai Peninsula Area.

PROPOSED BY: Allen Tigert and Phil Brna.

WHAT WOULD THE PROPOSAL DO? Prohibit fishing within 300 yards of the weir on the Anchor River from July 1 to July 31.

WHAT ARE THE CURRENT REGULATIONS? The waters within 300 feet of a fish weir or fish ladder are closed to sport fishing, unless a lesser distance is indicated by department markers.

WHAT WOULD BE THE EFFECT IF THE PROPOSAL WERE ADOPTED? This proposal would increase crowding in a fishery currently limited to approximately 2 river miles of open area. It may decrease the incidence of snagging after the king salmon season.

BACKGROUND: The current area closed to sport fishing downstream of the department weir is regulated by 5 AAC 75.050, which applies to all weirs in Alaska. The Anchor River weir is located just downstream of the North and South forks and just upstream of the sport fishery. The waters 300 feet downstream of the weir are not suitable holding habitat for king salmon, and during periods of low water levels, fish remain in pools further downstream prior to passing through the weir.

Each year beginning July 1, the lower section of the Anchor River opens to sport fishing for fish species other than king salmon. If low water conditions occur during this time, anglers have been known to illegally target king salmon, particularly in the pool known as "bridge hole". In 2010, the department received reports that anglers were illegally targeting king salmon after the king salmon season had closed in the area open to fishing for other species just downstream of the weir. On July 2, the department extended the area closed to sport fishing downstream of the weir to protect holding king salmon during a year of low abundance, as well as to assist enforcement.

DEPARTMENT COMMENTS: The department **OPPOSES** this proposal. Anchor River king salmon regulations can be adjusted by emergency order in season to respond to anticipated shortfalls in king salmon escapement.

COST ANALYSIS: Approval of this proposal is not expected to result in an additional direct cost for a private person to participate in this fishery.

PROPOSALS 38 and 39 - 5 AAC 56.122(2)-(5). Special provisions and localized additions and exceptions to the seasons, bag, possession, and size limits, and methods and means for the Kenai Peninsula Area.

PROPOSED BY: Allen Tigert and Phil Brna (Proposal 38).
Mike Priebe (Proposal 39).

WHAT WOULD THE PROPOSAL DO? These proposals would close the Anchor River and Deep Creek to all sport fishing from November 1 until the opening of king salmon fishing in the spring.

WHAT ARE THE CURRENT REGULATIONS? The Anchor River opens to fishing the Saturday before Memorial Day weekend for five 3-day weekends and the following Wednesdays. It reopens to fishing July 1 and remains open through December 31 each year. Deep Creek opens Memorial Day weekend for three 3-day weekends. Deep Creek reopens to fishing July 1 and remains open until December 31.

WHAT WOULD BE THE EFFECT IF THE PROPOSAL WERE ADOPTED? These proposals may reduce steelhead trout and Dolly Varden catch in the Anchor River and Deep Creek by an unknown amount. An earlier closure of the Anchor River and Deep Creek may result in a slight increase in fishing pressure on nearby Ninilchik River and Stariski Creek from the small number anglers who want to fish for steelhead trout and Dolly Varden in November and December.

BACKGROUND: The regulatory framework for LCIMA steelhead trout evolved over a period of nearly two decades during which angler participation and harvest in the steelhead trout fishery were generally increasing and numbers of returning steelhead trout enumerated each fall at a weir at the Anchor River were declining. Specifically, in 1977 the bag and possession limit was 2 steelhead trout daily with no seasonal limit. The season was closed from May 1 to June 30. By 1984, the bag and possession limit had been reduced to 1 fish daily, a seasonal limit of 2 fish was imposed and a harvest record required. Beginning in 1984 fishing was permitted only from July 1 through December 31. From 1984 through 1988, bait was prohibited after September 15. In 1989 and 1990, bait was prohibited beginning August 16. Since 1991, bait has been prohibited beginning September 1. The rainbow/steelhead trout fisheries in Anchor River and Deep Creek have been catch and release since 1989.

Steelhead trout begin entering LCIMA streams in late July and early August. Steelhead trout spawn in April to early June. There is an unknown level of hooking mortality of steelhead trout associated with all catch and release fishing regardless of gear type. Hooking mortality has been related more to the use of bait than the size and number of points of the hook used. Bait use increases hooking of fish in vital areas and therefore mortality.

In 2009, the first count of the entire outmigration of steelhead trout was collected for the Anchor River. In 2009, the Anchor River weir was installed on May 13 and outmigrating steelhead/rainbow trout were enumerated by direct observation and video. The first steelhead trout was observed migrating downstream on May 14. Approximately 50% of the run had

outmigrated by June 7, which was during the fourth regulatory king salmon fishery opening, and 90% had migrated by June 15, during the fifth regulatory king salmon opening. A total of 605 outmigrating steelhead trout were counted.

Anchor River steelhead trout immigration was enumerated during 3 years of weir operation (1988, 1989, and 1992) and 878, 769, and 1,261 fish were counted, respectively (Table 38-1). Steelhead trout counts have occurred in other years while the weir was operated for assessing coho salmon, but the counts are incomplete because they assessed only a portion of the steelhead trout immigration. Cumulative counts of immigrating steelhead trout at a weir operated in the Anchor River through at least August 31 in 1987-1989 and 1992 averaged 96 and ranged from 21 and 251. Cumulative steelhead trout weir counts through August 31 during 2004-2010 averaged 38 and ranged from 4 to 81. Significant numbers of steelhead trout begin passing the weir starting in late August and early September. The midpoint of the steelhead trout migration during 1988, 1989 and 1992, when the weirs were operated throughout the immigration, occurred from September 15-25 and immigration was 90% complete by October 2.

From 1989 through 2009, the steelhead trout catch in the Anchor River and Deep Creek was variable but generally stable. The annual variation in catch estimates is influenced by run size, amount of days the stream conditions are conducive to fishing, shifts in effort between streams and potentially increased angler effort. In recent years (2006-2009), the annual steelhead trout catch estimates for the Anchor River have averaged 6,500, almost double the historical average of 3,700 (Table 38-2). The estimated Anchor River steelhead trout stock size is thought to be approximately 1,500 fish. If this estimate of abundance is accurate, it would indicate that a large fraction of the population has been exposed to multiple hookings. Studies on delayed hooking mortality for steelhead trout estimated a range of 0% to 10%; however, these studies were not based on multiple hooking. Most Lower 48 and British Columbia fishery managers use a catch-release mortality in their modeling of 10% with bait and 5% for all other gear types.

DEPARTMENT COMMENTS: The department **OPPOSES** these proposals. The proposed date change is not likely to further protect steelhead trout in Anchor River because the river freezes and most fishing ceases around November 1. Existing steelhead trout sport fishing regulations are conservative and current run assessment indicates the stock is within the historical range of abundance.

COST ANALYSIS: Approval of this proposal is not expected to result in an additional direct cost for a private person to participate in this fishery.

Table 38-1. Anchor River coho salmon and steelhead trout weir counts, 1987-1992 and 2004-2010.

		Coho salmon			Rainbow/ Steelhead trout		
Year	Project dates	Total count	Cumulative counts by 8/31	Percent of total count by 8/31	Total count [a]	Cumulative counts by 8/31	Percent of total count by 8/31
1987	7/4 - 9/10	2,409	844	35	136	21	
1988	7/3 - 10/5	2,805	2,309	82	878	95	11
1989	7/6 - 11/5	20,187	9,537	47	769	183	24
1992	7/4 - 10/1	4,596	3,579	78	1,261	251	20
2004	5/16 - 9/13	5,728	1,078	19	20	4	20
2005	5/13 - 9/9	18,977	7,148	38	107	28	26
2006	5/15 - 8/24	10,181			4		
2007	5/14 - 9/12	8,226	3,549	43	325	62	19
2008	5/13 - 9/11	5,951	4,411	74	258	76	30
2009	5/12 - 9/11	2,692	1,518	56	85	6	7
2010 [b]	5/13 - 9/29	6,014	4,669	78	586	59	10
Averages							
1987-1992		7,499	4,067	61	969	176	20
2004-2009		8,626	3,541	46	133	35	20

[a] Standardized to start run on July 1 to exclude kelts counted in May and June.

[b] Preliminary data.

Table 38-2. Harvest and catch of steelhead trout in Lower Kenai Peninsula roadside streams, 1977- 2009.

	Anchor River		Stariski Creek		Deep Creek		Ninilchik River		All
Year	Harvest	Catch[a]	Harvest	Catch[a]	Harvest	Catch[a]	Harvest	Catch[a]	Harvest
1977	2,099		294		569		230		3,192
1978	2,305		352		498		307		3,462
1979	1,782		236		263		509		2,790
1980	1,186		105		236		381		1,908
1981	928		118		248		464		1,758
1982	698		59		239		179		1,175
1983	1,605		42		315		157		2,119
1984	985		137		311		137		1,570
1985	475		50		179		501		1,205
1986	520		31		688		275		1,514
1987	643		62		85		291		1,081
1988	200		18		291		272		781
1989		2,066		10		409		505	
1990		1,978		104		1,291		177	
1991		2,349		12		425		512	
1992		2,720		70		740		1,008	
1993		4,156		31		1,448		442	
1994		4,035		75		1,156		804	
1995		2,232				520		178	
1996		7,570		47		1,079		522	
1997		3,103				384		380	
1998		3,878		71		1,350		576	
1999		3,920		305		689		694	
2000		8,693		329		1,805		760	
2001		3,045		51		627		283	
2002		3,501		203		954		468	
2003		3,409		46		2,456		952	
2004		3,710		39		4,365		400	
2005		2,524		106		1,355		934	
2006		4,525		13		1,234		563	
2007		8,365		23		2,668		725	
2008		8,733		195		3,672		1,465	
2009		4,170		115		1,479		1,195	
Average	1,119	3,699	125	95	327	1,238	309	564	1,880

Source: Statewide Harvest Survey Mills 1979-1980, 1981a-b, 1982-1994, Howe et al. 1995, 1996, 2001 a-d, Walker et al. 2003, Jennings et al. 2004, 2006a-b, 2007, 2009 a-b, 2010 a-b and In prep).

[a] Catch first estimated by SHS during 1989. 1989 catch estimates from unpublished Statewide Harvest Survey data.

PROPOSAL 40 - 5 AAC 56.122. Special provisions and localized additions and exceptions to the seasons, bags, possessions, size limits and methods and means for the Lower Kenai Peninsula Area.

PROPOSED BY: Anchorage Advisory Committee.

WHAT WOULD THE PROPOSAL DO? This proposal would close Anchor River, Deep Creek, Ninilchik River, and Stariski Creek to steelhead trout fishing from November 1 until the opening of king salmon fishing in spring.

