Fishery Management Report No. 07-65

Overview of Northern Cook Inlet Area Sport Fisheries with Proposals under Consideration by the Alaska Board of Fisheries, February 2008

by

Sam Ivey,

Chris Brockman,

and

Dave Rutz

December 2007

Alaska Department of Fish and Game **Divisions of Sport Fish and Commercial Fisheries**

Symbols and Abbreviations

The following symbols and abbreviations, and others approved for the Système International d'Unités (SI), are used without definition in the following reports by the Divisions of Sport Fish and of Commercial Fisheries: Fishery Manuscripts, Fishery Data Series Reports, Fishery Management Reports, and Special Publications. All others, including deviations from definitions listed below, are noted in the text at first mention, as well as in the titles or footnotes of tables, and in figure or figure captions.

Weights and measures (metric)

centimeter	cm
deciliter	dL
gram	g
hectare	ha
kilogram	kg
kilometer	km
liter	L
meter	m
milliliter	mL
millimeter	mm

Weights and measures (English)

cubic feet per second	ft^3/s
foot	ft
gallon	gal
inch	in
mile	mi
nautical mile	nmi
ounce	oz
pound	lb
quart	qt
yard	yd

Time and temperature

day	d
degrees Celsius	°C
degrees Fahrenheit	°F
degrees kelvin	K
hour	h
minute	min
second	s

Physics and chemistry

all atomic symbols	
alternating current	AC
ampere	A
calorie	cal
direct current	DC
hertz	Hz
horsepower	hp
hydrogen ion activity (negative log of)	pH
parts per million	ppm
parts per thousand	ppt, ‰
volts	V
watts	W

General

Alaska Administrative Code	AAC
all commonly accepted abbreviations	e.g., Mr., Mrs., AM, PM, etc.
all commonly accepted professional titles	e.g., Dr., Ph.D., R.N., etc.
at	@
compass directions:	
east	E
north	N
south	S
west	W
copyright	©
corporate suffixes:	
Company	Co.
Corporation	Corp.
Incorporated	Inc.
Limited	Ltd.
District of Columbia	D.C.
et alii (and others)	et al.
et cetera (and so forth)	etc.
exempli gratia (for example)	e.g.
Federal Information Code	FIC
id est (that is)	i.e.
latitude or longitude	lat. or long.
monetary symbols (U.S.)	$, ¢
months (tables and figures): first three letters	Jan,...,Dec
registered trademark	®
trademark	™
United States (adjective)	U.S.
United States of America (noun)	USA
U.S.C.	United States Code
U.S. state	use two-letter abbreviations (e.g., AK, WA)

Measures (fisheries)

fork length	FL
mideye-to-fork	MEF
mideye-to-tail-fork	METF
standard length	SL
total length	TL

Mathematics, statistics

all standard mathematical signs, symbols and abbreviations	
alternate hypothesis	H_A
base of natural logarithm	*e*
catch per unit effort	CPUE
coefficient of variation	CV
common test statistics	(F, t, χ^2, etc.)
confidence interval	CI
correlation coefficient (multiple)	R
correlation coefficient (simple)	r
covariance	cov
degree (angular)	°
degrees of freedom	df
expected value	*E*
greater than	>
greater than or equal to	≥
harvest per unit effort	HPUE
less than	<
less than or equal to	≤
logarithm (natural)	ln
logarithm (base 10)	log
logarithm (specify base)	$\log_2$, etc.
minute (angular)	'
not significant	NS
null hypothesis	H_O
percent	%
probability	P
probability of a type I error (rejection of the null hypothesis when true)	α
probability of a type II error (acceptance of the null hypothesis when false)	β
second (angular)	"
standard deviation	SD
standard error	SE
variance	
population	Var
sample	var

FISHERY MANAGEMENT REPORT NO. 07-65

OVERVIEW OF NORTHERN COOK INLET AREA SPORT FISHERIES WITH PROPOSALS UNDER CONSIDERATION BY THE ALASKA BOARD OF FISHERIES, FEBRUARY 2008

by

Sam Ivey,
Chris Brockman,
and
Dave Rutz
Alaska Department of Fish and Game, Division of Sport Fish, Palmer

Alaska Department of Fish and Game
Division of Sport Fish, Research and Technical Services
333 Raspberry Road, Anchorage, Alaska, 99518-1599

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The Division of Sport Fish Fishery Management Reports series was established in 1989 for the publication of an overview of Division of Sport Fish management activities and goals in a specific geographic area. Since 2004, the Division of Commercial Fisheries has also used the Fishery Management Report series. Fishery Management Reports are intended for fishery and other technical professionals, as well as lay persons. Fishery Management Reports are available through the Alaska State Library and on the Internet: http://www.sf.adfg.state.ak.us/statewide/divreports/html/intersearch.cfm. This publication has undergone regional peer review.

Sam Ivey,
Alaska Department of Fish and Game, Division of Sport Fish,
1800 Glenn Highway, Suite 4
Palmer, AK 99645-6736, USA

Chris Brockman,
Alaska Department of Fish and Game, Division of Sport Fish,
1800 Glenn Highway, Suite 4
Palmer, AK 99645-6736, USA

and
Dave Rutz
Alaska Department of Fish and Game, Division of Sport Fish,
1800 Glenn Highway, Suite 4
Palmer, AK 99645-6736, USA

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ABSTRACT

This report provides a detailed summary of sport fisheries in the Northern Cook Inlet Management Area for which the Alaska Board of Fisheries (BOF) is considering proposals in February 2008. Included are a description and historical overview of each fishery, how the fishery is managed, and sport fishery performance and escapement for 2006 and 2007.

Key words: Northern Cook Inlet Management Area, Alaska Board of Fisheries, sport fisheries overview.

INTRODUCTION

This report provides a detailed summary of sport fisheries in the Northern Cook Inlet Management Area (NCIMA) for which the Alaska Board of Fisheries (BOF) is considering proposals in February 2008. Included are a description and historical overview of each fishery, how the fishery is managed, and sport fishery performance and escapement for 2006 and 2007.

The Northern Cook Inlet (NCI) sport fish management area (Figure 1) includes all freshwater drainages and adjacent marine waters of Upper Cook Inlet between the southern tip of Chisik Island and the Eklutna River, excluding the upper Susitna River drainage above the Oshetna River confluence. The management area encompasses approximately 30,000 square miles and is dominated by the Susitna River drainage which originates in glaciers of the Alaska and Talkeetna mountain ranges and flows south about 200 miles to Cook Inlet near Anchorage. Most sport fisheries in the NCIMA are easily accessible by road or jet boat, with the exception of remote West Cook Inlet (WCI) waters accessible only by boat or aircraft.

For the purposes of management and harvest reporting, the NCIMA is divided into four major units (Figure 1):

1. Knik Arm Management Unit (KAMU): includes all waters bounded on the north by Willow Creek (not including Willow Creek), on the west by a line ½ mile east of the Susitna River, on the south by Cook Inlet, Knik Arm and the Eklutna River (not including the Eklutna River), and on the east by the Upper Susitna River drainage upstream of its confluence with the Oshetna River. All adjacent marine waters of Cook Inlet are included.
2. Eastside Susitna Management Unit (ESMU): includes all drainages of the upper Susitna River above the Chulitna River to and including the Oshetna River drainage, all eastside drainages of the Chulitna River, and all eastside drainages of the Susitna River below its confluence with the Chulitna River to and including Willow Creek to the south. This management unit has no marine waters.
3. Westside Susitna Management Unit (WSMU): includes all westside drainages of the Chulitna River, and all westside drainages of the Susitna River below its confluence with the Chulitna River and, primarily for management purposes, eastside drainages of the Susitna River within a half-mile of the Susitna River downstream of Willow Creek. This management unit has no marine waters.
4. West Cook Inlet Management Unit (WCIMU): includes all freshwater drainages entering Cook Inlet between the Susitna River and the latitude of the southern tip of Chisik Island, and all adjacent marine waters of Cook Inlet.

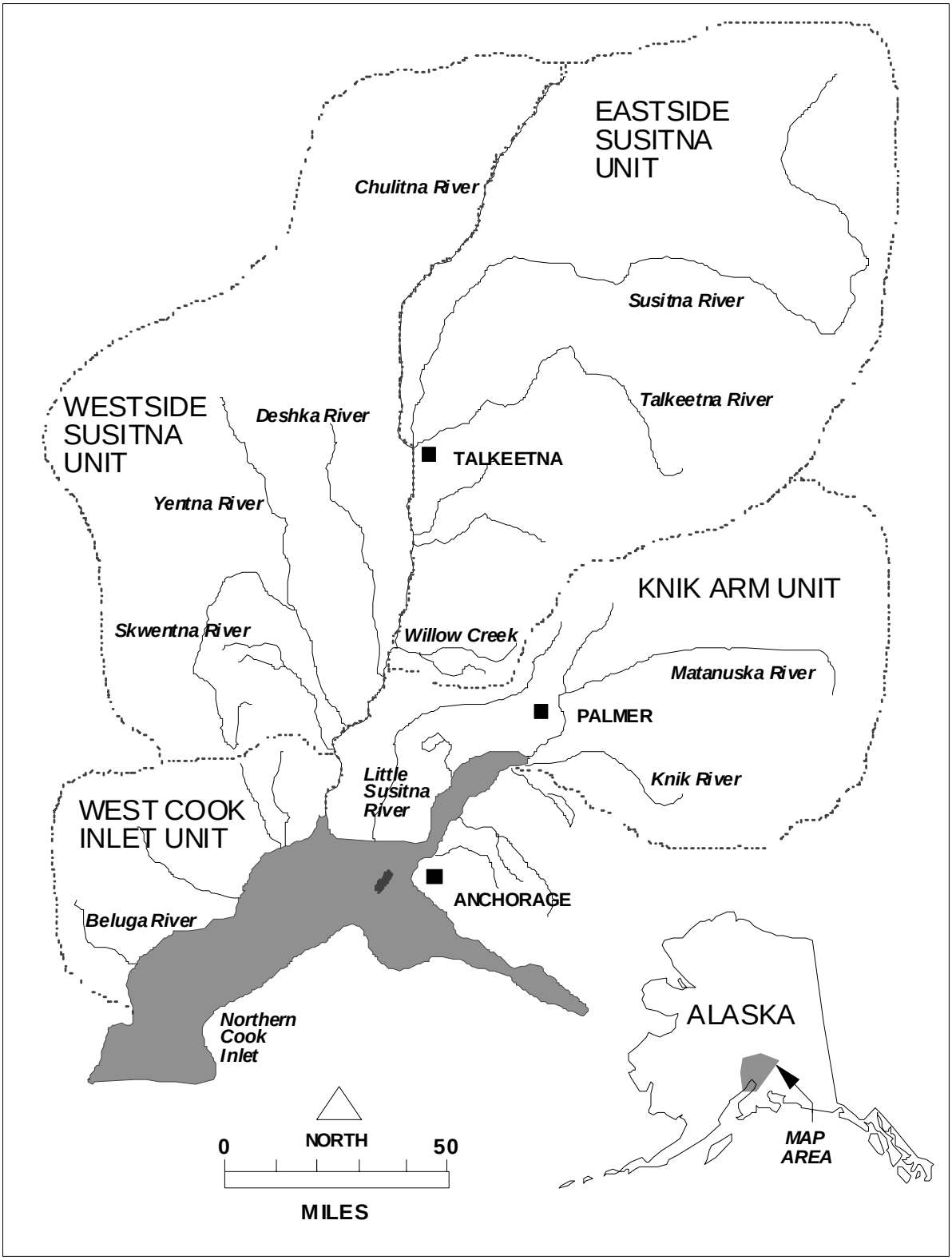

Figure 1.– Northern Cook Inlet Management Area.

Beginning in 1977, sport fishing effort in the NCIMA has been estimated using the Statewide Harvest Survey (SWHS), a mail 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, *In prep*.). Unless noted otherwise, all estimates of effort, harvest and catch that follow are from the SWHS. This survey estimates the number of angler-days of sport fishing effort expended by anglers fishing Alaskan waters, as well as the harvest and, beginning in 1990, catch (number harvested plus number released) of important sport species. The SWHS is designed to provide estimates of effort, harvest and catch by site but is not designed to provide estimates of effort directed towards a single species at a site.

The NCIMA is composed of two complete and a portion of a third SWHS reporting area (Jennings et al. *In prep.*). These areas include: (1) the Knik Arm Drainage Area reporting unit (Area K), (2) the West Cook Inlet reporting unit (Area N), and (3) the Susitna River Drainage reporting unit (Area M). The West Cook Inlet Area presently includes fresh and marine waters between the southern tip of Chisik Island and Cape Douglas, an area outside of the NCIMA. The Susitna River area includes several rivers and many lakes north of the Oshetna River boundary of the NCIMA. Area N and M fisheries outside of the NCIMA are not included in this report.

CHINOOK SALMON FISHERIES

Eighteen proposals (330-341, 343-346, and 348) specifically addressing Northern Cook Inlet Chinook salmon fisheries will be addressed by the BOF in February 2008. These proposals focus on Susitna River Chinook salmon stocks and range from liberalizing to restricting fisheries.

Chinook salmon runs to the NCIMA are made up of many stocks, and collectively make up the largest proportion of Cook Inlet drainage stocks. The Susitna River stock is the most numerous in the management area, and the fourth most numerous in Alaska, smaller only than the Yukon, Kuskokwim and Nushagak river stocks (Delaney and Vincent-Lang *Unpublished*). Although estimates of total return are unavailable for Northern Cook Inlet Chinook salmon because estimates of escapement are not available for all stocks, the collective annual return is probably from 100,000-200,000 fish (Delaney and Vincent-Lang *Unpublished*).

Total harvests of NCI Chinook salmon for all users varied from about 11,200 to 70,000 from 1893-1940 (Table 1), averaging about 38,500 fish. This harvest appears to be sustainable, considering it was maintained for over a half century. After harvests increased from 1940-1951, peaking at 150,000 and averaging 84,500 fish annually, harvests declined precipitously until fisheries were closed in 1963 to allow stocks to rebuild (Figure 2). This history suggests that the maximum sustainable harvest range for NCI Chinook salmon is from 38,500-70,000 fish.

In 1976, the Magnuson Fishery Conservation and Management Act was passed. This act, also known as the 200-mile limit law, extended federal fishery management authority into waters within 3 to 200 miles of the United States coast. It phased out foreign fishing fleets and implemented fishery management in offshore waters. Its effects on Cook Inlet Chinook salmon stocks are not fully understood; however, it is likely that the act and its associated fishery management plans increased Chinook salmon returns to NCI.

A variety of users have historically harvested NCIMA Chinook salmon returns, including freshwater and marine sport, commercial, subsistence, personal use, and educational (Table 2). However, harvest strategies for NCI Chinook salmon have changed substantially since the 1890s. The fishery has slowly evolved from a mixed-stock commercial harvest to a recreationally

dominated harvest that targets a multitude of discrete substocks. A detailed user history is documented in Whitmore et al. *Unpublished*.

From 1975-1990, sport fisheries targeting NCI Chinook salmon runs were gradually expanded to allow harvest of increasing returns (Figure 2). The Upper Cook Inlet Salmon Management Plan (5 AAC 21.363), adopted by the BOF in 1977, guided these expansions. This plan as it relates to NCI Chinook salmon stocks, originally stipulated that stocks normally moving through Upper Cook Inlet to spawning grounds prior to July 1 are to be managed primarily for recreational uses. Therefore, sport fisheries were expanded and currently constitute the largest harvests. In 1986 the BOF adopted the Northern District King Salmon Management Plan (5 AAC 21.366) to allocate a portion of the increasing NCI Chinook salmon returns to the commercial fishery. This step-down plan allows for a harvest up to 12,500 Chinook salmon by a commercial setnet fishery in the Northern District during June.

Under these plans, total harvest of NCI Chinook salmon continued to increase from 1986-1993, ranging from 40,300-54,300 fish and averaging 46,500 fish (Table 2). Mean and peak harvest of NCIMA Chinook salmon in sport fisheries from 1986-1993 were 34,600 and 49,400 fish, respectively (Table 2). Sport harvests decreased substantially to 16,500 fish in 1995 due in part to fishery closures and restrictions (Appendix A1) placed on sport fisheries following a period of poor escapements observed in the early 1990's. As Chinook salmon stocks rebounded in the mid to late 1990s, fisheries were reopened and some restrictions were lifted. Beginning in 1997 sport harvests trended upward peaking at 33,100 fish in 2000. They have since stabilized with an average of 28,300 fish harvested from 2001-2005. The average total harvest of NCI Chinook salmon by all users was 31,900 fish during the same time period (Table 2).

In response to development of a recreationally dominated harvest that targeted a multitude of discrete substocks, biological escapement goals (BEGs) were established in 1993 for 18 NCIMA Chinook salmon spawning streams based on long-term escapement survey data. Escapement goals are intended to ensure the long-term viability of NCIMA Chinook salmon stocks. The 1993 BEGs were replaced with sustainable escapement goals (SEGs) as new assessment methods were developed (Bue and Hasbrouck *Unpublished*). Escapement goals were revised during the February 2002 BOF meeting (Bue and Hasbrouck *Unpublished*), and again at the 2005 BOF meeting (Hasbrouck and Edmundson 2007) based on the Policy for the Management of Sustainable Salmon Fisheries and the Policy for Statewide Salmon Escapement Goals, both adopted by the BOF during winter 2000-2001. Currently there are 16 SEGs and one BEG governing Chinook salmon escapements in the NCIMA (Table 3).

Therefore, the primary management objective for NCIMA Chinook salmon is to achieve established escapement goals. Spawning escapement on each of the 17 streams is indexed annually using helicopter surveys or weirs. To ensure escapement goals are met, fishery managers may reduce harvest potential by reducing daily and seasonal bag limits, prohibiting bait, and reducing time and areas open to fishing. Streams that consistently fall below escapement goals may be closed to Chinook salmon fishing. On streams with weirs or programs that provide inseason sport harvest information, regulations may be liberalized by emergency order (EO) if harvestable surpluses are projected.

From the late 1970s through 1989, escapement goals were achieved. However, beginning in 1990, observed spawning escapements in streams with escapement goals decreased, and in 1992-1995 were well below escapement goals in many streams. In response, actions were taken in 1994

through EOs and BOF regulations to reduce harvest levels. As a result, the combined sport harvest of NCI Chinook salmon from 1995-1998 was reduced to approximately half of the 1993 peak harvest (Table 2). Escapement goals were again achieved beginning in 1997. Fisheries were subsequently reopened contributing in part to increased harvest levels beginning in 1999. Harvests have remained stable since the early 2000s despite liberalizations to major fisheries. The regulatory history of Chinook salmon in Northern Cook Inlet waters is outlined in Appendix A1.

KNIK ARM UNIT CHINOOK SALMON FISHERIES

Fishery Description

Within the Knik Arm Management Unit (Figures 1 and 3), the Little Susitna River (Figure 4) is the only stream open to Chinook salmon harvest, other than the Eklutna tailrace terminal fishery (see section below). It supports a major Chinook salmon fishery as well as the largest coho salmon fishery in the NCIMA. Chinook salmon bound for the Little Susitna River are also harvested in marine sport and commercial fisheries, and subsistence and personal use fisheries.

Chinook salmon return to the Little Susitna River from late May through early July with the peak immigration approximately mid-June. Spawning occurs from the Burma Road area upstream into Hatcher Pass with the majority of spawning taking place upstream of the Parks Highway Bridge. Few Chinook salmon use tributaries for spawning. Peak spawning typically occurs during the last week of July.

Angler access to the Little Susitna River occurs at three primary locations: (1) intertidal waters of the river are accessed by boats crossing Knik Arm from the Port of Anchorage public boat launch; (2) the road-accessible Little Susitna Public Use Facility (Burma Road Access) which includes a launch and campground; and (3) private and public launches near the Parks Highway which provide access to the upper reaches of the river. The Little Susitna Public Use Facility is the most heavily used access to the river. Powerboats can travel on the Little Susitna River from its mouth to the Parks Highway during periods of moderate to high water levels. However, during low flows, travel is restricted to smaller jet boats between river mile (rm) 28 and the Parks Highway at rm 70.

Historical Harvest and Escapement

Information about the fishery and Chinook salmon stock is available from several sources. Inseason sport harvest and fishing effort for Chinook salmon were estimated by onsite creel surveys from 1979 through 1990. Creel survey and SWHS estimates produced comparable results; therefore, the creel survey program was discontinued in 1991. Average annual harvest of Chinook salmon from the Little Susitna River was approximately 2,100 fish from 1977-2005 (Figure 5; Table 4).

Due to the semiglacial character of the Little Susitna River, aerial survey counts of Chinook salmon on spawning grounds cannot be conducted annually, although surveys were completed in 20 years since 1983. The average Chinook salmon escapement index during these years was 1,396 fish, with a peak count of 3,197 fish in 1988 (Table 5; Figure 6). During 1988, 1989, 1994 and 1995 a weir was operated at rm 32.5, with escapement counts ranging from about 2,800-7,400 fish (Table 5).

Stocking Program

To increase road-accessible harvest opportunities and ensure sustainability of the area's wild Chinook salmon populations, Sport Fish Division began a program to stock Chinook salmon at the Eklutna power plant tailrace (Figure 7) in 1999. Ship Creek Chinook salmon are used as brood stock (Loopstra 2007). There are no wild Chinook salmon returns to the tailrace, although a few hold in the confluence area before traveling to other Knik River streams to spawn. All fishing takes place in the ½ mile long power plant tailrace from the Old Glenn Highway to its confluence with the Knik River.

In May 2002, the first Chinook smolt were stocked into the tailrace (Table 6). Harvest in 2003 was about 400 fish and only about 20 fish in 2004, but increased in 2005 to 941 fish, and 484 fish were harvested in 2006.

Fishery Management and Objectives

The Chinook salmon fishing season for the Little Susitna River is from January 1 through July 13 with fishing permitted from the river's mouth upstream to the Parks Highway, a distance of about 70 miles.

Management of Chinook salmon has undergone changes (Appendix A1). In 2002, an SEG range of 900-1,800 Chinook salmon was set for the Little Susitna River (Bue and Hasbrouck *Unpublished*), replacing the BEG of 850 Chinook salmon that was set in 1993. During 1988, 1989, 1994 and 1995, years in which a weir program was conducted and harvest estimates were available, inriver exploitation rates were estimated at approximately 28%, 49%, 59% and 38%, respectively. This indicated an increased rate of exploitation from 1988 to 1994 which might not have been sustainable. From 1997-2006 escapement ranged from 1,100-2,100 fish and harvest varied from about 2,000-3,300 fish (Tables 4 and 5), indicating that the present regulatory framework is maintaining the necessary escapement to ensure a sustainable fishery.