WHAT ARE THE CURRENT REGULATIONS? The Anchor River opens to fishing the Saturday before Memorial Day weekend for five 3-day weekends and the following Wednesdays. It reopens to fishing July 1 and remains open through December 31 each year. Deep Creek and Ninilchik River open Memorial Day weekend for three 3-day weekends. Deep Creek and Ninilchik River reopen to fishing July 1 and remain open until December 31. Stariski Creek is open to fishing July 1 through December 31.

WHAT WOULD BE THE EFFECT IF THE PROPOSAL WERE ADOPTED? This proposal may reduce steelhead trout catch in these streams by an unknown amount. Enforcement of a steelhead trout fishing closure would be problematic if a sport fishery were still open for Dolly Varden.

BACKGROUND: The regulatory framework for LCIMA steelhead trout evolved over a period of nearly two decades during which angler participation and harvest in the steelhead trout fishery were generally increasing, and numbers of returning steelhead trout enumerated each fall at a weir in place at the Anchor River were declining. Specifically, in 1977 the bag and possession limit was 2 steelhead trout daily with no seasonal limit. The season was closed from May 1 to June 30. By 1984, the bag and possession limit had been reduced to 1 fish daily, a seasonal limit of 2 fish was imposed, and a harvest record required. Beginning in 1984 fishing was permitted only from July 1 through December 31. From 1984 through 1988, bait was prohibited after September 15. In 1989 and 1990, bait was prohibited beginning August 16. Since 1991, bait has been prohibited beginning September 1. The rainbow/steelhead trout fisheries in Anchor River and Deep Creek have been catch and release since 1989.

Steelhead trout begin entering LCIMA streams in late July and early August. Steelhead trout spawn in April to early June. There is an unknown level of hooking mortality of steelhead trout associated with all catch and release fishing regardless of gear type. Hooking mortality has been related more to the use of bait than the size and number of points of the hook used. Bait use increases hooking of fish in vital areas and therefore mortality.

Steelhead abundance in Deep Creek is probably less than in Anchor River and may be closer to the abundance of the Ninilchik River stock. In 2009, the first count of the entire outmigration of steelhead trout was collected for the Anchor River. In 2009, the Anchor River weir was installed on May 13 and outmigrating steelhead/rainbow trout were enumerated by direct observation and video. The first steelhead trout was observed migrating downstream on May 14. Approximately 50% of the run had outmigrated by June 7, which was during the fourth regulatory king salmon

fishery opening, and 90% had migrated by June 15, during the fifth regulatory king salmon opening. A total of 605 outmigrating steelhead trout were counted.

Anchor River steelhead trout immigration was enumerated during 3 years of weir operation (1988, 1989, and 1992) and 878, 769, and 1,261 fish were counted, respectively (Table 40-1). Steelhead trout counts have occurred in other years while the weir was operated for assessing coho salmon, but the counts are incomplete because they assessed only a portion of the steelhead trout immigration. Cumulative counts of immigrating steelhead trout at a weir operated in the Anchor River through at least August 31 in 1987-1989 and 1992 averaged 96, and ranged from 21 and 251. Cumulative steelhead trout weir counts through August 31 during 2004–2010 averaged 38, and ranged from 4 to 81. Significant numbers of steelhead trout begin passing the weir starting in late August and early September. The midpoint of the steelhead trout migration during 1988, 1989, and 1992, when the weirs were operated throughout the immigration, occurred from September 15–25 and immigration was 90% complete by October 2.

From 1989 through 2009, the steelhead trout catch in the Anchor River and Deep Creek was variable but generally stable. The annual variation in catch estimates is influenced by run size, amount of days the stream conditions are conducive to fishing, shifts in effort between streams, and potentially, increased angler effort. In recent years (2006–2009), the annual steelhead trout catch estimates for the Anchor River have averaged 6,500, almost double the historic average of 3,700 (Table 40-2). The estimated Anchor River steelhead trout stock size is thought to be approximately 1,500 fish. If this estimate of abundance is accurate, it would indicate that a large fraction of the population has been exposed to multiple hookings. Studies on delayed hooking mortality for steelhead trout estimated a range of 0% to 10%; however, these studies were not based on multiple hooking. Most Lower 48 and British Columbia fishery managers use a catch-release mortality in their modeling of 10% with bait and 5% for all other gear types.

DEPARTMENT COMMENTS: The department **OPPOSES** this proposal. The proposed date change is not likely to further protect steelhead trout in Anchor River because the river freezes and most fishing ceases around November 1. Existing steelhead trout sport fishing regulations are conservative and current run assessment indicates the stock is within the historical range of abundance. In addition, enforcement of a steelhead trout fishing closure would be problematic if a sport fishery were still open for Dolly Varden.

COST ANALYSIS: Approval of this proposal is not expected to result in an additional direct cost for a private person to participate in this fishery.

Table 40-1. Anchor River coho salmon and steelhead trout weir counts, 1987-1992 and 2004-2010.

		Coho salmon			Rainbow/ Steelhead trout		
Year	Project dates	Total count	Cumulative counts by 8/31	Percent of total count by 8/31	Total count [a]	Cumulative counts by 8/31	Percent of total count by 8/31
1987	7/4 - 9/10	2,409	844	35	136	21	
1988	7/3 - 10/5	2,805	2,309	82	878	95	11
1989	7/6 - 11/5	20,187	9,537	47	769	183	24
1992	7/4 - 10/1	4,596	3,579	78	1,261	251	20
2004	5/16 - 9/13	5,728	1,078	19	20	4	20
2005	5/13 - 9/9	18,977	7,148	38	107	28	26
2006	5/15 - 8/24	10,181			4		
2007	5/14 - 9/12	8,226	3,549	43	325	62	19
2008	5/13 - 9/11	5,951	4,411	74	258	76	30
2009	5/12 - 9/11	2,692	1,518	56	85	6	7
2010 [b]	5/13 - 9/29	6,014	4,669	78	586	59	10
Averages							
1987-1992		7,499	4,067	61	969	176	20
2004-2009		8,626	3,541	46	133	35	20

[a] Standardized to start run on July 1 to exclude kelts counted in May and June.

[b] Preliminary data.

Table 40-2. Harvest and catch of steelhead trout in Lower Kenai Peninsula roadside streams, 1977 through 2009.

	Anchor River		Stariski Creek		Deep Creek		Ninilchik River		All
Year	Harvest	Catch[a]	Harvest	Catch[a]	Harvest	Catch[a]	Harvest	Catch[a]	Harvest
1977	2,099		294		569		230		3,192
1978	2,305		352		498		307		3,462
1979	1,782		236		263		509		2,790
1980	1,186		105		236		381		1,908
1981	928		118		248		464		1,758
1982	698		59		239		179		1,175
1983	1,605		42		315		157		2,119
1984	985		137		311		137		1,570
1985	475		50		179		501		1,205
1986	520		31		688		275		1,514
1987	643		62		85		291		1,081
1988	200		18		291		272		781
1989		2,066		10		409		505	
1990		1,978		104		1,291		177	
1991		2,349		12		425		512	
1992		2,720		70		740		1,008	
1993		4,156		31		1,448		442	
1994		4,035		75		1,156		804	
1995		2,232				520		178	
1996		7,570		47		1,079		522	
1997		3,103				384		380	
1998		3,878		71		1,350		576	
1999		3,920		305		689		694	
2000		8,693		329		1,805		760	
2001		3,045		51		627		283	
2002		3,501		203		954		468	
2003		3,409		46		2,456		952	
2004		3,710		39		4,365		400	
2005		2,524		106		1,355		934	
2006		4,525		13		1,234		563	
2007		8,365		23		2,668		725	
2008		8,733		195		3,672		1,465	
2009		4,170		115		1,479		1,195	
Average	1,119	3,699	125	95	327	1,238	309	564	1,880

Source: Statewide Harvest Survey Mills 1979-1980, 1981a-b, 1982-1994, Howe et al. 1995, 1996, 2001 a-d, Walker et al. 2003, Jennings et al. 2004, 2006a-b, 2007, 2009 a-b, 2010 a-b and In prep).

[a] Catch first estimated by SHS during 1989. 1989 catch estimates from unpublished Statewide Harvest Survey data.

PROPOSALS 41 and 42 - 5 AAC 56.xxx. New regulation.

PROPOSED BY: Mike Priebe. (Proposal 41)
Allen Tigert and Phil Brna. (Proposal 42)

WHAT WOULD THE PROPOSAL DO? These proposals would limit guides on Anchor River and Deep Creek to 2 clients per day and prohibit guides from fishing while their client are present unless providing assistance to a disabled client.

WHAT ARE THE CURRENT REGULATIONS? There are no restrictions on the number of clients that can fish with a guide operating on the Anchor River or Deep Creek.

WHAT WOULD BE THE EFFECT IF THE PROPOSAL WERE ADOPTED? Guided fishing opportunity on the Anchor River and Deep Creek would be reduced unless guide business owners hired more guides or unless the number of guided operations increased on the rivers. Anglers wishing to be guided on the Anchor River and Deep Creek would have more difficulty scheduling a guided fishing trip, particularly groups larger than 2. The proposal could result in guides switching to other rivers where the number of clients per guide was unlimited. An increase in the number of guided anglers on small streams with similar characteristics to the Anchor River and Deep Creek, such as the Ninilchik River and Stariski Creek, may occur.

BACKGROUND: In early 1970s, angler effort peaked when Anchor River, Deep Creek, and Ninilchik River were the major king salmon fisheries in Southcentral Alaska. As other king salmon fisheries developed on the Kenai Peninsula and northern Cook Inlet, sport fishing effort on Anchor River, Deep Creek and Ninilchik River declined, although these king salmon fisheries are still popular. Since 1999 angler effort has been stable at approximately 22,000 angler days annually in Anchor River and 9,500 angler days in Deep Creek.

Anchor River and Deep Creek are accessed on foot and are fished from the bank. These 2 streams are too shallow, narrow, and obstacle-ridden to allow motorboat passage. They are floatable with a small raft or canoe. Anchor River is road-accessible at several points along the lower 9 miles, but it is only in the lower 2 miles that significant portions of the river bank are state-owned and therefore, public access is provided. Deep Creek can be accessed only at the mouth and at the Sterling Highway crossing; the uplands are privately owned and anglers must stay below mean-high water line or ask for permission from landowners to approach the stream.

Between 2006-2009, an average of 9 guides reported guided activity on the Anchor River in their department freshwater logbooks; 6 guides reported annually fishing in Deep Creek (Table 41-1). Guides conducted an average of 44 trips and 154 total angler days to the Anchor River each year from 2006–2009. The average number of clients guided per trip on the Anchor River was 3. Guides made an average of 36 trips and 146 total angler days to Deep Creek each year from 2006–2009. The average number of clients guided per trip on Deep Creek was 3. There was no increasing or decreasing trend in annual number of trips made or annual number of total clients during 2006–2009. Guide and/or crew reported fishing the Anchor River while guiding clients on 4 trips in 2006, 7 trips in 2007, and 5 trips in 2008. Guide and/or crew did not report fishing Deep Creek while guiding clients in 2006, but they did report fishing on 15 trips in 2008.