The management objective for the Little Susitna River Chinook salmon fishery is to maximize fishing opportunity while ensuring the attainment of the SEG. The annual objective for the Eklutna Tailrace stocking program is to release 150,000 Chinook smolt, resulting in a return of 4,000 adults and generating 10,000 angler-days of effort. The only other Knik Arm Unit Chinook salmon stream indexed annually is Moose Creek, a tributary of the Matanuska River, but there is no escapement goal.

In the near future NCI managers will be looking for signs of reduced sibling return from brood year 2006 due to a 100-year flood which swept much of the NCIMA during the third week of August, 2006. Major scouring and definite channelization was observed on the Little Susitna River above the Parks Highway where most Chinook salmon spawning occurs.

Sport Fishery Performance and Escapement in 2006 and 2007

The 2006 sport harvest of Chinook salmon from the Little Susitna River was 3,300 fish, above the 2001-2005 average of 2,500 fish (Table 4). The Little Susitna River harvest accounted for approximately 12% of the total Chinook salmon sport harvest from NCIMA waters during 2006 (Table 7). An aerial index of about 1,900 Chinook salmon was documented for the Little Susitna River in 2006 (Table 5). In 2006, about 220 fish were counted during the Moose Creek survey (Table 5). The Eklutna Tailrace provided its first compliment of age 4, 5, and 6 year old Chinook salmon in 2006. Harvest of Chinook salmon at the Eklutna Tailrace in 2006 was about 480 fish.

During 2007 catch rates reported by guides and anglers were above average on the Little Susitna River throughout the Chinook fishing season. Department staff observations of fishing at the Eklutna Tailrace indicated fair catches from late-May through mid-July.

Water conditions in August provided for above average visibility in which to conduct the annual index count. On July 17, 2007, about 1,700 Chinook salmon were counted (Table 5), within the SEG range of 900-1,800 (Figure 6).

In 2007, an aerial survey conducted on Moose Creek counted 330 fish, below the 1997-2006 (10 yr) average of about 350 (Table 5). There is no SEG established for Moose Creek, however, escapement counts from aerial surveys since 2000 have all fallen below the long-term average indicating a possible decrease in run strength for unknown reasons. In the early 2000s, the Chickaloon Village Traditional Council began a multiphase project to restore Moose Creek to its condition prior to the construction of a railroad spur used in the coal industry in the early 1920s. The project's main focus was restoration of the original creek channel and thereby reestablishment of fish passage where barriers had formed, the result of the human caused channelization. In 2005 and 2006, completion of the first and second phases restored fish passage around one major and three minor waterfall barriers. Chinook salmon were observed spawning above these barriers in 2005-2007.

EASTSIDE SUSITNA MANAGEMENT UNIT CHINOOK SALMON FISHERIES

Fishery Description

The Eastside Susitna Management Unit (ESMU; Figures 1, 8 and 9) is composed of three distinct geographical areas with different regulations: (1) the eastside Susitna River tributaries between the Deshka and Talkeetna rivers, (2) the Talkeetna River, and (3) the upper Susitna area which includes the Susitna River and its tributaries between Talkeetna River and Oshetna River (including the Oshetna River drainage) and all eastside tributaries of the Chulitna River (including the East Fork drainage of the Chulitna River).

Deshka to Talkeetna Area

Tributaries of the Deshka to Talkeetna area (Figures 8 and 9) are numerous and are characterized by their clear water. The majority of the fisheries in this portion of the management unit are accessible by road. There are exceptions, including Little Willow and Greys creeks and various Susitna River side sloughs that require a boat to access their most productive portions. The George Parks Highway (Alaska Route 1), which connects Anchorage and Fairbanks, parallels the Susitna River on the east. The Alaska Railroad also parallels the east side of the Susitna River to a large extent. Both transportation systems provide angler access to numerous tributaries.

Talkeetna River

The Talkeetna River joins the Susitna River about 98 miles upstream from Cook Inlet. This glacial system contains two major and numerous minor clear water tributaries that support Chinook salmon (Figure 10). Clear Creek is the most prominent Chinook fishery within the Talkeetna River drainage. The Talkeetna Spur Road provides access to the Talkeetna River; however, a boat is required to reach virtually all Chinook salmon fisheries within the drainage. This area is primarily accessed from the Talkeetna boat launch.

Upper Susitna River Area

The upper Susitna River area (Talkeetna to Devils Canyon; Figure 8) is accessible only by boat or railroad. A public boat launch adjacent to the community of Talkeetna provides access to the area. Boat travel is relatively safe from the Talkeetna River upstream to the entrance of Devils Canyon, a distance of about 55 miles. Boat travel beyond the entrance to Devils Canyon is extremely hazardous and few boat operators venture past this location. Indian River and Portage Creek are the most prominent Chinook salmon fisheries within the Upper Susitna River Area. The entrance to Devils Canyon, beyond which salmon cannot migrate, is about 150 miles upstream from Cook Inlet.

The Chulitna River empties into the Susitna River a short distance upstream of Talkeetna River at rm 92. Most tributaries entering the Chulitna River from the east are relatively short, high gradient streams, which receive few spawners. The exception is the East Fork, currently the only Chulitna River tributary supporting a Chinook salmon fishery (Middle Fork, West Fork mouth and lower Honolulu Creek are included in this fishery).

Stocking Program

Willow Creek was identified in 1981 as a candidate for Chinook salmon stocking in the Cook Inlet Regional Salmon Enhancement Plan (CIRPT 1981). A Chinook salmon smolt stocking program was initiated in 1985 and the program has continued annually with the exception of 1987. The goals of this program are to: (1) maintain the present quality and quantity of natural Chinook salmon production (2) produce through stocking an additional 6,000 returning Chinook salmon of which 4,000 would be available for harvest at Willow Creek on an annual basis, and (3) provide 10,000-15,000 angler-days of Chinook salmon fishing opportunity during Chinook salmon season (Sweet 1999). A project to estimate the relative contribution of stocked Chinook salmon to the sport harvest was conducted at the mouth of Willow Creek annually from 1988-2005. The program was ended when it was determined that harvests of stocked fish were well documented and relatively stable, averaging about 40% of the total harvest and ranging from 26% to 51% for 1991-2005, years in which a full compliment of stocked fish returned (Sweet 1999; Whitmore and Sweet 1998, 1999; Rutz and Sweet 2000; Sweet and Rutz 2001; Sweet et al. 2003, 2004).

Historical Harvest and Escapement

Information about the fishery and Chinook salmon stock is available from the SWHS, creel surveys, escapement surveys, and tagging studies. In the Deshka to Talkeetna area, most of the Chinook salmon harvest occurs the third and fourth weekends in June because few Chinook salmon arrive at the mouths of eastside Susitna tributaries prior to mid-June. At the Talkeetna River the fishery peaks the first week in July. The Upper Susitna River fishery has run timing similar to the Talkeetna River.

Tagging studies have shown that Chinook salmon substocks from Willow Creek, Talkeetna River, Sheep Creek and Montana Creek are subject to harvest at stream mouths other than their natal stream (Peltz and Sweet 1992). For example, stocks from the upper portions of the drainage such as Prairie Creek are harvested at stream mouths along their migration corridor. The magnitude of nonnatal stream harvest has not been determined.

From 1979-1995, harvest ranged from about 1,300 Chinook salmon in 1979 to 22,700 in 1993 (Table 7). From 2001-2005, ESMU fisheries averaged about 36% of the total NCIMA Chinook

salmon harvest (Table 7). Harvest steadily declined during this period, from about 13,500 Chinook salmon in 2001 to about 8,500 in 2004 and 2005. Included in these harvests are approximately 500-4,000 hatchery fish taken in Willow Creek beginning in 1988.

Willow Creek, Talkeetna River, Sheep Creek and Montana Creek traditionally produce the largest harvest of Chinook salmon in the Eastside Susitna Management Unit. The 2001-2005 average annual harvest for these fisheries ranged from 1,100 fish in Sheep Creek to 3,500 fish in Willow Creek (Table 8).

Creel surveys were employed from 1979-1989 to monitor the effort for and harvest of Chinook salmon and to collect biological samples at Montana Creek and the Talkeetna River. In 1991, 1992 and 1995 creel surveys were conducted for the Talkeetna River. Biological samples were collected from the Talkeetna River during the 1993, 1994 and 1996 seasons. Creel surveys were intermittently conducted at Sheep, Goose, Caswell, Little Willow, Sunshine, and Birch creeks and within the upper Susitna River area. Findings from these surveys are documented in Department of Fish and Game annual reports (Watsjold 1980, 1981; Bentz 1982, 1983; Hepler and Bentz 1984-1987; Hepler et al. 1988, 1989; Sweet and Webster 1990; Sweet et al. 1991; Peltz and Sweet 1992, 1993; Sweet and Peltz 1994; Whitmore et al. 1995, 1996; Whitmore and Sweet 1997).

Aerial survey escapement counts suggest that ESMU substocks comprise from 40% to 60% of the Susitna River Chinook salmon escapement (Table 9). Prairie Creek, a headwater tributary of the Talkeetna River, consistently receives the largest escapement with an average escapement of 5,200 Chinook salmon from 1997-2006 (Table 10).

Fishery Management and Objectives

Management of Chinook salmon in the Eastside Susitna Unit has undergone numerous changes since the 1980s, as has management of Chinook salmon in the entire NCIMA (Appendix A1).

In the Deshka to Talkeetna area, waters within one-quarter mile of the Susitna River are open to Chinook salmon fishing from January 1 through the third Monday in June and on Saturday, Sunday and Monday for three consecutive weeks beginning the fourth Saturday in June. For the Willow, Little Willow, Caswell, Kashwitna, Sheep, Goose and Montana creeks (Figure 9), fishing is allowed from the Susitna River upstream to the Parks Highway. Fishing on Montana Creek extends one-half mile upstream of the Parks Highway Bridge while

The Talkeetna River (Figure 10) and upper Susitna River drainages are open to Chinook salmon fishing from January 1 through July 13, from 6 am to 11 pm. Bag and possession limits are one fish per day and one in possession. Within the Talkeetna River area, Clear Creek is open upstream to rm 2. Both Larson and Prairie Creeks are closed to Chinook salmon fishing. Eastside Chulitna River tributaries are closed to Chinook salmon fishing with the exception of East Fork Chulitna and its tributaries. Harvest is allowed within a quarter mile of the confluence of the East Fork and West Fork of Chulitna River and including the Middle Fork and the first quarter mile of Honolulu Creek under the weekend only management strategy described for the Deshka to Talkeetna area. During the rest of the week, only catch-and-release fishing is allowed. The portion of the Susitna River above the Talkeetna River is designated as a trophy fishery for rainbow trout; therefore, only unbaited, single-hook artificial lures are permitted as terminal gear.

SEG ranges for nine Eastside Susitna Management Unit streams were established in 2002 (Table 3) based on historic escapement index counts (Bue and Hasbrouck *Unpublished*). The Deception Creek SEG was removed at the 2005 BOF meeting (Hasbrouck and Edmundson 2007) because Deception Creek is managed as part of Willow Creek. The management objective for these eight streams is to achieve the escapement goal for each system. In the streams that cross the George Parks Highway, management strategies provide maximum levels of sustained Chinook salmon fishing opportunity while attaining escapement objectives.

In the near future NCI managers will be looking for signs of reduced sibling return from brood year 2006 due to a 100-year flood which swept much of the NCIMA during the third week of August, 2006. Major scouring and channelization was observed on Willow and Montana creeks above the Parks Highway where most Chinook salmon spawning occurs. Other major eastside Chinook salmon producing streams were likely affected as well.

Sport Fishery Performance and Escapement in 2006 and 2007

The 2006 Chinook salmon harvest from the Eastside Susitna Management Unit was 7,300 fish, approximately 72% of the 2001-2005 average harvest of 10,100 fish, and 27% of the entire Chinook salmon sport harvest from the NCIMA (Table 7). All SEGs were met in 2006 with the exception of Sheep Creek which was 20 fish below the lower end of its SEG range of 400-1,200 Chinook salmon (Figure 11).

During 2006 the harvest of Chinook salmon from Willow Creek was 2,100, about 62% of the previous 5-year mean, but still dominating other major eastside fisheries (Sheep Creek, Montana Creek, and the Talkeetna River; Table 8).

Information provided to the department from sport anglers and guides indicated returns to eastside Susitna tributaries were average in 2007.

The 2007 escapement surveys for ESMU Chinook salmon, all of which were completed, indicated that SEGs were met for five of eight streams. SEGs were not met for Willow, Sheep, and Goose creeks (Table 10; Figure 11).

WESTSIDE SUSITNA MANAGEMENT UNIT CHINOOK SALMON FISHERIES

Fishery Description

The Westside Susitna Management Unit (WSMU) includes all westside drainages of the Chulitna River, and all westside drainages of the Susitna River below its confluence with the Chulitna River and, primarily for management purposes, eastside drainages of the Susitna River within a half mile of the Susitna River downstream of Willow Creek. Major tributaries within this unit which support Chinook salmon fisheries include the glacially turbid Yentna River, the largest tributary of the Susitna River, which flows into the Susitna River about 30 miles upstream from Cook Inlet, the Deshka River with confluence at rm 40 of the Susitna River, and Alexander Creek (confluence at rm 10 of the Susitna River). The Deshka River produces the largest return of Chinook salmon to the NCI area which exhibit early run timing, due to the relative closeness of the Deshka to the mouth of the Susitna River. Lake Creek (64 miles from the mouth of the Susitna River at rm 34 of the Yentna River), supports the largest Chinook salmon fishery on the Yentna River.

Access to these relatively remote fisheries is primarily by boat or aircraft. Susitna Landing, located at the mouth of the Kashwitna River, and Deshka Landing, located about 4 miles

upstream from the Deshka River, are the principal boat access sites on the Susitna River. A few anglers also gain access to Westside Susitna Management Unit fisheries by traversing Cook Inlet by boat from the Port of Anchorage. The Petersville Road provides the only vehicular access to this portion of the Susitna River drainage, allowing access to the upper reaches of the Deshka River and Peters Creek.

Historical Harvest and Escapement

Information about the WSMU fishery and Chinook salmon stock is available from the SWHS, weirs, and escapement surveys. Chinook salmon enter WSMU tributaries in May and June. Peak harvest at the mouth of Alexander Creek normally occurs during the first week of June. Harvest at the mouth of the Deshka River peaks during mid-June, and at Lake Creek the peak harvest usually takes place during the third week in June.

The WSMU supported the largest harvests of Chinook salmon within the NCIMA from 1979-1991 (Table 7). Within the unit, the Deshka River, Alexander Creek and Lake Creek have historically supported the largest Chinook salmon fisheries (Table 11), making up about 85% of the Chinook salmon harvest of the unit from 2001-2005. The Deshka River has historically provided the largest Chinook salmon harvest within the entire NCIMA (Table 11) except during the mid 1990's when the fishery was closed due to low observed escapements.

Harvest by major WSMU fisheries increased substantially from 1979-1993 (Table 11), probably as a result of improved access (as described in Whitmore et al. 1994) and population growth. However, liberalized regulations from 1986-1992 also contributed to increased harvests.

Escapements have been monitored annually in six tributaries using aerial surveys (Table 12). A weir has been used to census escapements to the Deshka River since 1995 (Table 12). From 1991-1996, Chinook salmon spawning abundance in WSMU tributaries fell below escapement goals (Table 12). At the Deshka River, Chinook salmon escapement index counts indicated an alarming decline during this period, while the average sport harvest of Chinook salmon from 1990-1992 was approximately 40% greater than the average harvest during the previous 10 years (Table 11). In response, restrictions were implemented on major WSMU streams and the Deshka River was closed to Chinook salmon fishing from June 17, 1994 to June 21, 1997 (Appendix A1). The escapement goal for the Deshka River of 11,200 Chinook salmon, counted by aerial survey, was not met from 1991-1996 (Table 12). In 1997-2005, the SEG or BEG was met for all streams, except Alexander Creek which fell 164 and 88 fish short in 2002 and 2003, respectively (Table 12).

Fishery Management and Objectives

Management of Chinook salmon in the WSMU has undergone numerous changes since the 1980s, as has management of Chinook salmon in the entire NCIMA (Appendix A1). These changes reflect periods of strong Chinook salmon returns during most of the 1980s and from about 1997 to present, surrounding a period of weak returns. An escapement monitoring weir at rm 7 of the Deshka River is an important tool for managing Chinook salmon returning to the Susitna River because of large observed escapements and relatively early run timing due the river's closeness to the mouth of the Susitna River. The Deshka weir operates from mid May through the duration of the Chinook salmon season to provide managers with timely inseason run information as well as post season biological data used to assess productivity in this system. A weir-based BEG range of 13,000-28,000 fish was established for the Deshka River based on

actual escapement, age, and harvest data gathered at the weir. SEG ranges for four other WSMU systems (Lake, Alexander, Peters creeks and the Talachulitna River) were also established in 2002 (Table 3). SEGs were based on historical aerial index counts of escapement (Bue and Hasbrouck *Unpublished*). The management objective for these five systems is to achieve the escapement goals while providing maximum levels of Chinook salmon fishing opportunity.

Inseason liberalizations to the Deshka River Chinook salmon fishery have been common since 2000 (Appendix A2). The Deshka River escapement exceeded the escapement goal of 17,500 fish from 1999-2001 and exceeded or was within the more recent BEG range since 2002 (Figure 12).

The SEG for Alexander Creek was not met in four out of the past six years (Figure 12). Northern pike have likely reduced Chinook salmon productivity in this system through predation on juvenile salmon. As a result, management for sustainable yield through reduction in harvest is anticipated in the near future.

In the near future NCI managers will be looking for signs of reduced returns from brood year 2006 due to a 100-year flood which swept much of the NCIMA during the third week of August, 2006. Major scouring and some channelization was observed on Moose Creek, a major tributary of the Deshka River where significant Chinook salmon spawning occurs.

Currently, the bag limit for WSMU Chinook fisheries is one daily and two in possession (except Alexander Creek; one in possession), and a seasonal limit of five Cook Inlet Chinook salmon. Only unbaited, single-hook artificial lures are allowed in large portions of Lake and Alexander creeks and the Deshka River, and in the Talachulitna River. Sport fishing guides may not participate or engage in fishing for Chinook salmon while clients are present or within their control.

Sport Fishery Performance and Escapement in 2006 and 2007

In 2006, total Chinook salmon harvest from all WSMU streams was 16,500 fish, 114% of the 2001-2005 mean (Table 7). These fisheries supported the largest harvests of Chinook salmon within the NCIMA in 2006. In 2006 escapements in all streams were within or above their SEG ranges except Alexander Creek (Figure 12).

During the 2007 season catch information from lodge owners, guides and anglers at Alexander Creek indicated a below average return for that stream. Angler success on Yentna tributaries and the Deshka River was variable. The final Deshka River weir count for 2006 totaled 18,714 Chinook salmon, within the SEG range of 13,000-28,000, and about half of the 2002-2006 mean (Table 12). Alexander Creek was the only stream in 2007 that did not meet it's SEG. The aerial index count on Alexander Creek was 480 fish, less than 25% of the lower end of the SEG range (Table 12; Figure12).

WEST COOK INLET MANAGEMENT UNIT CHINOOK SALMON FISHERIES

Fishery Description

Prior to 2000 the West Cook Inlet Management Unit (WCIMU) extended south from the mouth of the Susitna River to the West Foreland of Cook Inlet (Figure 13). Beginning in 2000 it was expanded to include all waters along the westside of Cook Inlet to the latitude of the southern tip of Chisik Island. Streams in the WCIMU, with the exception of the Chakachatna-McArthur and the Beluga River drainages, are relatively small clearwater coastal drainages that originate in the Alaska Range, Aleutian Range or from slopes of Mount Susitna. The Chakachatna-McArthur

and Beluga River drainages are largely glacial and receive minor use by Chinook salmon anglers. Beginning in 2000 the data in this report reflect harvest, effort and catch data from the expanded management unit.

The Chuitna and Theodore rivers are the area's most prominent Chinook salmon sport fisheries (Table 13). Streams south of the West Foreland, namely the Kustatan River and Polly Creek, support small returns of Chinook salmon and generate only a small Chinook harvest. Stocks from the WCIMU are also harvested in commercial fisheries as well as a subsistence fishery located near the village of Tyonek (Table 2).

Chinook salmon begin to arrive in the area during late May with the peak of most fisheries occurring during mid to late June.

Access to the coastal fisheries of the WCIMU is by air or water because there is no road link to the Southcentral Alaska highway system. Helicopters are used to access the upper reaches of these streams, and airplane combined with vehicle to access the lower reaches. A road network, built to facilitate oil and gas exploration and the timber industry, does exist in the Tyonek/Beluga area. Several gravel aircraft landing strips are present and a few roads also serve as runways. The village of Tyonek, with a population of nearly 300, is the area's primary population center.

Historical Harvest and Escapement

The total annual harvest of Chinook salmon from all streams in the WCIMU ranged from 550 to 1,200 fish and averaged 900 fish from 2001-2005 (Table 13).

In the 1990s, escapement goals were not met for some streams (Figure 14). The reduced abundance of spawning Chinook salmon in WCIMU is probably due to elevated sport harvest and flood-related mortality of eggs and juveniles in 1986. Inspection of the coastal streams after an October 1986 flood revealed substantial streambed scouring and channelization. In association with flooding, there was severe erosion, landslides and subsequent deposition of earth and debris into the streams. The 1993 escapement index count showed an improvement over the previous 4 years but decreased again in 1994. The 1994-1996 escapement counts for all streams were low. This trend finally reversed in 1997-1999 when all escapement goals were met (Figure 14). Run strength continued to be good through 2005, except that the Theodore River escapement was marginally less than the lower end of the SEG range in 2004 and 2005 (Table 14).

Fishery Management and Objectives

SEGs for three WCIMU streams were established in 2002 (Table 3), based on historical escapement index counts. The management objective for these three streams is to achieve the escapement goal while providing maximum levels of sustained Chinook salmon fishing opportunity.

West Cook Inlet Chinook fisheries are open January 1-June 30. The current bag and possession limit is one daily and one in possession, and a seasonal limit of five Cook Inlet Chinook salmon. Only unbaited, single-hook artificial lures are allowed in drainages between the mouth of Susitna River and West Foreland. In drainages from West Foreland to the southern tip of Chisik Island, bait is allowed after May 15. The Chuitna River is open to Chinook salmon sport fishing below the old cable crossing. Both the Lewis and Theodore Rivers have been catch-and-release only Chinook salmon fisheries since the 2002 BOF meeting (Appendix A1).

Fishery Performance and Escapement in 2006 and 2007

The estimated 2006 West Cook Inlet harvest was 1,038 Chinook salmon, exceeding the previous 5-year mean of 880 (Table 13). SEGs were met for the Chuitna, Theodore, and Lewis rivers in 2006 (Figure 14).

No SEGs were met in 2007 for WCIMU streams (Figure 14; Table 14). Escapements at the Chuitna and Theodore rivers were below the lower end of the SEG ranges by about 20 fish. A spawning escapement survey conducted on the Lewis River on July 17 counted zero Chinook salmon. Upon investigation, it was found that the river had overflowed its bank about one-half mile below the bridge and was flowing into a large swampy area. After the channel was restored, the river was again surveyed on August 7 to check for evidence of spawning. No Chinook salmon were observed spawning in the Lewis River in 2007.

COHO SALMON FISHERIES

Two proposals (342 and 345) addressing bait restriction and liberalizing bag limits for coho salmon fisheries of the NCIMA will be addressed by the BOF in February 2008.

AREA-WIDE OVERVIEW

Area-wide Historical Harvest and Escapement

Sport harvests of coho salmon in the NCIMA ranged from 17,200-105,300 fish from 1977-2005, and averaged 85,300 fish during the last five years (Table 15). From 2001-2005 NCIMA harvests accounted for 17% of the coho salmon harvests in the Southcentral region and 10% of the statewide harvests (Table 15). Within the NCIMA, the KAMU, which includes the Little Susitna River, accounted for the largest harvest of coho salmon through 2005 with the exception of 1999 and 2000 when ESMU surpassed it. The ESMU is usually a close second followed by the WSMU. The WCIMU, with fewer accessible streams, is a distant fourth in average harvest. Harvests of coho salmon in the KAMU are dominated by harvests from the Little Susitna River while harvests from other management units are distributed across several systems (Tables 16-19).

Area-wide Fishery Management and Objectives

Management of coho salmon in the NCIMA has undergone numerous changes (Appendix A3). Each season, management strategies for NCIMA coho salmon are implemented as the stocks begin entering Cook Inlet and are intercepted, first by the commercial fishery and then the sport fishery.

The magnitude, catch per unit effort, and geographical distribution of the commercial harvest are indices of general run strength. Comparison between years can be difficult because fishery restrictions may vary from year to year. As coho salmon enter fresh water, the department has limited ability to gauge overall run size. Until 1997, counting weirs at the Little Susitna River and the Deshka River provided the only quantitative measure of coho abundance in the NCIMA. Beginning in 1997, weirs were also operated in Wasilla, Cottonwood and Fish creeks. Wasilla and Fish Creek weirs were discontinued after 2003 and Cottonwood Creek weir after 2004. The Fish Creek weir currently operates to count only the sockeye salmon escapement and is removed about August 15, half way through the historical coho salmon run. Fish wheels and sonar on the Yentna River, and foot and aerial index counts for a few streams also contribute information about relative abundance. Within the NCIMA, nine index areas are surveyed annually by foot: Yellow Creek (Matanuska River), McRoberts and upper Jim Creeks (Knik River), Cottonwood

and Wasilla Creeks (Knik Arm), and Rabideux, Birch, Question, and Answer Creeks (Susitna River).

A creel survey to estimate coho salmon harvest and fishing effort was conducted at the Little Susitna River from 1982 through 1993. Intermittent or partial creel survey data have also been collected from other coho salmon fisheries.

Poor runs in 1997 and 1999 prompted inseason restrictions to both sport and commercial fisheries. In response to a poor return of coho salmon to Cook Inlet in 1997, emergency orders were issued to close the commercial fishery and to institute an areawide bag limit reduction and bait prohibition for wild stock sport fisheries. Restrictive action was again taken in the commercial fishery in 1998 because of a poor sockeye return. Because of the nature of the multi-species fishery, this action probably resulted in higher escapements. No additional action was required in the sport fishery during 1998, because instream coho abundance seemed to be above average. In 1999, poor returns again resulted in restrictions to the sport and commercial fisheries. Unfortunately these restrictions were made too late to increase coho salmon escapement. Low escapements of coho salmon to UCI streams prompted the governor and users to submit a request to the BOF to meet out of cycle and address this conservation problem. The BOF met in February 2000 and significant actions to both the sport and commercial fisheries were taken to reduce the overall harvest of Cook Inlet coho salmon (Appendix A3). Since then, coho salmon returns to NCIMA streams have been mostly above average. A 100-year flood which swept much of the NCIMA during the third week of August 2006 could impact future returns of coho salmon, at least in the short term. Impact would be greatest for adults returning in 2008.

KNIK ARM MANAGEMENT UNIT: LITTLE SUSITNA RIVER COHO SALMON FISHERY

Fishery Description

Access to the Little Susitna River (Figure 4) occurs at three primary locations: (1) intertidal waters of the river are accessed by boats crossing Knik Arm from the Port of Anchorage public boat launch; (2) the road-accessible Little Susitna Public Use Facility (Burma Road Access) which includes a launch and campground; and (3) private and public launches near the Parks Highway which provide access to the upper reaches of the river. The Little Susitna Public Use Facility is the most heavily used access to the river. Powerboats can travel on the Little Susitna River from the mouth of the river to the Parks Highway during periods of moderate to high water levels. However, during low flows travel is restricted to smaller jet boats between rm 28 and the Parks Highway at rm 70.

Coho salmon return to the Little Susitna River primarily from mid-July through early September. Tagging studies indicate that coho salmon migrate slowly up the Little Susitna River and remain available to the fishery for about 4 weeks, after which they pass the George Parks Highway Bridge into waters closed to fishing for salmon. Spawning takes place from late September through mid-October. Spawning primarily occurs upstream from the George Parks Highway in the mainstem of the river, but some spawning occurs in tributary streams.

Stocking Program

Stocking of coho salmon occurred at the Little Susitna River from 1982-1995. Beginning in 1987, returns from smolt releases started to make significant contributions to the sport harvest. The 1995 smolt release in Nancy Lake was the last stocking of hatchery coho salmon for the

Little Susitna River. The program was terminated because it was no longer cost effective to stock the Little Susitna River because of the strength of the natural run and high cost of hatchery enhancement. A summary of the stocking program can be found in the following reports: Bartlett and Conrad 1988; Bartlett and Vincent-Lang 1989; Bartlett and Sonnichsen 1990; Bartlett and Bingham 1991, 1993; Bartlett 1992, 1994, 1996 a-b.

Historical Harvest and Escapement

From 1977-2005, harvest of Little Susitna River coho salmon ranged from 2,800-27,600 fish with a mean harvest of 12,300 fish (Table 16). It has been a consistent second to the Kenai River, which supports the largest freshwater coho salmon harvest in Alaska.

Prior to 1986, coho salmon escapement to the Little Susitna River was indexed by ground and/or aerial surveys when water conditions permitted. Coho salmon escapements were counted at a weir in 1986 and from 1988 to present (Table 20). In 1986 the weir was damaged for several days by floodwaters and the count through the weir was incomplete (Table 20). Weir counts in 2005 and 2006 were also incomplete due to high water events. From 1988-1995 the weir was located at rm 32.5. From 1996 to present, the weir was located upstream at rm 71. Direct comparison of counts between weir sites is not possible, although most spawning occurs above the rm 71 site.

During 1997 and 1999 the Little Susitna River (Table 20), as well as the whole NCIMA, experienced poor coho salmon returns. However, these low returns did not appear to affect returns in subsequent years as escapement in 2001 was 30,600 coho salmon and a record escapement of 48,000 coho salmon occurred in 2002.

Harvest estimates from the SWHS and escapement data indicate that coho salmon abundance at the Little Susitna River fluctuates widely. Inriver returns (escapement plus sport harvest) ranged from approximately 12,000-67,000 fish from 1996-2005 (Tables 16 and 20), years after the stocking program ended and for which complete escapement counts are available. This wide range of inriver returns was mostly related to run size and to a lesser extent, sport harvest. Mean inriver exploitation has varied with escapement over the same time period and averaged 45% (Figure 15).

Fishery Management and Objectives

The Little Susitna River coho salmon sport fishery has been managed in accordance with the Little Susitna River Coho Salmon Management Plan (5 AAC 61.060) since 1991 and as modified following the 1992 and 1996 seasons (Appendix A3). Management objectives stated in the plan are to provide an SEG of 10,100-17,700 naturally spawning coho salmon upstream of the George Parks Highway (Table 20), and to provide coho salmon fishing opportunity from the George Parks Highway downstream to tidewater without emergency restrictions.

Currently the bag and possession limits are two coho salmon 16 inches or more in length per day and in possession. Only unbaited, artificial lures are allowed in the Little Susitna River from October 1 - August 5. This regulation was originally designed to reduce the catch rate of early arriving nonhatchery fish and remains in effect to reduce hook-and-release mortality. The hook-and-release mortality of bait-caught, ocean-fresh coho salmon has been documented to be approximately 70% (Vincent-Lang et al. 1993). The management plan allows the use of bait beginning August 6. Downstream of rm 32.5 (the original weir site) anglers are required to quit fishing when they reach their bag limit of Little Susitna coho salmon. Coho salmon intended for

release cannot be removed from the water, a regulation that also helps reduce hook-and-release mortality.

Coho salmon runs on the Little Susitna River have been found to be significantly correlated to those of other Knik Arm streams (Namtvedt and Yanusz *In prep*.). However, the Little Susitna River at its present location at rm 71 provides very little potential for gauging run strength in other Knik Arm streams or for inseason management of the fishery which occurs primarily on the lower 40 miles of river. Despite its low use as an inseason management tool due to the weir's location high up on the river, Little Susitna weir counts were used to liberalize bag and possession limits as well as time restrictions on the Little Susitna River and Cottonwood, Fish, and Wasilla creeks in 2006 (Appendix A3).

Fishery Performance and Escapement in 2006 and 2007

During 2006 fishing guides and anglers reported above average catches of coho salmon throughout the season despite extremely high water levels which occurred near the peak of the salmon run. Observations during the first half of the historical run were indicative of a large early run. The magnitude of the 2006 run and a possibly earlier than average run timing resulted in use of the Little Susitna River weir counts in liberalizing coho fisheries across the Knik Arm Unit (Appendix A3). At the same time this EO went into effect, the weir was subjected to major flooding, remaining submerged for the last two weeks in August and resulting in an incomplete count of escapement of only 8,800 fish (Table 20). However, the SEG of 10,100-17,700 was likely met because historical run timing suggests that at least half the run would have occurred during the two weeks the weir was inoperable. Also, escapement index surveys on Wasilla and Cottonwood creeks, both of which closely mirror the Little Susitna run, were about average (Figure 16). Reports from anglers fishing downstream of the weir during the period of flooding were good despite poor fishing conditions. During 2006, 12,400 coho were harvested from the Little Susitna River, below the 2001-2005 mean of 15,100 fish (Table 16).

During 2007, sport fishing guides and anglers reported below average catches early in the season. Angling success became average about a week later than historical observations. Post-season analysis of fish passage through the weir indicated the 2007 coho salmon run on the Little Susitna River to be about seven days late. A total of 17,600 coho salmon were counted through the Little Susitna River weir at rm 71 (Table 20), near the high end of the SEG range.

KNIK ARM MANAGEMENT UNIT: OTHER COHO SALMON FISHERIES

Fishery Description

The Knik Arm Management Unit (Figures 1 and 3) presently supports five significant sport coho salmon fisheries in addition to the Little Susitna River: Fish Creek, Cottonwood Creek, Wasilla Creek, Jim Creek, and Eklutna Tailrace. This unit also has a personal use dip net fishery on Fish Creek and four educational permit fisheries (Knik Tribal Council, Eklutna Village, Big Lake Cultural Outreach, and Intertribal Native Leadership).

Next to the Little Susitna, Jim Creek is historically the second largest Knik Arm sport fishery in terms of both participation and coho salmon harvest (Table 16). Jim Creek enters the glacial Knik River about 10 river miles from salt water. Most sport fishing occurs at the confluence of Jim Creek and the Knik River, an area locally known as the Jim Creek Flats. Fishing effort and harvest rates in the Jim Creek Flats area are strongly influenced by the Knik River because its

glacial waters can inundate the entire area. Powered and nonpowered boats can access upstream reaches of Jim Creek.

Coho salmon return to Knik Arm fisheries from late-July through August. Spawning occurs from late September through mid-October. The average weight of Knik Arm coho salmon, excluding those of Little Susitna River origin, is less than 6 pounds.

Stocking Program

The sport fishery at the Eklutna power plant tailrace (Figure 7) was originally supported by coho salmon returning to the Cook Inlet Aquaculture Association's (CIAA) hatchery located at the head of the tailrace. The nonprofit Eklutna hatchery operated from 1981-1998. Presently fish reared at the ADF&G Fort Richardson Hatchery support the fishery which is confined to the 0.5 mi long tailrace. Sport anglers harvest stocked coho, and a few wild sockeye and chum salmon in the tailrace during the coho return. Salmon of Knik River and Matanuska River drainage origin are also harvested at the confluence of the tailrace and the Knik River. Current objectives of the Eklutna stocking program are to stock 120,000 thermally marked coho salmon annually to produce a return of 7,500 adult coho salmon and generate 6,000 angler-days of effort (Loopstra 2007).

Coho salmon have been periodically stocked into other KAMU systems. Stocking of Fish and Cottonwood creeks was initiated during the late 1970s, and at Jim and Wasilla creeks in the late 1980s (Whitmore et al. 1994-1996; Whitmore and Sweet 1997-1999; Rutz and Sweet 2000; Sweet and Rutz 2001; Sweet et al. 2003, 2004). Contribution of hatchery fish to the catch and harvest in the sport fisheries was not evaluated.

Historical Harvest and Escapement

From 1987-1998 Knik Arm stocks were harvested by a set gillnet commercial fishery that operated near the mouth of Fish Creek. Coho salmon harvests averaged 2,900 annually during this period (Whitmore et al. 1996; Whitmore and Sweet 1997-1999). BOF action closed the Knik Arm commercial set gillnet fishery beginning in 1999 to allow higher coho and sockeye salmon escapements into Knik Arm streams. The total annual harvest for the five sport fisheries (Fish, Cottonwood, Wasilla, and Jim creeks and Eklutna Tailrace) averaged 16,500 coho salmon from 2001-2005 (Table 16). Jim Creek averaged 10,300 coho salmon harvested during this period, whereas the three weekend-only fisheries averaged 600 fish at Fish Creek, 620 fish at Cottonwood, and 350 fish at Wasilla Creek (Table 16).

Escapement index surveys have been conducted on four Knik Arm streams: Cottonwood, Wasilla, Jim, and Yellow creeks. Coho salmon escapement on Fish Creek has been monitored historically by weir, except from 1994-1996 and 2004 to the present, when the weir was removed prior to August 15 and before the majority of the run. Low escapements were observed in 1997 and 1999. Rebound from these escapements occurred in 2001 and 2003. The 2001 return was above average and the 2003 return was below average (Table 20).

Fishery Management and Objectives

Fish Creek, Cottonwood Creek, and Wasilla Creek (Figure 3) are restricted primarily to intertidal fisheries, and have been open to salmon fishing on weekends only (Saturday and Sunday) since 1971 because harvestable stock surpluses cannot normally accommodate continuous daily exploitation. Time restrictions were added in February 1999 after poor returns during 1997 and

1999 occurred in these creeks (Appendix A3). Motorboats are not permitted on Wasilla Creek during weekends from July 15 - August 15.

Historical escapement data are available for Fish, Cottonwood, and Wasilla creeks from past weirs operated on each creek from about July 20 through September 25 and foot index counts conducted annually on Cottonwood and Wasilla creeks. For Jim Creek, foot surveys are conducted on McRoberts Creek, a tributary of Jim Creek, and on Upper Jim Creek; the counts are summed to provide a total Jim Creek escapement index. However, only the McRoberts Creek counts are used in the escapement goal. Biological escapement goals set in 1994 were reevaluated in 2002 and SEGs were established for Fish, Cottonwood, and Jim creeks (Table 21). The BEG for Wasilla Creek was dropped in 2002 because of a lack of historical escapement data from which to develop one. The Jim Creek SEG was based on historic escapement index counts, and the Fish and Cottonwood goals were based on average coho salmon weir counts. Wasilla and Fish Creek weirs were discontinued after 2003 and Cottonwood Creek weir after 2004. Therefore the Cottonwood and Fish Creek SEGs were subsequently dropped. Only one SEG of 450-700 fish on the Jim Creek drainage (McRoberts Creek) remains (Table 21). The management objective for these four systems is to achieve the escapement goal while providing a maximum level of sustained coho salmon fishing opportunity.

Coho salmon weir counts on Wasilla, Cottonwood, Fish, and Jim creeks and the Little Susitna River have been found to be significantly correlated (Namtvedt and Yanusz *In prep.*). Despite its low use as an inseason management tool due to the weir's location high up on the river, Little Susitna weir counts were used to liberalize bag and possession limits as well as time restrictions on the Little Susitna River and Cottonwood, Fish, and Wasilla creeks on August 19, 2006. Area flooding beginning at this same time and lasting through the end of August may have somewhat deflated the intent of these liberalizations.

The Cook Inlet Coho Salmon Conservation Management Plan was adopted by the BOF in February 2000 (Appendix A3) in response to poor returns of coho salmon to the Knik Arm Management Unit in 1997 and 1999 (Table 21). The plan sets the bag and possession limits for all Knik Arm fisheries, excluding the stocked coho fishery at the Eklutna Tailrace, at two coho salmon 16 inches or more in length. Jim Lake, McRoberts Creek, and upper Jim Creek, tributaries supporting large spawning populations, are the only areas closed to coho salmon fishing in the Jim Creek drainage.

Fishery Performance and Escapement in 2006 and 2007

Total sport harvest of coho salmon in Knik Arm streams (excluding Little Susitna River) was 27,300 fish in 2006, about 150% of the 2001-2005 mean of 17,600 fish (Table 16). Total harvest was driven by a record high harvest from Jim Creek. The 2006 harvest of 19,300 on Jim Creek was nearly double the 2001-2005 mean of 10,900 fish. Anglers reported good catches at Jim Creek. Eklutna Tailrace had an average run as reported by anglers and supported by an onsite inspection by area staff. Index survey counts in 2006 were above average (Table 20). The upper limit of the SEG for McRoberts Creek (Jim Creek drainage) was exceeded (Figure 16).

Limited inseason information is available for Fish, Cottonwood, and Wasilla creeks because of the very limited open season and little angler effort. Reports that were received from anglers in 2007 indicated an average return. Anglers reported good catches at Jim Creek. Eklutna Tailrace had an average run as reported by anglers and supported by an onsite inspection by area staff.

In 2007, 725 coho salmon were counted on McRoberts Creek, just above the upper bound of the SEG (Figure 16). Index counts of 430 fish on Wasilla and 50 fish on the Matanuska River – Yellow Creek were below respective five and ten year means, while the Cottonwood Creek index count of 1,000 fish was above its five and ten year means (Table 20). The Fish Creek sockeye salmon weir concluded on August 15 with a partial count of 6,900 coho salmon. About 2,800 additional coho salmon were counted below the weir on the day the weir was pulled resulting in a total count of 9,600. Even though the count was partial, it was still above the five-year mean of 7,000 fish corresponding to the years 1999-2003 in which full counts were conducted.

EASTSIDE SUSITNA AND WESTSIDE SUSITNA MANAGEMENT UNITS COHO SALMON FISHERIES

Fishery Description

A description of these management units, including access, is presented in the Chinook salmon section of this report. The Susitna River drainage supports the largest coho salmon stock within the NCIMA and the entire Upper Cook Inlet area. Coho salmon returning to the Susitna River units are early-run stocks, which begin to enter these drainages about mid-July. The migration into the Yentna River drainage (rm 28 of the Susitna River, WSMU) normally peaks the last week in July, whereas the peak passage into the Talkeetna River (rm 98 of the Susitna River, Eastside Susitna Management Unit) takes place 7 to 10 days later. Few coho salmon enter the Susitna River after early September. Most spawning occurs between mid-September and mid-October.

All Eastside Susitna Management Unit tributaries provide fishing opportunities for coho salmon. The Deshka River and Lake Creek are the major Westside Susitna Management Unit coho salmon fisheries. Fish Lakes Creek and the Talachulitna provide modest harvests, while the Alexander Creek fishery has diminished over the past decade, possibly a result of northern pike predation on juvenile coho salmon.

Historical Harvest and Escapement

Coho salmon harvests averaged 22,000 fish in the ESMU and 17,100 fish in the WSMU from 2001-2005 (Table 15). The contribution from the ESMU and WSMU to the total NCIMA coho salmon harvest during 2001-2005 was 26% and 20%, respectively.

From 2001-2005, Willow Creek, Montana Creek, and the Talkeetna River produced the largest coho salmon harvests in the ESMU, averaging 4,600, 4,100, and 4,500 fish, respectively, and accounting for approximately 60% of the Eastside Susitna harvest (Table 17). During that period, coho salmon harvest averaged 4,600 fish from the Deshka River, 1,600 fish from Fish Lakes Creek, and 6,100 fish from Lake Creek, accounting for 72% of the WSMU coho salmon harvest (Table 18).

Total coho salmon abundance in the Susitna River drainage has not been estimated. Abundance in portions of this vast drainage has been measured by sonar, fish wheel, weir, and mark-recapture methods. From 1981-1983, average coho salmon abundance was an estimated 47,000 fish in the Susitna River excluding all systems below rm 80 (Table 21). It is important to recognize that significant coho salmon returns occur in tributaries of the Susitna River downstream of rm 80. Coho salmon abundance in the Deshka River, Alexander Creek, Willow

Creek, and many other important coho salmon systems was not measured during the 1981-1983 studies.

Side-scan sonar and fish wheels have been used to estimate coho salmon abundance in the Yentna River from 1981-2007 (Westerman and Willette 2007). The Yentna River sonar program was designed to estimate sockeye salmon escapement utilizing sonar counters and fish wheels on opposite banks. Coho salmon are also counted, though factors such as the offshore distribution of upstream migrating coho affect the accuracy of the counts. Estimates of coho salmon are considered index counts only (Tarbox et al. 1983; Davis and King 1997). Coho salmon estimates made from 1981-1984 encompassed the entire coho salmon migration. Partial counts were recorded from 1985-2007 due to the sonar project shutting down prior to the end of the coho run. The number of coho salmon passing rm 80 on the Susitna River exceeded the number of coho salmon entering the Yentna River annually from 1981-1983. Sonar enumeration of coho salmon entering the Yentna River drainage ranged from 6,300-132,900 fish from 1985-2007 (Table 21).

Coho salmon have been counted through a weir on the Deshka River since 1995. The weir was operated at rm 17 from 1995-1996 and at rm 7 from 1997 to present. During 1996 the weir was operational only through July 30, after which high water made counting fish impossible. Incomplete counts were also recorded in 1998-1999 and 2002 due to high water events (Ivey *In prep.*). Estimating escapement during incomplete count years is nearly impossible as run timing for Deshka River coho is highly variable (Ivey *In prep.*). Mean escapement from 1997-2006 at rm 7, including the complete count years of 1997, 2000-2001, and 2003-2005 only, was 32,100 coho salmon (Table 21). A peak escapement of 62,900 coho salmon occurred in 2004. The weir continues to be operated at this site annually.