DEPARTMENT COMMENTS: The department is **NEUTRAL** on these allocative proposals.

COST ANALYSIS: Approval of this proposal is not expected to result in an additional direct cost for a private person to participate in this fishery.

Table 41-1. Freshwater logbook participation in Anchor River and Deep Creek, 2006-2009.

	Anchor River				Deep Creek			
Year	Trips	Guides	Angler Days	Avg. # clients per trip	Trips	Guides	Angler Days	Avg. # clients per trip
2006	52	10	172	3	25	6	107	4
2007	46	9	173	3	35	3	124	4
2008	51	9	199	4	43	7	178	3
2009	25	9	70	3	39	6	154	3
Average 2006-2009	44	9	154	3	36	6	141	4

PROPOSAL 43 - 5 AAC 58.022. Waters; seasons; bag, possession, and size limits; and special provisions for Cook Inlet – Resurrection Bay Saltwater Area; and 5 AAC 58.055. Upper Cook Inlet Salt Water Early-run King Salmon Management Plan.

PROPOSED BY: Mike Schuster.

WHAT WOULD THE PROPOSAL DO? This proposal would allow fishing from shore for early-run king salmon in the closed marine waters near Ninilchik River and Deep Creek concurrent with freshwater openings for king salmon in Deep Creek and the Ninilchik River.

WHAT ARE THE CURRENT REGULATIONS? The salt waters within a 1-mile radius north from the mouth of the Ninilchik River are closed to king salmon fishing January 1 through June 30. The salt waters south of the Ninilchik River to 2 miles south of Deep Creek and within 1 mile of shore are closed to all fishing April 1 through June 30.

Freshwater streams are separated from salt waters at the mouths of creeks, streams, and rivers at a line between extremities of the latter's banks at a mean low tide or at a point to be determined and adequately marked by the department.

The Ninilchik River and Deep Creek are open to sport fishing for 3 consecutive 3-day weekends (Saturday–Monday) starting on Memorial Day weekend.

WHAT WOULD BE THE EFFECT IF THE PROPOSAL WERE ADOPTED? This proposal would provide anglers who fish in Deep Creek and the Ninilchik River additional area to fish, which might reduce crowds on these streams. This proposal could increase the harvest of king salmon by an unknown but assumed low, level of harvest. Allowing fishing in the conservation zone during king salmon openings would eliminate the enforcement issue of anglers inadvertently fishing in closed waters due to the lack of adequate boundary markers.

BACKGROUND: The board passed the *Upper Cook Inlet Marine Early Run King Salmon Management Plan* in 1996. The plan was intended to stabilize a growing king salmon fishery on fully utilized mixed stocks in the nearshore marine waters from Ninilchik south to Bluff Point, and to prevent overexploitation of king salmon stocks thought to be intercepted in the marine recreational fishery and that were experiencing below average returns. These king salmon stocks included Deep Creek, Anchor River, Kenai River, and some northern Cook Inlet tributaries. Record harvests were occurring in the Anchor River and Deep Creek concurrently with below average escapement. In addition to creating the management plan, the board restricted freshwater king salmon fisheries in Anchor River and Deep Creek as a further conservation measure. The plan also established a conservation zone that extended 1 mile seaward and encompassed the area from the mouth of the Ninilchik River to 2 miles south of Deep Creek (Figure 43-1).

The early-run marine king salmon harvest north of Bluff Point peaked at 8,230 in 1995. After implementation of the *Upper Cook Inlet Marine Early-run King Salmon Management Plan*, the average annual early-run marine king salmon sport harvest stabilized at an average of 4,505 fish. Annual harvests from 1996 through 2009 were within the guideline harvest level of 8,000 king

salmon 20" or greater in length. The peak harvest was 5,783 fish in 1998. The reported harvests are of king salmon of any size, including those less than 20 inches (Table 43-1).

A department study to estimate the contribution of coded wire tagged king salmon stocks to the marine fishery was conducted from 1996–2002 and found that the marine fishery between Bluff Point and Deep Creek harvests a mixture of king salmon stocks from Cook Inlet and the western United States. Cook Inlet stocks dominate the harvest, but nonlocal stocks make up a significant proportion of the harvest in some years. No one Cook Inlet stock dominates the harvest; rather, many Cook Inlet stocks contribute. Deep Creek wild and Ninilchik River hatchery-produced king salmon were the only local stocks with coded wire tags, and were found to contribute fewer than 300 and fewer than 200 fish, respectively, to the annual marine harvest in the years that all year classes of the 2 stocks were tagged. The marine harvest of Anchor River king salmon is likely slightly higher, but of a similar small magnitude, compared to the harvest from Deep Creek. Cook Inlet stocks dominated the harvest taken within 3/4 mile from shore and nonlocal stocks comprise the largest component of the harvest beyond 3/4 mile of shore. No information exists about the stock composition of the marine harvest prior to the restrictions implemented in 1996.

Deep Creek is managed to achieve an SEG of 350–800 king salmon counted during a single aerial survey conducted at the peak of king salmon spawning in late July after the fishery is closed. Assessment of the Deep Creek king salmon regulations are made postseason based on upon consistent achievement of the SEG over several years. With the exception of 2008, Deep Creek king salmon escapement index counts have been within or above the SEG of 350–-800 since 1998.

Since 1999, wild king salmon escapement in the Ninilchik River upstream of the eggtake weir between July 3 and July 31 has been within the SEG of 550–1,300 king salmon, except in 2007 and 2009. In both 2007 and 2009, the wild king salmon escapement count missed the goal by fewer than 20 fish. The king salmon sport fishery in the Ninilchik River has been liberalized to harvest the surplus of hatchery-reared fish. In 2004, the bag limit was increased from 1 king salmon 20" or larger to 2 king salmon 20" or longer, of which only 1 could be wild. In 2007, the season was extended for hatchery-reared fish from July 1 through December 31.

Sport fishing for king salmon in Deep Creek and Ninilchik River occurs from their mouths to approximately 2 miles upstream. Crowds can be quite large at times, particularly on the Ninilchik River during Memorial Day weekend. Since the mouths of these streams are not well defined channels and are exposed to large daily tidal fluctuations, the department has not found adequate means of establishing markers for the salt water closures. This has caused anglers to inadvertently fish beyond the mean low tide in the conservation zone. This situation also occurs in the king salmon sport fishery that occurs at the mouth of the Anchor River.

DEPARTMENT COMMENTS: The department is **NEUTRAL** on this proposal since it is not likely to measurably increase king salmon harvest in Deep Creek or Ninilchik River.

COST ANALYSIS: Approval of this proposal is not expected to result in an additional direct cost for a private person to participate in this fishery.

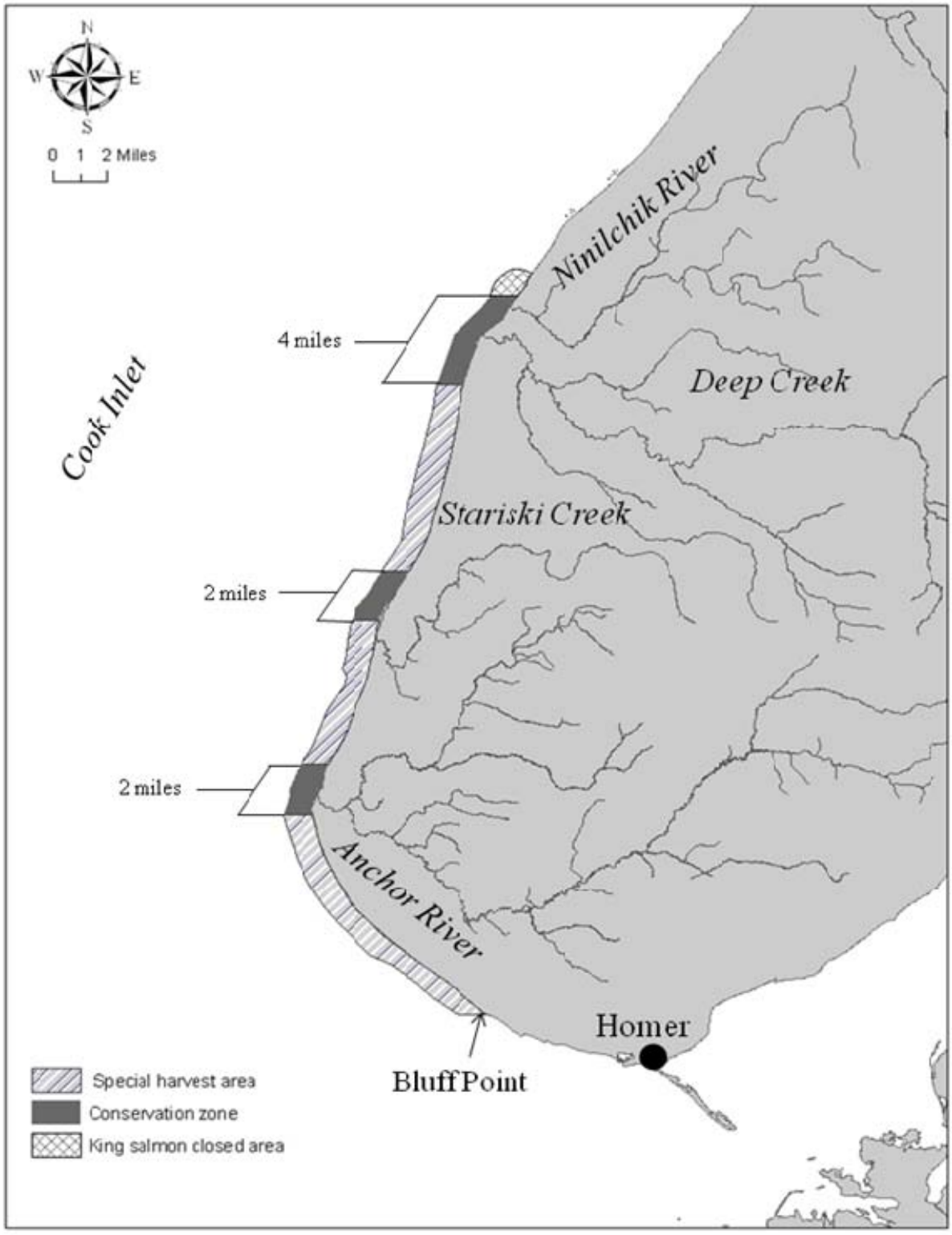

Figure 43-1. Map of Cook Inlet Early Run King Salmon Special Harvest Area.

Table 43-1. Marine early- and late-run Central Cook Inlet king salmon sport fishery harvest by boat anglers, 1972-2009.

Year	Early-run	Late-run	Total
1972	1,000	1,250	2,250
1973	519	491	1,010
1974	500	100	600
1975	540	345	885
1976	5,495	1,382	6,877
1977	4,617	366	4,983
1978	2,669	2,693	5,362
1979	3,088	1,164	4,252
1980	521	747	1,268
1981	2,363	170	2,533
1982	2,497	1,173	3,670
1983	1,000	1,707	2,707
1984	2,386	835	3,221
1985	5,087	1,731	6,818
1986	2,888	1,208	4,096
1987	3,613	1,512	5,125
1988	4,243	1,775	6,018
1989	3,863	1,616	5,479
1990	4,694	1,964	6,658
1991	4,824	2,019	6,843
1992	5,996	2,509	8,505
1993	8,136	3,404	11,540
1994	6,850	2,296	9,146
1995	8,230	2,673	10,903
1996	4,702	2,006	6,708
1997	5,646	2,850	8,496
1998	5,783	1,680	7,463
1999	4,907	997	5,904
2000	4,773	1,026	5,799
2001	3,671	860	4,531
2002	3,368	427	3,795
2003	4,042	200	4,242
2004	3,880	1,539	5,419
2005	3,746	1,040	4,786
2006	5,035	898	5,933
2007	4,015	797	4,829
2008	2,137	517	2,654
2009	1,415	256	1,671
Mean			
1972-1995	3,567	1,464	5,031
1996-2009	4,080	1,078	5,159

PROPOSALS 44, 45, and 46 - 5 AAC 58.022. Waters; seasons; bag, possession, and size limits; and special provisions for Cook Inlet – Resurrection Bay Saltwater Area; and 5 AAC 58.055. Upper Cook Inlet Salt Water Early-run King Salmon Management Plan.

PROPOSED BY: Mike Priebe (Proposal 44).
Lynn Whitmore (Proposal 45).
John L. Martin (Proposal 46).

WHAT WOULD THE PROPOSAL DO? These proposals would increase the total closed area at mouth of Anchor River from 2 miles to 4 miles in the Early-run King Salmon Special Harvest Area.

WHAT ARE THE CURRENT REGULATIONS? The *Upper Cook Inlet Salt Water Early-run King Salmon Management Plan* stipulations apply April 1 through June 30. In the plan, conservation zones where fishing is closed are 1 mile from shore and: 1) 1 mile north and south of the Anchor River; 2) 1 mile north of the Ninilchik River to 2 miles south of Deep Creek and; 3) 1 mile north and south from Stariski Creek. In waters within 1 mile of shore, from 1 mile north of the Ninilchik River to Bluff Point, the plan designates a Special Harvest Area where: 1) guides may not fish while accompanying paid clients, except to provide assistance to a disabled client; and 2) anglers may not continue to fish for any species on the same day after taking a king salmon 20 inches or more in length.

WHAT WOULD BE THE EFFECT IF THE PROPOSAL WERE ADOPTED? These proposals would result in king salmon harvest rates well below sustainable levels in the Anchor River when the SEG is met. These proposals would have little to no effect on achievement of the Anchor River escapement goal in years of low abundance because the department already uses emergency orders to close or restrict this fishery. The harvest of king salmon stocks bound for the Anchor River would likely decrease by an unknown amount. The harvest of other king salmon stocks of Cook Inlet origin would also decrease by an unknown amount. The harvest of other species, including halibut might also decrease.

BACKGROUND: The board passed the *Upper Cook Inlet Marine Early Run King Salmon Management Plan* in 1996. The plan was intended to stabilize a growing king salmon fishery on fully utilized mixed stocks in the nearshore marine waters from Ninilchik south to Bluff Point, and to prevent overexploitation of king salmon stocks thought to be intercepted in the marine recreational fishery and that were experiencing below average returns. These king salmon stocks included Deep Creek, Anchor River, Kenai River, and some northern Cook Inlet tributaries. Record harvests were occurring in the Anchor River and Deep Creek, concurrently with below average escapement. Besides creating the management plan, the board restricted freshwater king salmon fisheries in Anchor River and Deep Creek as a further conservation measure. The plan also established a conservation zone that extended 1 mile seaward, and that encompassed the area from the mouth of the Ninilchik River to 2 miles south of Deep Creek (Figure 44-1).

The early-run marine king salmon harvest north of Bluff Point peaked at 8,230 in 1995. After implementation of the *Upper Cook Inlet Marine Early-run King Salmon Management Plan*, the average annual early-run marine king salmon sport harvest stabilized at an average of 4,505 fish.

Annual harvest from 1996 through 2009 were within the guideline harvest level of 8,000 king salmon 20" or greater in length. The peak harvest was 5,783 fish in 1998. The reported harvests are of king salmon of any size, including those less than 20 inches (Table 44-1).

A department study to estimate the contribution of coded wire tagged king salmon stocks to the marine fishery was conducted from 1996–2002, and found that the marine fishery between Bluff Point and Deep Creek harvests a mixture of king salmon stocks from Cook Inlet and the western United States. Cook Inlet stocks dominate the harvest but, nonlocal stocks make up a significant proportion of the harvest in some years. No one Cook Inlet stock dominates the harvest; rather, many Cook Inlet stocks contribute. Deep Creek wild and Ninilchik River hatchery-produced king salmon were the only local stocks with coded wire tags, and were found to contribute fewer than 300 and fewer than 200 fish, respectively, to the annual marine harvest in the years that all year classes of the 2 stocks were tagged. The marine harvest of Anchor River king salmon is likely slightly higher, but of a similar small magnitude, compared to the harvest from Deep Creek. Cook Inlet stocks dominated the harvest taken within 3/4 mile from shore and nonlocal stocks comprise the largest component of the harvest beyond 3/4 mile of shore. No information exists about the stock composition of the marine harvest prior to the restrictions implemented in 1996.

The Anchor River supports the largest run of king salmon within the Lower Cook Inlet Management Area (LCIMA). King salmon escapement to the Anchor River has ranged from 3,455 in 2009 to 12,016 in 2004. Freshwater harvests from 2004–2009 averaged 1,447 Anchor River king salmon and the estimated percentage of the total run that was harvested by users in the freshwater during that time ranged from 11.4% to 20.4% (Table 44-2).

In 2003, Anchor River king salmon escapement was estimated using a Dual-frequency Identification Sonar (DIDSON). DIDSON has been used in conjunction with a weir since 2004 to estimate total king salmon spawning escapement. The Anchor River is managed to achieve a lower bound sustainable escapement goal (SEG) of 5,000 king salmon counted by sonar/weir located immediately upstream of the fishery. Department staff is recommending a modification of the lower-bound SEG of 5,000 to an SEG range of 3,800 to 10,000 to the directors of Commercial Fisheries and Sport Fish. King salmon regulations in the Anchor River can be modified inseason based upon real time fish counts to achieve the sustainable escapement goal.

Based upon the low harvest rate of Anchor River king salmon during 2004–2007, the king salmon sport fishery regulations were liberalized in 2007 by allowing fishing on Wednesdays following each open weekend, increased annual limit from 2 to 5 king salmon, and decreased saltwater closed waters on either side of the river mouth from 2 miles to 1 mile.

During the 2009 fishing season, the Anchor River king salmon run was projected to be below the escapement goal and the inriver king salmon fishery was closed by emergency order after the third regulatory opening. Simultaneously, the closed saltwater area on either side of the Anchor River mouth was increased from 1 to 2 miles. In 2010, low escapement prompted prohibiting the use of bait and increasing the marine closed area after the second regulatory opening. Retention of king salmon was prohibited after the third regulatory weekend and the closure of the saltwater area was extended through July 12 in an effort to achieve the escapement goal.

DEPARTMENT COMMENTS: The department **OPPOSES** these proposals because they unnecessarily restrict the harvest of king salmon in the early-run special harvest area around the Anchor River. Anchor River king salmon regulations can be adjusted by emergency order inseason to respond to anticipated shortfalls in king salmon escapement and the current regulations will result in sustainable harvests when escapement falls within the SEG.

COST ANALYSIS: Approval of this proposal is not expected to result in an additional direct cost for a private person to participate in this fishery.

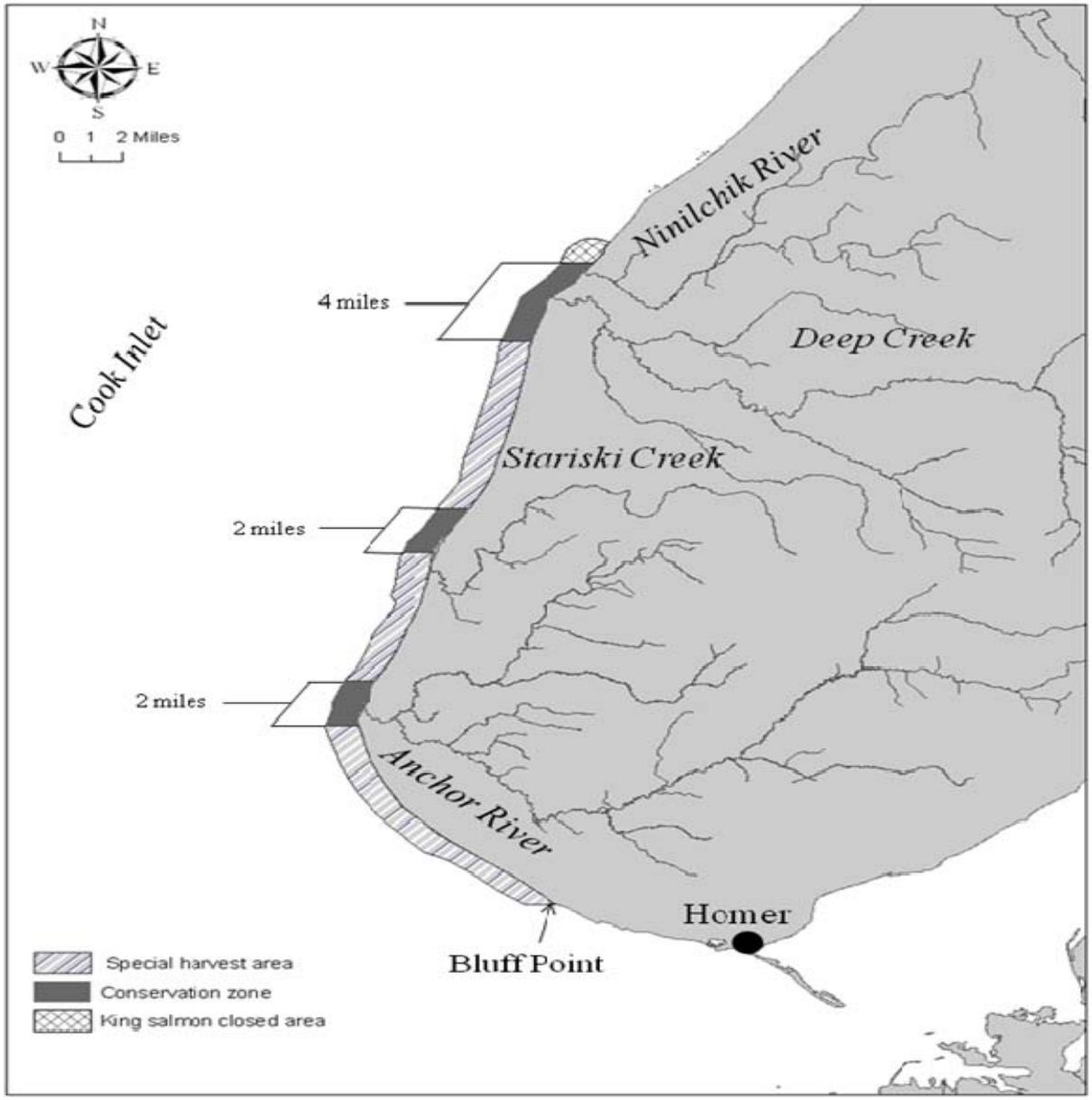

Figure 44-1. Map of Cook Inlet Early Run King Salmon Special Harvest Area.