Fishery Management and Objectives

Coho salmon sport fishing is permitted throughout the year at most sites in the ESMU and WSMU. However, portions of several ESMU fisheries are closed to salmon fishing to protect spawning fish. Closures usually include upper reaches of tributaries that are road accessible.

Flowing waters of major tributaries, or portions of tributaries, within the Susitna River drainage are restricted to unbaited, single-hook artificial lures throughout the year. These regulations are implemented as part of special management regulations for rainbow trout under the Cook Inlet and Copper River Basin Rainbow/Steelhead Trout Management Policy (CIRTMP) and in part under current Chinook salmon management strategies (Appendix A1). Under CIRTMP, only unbaited artificial lures may be used from September 1 through May 15 in all flowing waters of the Susitna River drainage Additionally, except in the Deshka River, bait is prohibited from May 15 through July 13 in waters open to Chinook salmon fishing. Exceptions have been made for fishing burbot when legal burbot fishing gear is used.

In the ESMU, the bag and possession limit for coho salmon is two fish 16 inches or more in length. Bag and possession limits were increased in the WSMU at the January 2005 BOF meeting to three fish 16 inches or more in length and six in possession, except in Alexander Creek where the two fish bag/possession limit was retained.

Besides the Deshka River weir where actual escapement is counted, four other streams are indexed on an annual basis: Rabideux Creek, Birch, Question, and Answer creeks (Table 21). There are no SEGs within the ESMU and WSMU.

Sport Fishery Performance and Escapement in 2006 and 2007

The 2006 sport coho salmon harvest was an estimated 22,700 fish from the ESMU, and 20,500 fish from the WSMU (Table 15), above the 2001-2005 means. Most escapement index counts for ESMU and WSMU streams were above average for 2006 (Table 21). The Deshka River weir succumbed to a 100-year flood that swept the ESMU and WSMU during the third week in August. No coho salmon were counted after August 15, 2006. Although incomplete due to the high waters, the 2006 weir count was 59,400 and 185% of the mean count for years in which the weir was successfully operated at rm 7.

During 2007, fishing guides and anglers reported average to below average catches of coho salmon for the WSMU throughout much of the season. Conversely, angling success across much of the ESMU was reportedly average and specifically in the Talkeetna River area, above average. A below average run was realized for the Deshka River. The final 2007 weir count for the Deshka River was 10,600 fish (Table 21). The 2007 escapement to the Yentna River, estimated by sonar at rm 4, was 40,000 coho salmon (Table 21), below the 1997-2006 mean of 58,700 fish. As stated earlier it is unknown if this is an accurate representation of the coho escapement as there are questions about the migration pattern of coho within the river.

The department conducted surveys to index escapement of coho salmon on three of the additional ESMU streams: Question, Answer, and Birch creeks. Poor water conditions may have resulted in lower than average observed counts (Table 21).

WEST COOK INLET MANAGEMENT UNIT COHO SALMON FISHERIES

Fishery Description

A description of this management unit, including access, is presented in the Chinook salmon section of this report. Little information is available regarding run timing of West Cook Inlet Management Unit coho salmon; however, it is assumed to be similar to that of the Susitna River. The Chuitna and Theodore rivers provide the major fisheries north of the West Foreland, and the Kustatan River and tributaries of Big River Lakes provide the major fishery sites south of the West Foreland. Harvest levels on Big River Lakes' tributaries surpassed those of Chuitna River every year since 2003. Currently this fishery mirrors the Kustatan River in size.

Historical Harvest and Escapement

Coho salmon harvests averaged 14,000 fish in the WCIMU from 2001-2005 (Table 15). The unit's contribution to the total NCIMA was 16% during this period. The Kustatan River is the primary producer of coho salmon in the management unit. Average harvest in this stream from 2001-2005 was an estimated 4,400 fish, accounting for approximately 32% of the harvest within this management unit (Table 19). The second and third major coho producers are tributaries of Big River Lakes, with a 2001-2005 sport harvest of 2,100 fish and the Chuitna River with 2,000 coho salmon harvested during the same period (Table 19).

During recent years the department has collected no coho salmon escapement information in the West Cook Inlet Management Unit, so very little information exists regarding coho salmon abundance.

Fishery Management and Objectives

Regulatory history of WCIMU is found in Appendix A3. In the WCIMU all flowing waters are closed to salmon fishing October 1-December 31. In the unit north of the West Foreland, the bag and possession limits for coho salmon are two per day and four in possession. South of the West Foreland the limit is three per day and six in possession.

Sport Fishery Performance and Escapement in 2006 and 2007

The 2006 sport harvest of coho salmon from West Cook Inlet unit was an estimated 11,900 fish (Table 15), 85% of the 2001-2005 mean. The largest harvest of coho salmon came from the tributaries of Big River Lakes with an estimated harvest of 4,000 fish, about 190% of the 2001-2005 mean. The Kustatan River, normally supporting the largest harvests, had the second highest harvest at 3,600 fish. Inseason catch information received in 2007 from sport anglers and guides indicated an average return.

SOCKEYE SALMON FISHERIES

The BOF will consider numerous proposals addressing the prosecution of sockeye salmon fisheries in Upper Cook Inlet in February 2008. Although no sport fishing proposals are before the BOF, stock history and status information and information relevant to management of NCIMA sockeye salmon sport fisheries may be useful to the BOF when considering these Upper Cook Inlet proposals.

FISHERY DESCRIPTION

The Yentna River is thought to support about 50% of Susitna River sockeye escapement. The sport fishery for sockeye salmon in NCIMA drainages is mostly incidental to harvest of other salmon. Big River Lakes, a major sockeye salmon sport fishery in the WCIMU, is growing rapidly and is currently the largest fishery in the NCIMA. The majority of the harvest in this fly fishing only fishery occurs at the mouth of Wolverine Creek which drains into Big River Lakes. Other directed sockeye salmon fisheries occur in the Susitna River drainage at Larson Creek (Talkeetna River drainage) in the ESMU, Lake Creek and the Talachulitna River in the WSMU, and the mouth of Nancy Lake Creek (Little Susitna River drainage) and at Jim Creek in the KAMU; harvests are generally smaller in the WCIMU (Tables 22-24).

STOCKING PROGRAM

Due to declining abundance of sockeye salmon during the early 1970s, stocking of Fish Creek with sockeye salmon was initiated in 1975. The Big Lake state fish hatchery supported the program through 1992 using Fish Creek broodstock. After the Big Lake hatchery closed in 1993, stocking continued using Fish Creek broodstock reared at the Eklutna hatchery, a private non-profit hatchery operated by Cook Inlet Aquaculture Association (CIAA), located on the Knik River in the Eklutna power plant tailrace. CIAA discontinued operation of the Eklutna Hatchery in 1998 following the 1997 release, at which time the program was switched to the Trail Lakes Hatchery, another CIAA facility. Current production goals are 9 million sockeye salmon eggs of Fish Creek brood, from which sockeye salmon fry and smolt are released annually into the Big Lake drainage.

HISTORICAL HARVEST AND ESCAPEMENT

Sport harvests of sockeye salmon in the NCIMA ranged from 3,100-23,200 fish during 1977-2005 and averaged 13,300 fish (Table 26). Within the NCIMA, the KAMU and ESMU historically accounted for the majority of the harvest of sockeye salmon. The WCIMU, with fewer accessible streams, placed last in average harvest until about 1993 when the sport fishery at Wolverine Creek (Big River Lakes) began to grow (Figure 17). The Little Susitna River, Knik River and Cottonwood Creek dominate KAMU harvests (Table 22) while ESMU harvests are predominately from the Talkeetna River, specifically Larson Creek (Table 23). The Talkeetna River accounted for 71% of the ESMU harvest from 2001-2005. Lake Creek is the largest fishery in the WSMU while the WCIMU harvest is predominately from Wolverine Creek (Big River Lakes; Tables 24 and 25). Wolverine Creek, located in Redoubt Bay Critical Habitat Area, has developed into a popular sockeye salmon fly-fishing and bear viewing area since the early 1980s. Charter operators and guides have reported actual harvest and client counts annually since 2001 (Table 27).

Sockeye salmon populations are present in numerous streams throughout the KAMU, some of which were surveyed sporadically in the past (Table 28). Bodenburg Creek, a Knik River tributary, was surveyed annually from 1968-2007, except for 1984 (Table 29).

The escapement of sockeye salmon into the Fish Creek drainage has been documented. Escapement of these late-run sockeye salmon ranged from 2,705 fish in 1973 to 307,000 fish in 1940 (Chlupach and Kyle 1990). From 1968-2005, escapement of sockeye salmon ranged from 2,700 fish in 1973 to 192,400 fish in 1984 and averaged 51,400 fish (Table 28; Figure 18). Escapements were below the historical average from 1998-2001 and 2004 to 2007.

Escapement of sockeye salmon to the Susitna River drainage was documented annually since 1978 at the Yentna River sonar site operated by the Commercial Fisheries Division at rm 4 of the Yentna River, and at various times by CIAA weirs at Chelatna Lake (Lake Creek drainage), Larson Lake (Talkeetna River drainage), and Hewitt Lake (Table 28). Within the NCIMA, Commercial Fisheries Division has also operated a weir at Packers Creek on Kalgin Island and at Judd Lake.

CIAA operated a weir on Wolverine Creek from 1981-1983 (Table 28). Increased harvest and use of the area prompted managers to investigate the escapement of sockeye salmon into Wolverine Creek beginning in 2004. A remote camera station was set up on Wolverine Creek in mid-June, 2004. Technical problems have resulted in incomplete counts since 2004 (Table 28).

FISHERY MANAGEMENT AND OBJECTIVES

Regulations for sockeye salmon sport fisheries of the NCIMA follow general regulations for other salmon over 16 inches in length. The bag and possession limit on WSMU and WCIMU tributaries is three per day and six in possession; ESMU and KAMU tributaries is three per day and three in possession. Wolverine Creek is managed as the area's only fly-fishing only waters June 1-July 31, within a 500-yard radius of its mouth.

The management objective for sockeye salmon in the NCIMA sport fisheries is to attain established escapement goals as measured at various weirs and sonar sites while harvesting fish in excess of these escapement goals. The SEG for Fish Creek is 20,000-70,000 sockeye salmon counted through a weir. The SEG for the Yentna River is 90,000-160,000 counted by side-scan sonar at rm 4 of the Yentna River. The Yentna River also has an Optimal Escapement Goal (OEG) of 75,000-185,000 fish when returns to the Kenai River exceed 4,000,000 sockeye salmon.

Management of Fish Creek sockeye salmon has undergone many changes in conjunction with an observed decline in total escapements in recent years. During the February 2002 BOF meeting, Fish Creek sockeye salmon were designated as a stock of yield concern after demonstrating a chronic inability to meet the escapement goal, 50,000 fish at the time, over the previous five years (Figure 18; Table 28). At the same meeting, an SEG of 20,000-70,000 fish was recommended based on wild fish (pre-hatchery) escapements from 1938-1978 (Bue and Hasbrouck *Unpublished*). An action plan was developed, as directed by the BOF in 2002, to modify current land use patterns that may adversely affect fish habitat resource values in the Fish Creek watershed through education, increased community planning involvement, monitoring, and research to increase escapement toward the goal of achieving the SEG. Specific actions recommended for achieving this objective may be found in Sweet et al. (2004).

Litchfield and Willette (2002) found dissolved oxygen and nutrient concentrations similar to levels experienced in the early 1980s, suggesting no relationship to the decline in survival of Fish Creek sockeye salmon. Aggregate survival (hatchery and wild fish) to the smolt life stage was ¼ the survival rates of other sockeye producing systems during the late 1980s. Further, wild survival to the smolt stage was lower than hatchery stocked fish. Two plausible explanations to overall decline in wild stock productivity were identified: 1) a cofferdam at the Big Lake outlet could have reduced productivity of the subpopulation spawning below the dam; 2) Big Lake Hatchery operations prevented sockeye salmon from entering Meadow Creek above the Hatchery in an effort to reduce potential spread of disease (Litchfield and Willette 2002). The cofferdam was removed in 2004 in an attempt to improve passage of fry into the Lake (Hasbrouck and Edmundson 2007).

The Fish Creek stock was reevaluated at the 2005 BOF meeting where it was determined to no longer be a stock of yield concern. Regardless of the official standing, sockeye salmon returns to Fish Creek since 2004 have been only 20%-50% of the mean escapement for years since enhancement of the stock began (Table 28). Since 2004, sockeye salmon sport fisheries occurring on the Susitna River and Fish Creek have been restricted through various emergency orders prohibiting retention and the Fish Creek personal use fishery has not been opened since 2001 (see the personal use section below for details). The EOs were based on low inseason escapement estimates generated at the Yentna River sonar and additionally in 2006, on a low preseason projection of 190,000 sockeye salmon returning to Susitna River. About half the projected sockeye return, or 95,000 fish, were projected to ascend the Yentna River in 2006.

SPORT FISHERY PERFORMANCE AND ESCAPEMENT IN 2006 AND 2007

In 2006, anglers fishing KAMU streams reported fair sockeye catches. However, based on low Yentna sonar counts early in the season, combined with a preseason projection near the low end of the Yentna River SEG range, an effort was made to reduce the sport harvest of Susitna sockeye on July 15 by prohibiting retention of sockeye while fishing for other salmon. The EO was rescinded and sport harvest resumed after the low end of the escapement goal for Yentna River was achieved on August 11, near the end of the run. The final Yentna River sonar count was 92,045 fish, within the SEG range of 90,000-160,000 (Table 28). Since the EO spanned the majority of the historical run, its effect likely reduced harvest on major fisheries of the Susitna, such as Larson Creek.

Harvest from the ESMU was 1,400 sockeye salmon and from the WSMU, 630 fish, 60% and 86% below their 2001-2005 means, respectively (Tables 23 and 24). The CIAA-operated Larson

Creek weir ended the season with an above average count of 56,300 fish. A return of 32,600 sockeye was counted at the Fish Creek weir (Table 28), within the SEG of 20,000-70,000 fish. The 2006 sport harvest of sockeye salmon in the KAMU totaled 4,600 fish. The majority of the harvest occurred in the Knik River (Table 22). The Wolverine Creek fishery at Big River Lakes accounted for the majority of the total sport harvest of 5,000 fish from the WCIMU (Tables 25). The KAMU was 12% below its 2001-2006 mean harvest of 5,200 sockeye salmon while the WCIMU was 144% of its 5-year mean of 3,400 fish (Tables 22 and 25).

In 2007, anglers fishing KAMU streams reported below average sockeye catches. A return of 27,900 sockeye salmon was counted at the Fish Creek weir, within, but near the low end of, the SEG range (Table 28). Talkeetna River anglers and spot checks by department staff indicated an average year at Clear and Larson creeks. Fisheries on the Yentna River were reported to be below average. The final Larson Creek weir count was 47,800 sockeye salmon, above the historical mean of 32,300 fish (Table 28). Based on inseason escapement estimates from the Yentna River sonar, an EO was issued on August 11 closing the Susitna River to the harvest of sockeye salmon. The Yentna River sonar count of 79,900 was below the SEG range of 90,000-160,000 (Table 28).

In light of recent declines in sockeye salmon escapements to the Susitna River, a major effort to better understand the dynamics surrounding sockeye salmon production in the Susitna River began in 2006. A three-year capture-recapture study using a combination of fish wheels and weirs is being used to estimate abundance. Sport Fish Division operated fish wheels on the lower Susitna near Flathorn Lake and on the upper Susitna near Sunshine. Commercial Fish Division operated fish wheels at rm 4 of the Yentna River. CIAA operated weirs on outlet streams of eight major sockeye-producing lakes: Chelatna, Shell, Hewitt, Judd, Larson, Stephan, Byers, and Swan lakes. The whole-drainage abundance estimate derived from the capture-recapture study will be compared to the sonar count of sockeye salmon at rm 4 of the Yentna River to establish the relationship between the two and whether the sonar can be used as a reliable index in future years. Part of this project is directed at establishment of a genetic baseline for Susitna sockeye salmon. Microsatellite and Single Nucleotide Polymorphism (SNPs) technology will be used to further our understanding of stock identification and, in turn, exploitation of Susitna origin sockeye among various fisheries. The validity of stock composition estimates generated by the currently used weighted age composition analysis method will be tested as will historical estimates evaluated (Tobias and Willette *In prep*).

NORTHERN PIKE FISHERIES

The BOF will consider four proposals (352-355) to liberalize methods and means and general harvest of northern pike in various locations within the NCIMA.

FISHERY DESCRIPTION

Northern pike are not indigenous to the NCIMA although they are north of the Alaska Range. It is believed they were illegally introduced into the area during the early 1950s. Since then, northern pike have expanded their range both naturally and through subsequent illegal stockings. They have been reported in more than 100 lakes and more than a dozen tributaries of the Susitna River (Sweet and Rutz 2001; Appendix B1). Prior to about 1992 several of these lakes consistently produced northern pike in the trophy class range (greater than 40 inches for catch-and-release honorary certificates or 15 pounds) and it was common to find fish weighing up to 20 lb and occasionally over 30 lb. The potential for proliferation of northern pike in the Susitna

Drainage is immense. Most of the habitat suitable to northern pike is found within the lower lying WSMU. The area from the headwaters of the Deshka River (Petersville Road) across the Kahiltna River to Hewitt Lake, then down to the mouth of the Susitna River, encompasses areas where most of the pike and pike habitat exists (Figure 8). In the KAMU, most pike habitat exists in a triangle created by the Susitna River and Parks Highway south of Willow (Figure 3). This area includes the Nancy Lake, Big Lake, and the Little Susitna River drainages, and lakes of the Susitna Flats such as Flathorn and Figure Eight lakes. Growing or even new pike fisheries are expected in these areas as northern pike continue colonization of the NCIMA. Northern pike were documented in Big Lake and Nancy Lake in 2005 (Appendix B1). The amount of available pike habitat in ESMU waters is sparse when compared to that of the WSMU or KAMU. Regardless, pike have been documented or reported in some of the lakes in the ESMU (Appendix B1).

HISTORICAL HARVEST AND CATCH

In 1977, the first year estimates were available, harvest of northern pike in the NCIMA was only 130 fish, accounting for only 1% of the statewide harvest of northern pike (Table 30). Northern pike harvests slowly increased through 1983 when the harvest totaled 950 fish. Since 1984, harvest of northern pike has greatly increased, likely due to continued range expansion and increased angler interest. Interest in northern pike as a sport fish grew in the mid 1990s as concerns about their spread increased and regulations were subsequently liberalized (Appendix A4). As interest increased, harvest increased sharply (Figure 19). Harvests have been over 5,000 fish in all years since 1990 except 1994 and 1995. The 2001-2005 average harvest in the NCIMA was 11,300 fish, about twice the historical average of 5,100 fish (Table 30).

Since 1990, the first year catch estimates were generated from the SWHS, the average catch of northern pike in the NCIMA has been about 3.5 times the harvest; 70% of pike are released by anglers (Figure 20). The first northern pike catch from the ESMU and WCIMU was documented in the SWHS in 1996 and 1993, respectively (Table 30). Previously, other than anecdotal information, no information was available regarding northern pike catch or harvest from these areas. The NCIMA harvest surpassed the Arctic-Yukon-Kuskokwim area for the first time in 1997, but the NCIMA catch remains less than the AYK catch.

FISHERY MANAGEMENT AND OBJECTIVES

The management objective for this fishery is to maximize harvest opportunity. The majority of the NCIMA does not have a bag or possession limit for northern pike. Note that this is in contrast to other areas of Alaska where pike are indigenous and are managed conservatively.

In 1997 and 2002, the BOF liberalized harvest methods in many lakes within the NCIMA where pike populations were pervasive (Appendix A4). Additional lakes may be added to this list as pike gain strongholds in new areas through continued range expansion. In 1998 the BOF adopted a slot limit regulation for Alexander and Trapper lakes to provide anglers the opportunity to catch large fish. The daily bag limits were set at: less than 22 inches in length, no limit; 22-30 inches, no retention; and over 30 inches, 1 per day. The objective was to remove fish less than 22 inches in length from the population while protecting fish in the 22–30 inch range, allowing them a chance to attain a larger size when they would again be available for harvest. In 2002 the slot limit was repealed for Trapper Lake when it was determined only one lake, Alexander Lake, would be used to evaluate the effectiveness a slot limit management strategy.

The current management strategy was based on a study conducted from 1994 to 1997 that described seasonal movements and age, length, and diet composition of northern pike in selected Susitna River tributaries (Rutz 1999). This study gathered baseline data to describe pike population structure and measure the effects of pike on salmonid productivity in the area. Results were extrapolated to potential effects on other salmonid-producing areas of NCI (Whitmore and Sweet 1998; Appendix B1). Coho salmon productivity was found to be most adversely affected due to overlap in habitat use (Rutz 1999; Roth and Stratton 1984). Areas that once contained healthy fish populations but that now contain mostly pike include Alexander Lake and all inlet streams, Fish Creek of the Nancy Lake canoe system, Fish Creek of Kroto Slough, and Fish Lake Creek of the Yentna River.

Future management of northern pike in the NCIMA will follow guidelines and strategies outlined in the Management Plan for Invasive Northern Pike in Alaska (ADF&G 2007) implemented in 2005, and the Alaska Aquatic Nuisance Species Management Plan (ADF&G 2002). Management will be integrated with long-term investigations and will follow the six steps identified in the Management Plan for Invasive Northern Pike in Alaska: 1) detection and monitoring, 2) assessment, 3) defining management options, 4) public involvement, 5) management action, and 6) evaluation of management. Possible management strategies will depend on assessment results and will likely be tailored by specific system.

Since the total number of waters identified for investigations outnumbers those that can be visited during one season, detection and assessment investigations are considered to be long-term and subject to prioritization. Priority for assessment work is currently given to systems most vulnerable to pike colonization such as anadromous and stocked waters containing suitable pike habitat. At least eight areas that could be threatened should pike invade include: 1) Mama and Papa Bear Lake in Talkeetna, 2) Caswell Creek along the Parks Highway, 3) Rabideux Creek near Susitna River bridge, 4) Big Lake system, 5) Little Susitna system, 6) Jim Creek system, 7) Cottonwood Creek system, and 8) Three Mile River and lakes of West Cook Inlet. Pike have now been confirmed in Big Lake and the Little Susitna River. It is suspected that pike have invaded Cottonwood Creek because they have been documented in Anderson Lake, a lake intermittently connected to the Cottonwood system. The department has had anecdotal reports of northern pike in Jim Creek, but their presence has not been documented. Because the Big Lake, Cottonwood, and Jim Creek systems have ideal pike habitat, salmonid populations would likely be severely affected by colonization. The Little Susitna River has limited pike habitat, so the negative effects to salmonid stocks there may be limited. Mama and Papa Bear lakes and WCIMU area lakes were assessed in 2007. No pike were found in Mama and Papa Bear lakes; pike were documented in Chuitbuna Lake in the WCIMU.