Table 44-1. Marine early- and late-run Central Cook Inlet king salmon sport fishery harvest by boat anglers, 1972-2009.

Year	Early-run	Late-run	Total
1972	1,000	1,250	2,250
1973	519	491	1,010
1974	500	100	600
1975	540	345	885
1976	5,495	1,382	6,877
1977	4,617	366	4,983
1978	2,669	2,693	5,362
1979	3,088	1,164	4,252
1980	521	747	1,268
1981	2,363	170	2,533
1982	2,497	1,173	3,670
1983	1,000	1,707	2,707
1984	2,386	835	3,221
1985	5,087	1,731	6,818
1986	2,888	1,208	4,096
1987	3,613	1,512	5,125
1988	4,243	1,775	6,018
1989	3,863	1,616	5,479
1990	4,694	1,964	6,658
1991	4,824	2,019	6,843
1992	5,996	2,509	8,505
1993	8,136	3,404	11,540
1994	6,850	2,296	9,146
1995	8,230	2,673	10,903
1996	4,702	2,006	6,708
1997	5,646	2,850	8,496
1998	5,783	1,680	7,463
1999	4,907	997	5,904
2000	4,773	1,026	5,799
2001	3,671	860	4,531
2002	3,368	427	3,795
2003	4,042	200	4,242
2004	3,880	1,539	5,419
2005	3,746	1,040	4,786
2006	5,035	898	5,933
2007	4,015	797	4,829
2008	2,137	517	2,654
2009	1,415	256	1,671
Mean			
1972-1995	3,567	1,464	5,031
1996-2009	4,080	1,078	5,159

Table 44-2. Anchor River king salmon escapement, harvest and exploitation, 2003-2009.

Year	Project dates	Escapement	Harvest	Exploitation rate (%)	Fishing Days
2003	May 30–Jul 09	9,238	1,011	9.9	12
2004	May 15–Sep 15	12,016	1,561	11.5	15
2005	May 13–Sep 09	11,156	1,432	11.4	15
2006	May 15–Aug 24	8,945	1,394	13.5	15
2007	May 14–Sep 12	9,622	2,081	17.8	15
2008	May 13–Sep 12	5,806	1,612	21.7	20
2009	May 12–Sep 11	3,455	737	17.6	12
Average 2003-2009		8,605	1,404	14.0	15

PROPOSAL 47 - 5 AAC 58.055. Upper Cook Inlet Salt Water Early-run King Salmon Management Plan.

PROPOSED BY: Allen Tigert, Phil Brna, and John Martin.

WHAT WOULD THE PROPOSAL DO? This proposal would close nearshore marine waters from Bluff Point north to Ninilchik River if either Anchor River or Deep Creek are closed by emergency order.

WHAT ARE THE CURRENT REGULATIONS? *The Upper Cook Inlet Salt Water Early-run King Salmon Management Plan* stipulations apply April 1 through June 30. In the plan, conservation zones where fishing is closed are 1 mile from shore and: 1) 1 mile north and south of the Anchor River; 2) 1 mile north of the Ninilchik River to 2 miles south of Deep Creek; and 3) 1 mile north and south from Stariski Creek. In waters within 1 mile of shore, from 1 mile north of the Ninilchik River to Bluff Point, the plan designates a Special Harvest Area where: 1) guides may not fish while accompanying paid clients, except to provide assistance to a disabled client; and 2) anglers may not continue to fish for any species on the same day after taking a king salmon 20 inches or more in length.

WHAT WOULD BE THE EFFECT IF THE PROPOSAL WERE ADOPTED? Sport fishing opportunity in the Early Run King Salmon Special Harvest Area would decrease in years when emergency orders are written to close the Anchor River or Deep Creek. The harvest of king salmon would decrease by an unknown amount. The harvest of other species including halibut would also decrease.

BACKGROUND: The board passed the *Upper Cook Inlet Marine Early Run King Salmon Management* Plan in 1996. The plan was intended to stabilize a growing king salmon fishery on fully utilized mixed stocks in the nearshore marine waters from Ninilchik south to Bluff Point, and to prevent overexploitation of king salmon stocks thought to be intercepted in the marine recreation fishery and that were experiencing below average returns. These king salmon stocks included Deep Creek, Anchor River, Kenai River, and some northern Cook Inlet tributaries. Record harvests were occurring in the Anchor River and Deep Creek, concurrently with below average escapement. Besides creating the management plan, the board restricted freshwater king salmon fisheries in Anchor River and Deep Creek as a further conservation measure. The plan also established a conservation zone that extended 1 mile seaward and encompassed the area from the mouth of the Ninilchik River to 2 miles south of Deep Creek (Figure 47-1).

The early-run marine king salmon harvest north of Bluff Point peaked at 8,230 in 1995. After implementation of the *Upper Cook Inlet Marine Early-run King Salmon Management Plan*, the average annual early-run marine king salmon sport harvest stabilized at an average of 4,505 fish. Annual harvest from 1996 through 2009 were within the guideline harvest level of 8,000 king salmon 20" or greater in length. The peak harvest was 5,783 fish in 1998. The reported harvests are of king salmon of any size, including those less than 20 inches (Table 47-1).

A department study to estimate the contribution of coded wire tagged king salmon stocks to the marine fishery was conducted from 1996–2002, and found that the marine fishery between Bluff

Point and Deep Creek harvests a mixture of king salmon stocks from Cook Inlet and the western United States. Cook Inlet stocks dominate the harvest but nonlocal stocks make up a significant proportion of the harvest in some years. No one Cook Inlet stock dominates the harvest; rather, many Cook Inlet stocks contribute. Deep Creek wild and Ninilchik River hatchery-produced king salmon were the only local stocks with coded wire tags, and were found to contribute fewer than 300 and fewer than 200 fish, respectively, to the annual marine harvest in the years that all year classes of the 2 stocks were tagged. The marine harvest of Anchor River king salmon is likely slightly higher, but of a similar small magnitude, compared to the harvest from Deep Creek. Cook Inlet stocks dominated the harvest taken within 3/4 mile from shore and nonlocal stocks comprise the largest component of the harvest beyond 3/4 mile of shore. No information exists about the stock composition of the marine harvest prior to the restrictions implemented in 1996.

The Anchor River supports the largest run of king salmon within the Lower Cook Inlet Management Area (LCIMA). King salmon escapement to the Anchor River has ranged from 3,455 in 2009 to 12,016 in 2004. From 2004 through 2009, the annual freshwater harvest of king salmon has averaged 1,447, and the estimated percentage of the total run that was harvested by users in freshwater ranged from 11.4% to 20.4%.

In 2003, Anchor River king salmon escapement was estimated using a Dual-frequency Identification Sonar (DIDSON). DIDSON has been used in conjunction with a weir since 2004 to estimate total king salmon spawning escapement. The Anchor River is managed to achieve a lower bound sustainable escapement goal (SEG) of 5,000 king salmon counted by sonar/weir located immediately upstream of the fishery. Department staff is recommending a modification of the lower-bound SEG of 5,000 to an SEG range of 3,800 to 10,000 to the directors of Commercial Fisheries and Sport Fish. King salmon regulations in the Anchor River can be modified inseason based upon real time fish counts to achieve the sustainable escapement goal.

Deep Creek is managed to achieve an SEG of 350–800 king salmon counted during a single aerial survey conducted at the peak of king salmon spawning in late July after the fishery is closed. Assessment of the Deep Creek king salmon regulations are made postseason based on upon consistent achievement of the SEG over several years. With the exception of 2008, Deep Creek king salmon escapement index counts have been within or above the SEG of 350–800 since 1998.

Based upon the low harvest rate of Anchor River king salmon during 2004–2007, the king salmon sport fishery regulations were liberalized in 2007 by allowing fishing on Wednesdays following each open weekend, increasing the annual limit from 2 to 5 king salmon, and decreasing the saltwater closed waters on either side of the river mouth from 2 miles to 1 mile.

During the 2009 fishing season, the Anchor River king salmon run was projected to be below the escapement goal and the inriver king salmon fishery was closed by emergency order after the third regulatory opening. Simultaneously, the closed saltwater area on either side of the Anchor River mouth was increased from 1 to 2 miles. In 2010, low escapement prompted prohibiting the use of bait and increasing the marine closed area after the second regulatory opening. Retention of king salmon was prohibited after the third regulatory weekend and the closure of the saltwater area was extended through July 12 in an effort to achieve the escapement goal.

DEPARTMENT COMMENTS: The department **OPPOSES** this proposal because it would unnecessarily restrict sport fishing in the Early-run King Salmon Special Harvest Area. The Anchor River and Deep Creek king salmon stocks are only a small portion of the fish harvested in this mixed stock fishery. Anchor River king salmon regulations can be adjusted by emergency order inseason to respond to anticipated shortfalls in king salmon escapement and the current regulations will result in sustainable harvests when escapement falls within the SEG.

COST ANALYSIS: Approval of this proposal is not expected to result in an additional direct cost for a private person to participate in this fishery.