SPORT FISHERY PERFORMANCE IN 2006 AND 2007

The NCIMA estimated harvest of northern pike during the 2006 season was 11,400 fish, approximately 100 fish more than the 2001-2005 mean harvest. The KAMU and WSMU each accounted for the majority of the harvest, with the remainder from the ESMU and WCIMU (Table 30). The Nancy Lake Complex and Flathorn lakes contributed to approximately 58% of the KAMU mean catch from 2001-2005 (Table 31). Alexander Creek Drainage was the main producer of northern pike (>50%) on the WSMU throughout the same period (Table 32). Estimated harvest and catch of northern pike during 2007 is expected to be similar to 2006.

BURBOT FISHERIES

The BOF will consider two proposals (350 and 351) to restrict burbot harvest on Big Lake.

FISHERY DESCRIPTION

The majority of burbot angling in the NCIMA occurs in the KAMU, primarily in Big Lake (Figure 3; Tables 33-36). Nancy Lake, also in the KAMU, is the only water body in the NCIMA closed to the harvest of burbot. Burbot fisheries of the ESMU are primarily located near the confluences of tributaries along the Susitna River, including the Talkeetna River. Access to ESMU fisheries is primarily from the George Parks Highway and by jet boat. Burbot fisheries of the WSMU occur on the Yentna River and all streams entering the Susitna River from the west. Access is by boat or aircraft.

HISTORICAL HARVEST

Harvest in the NCIMA ranged from 520-5,100 fish since 1977 with a mean harvest of 1,700 fish (Table 33). Harvest in the NCIMA increased substantially from 1977 to 1987 (Figure 21). Historically, the vast majority of the burbot harvest in the NCIMA has occurred in the KAMU, specifically in the Big Lake fishery (Table 34). About 50% of the total harvest was from the KAMU from 2001-2005 (Table 33) and 25% each from the ESMU and WSMU. Within the KAMU, nearly 79% of the harvest occurs in Big Lake. Burbot harvest in the Susitna River Drainage is spread out and occurs primarily in the flowing waters.

FISHERY MANAGEMENT AND OBJECTIVES

The management objective for this fishery is to maintain historical size and age compositions and abundance levels.

Burbot are a long lived fish commonly reaching 15 years of age. In Alaska they often do not reach sexual maturity until late in life, 6-7 years in the more northern extent of their range (Morrow 1980). The long life and slow reproduction rate requires more conservative management of this species to maintain healthy populations.

In Southcentral Alaska over-exploitation of burbot in lakes by sport fishing was documented in 1991 (Lafferty et al. 1992). Subsequently, restrictive measures were taken to protect burbot from overexploitation. In 1993 regulations prohibited the use of set lines. Lines had to be closely attended and the number of lines and hooks used for burbot could not exceed the daily bag limit. Additionally Nancy Lake was closed to the harvest of burbot. In 1997 the closely attended portion of the regulation adopted in 1993 was repealed for the flowing waters of the Susitna River and Yentna River. In 1998 bait was restricted and single hook, artificial only regulations went into effect on Big Lake during the winter fishery (November 1-April 30). This measure was taken to reduce harvest and catch-and-release associated mortality on burbot, Arctic char, and rainbow trout stocks in Big Lake.

SPORT FISHERY PERFORMANCE IN 2006 AND 2007

The 2006 harvest of 550 burbot (Table 33) in the KAMU represents 51% of the NCIMA total harvest for this stock. Within the KAMU, 94% of the harvest was from Big Lake (Table 34). The ESMU harvest of 406 fish (Table 33) represents 38%, and the WSMU harvest of 126 fish (Table 33) represents 12% of burbot harvested in the NCIMA. Harvest patterns are expected to be similar in 2007.

PERSONAL USE FISHERIES

The BOF will consider three proposals (356-358) addressing personal use fisheries within the NCIMA. Two proposals would open new personal use salmon fisheries and one proposal would limit harvest of smelt in Cook Inlet.

OVERVIEW

Brannian and Fox (1996) and Reimer and Sigurdsson (2004) provide a detailed history of subsistence and personal use salmon fishing in Upper Cook Inlet. Sockeye salmon is the predominant harvest in these fisheries in Upper Cook Inlet.

Fish Creek sockeye salmon have long been used in commercial and subsistence (Engel and Vincent-Lang 1992), as well as personal use, fisheries. The Knik Arm subsistence fishery was operational through 1970. In 1971 the fishery was closed because of declining sockeye salmon escapements into Fish Creek. It was reopened in 1984 and 1985, and then closed again in 1986.

The Fish Creek commercial set gillnet and personal use dip net fisheries along the northwest shore of Knik Arm were initiated by the BOF in 1986 to harvest sockeye salmon surplus to spawning and egg take needs. These fisheries continued annually, contingent upon a projected escapement of 50,000 Fish Creek sockeye salmon. The commercial gillnet fishery was closed by BOF action from 1999 through 2001, due to low returns in 1997 and 1998. The fishery was eliminated by the BOF in 2002 because returns continued below desired escapement levels. Mean annual harvest of sockeye salmon in the commercial gillnet fishery while in existence was 23,400 fish (Table 37). The personal use fishery is authorized for Fish Creek, but it has been closed since 2001.

The Upper Cook Inlet Subsistence Management Plan provided for a subsistence set gillnet fishery in marine waters in the Northern District of Upper Cook Inlet in 1991, 1992 and 1994. Subsistence set gillnet fishing was allowed for a total of 17 days between May 21 and September 28. Hours for the fishery were 8:00 a.m. until 8:00 p.m. The threat of a court-ordered closure of this subsistence fishery for the 1995 season caused the BOF to take action to allow the fishery to proceed as a personal use gillnet fishery. Annual harvest ranged from 3,900 fish in 1985 to 53,300 fish in 1994 with a mean harvest of 31,500 sockeye salmon (see Table 23 in Sweet et al. 2003). Coho, sockeye, and pink salmon were harvested as well. This personal use gillnet fishery was eliminated by the BOF prior to the 1996 season.

FISHERY DESCRIPTION

The current personal use fisheries within the NCIMA include a sockeye salmon dip net fishery in Fish Creek and a personal use smelt fishery, the majority of which takes place in the Susitna River. There is also a small harvest in the Knik Unit at the mouth of Fish Creek (Tables 38).

HISTORICAL HARVEST AND ESCAPEMENT

The personal use dip net fishery on Fish Creek sustained an annual mean harvest of 9,700 sockeye salmon from 1987-2001, ranging from 460 fish in 2001 to 37,200 fish in 1993 (Table 37). The fishery was closed by EO after the third day in 2001 and has not opened since. Prosecution of this fishery is dependent on projected escapements into Fish Creek. Levels of escapement have been mostly below average since about 1998.

The average Susitna River smelt harvest from 1996–2005 was 4,800 fish and ranged from 10-16,900 fish (Table 38). The inriver return of smelt to the Susitna River drainage ranges in the millions with personal use harvest accounting for less than 1% of this return. In terms of harvest, this fishery is likely one of the most underutilized in the state. It is managed inseason with spot checks conducted by Palmer Area staff and postseason through the SWHS. It is likely that unless increased access is provided to the Susitna River, the personal use harvest of smelt will remain fairly stable.

FISHERY MANAGEMENT AND OBJECTIVES

In 2002 the SEG for sockeye salmon on Fish Creek was changed from a point goal of 50,000 fish to a range of 20,000-70,000 fish (Bue and Hasbrouck *Unpublished*). Further, the Fish Creek dip net fishery was modified under the Upper Cook Inlet Personal Use Salmon Fisheries Management Plan (5AAC 77.540). The commissioner will open the fishery from July 10 through July 31, if the department projects the escapement of sockeye salmon into Fish Creek will be above the upper end of the escapement goal of 20,000-70,000 fish. Prior to 2002, the fishery was open until closed by EO. Participants in the fishery must obtain an Upper Cook Inlet personal use permit, which also includes the Kenai River and Kasilof River personal use dip net fisheries, and the Kasilof River set gillnet personal use fishery. The annual limit is 25 fish for the head of household plus 10 fish for each additional member of the household, and is inclusive of all Upper Cook Inlet personal use fisheries. Permits must be returned with the total catch recorded. The closing date is set at July 31 to limit the number of coho salmon harvested.

The management objective for the Fish Creek personal use fishery is to allow escapement of sockeye salmon along the entire course of the return while harvesting fish in excess of spawning needs. There are no specific management objectives for the personal use smelt fishery. All fisheries are managed to provide sustained yield.

FISHERY PERFORMANCE AND ESCAPEMENT IN 2006 AND 2007

The personal use fishery on Fish Creek was not opened in 2006 or 2007 due to low returns to the Fish Creek system as measured by the Fish Creek weir. The total weir count in 2006 and 2007 was 32,600 and 27,900 fish, respectively (Table 28).

The 2006 NCIMA estimated smelt harvest was 71 fish, all from the KAMU (Table 38). No smelt were reported harvested in the WSMU. It should be noted that no reported harvest has occurred in the past. This most likely only indicates low fishery participation, which makes it difficult to estimate harvest through the SWHS which surveys anglers randomly. The 2001-2005 mean harvest in the WSMU was 6,600 smelt. Inseason observations of run strength by staff in 2006 and 2007 indicate good returns. The smelt harvest in 2007 is expected to be similar to the 2001-2005 mean.

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TABLES AND FIGURES

Table 1.-Estimated harvests, by all user groups, of Chinook salmon of Northern Cook Inlet origin, 1893-2006.

Year	Harvest	Year	Harvest	Year	Harvest
1893	24,000	1935	60,060	1977	5,446
1894	12,400	1936	64,850	1978	4,430
1895	20,159	1937	68,786	1979	9,837
1896	14,461	1938	46,130	1980	11,301
1897	11,266	1939	42,181	1981	11,372
1898	13,111	1940	50,413	1982	17,121
1899	13,682	1941	83,858	1983	18,706
1900	21,346	1942	76,144	1984	23,996
1901	27,455	1943	89,105	1985	25,842
1902	39,210	1944	68,168	1986	43,192
1903	52,818	1945	55,362	1987	40,335
1904	24,058	1946	51,425	1988	44,153
1905	14,134	1947	85,443	1989	50,981
1906	17,936	1948	84,797	1990	42,430
1907	50,355	1949	89,025	1991	43,397
1908	27,019	1950	130,274	1992	52,788
1909	47,699	1951	150,010	1993	54,335
1910	39,222	1952	59,600	1994	36,189
1911	44,676	1953	71,544	1995	22,963
1912	38,293	1954	52,260	1996	22,981
1913	50,922	1955	37,199	1997	24,505
1914	38,043	1956	52,248	1998	26,569
1915	67,034	1957	34,214	1999	37,621
1916	50,316	1958	18,278	2000	37,325
1917	52,399	1959	26,226	2001	33,894
1918	27,909	1960	22,031	2002	29,888
1919	19,041	1961	15,822	2003	31,308
1920	31,650	1962	16,216	2004	31,376
1921	11,157	1963	14,106	2005	33,078
1922	24,824	1964	3,698	2006	33,985
1923	23,929	1965	7,801		
1924	21,610	1966	815		
1925	40,826	1967	623		
1926	60,496	1968	1,163		
1927	69,923	1969	3,927		
1928	55,908	1970	1,853		
1929	54,155	1971	10,494		
1930	57,854	1972	5,748		
1931	41,122	1973	246		
1932	56,745	1974	238		
1933	47,425	1975	301		
1934	57,903	1976	692		

Source: Delaney and Vincent-Lang *Unpublished*; Fox and Shields 2000; 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, *In prep*.

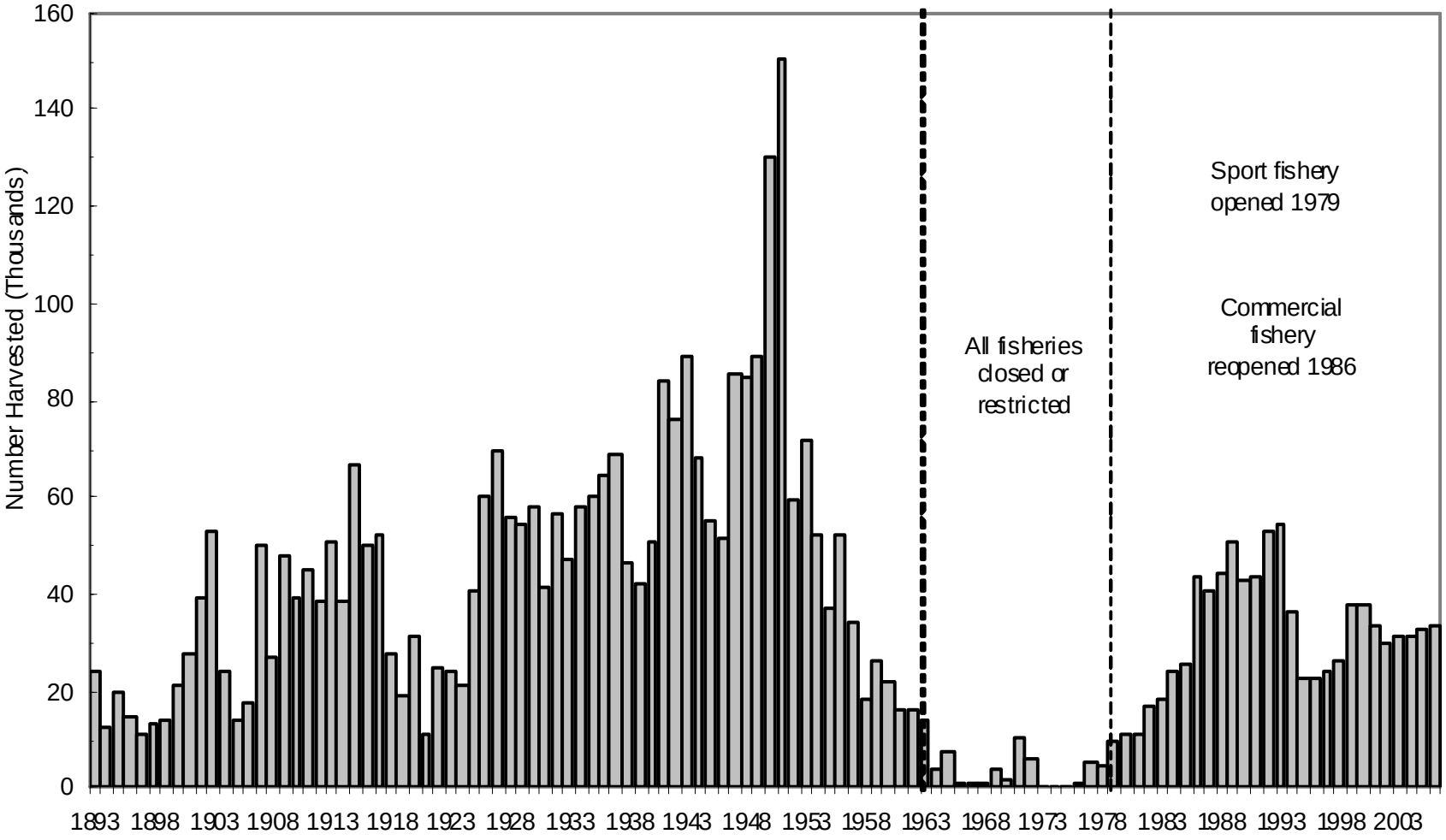


Figure 2.-Harvest of Chinook salmon by all users, 1893-2006.

Table 2.-Estimated harvests of Chinook salmon originating from the Northern Cook Inlet Management Area, 1977-2007.

	Commercial[a]			Recreational[b]						
Year	NCI[c]	Kustatan	Total	Knik Arm Drainages	Eastside Susitna	Westside Susitna	West Cook Inlet	Total	Subsistence[d]	NCIMA Total
1977	565	207	772	207	1,056	2,938	473	4,674		5,446
1978	666	221	887	140	886	2,039	478	3,543		4,430
1979	1,714	159	1,873	800	1,298	5,768	98	7,964		9,837
1980	993	174	1,167	646	1,370	6,148	34	8,198	1,936	11,301
1981	725	43	768	1,466	2,202	4,742	192	8,602	2,002	11,372
1982	2,716	391	3,107	1,666	2,063	8,573	147	12,449	1,565	17,121
1983	933	163	1,096	1,255	2,852	9,568	1,185	14,860	2,750	18,706
1984	1,004	214	1,218	2,057	4,428	12,106	1,833	20,424	2,354	23,996
1985	1,890	211	2,101	1,889	4,342	13,644	2,029	21,904	1,837	25,842
1986	15,488	308	15,796	1,524	8,569	13,402	2,378	25,873	1,523	43,192
1987	12,701	176	12,877	2,476	8,603	13,350	1,477	25,906	1,552	40,335
1988	12,836	123	12,959	2,916	9,139	15,970	1,695	29,720	1,474	44,153
1989	12,731	1,144	13,875	4,341	9,783	19,343	2,325	35,792	1,314	50,981
1990	9,582	1,084	10,666	2,022	9,423	17,425	2,097	30,967	797	42,430
1991	6,859	925	7,784	2,277	9,083	21,836	762	33,958	1,655	43,397
1992	4,554	964	5,518	3,969	21,307	18,737	1,213	45,226	2,044	52,788
1993	3,307	424	3,701	3,602	22,688	21,142	1,955	49,387	1,247	54,335
1994	3,185	449	3,634	4,303	14,970	10,248	1,583	31,104	1,451	36,189
1995	4,130	198	4,328	1,707	7,872	6,265	693	16,537	2,098	22,963
1996	1,958	145	2,103	1,579	11,023	5,879	1,358	19,839	1,039	22,981
1997	1,133	113	1,246	2,938	10,989	7,799	894	22,620	639	24,505
1998	2,547	83	2,630	2,031	10,472	9,716	693	22,912	1,027	26,569
1999	2,812	776	3,588	2,724	16,875	12,131	1,073	32,803	1,230	37,621
2000	2,307	759	3,066	2,824	11,774	17,341	1,163	33,102	1,157	37,325
2001	1,811	712	2,523	2,255	13,504	13,914	722	30,395	976	33,894
2002	1,895	439	2,334	3,195	10,695	11,357	1,227	26,474	1,080	29,888
2003	1,670	445	2,115	2,562	9,499	15,035	1,124	28,220	973	31,308
2004	2,058	430	2,488 [e]	2,556	8,498	15,694	782	27,530	1,345	31,363
2005	3,373	87	3,460	3,692	8,453	15,945	546	28,636	982	33,078
2006	4,261	244	4,505	3,813	7,339	16,454	1,038	28,644	836 [e]	33,985
2007	3,822	42	3,864 [e]	Data not available						

[a] Fox and Shields 2005, Shields 2007.

[b] 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, *In prep*.

[c] Northern District total.

[d] Source of data is Shields 2007. Includes Tyonek subsistence fishery 1980-2007 and Northern/Central districts subsistence fisheries 1985 and 1991-1993. 1994-1995 data include Northern districts.

[e] Preliminary data.

Table 3.-Chinook salmon escapement goals for the Northern Cook Inlet Management Area in 2006.

Drainage	Escapement Goal Range	Type[a]	Method of Survey
Knik Arm Management Unit			
Little Susitna River	900-1,800	SEG	Aerial
Eastside Susitna River Management Unit			
Chulitna River	1,800-5,100	SEG	Aerial
Clear Creek	950-3,400	SEG	Aerial
Goose Creek	250-650	SEG	Aerial
Little Willow Creek	450-1,800	SEG	Aerial
Montana Creek	1,100-3,100	SEG	Aerial
Prairie Creek	3,100-9,200	SEG	Aerial
Sheep Creek	600-1,200	SEG	Aerial
Willow Creek	1,600-2,800	SEG	Aerial
Deception Creek	No goal		
Westside Susitna River Management Unit			
Alexander Creek	2,100-6,000	SEG	Aerial
Deshka River	13,000-28,000	BEG	Weir
Lake Creek	2,500-7,100	SEG	Aerial
Peters Creek	1,000-2,600	SEG	Aerial
Talachulitna River	2,200-5,000	SEG	Aerial
West Cook Inlet Management Unit			
Chuitna River	1,200-2,900	SEG	Aerial
Lewis River	250-800	SEG	Aerial
Theodore River	500-1,700	SEG	Aerial

[a] SEG is sustainable escapement goal; BEG is biological escapement goal.

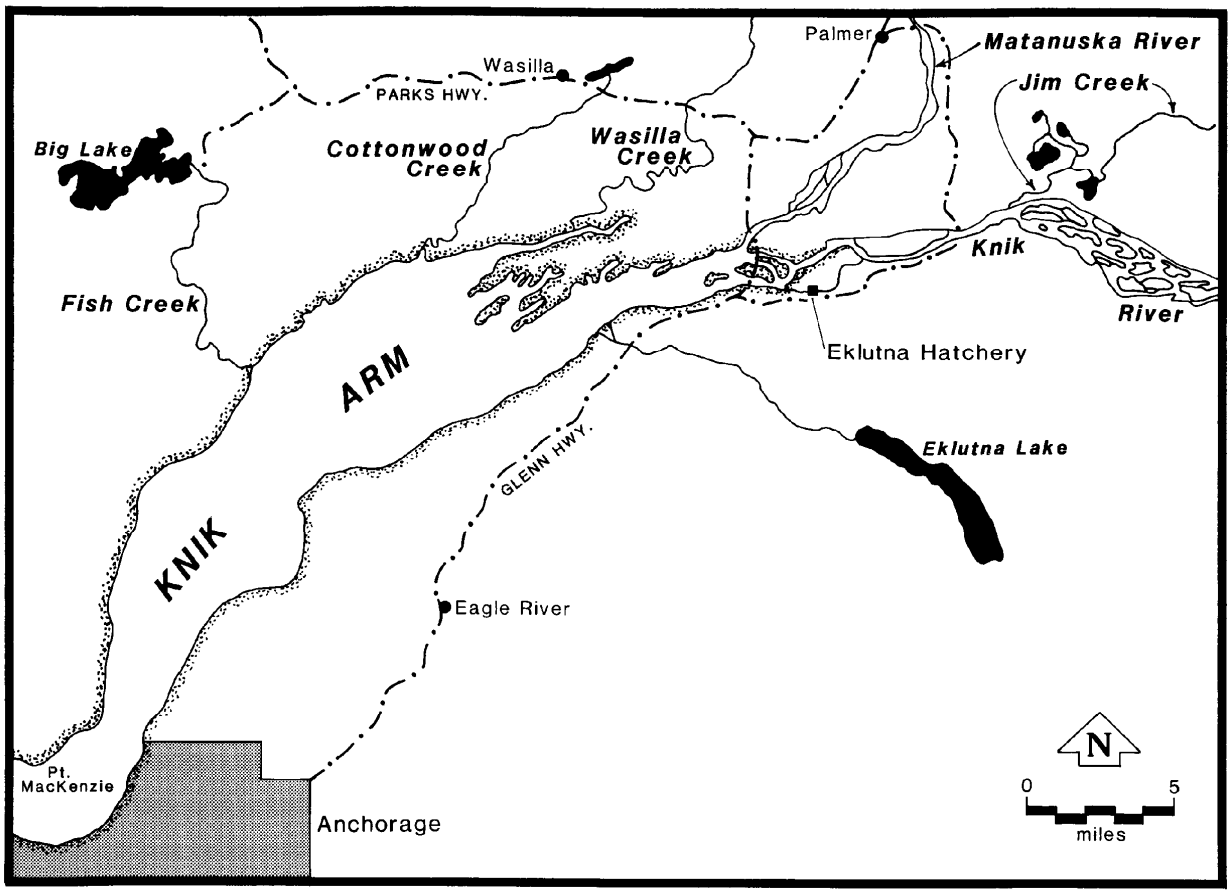


Figure 3.-The Knik Arm Management Unit.