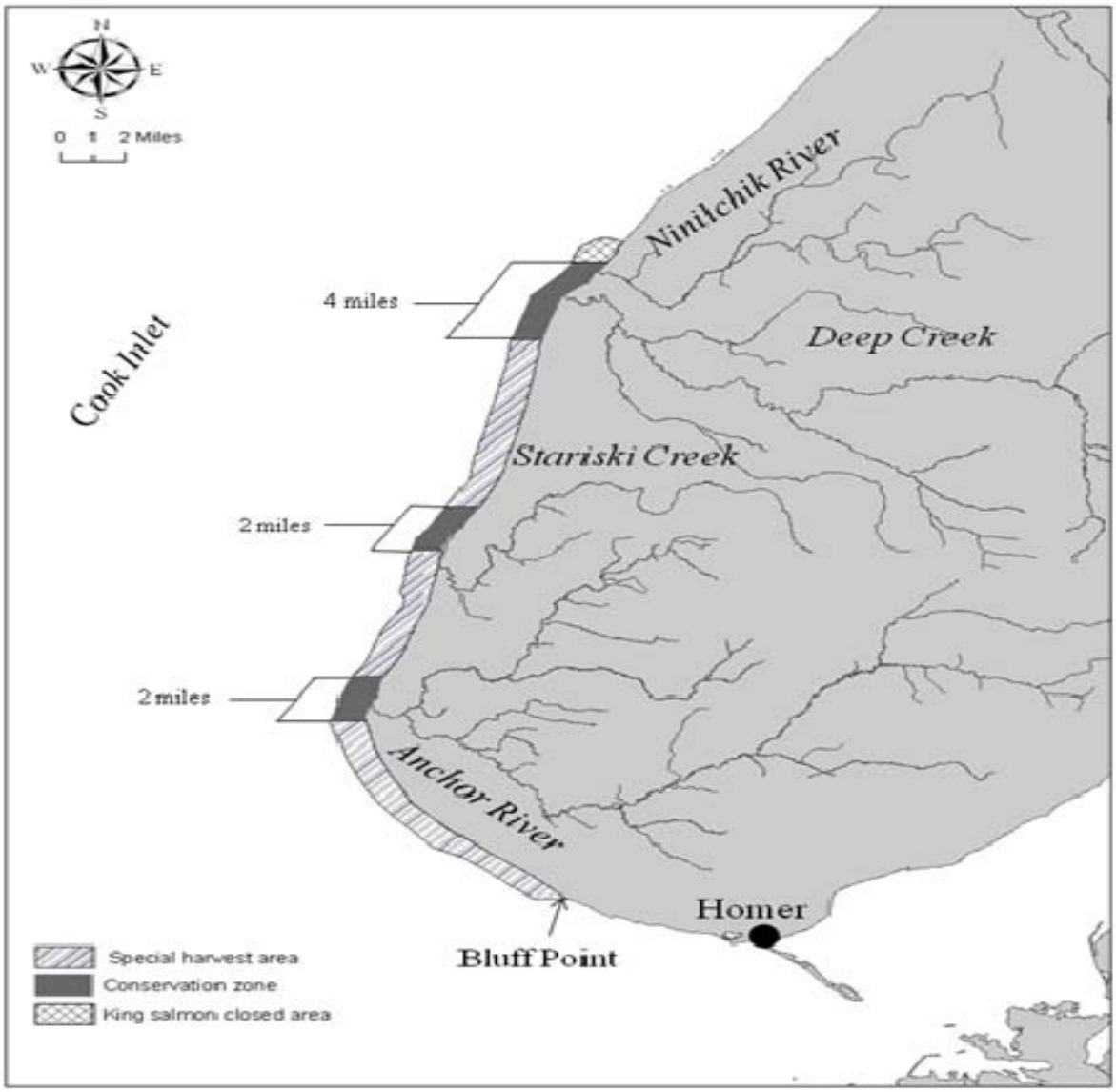

Figure 47-1. Map of Cook Inlet Early Run King Salmon Special Harvest Area.

Table 47-1. Marine early- and late-run Central Cook Inlet king salmon sport fishery harvest by boat anglers, 1972-2009.

Year	Early-run	Late-run	Total
1972	1,000	1,250	2,250
1973	519	491	1,010
1974	500	100	600
1975	540	345	885
1976	5,495	1,382	6,877
1977	4,617	366	4,983
1978	2,669	2,693	5,362
1979	3,088	1,164	4,252
1980	521	747	1,268
1981	2,363	170	2,533
1982	2,497	1,173	3,670
1983	1,000	1,707	2,707
1984	2,386	835	3,221
1985	5,087	1,731	6,818
1986	2,888	1,208	4,096
1987	3,613	1,512	5,125
1988	4,243	1,775	6,018
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1995	8,230	2,673	10,903
1996	4,702	2,006	6,708
1997	5,646	2,850	8,496
1998	5,783	1,680	7,463
1999	4,907	997	5,904
2000	4,773	1,026	5,799
2001	3,671	860	4,531
2002	3,368	427	3,795
2003	4,042	200	4,242
2004	3,880	1,539	5,419
2005	3,746	1,040	4,786
2006	5,035	898	5,933
2007	4,015	797	4,829
2008	2,137	517	2,654
2009	1,415	256	1,671
Mean			
1972-1995	3,567	1,464	5,031
1996-2009	4,080	1,078	5,159

PROPOSAL 48 - 5 AAC 58.060. Lower Cook Inlet Winter Salt Water King Salmon Sport Fishery Management Plan.

PROPOSED BY: Dave Lyon.

WHAT WOULD THE PROPOSAL DO? This proposal would increase the king salmon bag limit to 2 fish with no recording requirement during the winter king salmon fishery north of Bluff Point in Cook Inlet.

WHAT ARE THE CURRENT REGULATIONS? In salt waters north of latitude of Bluff Point (59° 40'N), the limit of king salmon is 1 per day/ 1 in possession with no minimum size limit. There is an annual limit of 5 king salmon 20" or greater in length and anglers must immediately record the harvest.

In salt waters south of latitude of Bluff Point, the limit of king salmon is 2 per day/2 in possession with no minimum size limit. There is an annual limit of 5 king salmon 20" or greater in length and anglers must immediately record the harvest, except that king salmon harvested from October 1 to March 31 are not included in the limit.

WHAT WOULD BE THE EFFECT IF THE PROPOSAL WERE ADOPTED? This proposal would result in more simplified and consistent sport fishing regulations in the Lower Cook Inlet winter salt water king salmon sport fishery, but would create a seasonal bag limit difference north of Bluff Point. The recording requirement for king salmon harvested in Cook Inlet would also be simplified. King salmon harvest may increase by an unknown amount. Sport fishing effort during the winter king salmon fishery might become more evenly distributed.

BACKGROUND: The winter king salmon sport fishery in Lower Cook Inlet (LCI) and Kachemak Bay is a small troll fishery that is primarily accessed from the Homer Harbor since there are no tractor launch facilities operating through the winter at Deep Creek or Anchor Point. Residents from the south side of Kachemak Bay (Bear Cove to Port Graham) also participate in the fishery. Most fishing effort occurs along the south shoreline of Kachemak Bay from Point Pogibshi east to Chugachik Island, and along the shoreline from the Homer Spit north to Anchor Point. Anglers fishing north of the Homer Spit commonly troll north and south of Bluff Point (Figure 48-1) within the same trip.

King salmon harvest from the winter fishery has been unrestricted by an annual limit or harvest recording requirement from October 1 to March 31 since 1988, except during 2001, when the board adopted a requirement that included harvests during the winter fishery be included in the 5 king salmon annual limit, based upon indications that the fishery was growing. The annual limit and recording requirement was rescinded by the board the following year when the board established the *Lower Cook Inlet Winter Salt Water King Salmon Sport Fishery Management Plan* (5 AAC 58.060). The management plan includes a sport guideline harvest level of 3,000 king salmon for the waters of the Lower Cook Inlet Management Area (LCIMA) south of Bluff Point from October 1 through March 31, and stipulates the harvest will be estimated annually with the Statewide Harvest Survey (SWHS).

Since 2002, the average annual king salmon harvest has been relatively stable and has averaged approximately 1,900 fish (Table 48-1). Since anglers generally refer to the area north of the Homer Spit as Bluff Point, the annual king salmon harvest estimates likely include harvest that occurs north of Bluff Point as well. The proportion of the effort and king salmon harvest that occurs north of Bluff Point in the winter king salmon fishery is unknown.

The stock composition of the king salmon harvested in the LCI winter saltwater king salmon sport fishery is largely unknown, but is likely comprised of wild and hatchery runs of stocks from British Columbia, Washington, Oregon, and Alaska. Coded wire tag data from volunteer samples since 1978 suggest that majority of the harvest is comprised of non-Alaska stocks (Table 48-2).

DEPARTMENT COMMENTS: The department is **NEUTRAL** on this proposal since there is no conservation concern with the winter king salmon fishery. Any potential increase in harvest associated with this proposed regulation change likely will not result in harvest exceeding the guideline harvest level.

COST ANALYSIS: Approval of this proposal is not expected to result in an additional direct cost for a private person to participate in this fishery.

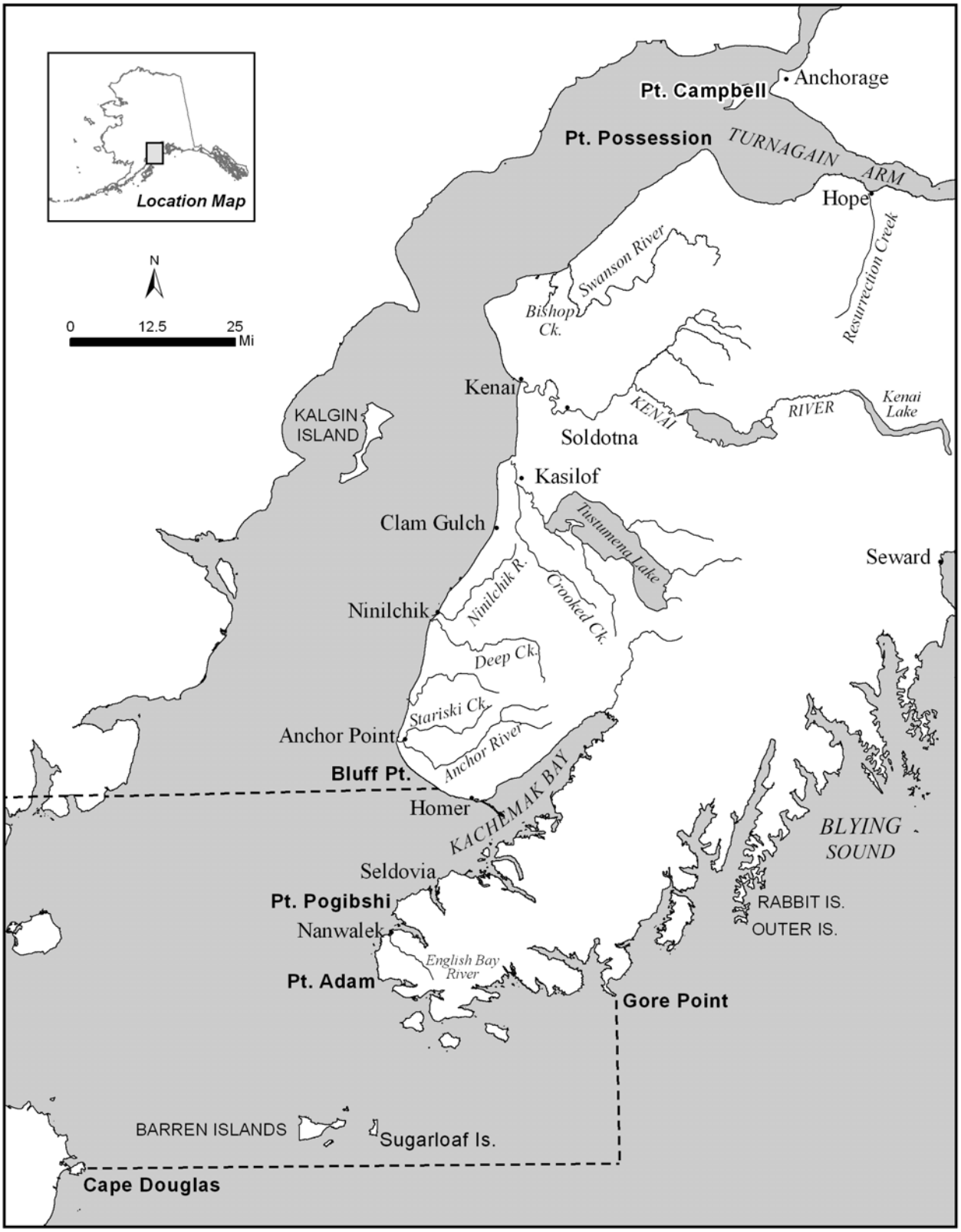

Figure 48-1. Map of Cook Inlet salt waters.

Table 48-1. King salmon harvested in Lower Cook Inlet and Kachemak Bay sport fishery during October-March, 2002-2009.

	Harvest		Total
YEAR	Guided	Unguided	Harvest
2002	204	1219	1423
2003	289	1515	1804
2004	419	1650	2069
2005	412	2546	2958
2006	169	1346	1515
2007	404	1607	2011
2008	336	1356	1692
2009	301	1381	1682
Mean	317	1578	1894

Guideline harvest level = 3,000 king salmon October 1 through March 31.

Table 48-2. King salmon coded wire tag recoveries from volunteer sport samples within Kachemak Bay and Lower Cook Inlet during October-March, 1978-2010.

	Number of coded wire tagged king salmon					Total number
Year	British Columbia	Oregon	Washington	Alaska	No tag	Samples
1978			1			1
1992	8				1	9
1993	3					3
1994	11	1				12
1995	3					3
2001	1				3	4
2002	4	1			5	10
2003	6	2	1		4	13
2004	5				2	7
2005	2				2	4
2006	3				2	5
2007				1		1
2008					2	2
2009	3	2			7	12
2010	4	2		2	4	12
Total	53	8	2	3	32	98

PROPOSAL 49 - 5 AAC 58.030. Methods, means and general provisions - Finfish.

PROPOSED BY: Dave Lyon.

WHAT WOULD THE PROPOSAL DO? This proposal would allow the use of bow and arrow to take salmon in Kachemak Bay marine waters, except in the Nick Dudiak Fishing Lagoon, from June 24 through December 31.

WHAT ARE THE CURRENT REGULATIONS? Unless otherwise provided in specific area regulations, sport fishing may only be conducted by the use of a single line attached to not more than 1 plug, spoon, spinner, series of spinners, or 2 flies, or 2 hooks attached to a pole or rod.

Snagging is allowed from June 24 through December 31 in Kachemak Bay east of a line from Anchor Point to Point Pogibshi, except in the Nick Dudiak Fishing Lagoon on the Homer Spit.

In Cook Inlet salt waters, spears may be used to take fish, subject to applicable season and bag limits, by persons who are completely submerged.

WHAT WOULD BE THE EFFECT IF THE PROPOSAL WERE ADOPTED? This proposal would likely result in additional mortality and harvest of salmon, and could create a safety concern in areas where anglers are concentrated. Halibut Cove Lagoon is a popular area to fish for king salmon from June 24 to July. Tutka Bay Lagoon is another popular area to fish for sockeye salmon from early July until mid August.

BACKGROUND: The use of archery equipment in sport fishing regulations throughout the state has applied to species with no limits or liberal harvest limits (i.e., whitefish, suckers, burbot), or northern pike. The effectiveness of harvesting salmon with archery gear is unknown and it is likely there is potential for increased mortality in salmon that have not been hit in an appropriate location, have been injured or wounded, and have escaped. There is also no release option with archery gear since salmon caught are unlikely to survive if released due to the nature of gear. Anglers use archery equipment or "bowfishing" equipment in other states to target "rough" or "trash" fish that generally are not targeted by sport anglers.

DEPARTMENT COMMENTS: The department **OPPOSES** this proposal. The department has safety concerns in several Kachemak Bay locations, and concerns that this gear will be inadequate to harvest salmon without a high proportion of waste. Adoption of this proposal would set a precedent in sport fisheries management.

COST ANALYSIS: Approval of this proposal is not expected to result in an additional direct cost for a private person to participate in this fishery.

PROPOSAL 50 – 5AAC 58.022. Waters; seasons: bag, possession, and size limits; and special provisions for Cook Inlet-Resurrection Bay Saltwater Area.

PROPOSED BY: Jere Murray and Walter McInnes.

WHAT WOULD THE PROPOSAL DO? The proposal would require that any salmon, other than king salmon, removed from the salt waters of Cook Inlet–Resurrection Bay must be retained and become part of the bag limit of the person originally hooking them, and would prohibit a person from removing a salmon from the salt waters before releasing the fish.

WHAT ARE THE CURRENT REGULATIONS? In marine waters, king salmon 20" or longer removed from the water must be retained and becomes a part of the daily bag limit of the person originally hooking it. King salmon intended for release may not be removed from the water. Regulations also prohibit "molesting" fish, which includes dragging, kicking, throwing, striking, or otherwise abusing a fish that is intended to be released.

WHAT WOULD BE THE EFFECT IF THE PROPOSAL WERE ADOPTED? Catch and release mortality would be decreased by an unknown amount, but the proposal would likely increase the harvest of salmon that would otherwise be released.

BACKGROUND: Over the last 5 years, anglers fishing North Gulf Coast marine waters (which include the Resurrection Bay Terminal harvest area) have released an annual average of 24,306 coho salmon; 1,365 sockeye salmon; 16,906 pink salmon; and 2,076 chum salmon. In lower Cook Inlet marine waters anglers released an annual average of 4,424 coho salmon; 1,586 sockeye salmon; 6,149 pink salmon; and 703 chum salmon.

The component of handling mortality attributable to removing a salmon from the water is difficult to separate from the overall mortality caused by catch-and-release handling, so the conservation effect of this proposal is unknown. Studies of catch-and-release mortality have identified warm water temperatures and hook placement as the most significant catch-and-release mortality factors. Other factors such as hook type, fish size, fighting time, and handling techniques have been shown to have a much smaller influence on mortality.

Many boat anglers cannot easily remove a hook from a fish without removing it from the water due to high gunwales and the great distance to water from the boat deck. Typically a long-handled net is used to land these fish since a gaff may not be used to puncture a fish that is intended to be released.

DEPARTMENT COMMENTS: The department **OPPOSES** this proposal. The board has adopted regulations prohibiting removing fish from the water, but typically to address a stock-specific concern for highly utilized wild king salmon or rainbow trout stocks. The department does not support using this tool to cover such a wide area and number of fisheries.

COST ANALYSIS: Approval of this proposal is not expected to result in an additional direct cost for a private person to participate in this fishery.

PROPOSAL 51 - 5 AAC 58.XXX. New Section.

PROPOSED BY: Pioneer Alaskan Fisheries Inc.

WHAT WOULD THE PROPOSAL DO? This proposal would create a management plan for rockfish, lower the daily bag limit, require harvest recording by species, create "no fishing" sanctuaries in unspecified areas of Lower Cook Inlet/North Gulf Coast, and educate the public.

WHAT ARE THE CURRENT REGULATIONS? In Lower Cook Inlet (LCI) waters, the sport fish rockfish bag and possession limit is 5 per day/10 in possession; only 1 per day/2 in possession may be non-pelagic species. In North Gulf Coast waters, the bag and possession limit is 4 per day/8 in possession; only 1 per day and 2 in possession may be non-pelagic species. The season in both areas is open year round, and there are no size limits.

There are no harvest recording requirements for sport-caught rockfish for nonguided anglers, but sport-fishing guides are required to identify rockfish caught by their clients as "pelagic", "yelloweye", or "non-pelagic (excluding yelloweye)" in saltwater logbooks.

The board has made a customary and traditional use finding for rockfish in the Cook Inlet Area (which extends to Cape Fairfield) outside the nonsubsistence area, and set an amount reasonably necessary for subsistence at 750–1,350 rockfish. In the subsistence fishery, rockfish may be taken only by a single hand troll, single hand-held line, or single longline, none of which may have more than 5 hooks attached to it, except that rockfish taken incidentally in another subsistence finfish fishery may be retained for subsistence purposes as part of the regular subsistence rockfish bag limit, which is 5 fish, with a possession limit of 10 fish, of which only 1 per day and 2 in possession may be non-pelagic. A person may not take or possess rockfish under sport fishing regulations and under subsistence regulations on the same day.

WHAT WOULD BE THE EFFECT IF THE PROPOSAL WERE ADOPTED? Reducing the sport fish bag limit for rockfish to 2 fish would reduce the harvest of rockfish by approximately 28% to 43% in LCI waters and 28% to 31% in North Gulf Coast waters. The proposal does not specify whether the bag limit reduction would be to 2 rockfish of any species, or whether the restriction of 1 non-pelagic fish would remain in place. Changing the bag limit to 2 fish of any species would likely increase harvest of non-pelagic rockfish species, which are more vulnerable to overfishing. Adoption of sport fishing bag and possession limits that differ from subsistence limits would likely create confusion among user groups and for enforcement.

Requiring a harvest record by species would likely result in data of questionable utility due to the difficulty of identification at the species level. Adoption of recording requirements in the sport fishery and not in the subsistence fishery would likely create confusion among user groups and for enforcement.

"No fishing" sanctuaries would have to be designated by the board through an extensive public process that includes incorporation of the subsistence priority in Alaska statute, affected stakeholders, identification of goals, analysis for sanctuary design, and evaluation of prospective costs and benefits. Sanctuaries would likely exclude subsistence, sport and commercial fishing

in order to achieve the stated goal of regenerating outlying areas. The effect of this action is undeterminable without knowing the goals, size, uses in, and location of sanctuary areas.