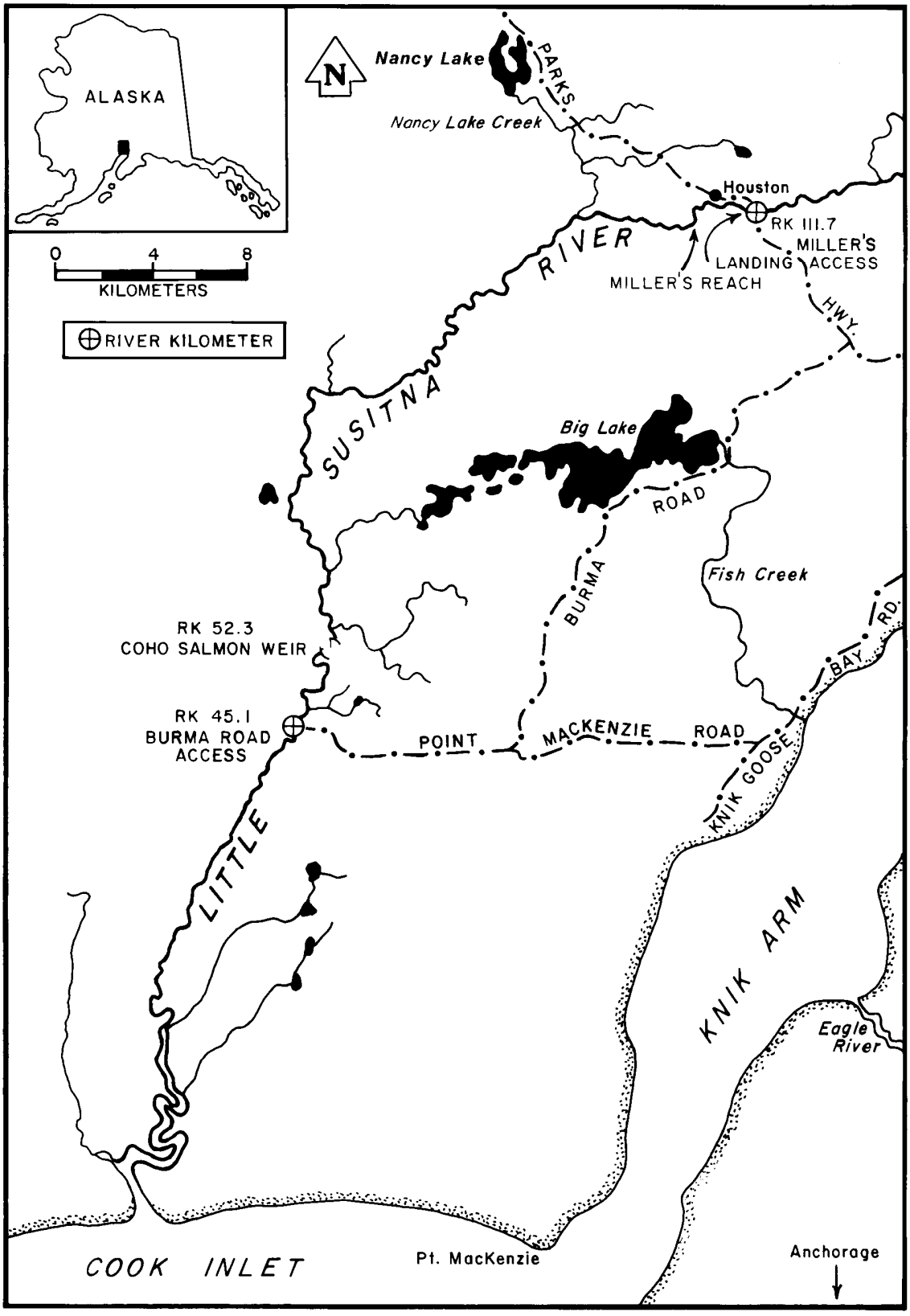


Figure 4.-The Little Susitna River.

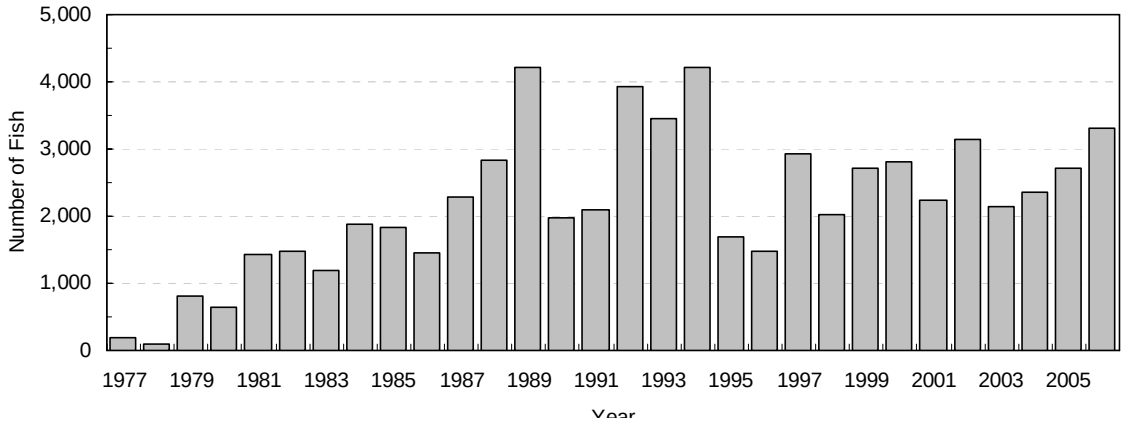


Figure 5.-Harvest of Chinook salmon from the Little Susitna River, 1977-2006.

Table 4.-Harvest of Chinook salmon from the Knik Arm Management Unit, 1977-2006.

Year	LittleSusitna River	Eklutna Tailrace	Other	Total
1977	191		16	207
1978	93		47	140
1979	800		0	800
1980	646		0	646
1981	1,418		48	1,466
1982	1,467		199	1,666
1983	1,187		68	1,255
1984	1,883		174	2,057
1985	1,845		44	1,889
1986	1,457		67	1,524
1987	2,282		194	2,476
1988	2,822		94	2,916
1989	4,204		137	4,341
1990	1,965		57	2,022
1991	2,102		175	2,277
1992	3,920		49	3,969
1993	3,441		161	3,602
1994	4,204		99	4,303
1995	1,698		9	1,707
1996	1,484		95	1,579
1997	2,938		0	2,938
1998	2,031		0	2,031
1999	2,713		11	2,724
2000	2,802		22	2,824
2001	2,243		12	2,255
2002	3,144		51	3,195
2003	2,138	399	25	2,562
2004	2,362	23	66	2,451
2005	2,724	941	27	3,692
2001-2005 Mean	2,522	454	36	2,831
2006	3,303	484	26	3,813

Source: 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, *In prep*.

Table 5.-Escapement of Chinook salmon, Knik Arm Management Unit, 1977-2007.

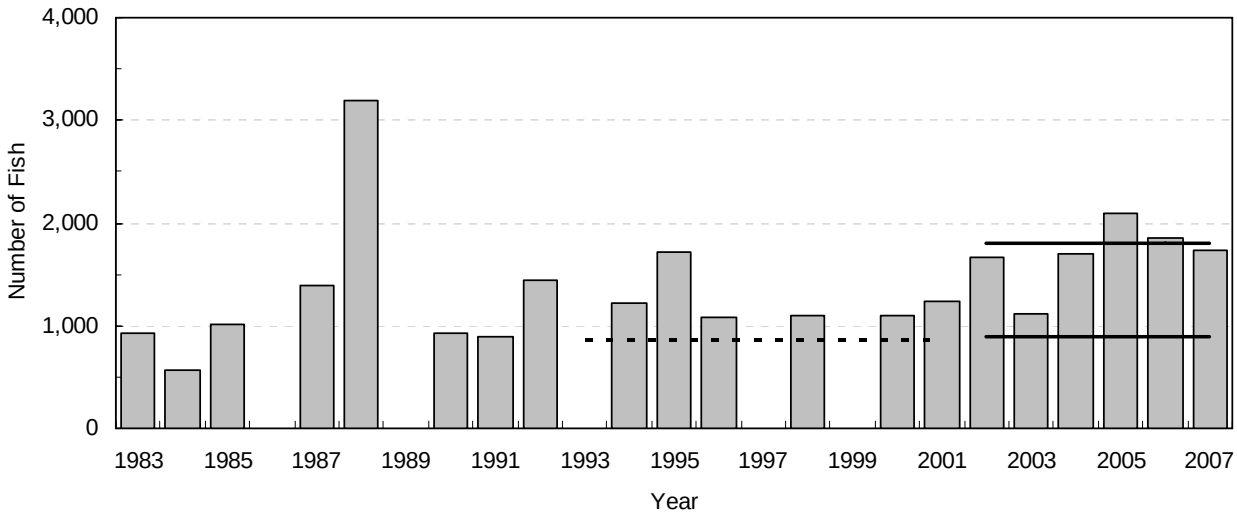
Year	Little Susitna River		Moose Creek [a]
	Weir	Aerial	
1977			
1978			
1979		– [b]	253
1980		– [b]	
1981		– [b]	238
1982		– [b]	406
1983		929	452
1984		558	541
1985		1,005	475
1986		– [b]	419
1987		1,386	957
1988	7,374	3,197	1,072
1989	4,367	– [b]	999
1990		922	545
1991		892	704
1992		1,441	959
1993		– [b]	175 [c]
1994	2,981	1,221	894
1995	2,809	1,714	488
1996		1,079	652
1997		– [b]	652
1998		1,091	214
1999		– [b]	744
2000		1,094	198
2001		1,238	275
2002		1,660	310
2003		1,114	471
2004		1,694	197
2005		2,095	254
2006		1,855	216
Means			
1977-2006		1,378	510
1997-2006		1,480	353
2002-2006		1,684	290
SEG [d]		900-1,800	
2007		1,731	330

[a] Foot survey through 1994, helicopter beginning in 1995.

[b] No count conducted, turbid water.

[c] Late count

[d] Sustainable escapement goal.



Note: escapement was not counted in 1986, 1989, 1993, 1997, and 1999.

Figure 6.-Escapement of Chinook salmon into the Little Susitna River (1983-2007), biological escapement goal (dashed line, 1993-2001)) and sustainable escapement goal range (solid lines, 2002-2007).

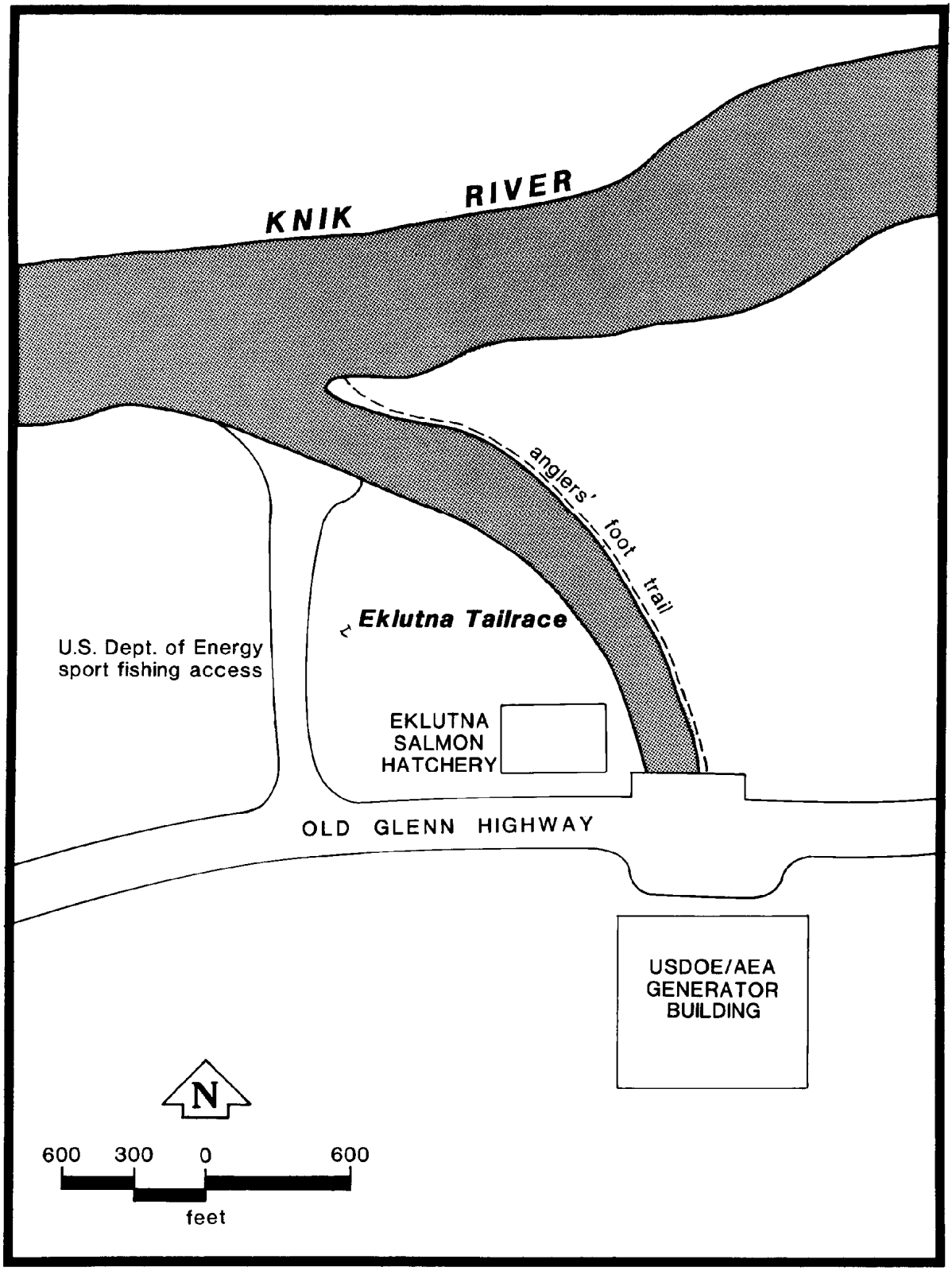


Figure 7.-The Eklutna power plant tailrace stocking location and fishery.

Table 6.-Chinook salmon smolt stocked into Eklutna Tailrace, and harvest of returning adults, 2002-2007.

Release Year	Brood Year	Smolt Released	Mean Size (g)	Release Date	Harvest
2002	2001	106,991	11.3	5/20	
2003	2002	218,492	12.8 (50.05%), 12.0 (49.95%)	6/3, 6/4	398
2004	2002 [a]	215,165	13.4	5/19	23
2005	2003	164,586	14.0	6/1	941
2006	2004	213,250	10.6	5/31 & 6/1	484
2007	2005	110,978	8.9	5/30	not available

Notes: for all releases, brood stock was Ship Creek and all fish were marked with a thermal mark. All releases were raised at Ft. Richardson Hatchery, except the 2002 release which was raised at Elmendorf Hatchery.

Table 7.-Harvest of Chinook salmon from the Eastside Susitna, Westside Susitna, West Cook Inlet, and Knik Arm management units, 1979-2006.

	Eastside Susitna Management Unit			Westside Susitna	West Cook Inlet	Knik Arm	
Year	Hatchery	Non-hatchery	Total	Management Unit	Management Unit	Management Unit	Total
1979			1,298	5,768	98	800	7,964
1980			1,370	6,148	34	646	8,198
1981			2,202	4,742	192	1,466	8,602
1982			2,063	8,573	147	1,666	12,449
1983			2,852	9,568	1,185	1,255	14,860
1984			4,428	12,106	1,833	2,057	20,424
1985			4,342	13,644	2,029	1,889	21,904
1986			8,569	13,402	2,378	1,524	25,873
1987			8,603	13,350	1,477	2,476	25,906
1988	355	8,784	9,139	15,970	1,695	2,916	29,720
1989	1,079	8,704	9,783	19,343	2,325	4,341	35,792
1990	1,194	8,229	9,423	17,425	2,097	2,022	30,967
1991	844	8,239	9,083	21,836	762	2,277	33,958
1992	4,566	16,741	21,307	18,737	1,213	3,969	45,226
1993	3,977	18,711	22,688	21,142	1,955	3,602	49,387
1994	2,703	12,267	14,970	10,248	1,583	4,303	31,104
1995	1,111	6,761	7,872	6,265	693	1,707	16,537
1996	1,205	9,818	11,023	5,879	1,358	1,579	19,839
1997	1,091	9,898	10,989	7,799	894	2,938	22,620
1998	902	9,570	10,472	9,716	693	2,031	22,912
1999	2,464	14,411	16,875	12,131	1,073	2,724	32,803
2000	1,776	9,998	11,774	17,341	1,163	2,824	33,102
2001	2,057	11,447	13,504	13,914	722	2,255	30,395
2002	1,720	8,975	10,695	11,357	1,227	3,195	26,474
2003	1,605	7,894	9,499	15,035	1,124	2,562	28,220
2004	969	7,529	8,498	15,694	782	2,556	27,530
2005	981	7,472	8,453	15,945	546	3,692	28,636
Mean 2001-2005	1,466	8,663	10,130	14,389	880	2,852	28,251
2006	[a]		7,339	16,454	1,038	3,813	28,644

[a] Hatchery contribution no longer available. Creel program concluded in 2005.

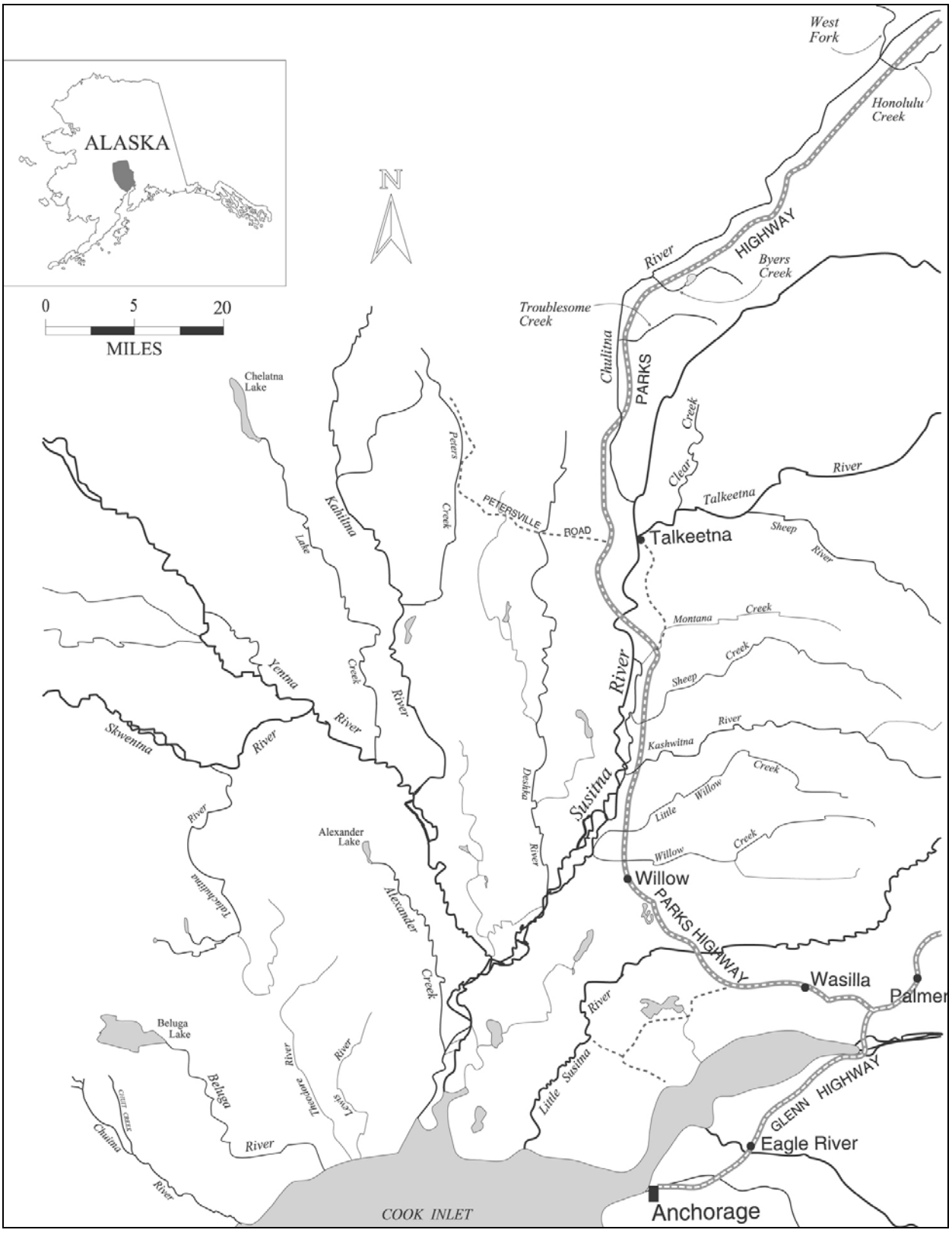


Figure 8.-Susitna River and tributaries.

Table 8.-Chinook salmon harvests from the Eastside Susitna Management Unit, by fishery, 1977-2006.