BACKGROUND: There are 36 species of rockfish in Alaska, with diverse habitat requirements and life histories that are generally characterized by slow growth, a long life span, high age at sexual maturity, and low reproductive rates. Rockfish are usually caught in the sport fishery while targeting other species and, because they have an unvented swim bladder, suffer high mortality upon release when caught in deep water.

Rockfish are categorized for sport fishery management as either "pelagic" or "non-pelagic." Pelagic species such as black rockfish are not as long-lived as most non-pelagic species. They are found throughout the water column, are often caught incidental to salmon fishing in relatively shallow water (less than 10 fathoms), and can be released with high survival. Non-pelagic species, such as yelloweye rockfish, are typically found on the bottom in deep water, live longer, mature later, and cannot sustain harvest rates as high as for pelagic species. Sport fishery bag limits are structured to minimize directed harvest of non-pelagic species, but allow for retention of most of the incidental catch that suffers high release mortality when caught in deep water.

The department is investigating methods of reducing release mortality. A recent department study estimated high rates of survival of yelloweye rockfish released at capture depth, while only approximately 24% of the yelloweye rockfish released at the surface survived (report in prep).

The department has conducted dockside interviews and biological sampling in the ports of Homer and Seward since 1991 and in central Cook Inlet since 1994. Information collected from dockside interviews includes biological data (species, age, length, etc.) from the recreational harvest, and information on angler effort (spatial distribution of harvest, target species, effort, catch, and harvest composition, etc.). The department collects similar information from the commercial rockfish harvest. Also, since 2004, the department has collected rockfish harvest information in postal surveys to holders of federal subsistence halibut cards (SHARCs) since that program's inception in 2003. Rockfish are occasionally harvested incidental to the federal subsistence halibut fishery.

Throughout the 1980s and 1990s, most of the total rockfish harvest was from the commercial fishery. In response to increasing commercial harvest in the 1990s, the board set an annual guideline harvest level (GHL) of 150,000 pounds round weight of all species combined for the commercial sector. Commercial harvest has declined over time, and the commercial fishery has not harvested the entire GHL since 2000. Meanwhile, sport harvest has increased, along with increases in effort in Cook Inlet and North Gulf Coast waters. Although the sport fishery now accounts for the majority of removals, total harvest has been relatively constant at around 300,000 lbs (Figure 51-1). Pelagic species have accounted for 59-74% of the sport rockfish harvest since 2000.

In 2003, Division of Subsistence in-person household surveys showed that Nanwalek residents harvested an estimated 991 rockfish (any species) and Port Graham residents harvested an estimated 236 rockfish (any species). Incidental subsistence harvest of rockfish for both

communities, as estimated by a 2006 survey, is low, at 136 combined for both communities (Figure 51-2).

To further educate the public about rockfish, the department partnered with Alaska Sea Grant to publish the "Angler's Guide to the Rockfishes of Alaska", and provides information on identification, habits, longevity, movement, and management challenges. Suggestions are provided for conserving rockfish and minimizing incidental catch. A page in the Southcentral Alaska Sport Fishing Regulations Summary is devoted to rockfish identification and management and life history education. The department has presented posters on subsistence rockfish research to science symposia and has provided an article on subsistence rockfish research in "Alaska Fish and Wildlife News", an online magazine. The department has also made presentations of subsistence research findings about rockfish to Alaska and Lower 48 universities, as well as to the Alaska chapter of the American Fisheries Society. A project to study the effects and potential benefits of releasing rockfish at depth was completed in Prince William Sound in 2010; results should be published and presented to the public in spring, 2011.

DEPARTMENT COMMENTS: The department is **NEUTRAL** on the allocative aspects of this proposal, but **OPPOSES** a bag limit that would allow for the harvest of 2 rockfish of any species, as it would likely increase the harvest of non-pelagic species. The department also **OPPOSES** a requirement to report harvest by species because identification at the species level is difficult for many anglers, and because these data are obtained through department dockside sampling programs and subsistence surveys. The divisions of Commercial Fisheries and Sport Fish are evaluating rockfish management approaches and objectives, and are collaborating on assessment and research.

COST ANALYSIS: Approval of this proposal is not expected to result in an additional direct cost for a private person to participate in this fishery.

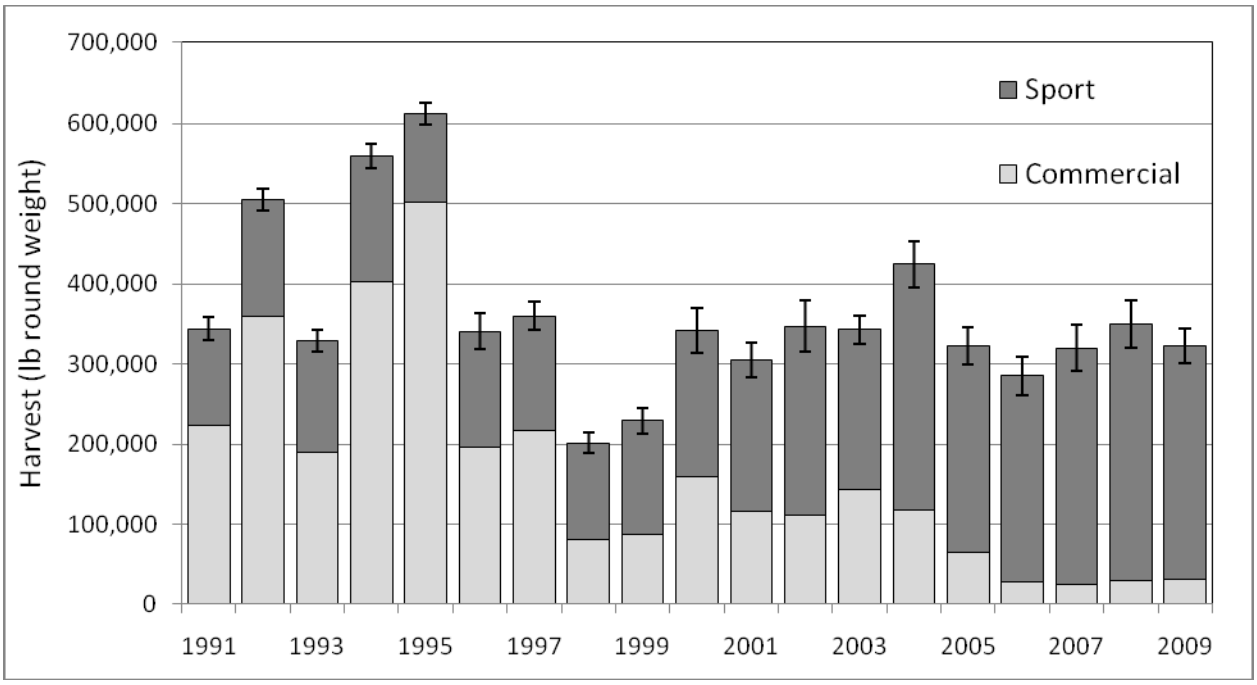

Figure 51-1. Cook Inlet-North Gulf Coast commercial and sport rockfish harvest (lb round wt) with 95% confidence intervals, 1991-2009.

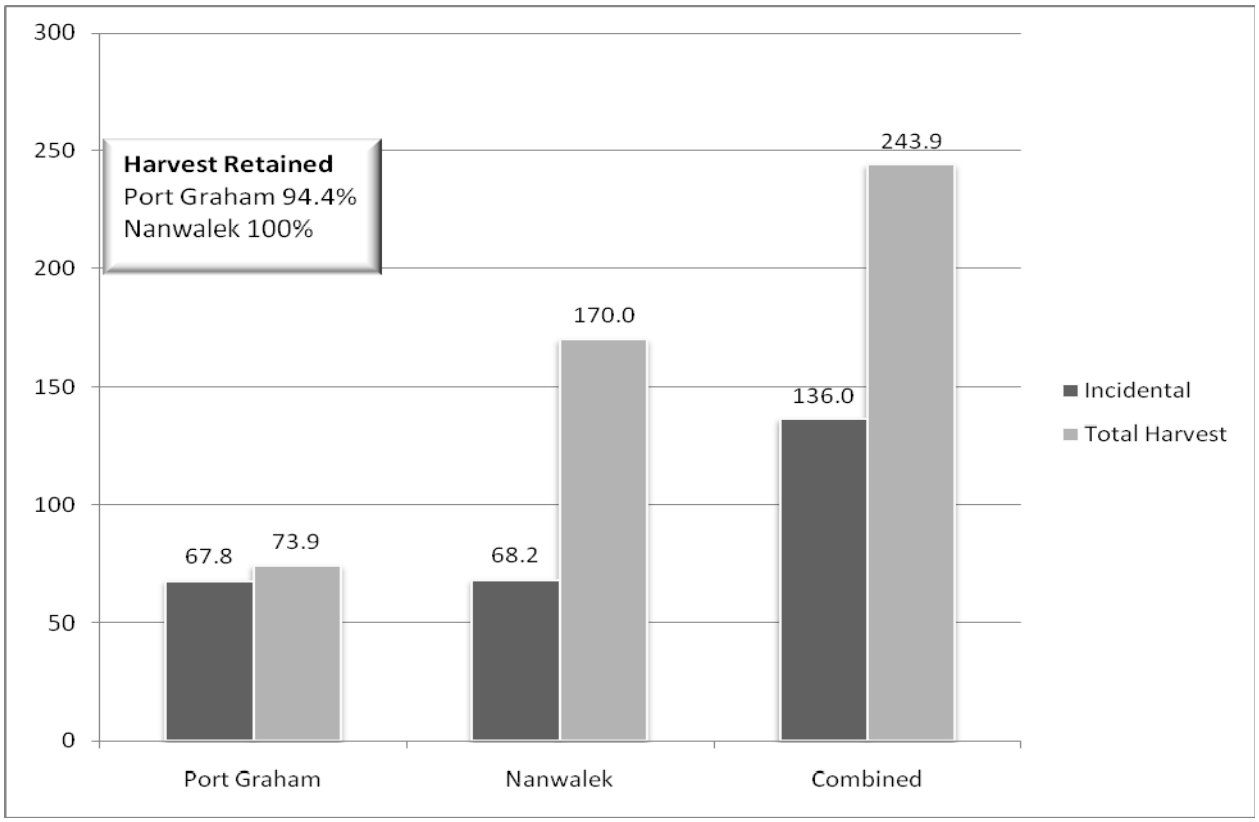

Figure 51-2. Incidental harvest of rockfish in Nanwalek and Port Graham, federal subsistence halibut fishery, 2006.