Year	Willow Creek	Little Willow Creek	Kashwitna River	Caswell Creek	Sheep Creek	Goose Creek	Montana Creek	Birch Creek	Sunshine Creek	Talkeetna River[a]	Other[b]	Total
1977	137	16			259		415			25	204	1,056
1978	47	0			256		408			12	163	886
1979	459	0		156	10		312		10	312	39	1,298
1980	289	32		215	45		559		13	172	45	1,370
1981	585	0		249	0		661		57	373	277	2,202
1982	629	0		471	0		241		52	450	220	2,063
1983	534	0	231	272	0		504		105	934	272	2,852
1984	774	37	0	586	0	0	1,522		125	1,272	112	4,428
1985	1,063	25		527	0		979		771	871	106	4,342
1986	1,017	872	73	327	1,778	145	2,796	290	327	908	36	8,569
1987	1,987	711	116	88	1,610	334	1,726	44	319	1,639	29	8,603
1988	2,349	937	0	578	1,847	218	1,070	28	303	1,762	47	9,139
1989	2,846	507	11	357	1,116	385	1,708	28	368	2,372	85	9,783
1990	3,237	387	6	330	1,537	504	478		465	2,358	121	9,423
1991	3,208	684	41	305	1,519	288	575	47	230	2,025	161	9,083
1992	8,884	1,023	16	592	2,663	1,033	3,078	101	365	3,338	214	21,307
1993	8,626	1,200	38	531	2,300	633	4,054	9	280	4,729	288	22,688
1994	5,980	745	78	562	1,349	361	3,111	108	297	2,144	235	14,970
1995	2,742	436	18	397	746	226	1,004	0	132	2,126	45	7,872
1996	2,690	896	21	128	1,397	437	1,612	22	53	3,585	182	11,023
1997	3,135	699	10	30	550	298	2,181	30	53	3,800	203	10,989
1998	2,793	546	15	226	700	348	1,471	83	116	3,846	328	10,472
1999	4,988	1,344	83	142	2,558	371	3,279	134	11	3,701	264	16,875
2000	3,782	578	160	561	851	258	1,728	223	472	2,740	421	11,774
2001	4,573	941	74	238	1,420	160	2,646	65	93	2,866	428	13,504
2002	3,591	580	217	115	928	403	2,026	35	38	2,616	146	10,695
2003	3,922	510	373	26	1,284	350	1,242	167	154	1,276	195	9,499
2004	2,818	445	125	23	914	335	1,071	0	25	2,473	25	8,254
2005	2,466	621	112	394	878	150	1,328	287	205	1,960	52	8,453
Mean 2001-2005	3,474	619	180	159	1,085	280	1,663	111	103	2,238	169	10,081
2006	2,141	449	210	264	707	27	1,672	97	211	1,561	0	7,339

[a] Talkeetna River and tributaries including Clear Creek.

[b] Includes lakes and streams.

Table 9.-NCIMA Chinook salmon escapement index counts (aerial), 1979-2004.

	Susitna River			Knik	West	Total
Year	Eastside	Westside	Total	Arm[a]	Cook Inlet	NCIMA
1979	5,082	39,552	44,634		2,540	47,174
1980						
1981	7,419	2,025	9,444		3,601	13,045
1982	10,700	25,224	35,924		7,384	43,308
1983	17,859	42,850	60,709	929	5,562	67,200
1984	25,678	27,974	53,652	558	5,043	59,253
1985	18,177	38,932	57,109	1,005	4,619	62,733
1986	15,828	32,330	48,158		6,114	54,272
1987	26,535	23,936	50,471	1,386	2,423	54,280
1988	26,255	40,963	67,218	3,197	5,546	75,961
1989	23,117	4,818	27,935		2,468	30,403
1990	25,040	28,042	53,082	922	1,329	55,333
1991	21,773	19,425	41,198	892	1,348	43,438
1992	15,782	18,899	34,681	1,441	2,835	38,957
1993	13,066	18,028	31,094		3,882	34,976
1994	11,904	9,423	21,327	1,221	2,121	24,669
1995	21,778	15,828	37,606	1,714	2,223	41,543
1996	22,084	16,802	38,886	1,079	2,392	42,357
1997	35,927	38,437	74,364		5,087	79,451
1998	24,393	32,958	57,351	1,091	4,805	63,247
1999	24,306	30,260	54,566		7,812	62,378
2000	20,161	11,137	31,298	1,094	3,964	36,356
2001	23,047	15,102	38,149	1,238	4,394	43,781
2002	35,137	28,066	63,203	1,660	3,649	68,512
2003	15,341	24,294	39,635	1,114	4,974	45,723
2004	22,567	54,421	76,988	1,694	5,038	83,720
2005	21,780	27,774	49,554	2,095	2,730	54,379
2006	16,934	23,074	40,008	1,855	4,206	46,069
Means						
1979-2006	20,284	25,577	45,861	1,378	4,003	50,834
1997-2006	23,959	28,552	52,512	1,480	4,666	58,362
2002-2006	22,352	31,526	53,878	1,684	4,119	59,681
2007	23,229	18,645	41,874	1,731	2,439	46,044

Table 10.-Eastside Susitna River Management Unit Chinook salmon escapement index counts (aerial), 1979-2007.

Year	Willow Creek [g]	Deception Creek Total	Deception Creek Non-hatchery	Little Willow Creek	Sheep Creek	Goose Creek	Montana Creek	Clear Creek	Prairie Creek	Chulitna River	Portage Creek	Indian River	Kashwitna River	Other [b]	Total
1979	848	239		327	778	[a]	1,094 [h]	864	[a]	[a]	190	285	457	[a]	5,082
1980															0
1981	991	366		459	1,013	262	814	[a]	1,875	[a]	659	422	558	[a]	7,419
1982	592	229 [f]		316	527	140	887 [h]	982	3,844	863	1,111	1,053	156	268	10,700
1983	777	121 [f]		1,042	975	477	1,641 [h]	938	3,200	4,058	3,140	1,193	297	[a]	17,859
1984	2,789	675 [f]			1,028	258	2,309 [h]	1,520	9,000	4,191	2,341	1,456	111	[a]	25,678
1985	1,856	1,044 [f]		1,305	1,634	401	1,767 [h]	2,430	6,500	783	[c]	[c]	457	4,066	18,177
1986	2,059	521 [f]	364	2,133	1,285	630	[a]	[a]	8,500	[a]	[a]	[a]	700	[a]	15,828
1987	2,768	692 [f]	518	1,320	895	416	1,320 [h]	[a]	9,138	5,252	2,616	1,246	872	[a]	26,535
1988	2,496	790 [f]	537	1,515	1,215	1,076	2,016 [h]	4,850	9,280	[a]	1,402	456	1,159	[a]	26,255
1989	5,060	800 [f]	623	1,325	610	835	2,701 [h]	[a]	9,463	[a]	1,309	659	355	[a]	23,117
1990	2,365	700 [f]	420	1,115	634	552	1,269	2,380	9,113	2,681	1,886	1,473	872	[a]	25,040
1991	2,006	747 [f]	515	498	154 [d]	968	1,215	1,974	6,770	4,410	1,223	1,468	340	[a]	21,773
1992	1,660	983 [f]	423	673	[a]	369	1,560	1,530	4,453	2,527	1,078	479	470	[a]	15,782
1993	2,227	1,011 [f]	502	705	[a]	347	1,281	886	3,023	2,070	629	362	525	[a]	13,066
1994	1,479	766	388	712	542	375	1,143	1,204	2,254	1,806	857	336	430	[a]	11,904
1995	3,792	834	445	1,210	1,049	374	2,110	1,928	3,884	3,460	1,505	796	836	[a]	21,778
1996	1,776	1,211	654	1,077	1,028	305	1,841	2,091	5,037	4,172	2,185	579	782	[a]	22,084
1997	4,841	1,340	[a]	2,390	[a]	308	3,073	5,100	7,710	5,618	3,086	1,700	761	[a]	35,927
1998	3,500	1,273	699	1,782	1,160	415	2,936	3,894	4,465	2,586	1,261	502	619	[a]	24,393
1999	2,081	1,000	801	1,837	[a]	268	2,088	2,216	5,871	5,455	1,797	1,049	644	[a]	24,306
2000	2,601	1,563	828	1,121	1,162	348	1,271	2,142	3,790	4,218	1,015	601	329	[a]	20,161
2001	3,188	1,975	943	2,084	[a]	[a]	1,930	2,096	5,191	2,353 [d]	2,334	1,292	604	[a]	23,047
2002	2,758	1,000	123	1,680	854	565	2,357	3,496	7,914	9,002	3,336	1,126	1,049	[a]	35,137
2003	3,964	914	288	879	[a]	175	2,576	[a]	4,095	[a]	827 [d]	1,365	546	[a]	15,341
2004	2,985	480	170	2,227	285	417	2,117	3,417	5,570	2,162	1,972	593	342	652	22,567
2005	2,463	1,806	634	1,784	760	468	2,600	1,924	3,862	2,838	2,151	670	454	83	21,780
2006	2,217	940	368	816	580	306	1,850	1,520	3,570	2,862	942	718	613		16,934
Means															
1979-2006	2,450	890	512	1,244	865	442	1,837	2,245	5,668	3,494	1,634	875	568	1,267	19,560
1997-2006	3,060	1,229	539	1,660	800	363	2,280	2,867	5,204	4,122	1,872	962	596		23,959
2002-2006	2,877	1,028	317	1,477	620	386	2,300	2,589	5,002	4,216	1,846	894	601		22,352
[e]	1,600-2,800		350-700[i]	450-1,800	600-1,200	250-650	1,100-3,100	950-3,400	3,100-9,200	1,800-5,100					
2007	1,373	604		1,103	400	105	1,936	3,310	5,036	5,166	2,284	1,017	895		23,229

[a] No counts conducted.
[b] May include Honolulu, Byers, Troublesome, Bunco, Birch, Sunshine, Larson creeks.
[c] Included with other streams.
[d] Poor count due to timing, poor visibility or weather conditions.
[e] Sustainable escapement goal.
[f] Combination of foot surveys and weir counts.
[g] Includes hatchery fish.
[h] Foot survey
[i] Deception Creek SEG discontinued after 2005.
[h] Foot survey
[j] Deception Creek SEG discontinued after 2005.

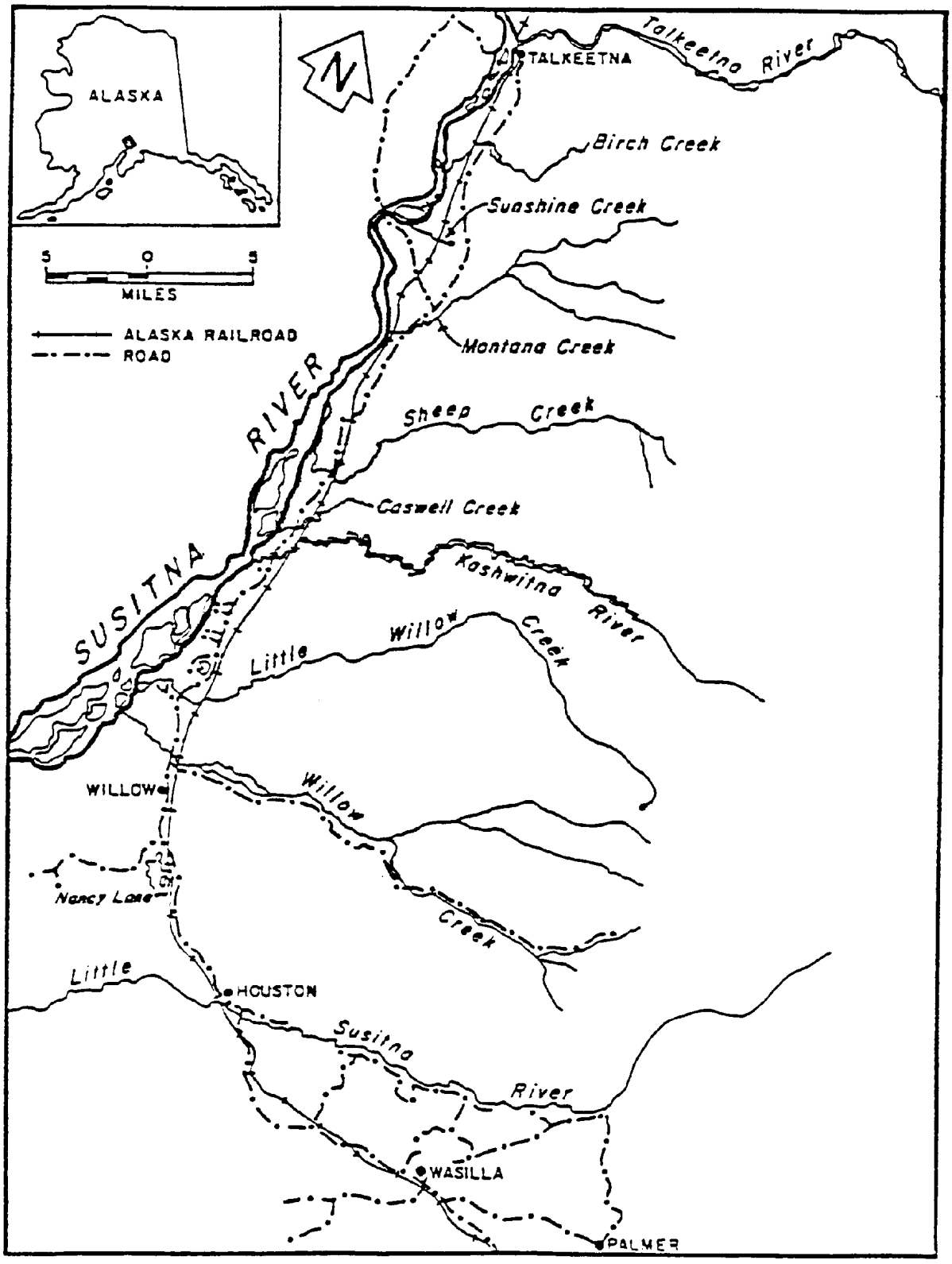


Figure 9.-Eastside Susitna Management Unit.

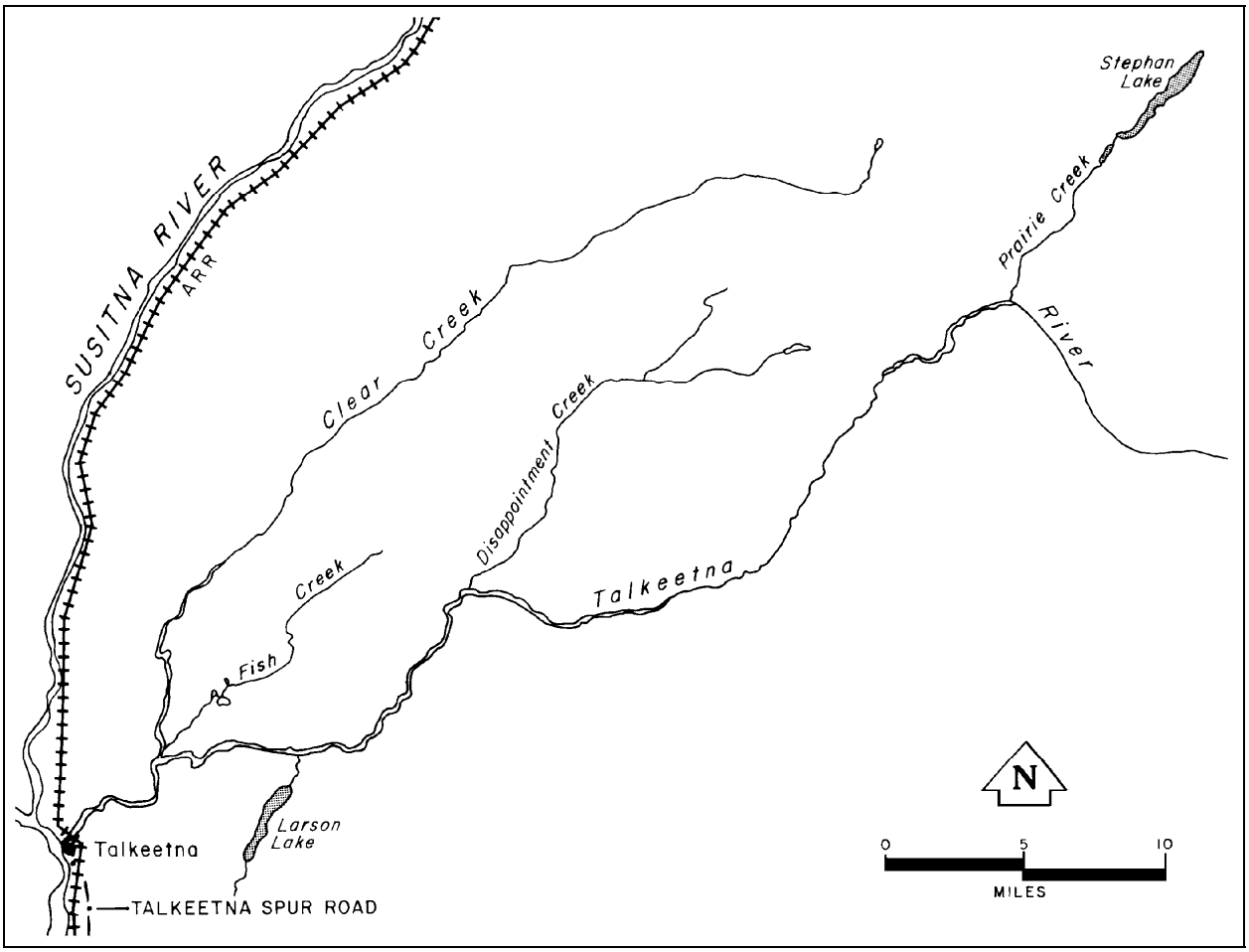
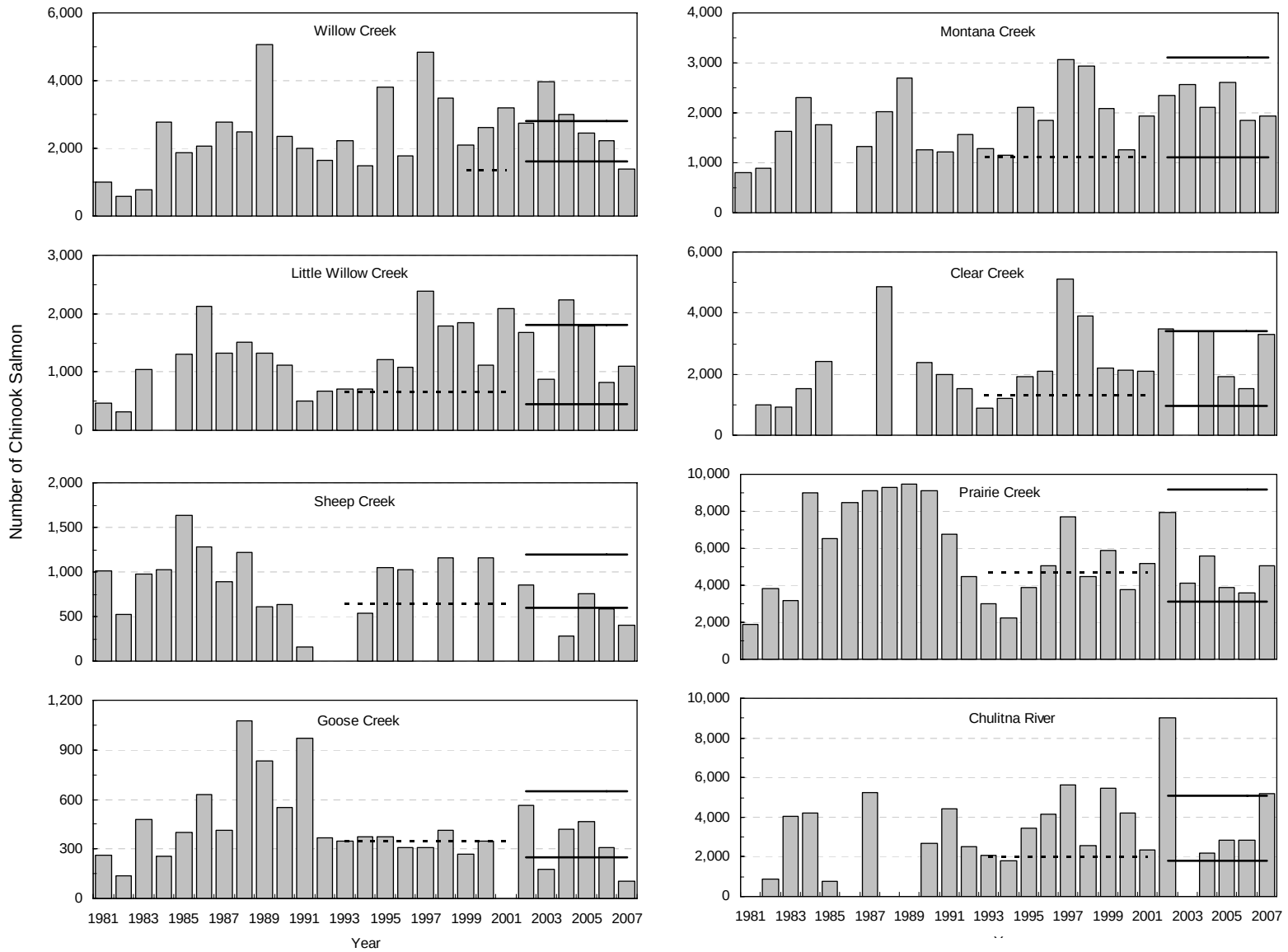


Figure 10.-The Talkeetna River area.



Notes: Bars are escapement, solid lines represent current escapement goal ranges, and dashed lines represent previous escapement goals.

Figure 11.-Escapement (1981-2007) and escapement goals for Chinook salmon stocks in 8 systems of the Eastside Susitna Management Unit.

Table 11.-Chinook salmon harvest, by fishery, in the West Susitna Management Unit, 1977-2006.

Year	Alexander Creek	Deshka River	Rabideux Creek	Yentna River	Peters Creek	Lake Creek	Fish Creek[a]	Talachulitna River	Other Streams[b]	Other Lakes[b]	Total
1977	820	1,017				464		224	413	0	2,938
1978	769	850				326		12	82	0	2,039
1979	712	2,811				1,796		293	156	0	5,768
1980	1,438	3,685				775		121	129	0	6,148
1981	1,121	2,769				795		57	0	0	4,742
1982	2,506	4,307				1,645		0	115	0	8,573
1983	1,711	4,889				2,423		336	209	0	9,568
1984	2,107	5,699			112	2,881		424	709	174	12,106
1985	2,761	6,407				2,575		224	1,677	0	13,644
1986	2,937	6,490				2,134	647	201	948	45	13,402
1987	2,224	5,632				3,282	834	116	1,252	10	13,350
1988	4,687	5,474			549	2,784	729	909	829	9	15,970
1989	4,882	8,062	12	215	339	3,554	1,202	403	656	18	19,343
1990	5,119	6,161	55	178	385	3,423	740	709	631	24	17,425
1991	6,548	9,306		301	495	2,712	660	848	942	24	21,836
1992	4,124	7,256	23	652	655	3,668	879	445	867	168	18,737
1993	5,154	5,682		653	283	6,425	1,148	875	922	0	21,142
1994	3,070	624		402	202	3,548	930	927	545	0	10,248
1995	1,217	0		425	252	2,838	545	509	479	0	6,265
1996	1,005	11		320	74	2,587	415	697	770	0	5,879
1997	1,470	42		315	34	3,777	557	778	826	0	7,799
1998	1,275	3,384		350		2,511	840	563	793	0	9,716
1999	2,241	3,496		939	197	3,037	1,188	977	56	0	12,131
2000	2,721	7,076		838	236	4,611	742	695	422	0	17,341
2001	2,313	5,007		648	88	4,067	965	409	417	0	13,914
2002	1,992	4,508		559	52	2,878	761	508	99	0	11,357
2003	2,293	6,605		277	122	4,467	371	587	313	0	15,035
2004	1,294	9,050	12	523	85	3,657	390	344	293	0	15,648
2005	1,052	7,332		963	0	4,508	307	800	915	68	15,945
Mean 2001-2005	1,789	6,500		594	69	3,915	559	530	407	14	14,380
2006	1,396	7,753	40	1964	33	4,070	103	452	643	0	16,454

[a] Fish Lake drainage (Yentna River drainage).

[b] May include harvest from West Cook Inlet waters through 1998.

Table 12.-Chinook salmon escapement index counts, for Westside Susitna Management Unit stocks, 1979-2007.

Year	Alexander Creek	Deshka River Aerial index	Deshka River Weir [g]	Peters Creek	Lake Creek	Talachulitna River	Cache Creek	Other Streams[b]	Aerial Total
1979	6,215	27,385		108	4,196	1,648	[a]	[a]	39,552
1980 [a]									
1981	[a]	[a]		[a]	[a]	2,025	[a]	[a]	2,025
1982	2,546	16,000		[a]	3,577	3,101	[a]	[a]	25,224
1983	3,755	19,237		2,272	7,075	10,014	497	[a]	42,850
1984	4,620	16,892		324	[a]	6,138	[a]	[a]	27,974
1985	6,241	18,151		2,901	5,803	5,145	206	485	38,932
1986	5,225	21,080		1,915	[a]	3,686	424	[a]	32,330
1987	2,152	15,028		1,302	4,898	[a]	556	[a]	23,936
1988	6,273	19,200		3,927	6,633	4,112	818	[a]	40,963
1989	3,497	[a]		959	[a]	[a]	362	[a]	4,818
1990	2,596	18,166		2,027	2,075	2,694	484	[a]	28,042
1991	2,727	8,112 [c]		2,458	3,011	2,457	499	161	19,425
1992	3,710	7,736		996	2,322	3,648	487	[a]	18,899
1993	2,763	5,769		1,668	2,869	3,269	1,690	[a]	18,028
1994	1,514	2,665		573	1,898	1,575	628	570	9,423
1995	2,090	5,150	10,048	1,041	3,017	2,521	1,601	408	15,828
1996	2,319	6,343	14,349	749	3,514	2,748	581	548	16,802
1997	5,598	19,047	35,587	2,637	3,841	4,494	1,774	1,046	38,437
1998	2,807	15,556	15,409[f]	4,367	5,056	2,759	1,771	642	32,958
1999	3,974	12,904	29,649	3,298	2,877	4,890	1,720	597	30,260
2000	2,331[c]	[a]	35,242	1,648	4,035	2,414	709	[a]	11,137
2001	2,282	[a]	29,004	4,226	4,661	3,309	624	[a]	15,102
2002	1,936	8,749	29,428	2,959	4,852	7,824	671	1,075	28,066
2003	2,012	[a]	39,496	3,998	8,153	9,573	558	[a]	24,294
2004	2,215	28,778	57,934	3,757	7,598	8,352	212	3,509	54,421
2005	2,140	11,495	37,725	1,508	6,345	4,406	1,460	420	27,774
2006	885	6,499 [c]	31,150	1,114	5,300	6,152	1,230	1,894	23,074

-continued-

Table 12.-Page 2 of 2.

Year	Alexander Creek	Deshka River Aerial index	Deshka River Weir [g]	Peters Creek	Lake Creek	Talachulitna River	Cache Creek	Other Streams[b]	Aerial Total
Means									
1979-2006	3,247	14,088	30,418	2,109	4,505	4,358	851	946	25,577
1997-2006	2,618	14,718	34,062	2,951	5,272	5,417	1,073	1,312	28,552
2002-2006	1,838	13,880	39,147	2,667	6,450	7,261	826	1,725	31,526
Esc. Goal	2,100-6,000 [d]	[e]	13,000-28,000 [h]	1,000-2,600 [d]	2,500-7,100 [d]	2,200-5,000 [d]			
2007	480	6,712	18,714	1,225	4,081	3,871	551	1,725	18,645

[a] No count conducted.

[b] May include Donkey Creek, Red Creek, Red Salmon Creek, Canyon Creek and other miscellaneous creeks.

[c] Low count due to timing, poor visibility or weather conditions.

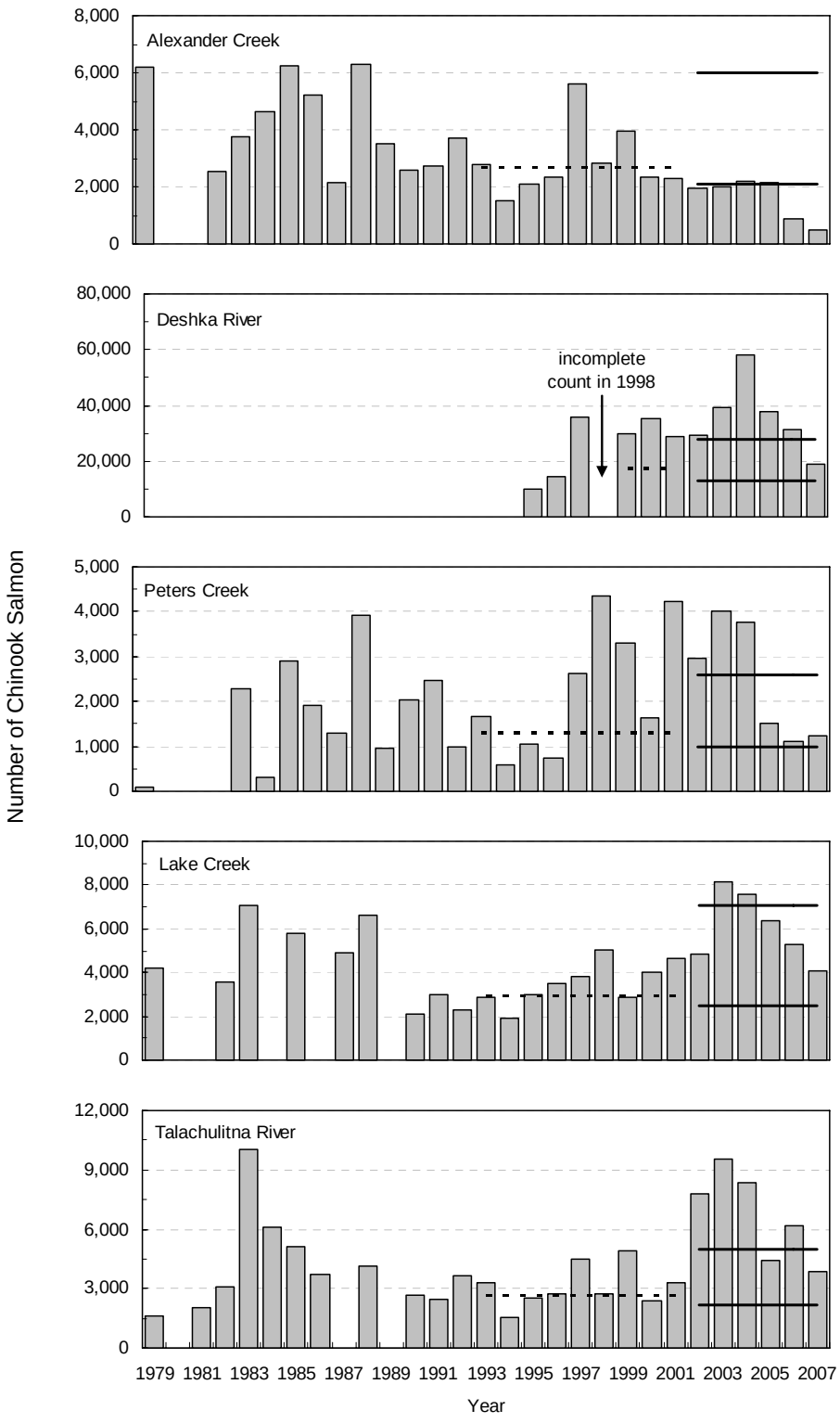
[d] Sustainable escapement goal (Bue and Hasbrouck *Unpublished*).

[e] Aerial escapement goal 1994-1998 was 11,200, revised for 1999 to 8,750 and discontinued after 2001.

[f] During 1998 weir count represents only half the return. High water delayed construction until June 16.

[g] Weir count, not an actural escapement count.

[h] Weir based BEG established in 2001 (Bue and Hasbrouck *Unpublished*).



Notes: Y-axis scales vary by stock. Bars are escapement, solid lines represent current escapement goal ranges, and dashed lines represent previous escapement goals.

Figure 12.-Escapement (1979-2007) and escapement goals for Chinook salmon stocks in five systems of the Westside Susitna Management Unit.

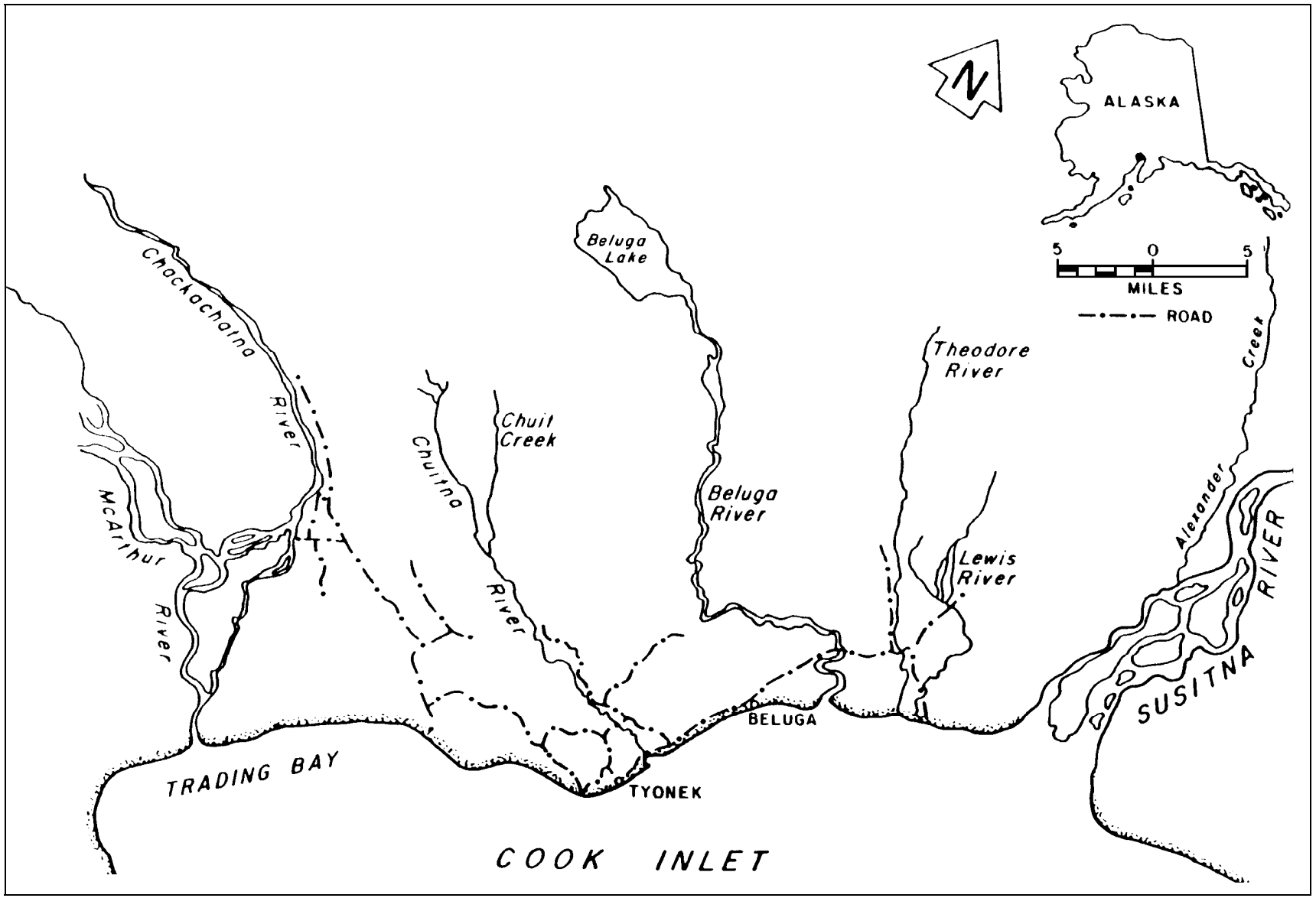
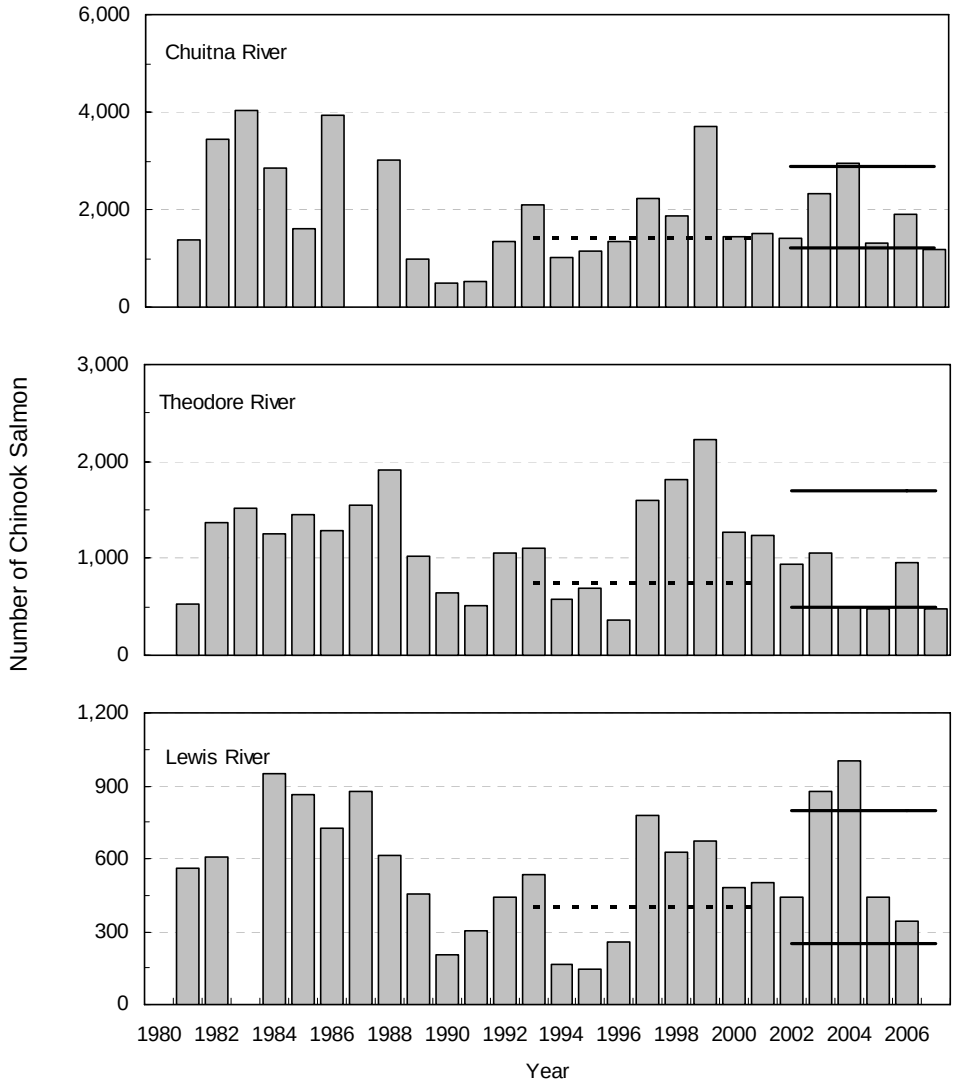


Figure 13.-West Cook Inlet coastal streams.

Table 13.-West Cook Inlet Management Unit Chinook salmon harvest by fishery, 1977-2006.

Year	Chuitna River	Beluga River	Theodore River	Lewis River	Susitna River – North Foreland	South of North Foreland	Other Sites	Total
1977	227		237	9				473
1978	408		58	12				478
1979	78		20	0				98
1980	17		17	0				34
1981	115		77					192
1982	105		42					147
1983	1,185		0					1,185
1984	723		1,110					1,833
1985	734		1,195	100				2,029
1986	960		1,418					2,378
1987	146		1,146	185				1,477
1988	312		1,137	246				1,695
1989	581	237	1,317	190				2,325
1990	1,064		748	285				2,097
1991	377		369	16				762
1992	516	175	522					1,213
1993	893		527	27		100	408	1,955
1994	530		581			6	466	1,583
1995	201		360	0		19	113	693
1996	844		183	0	331	0	0	1,358
1997	728		0	0	121	22	23	894
1998	551		0	0	73	63	6	693
1999	561		0	0	301	189	22	1,073
2000	513		0		182	468	0	1,163
2001	457		21		54	64	126	722
2002	629		0	0	502	0	96	1,227
2003	592	51	13	0	194	144	130	1,124
2004	333	276	0	0	102	0	71	782
2005	294	105	0	0	24	92	31	546
2001-2005 Mean	461		7	0	175	60	91	880
2006	445	66	0	0	160	32	335	1,038

Note: Estimates as reported through the SWHS based on fewer than 30 responses, and therefore indicate only that fishing occurred in the drainages, and an approximate order of magnitude (Mills and Howe 1992).



Notes: Y-axis scales vary by stock. Bars are escapement, solid lines represent current escapement goal ranges, and dashed lines represent previous escapement goals.

Figure 14.-Escapement (1980-2007) and escapement goals for Chinook salmon stocks in three systems of the West Cook Inlet Management Unit.

Table 14.-Chinook salmon escapement index counts, for West Cook Inlet Management Unit stocks, 1979-2007.

Year[a]	Chuitna River	Theodore River	Lewis River	Coal Creek	Other Streams[c]	Total
1979	1,246	512	546		236	2,540
1980[b]						
1981	1,362	535	560		1,144	3,601
1982	3,438	1,368	606		1,972	7,384
1983	4,043	1,519	[b]		[b]	5,562
1984	2,845	1,251	947		[b]	5,043
1985	1,600	1,458	861		700	4,619
1986	3,946	1,281	722		165	6,114
1987	[b]	1,548	875		[b]	2,423
1988	3,024	1,906	616		[b]	5,546
1989	990	1,026	452		[b]	2,468
1990	480	642	207		[b]	1,329
1991	537	508	303		[b]	1,348
1992	1,337	1,053	445		[b]	2,835
1993	2,085	1,110	531		156	3,882
1994	1,012	577	164		368	2,121
1995	1,162	694	146	221		2,223
1996	1,343	368	257	424		2,392
1997	2,232	1,607	777	471		5,087
1998	1,869	1,807	626	503		4,805
1999	3,721	2,221	675	1195		7,812
2000	1,456	1,271	480	757		3,964
2001	1,501	1,237	502	1,154		4,394
2002	1,394	934	439	882		3,649
2003	2,339	1,059	878	698		4,974
2004	2,938	491	1,000	609		5,038
2005	1,307	478	441	504		2,730
2006	1,911	958	341	996		4,206
Means						
1979-2006	1,966	1,090	554	701	677	4,003
199720-06	2,067	1,206	616	777		4,666
2002-2006	1,978	784	620	738		4,119
SEG[d]	1,200-2,900	500-1,700	250-800			
2007	1,180	486	0 [e]	773		2,439

[a] Aerial count unless otherwise indicated.

[b] No count conducted, turbid water.

[c] May include Olsen, Nikoli, Coal, Straight, Bishop, Drill, and Scarp creeks.

[d] Sustainable escapement goal.

[e] River diverged into swamp 1/2 mi below bridge. No water in channel.

Table 15.-Sport harvest of coho salmon in the Northern Cook Inlet Management Area, by management unit, 1977-2006.

	Northern Cook Inlet Management Area					South-central Region Total	% by NCIMA	Alaska Total	% by NCIMA
Year	Knik Arm	Eastside Susitna	Westside Susitna	West Cook Inlet	Total Harvest				
1977	4,366	5,709	6,599	532	17,206	67,866	25	105,004	16
1978	7,895	8,573	10,173	378	27,019	81,990	33	131,945	20
1979	7,139	7,564	9,036	337	24,076	93,234	26	119,329	20
1980	16,030	10,368	12,141	628	39,167	127,958	31	164,302	24
1981	10,484	6,593	5,940	604	23,621	95,376	25	125,666	19
1982	13,676	10,167	10,658	745	35,246	136,153	26	195,644	18
1983	6,139	5,176	3,610	2,552	17,477	87,935	20	149,270	12
1984	23,429	13,916	9,511	2,681	49,537	166,688	30	238,536	21
1985	14,339	7,042	11,270	6,320	38,971	137,671	28	200,773	19
1986	12,361	16,190	13,117	4,222	45,890	188,872	24	255,887	18
1987	25,787	11,028	8,746	8,548	54,109	176,710	31	235,435	23
1988	40,037	19,518	16,283	7,403	83,241	225,812	37	281,450	30
1989	23,846	17,078	18,226	7,683	66,833	237,155	28	338,195	20
1990	18,762	11,743	13,883	6,016	50,404	214,114	24	325,936	15
1991	22,186	19,479	20,507	8,253	70,425	254,961	28	389,569	18
1992	25,814	33,790	16,218	7,037	82,859	237,204	35	345,513	24
1993	35,763	26,063	15,454	10,326	87,606	283,868	31	412,487	21
1994	28,539	20,870	15,361	8,247	73,017	299,849	24	502,948	15
1995	20,650	19,165	17,148	8,182	65,145	263,749	25	368,631	18
1996	24,874	24,174	17,375	11,430	77,853	328,178	24	503,413	15
1997	11,773	10,297	7,123	6,492	35,685	283,311	13	462,931	8
1998	23,750	23,086	13,235	8,160	68,231	375,742	18	600,862	11
1999	14,429	23,292	17,995	9,339	65,055	309,564	21	632,829	10
2000	32,530	37,748	23,262	11,712	105,252	419,835	25	624,327	17
2001	30,106	26,617	19,221	13,949	89,893	480,048	19	811,799	11
2002	44,448	27,183	14,144	13,380	99,155	488,911	20	776,033	13
2003	24,583	18,585	16,072	14,239	73,479	450,231	16	783,328	9
2004	34,298	20,484	17,785	15,769	88,746	516,183	17	861,490	10
2005	27,000	17,471	18,266	12,572	75,309	514,473	15	937,965	8
Means									
1977-2005	21,553	17,206	13,737	7,163	59,673	260,126	25	409,707	17
2001-2005	32,087	22,068	17,098	13,982	85,316	489,969	17	834,123	10
2001-2005 % of NCIMA	38	26	20	16					
2006	39,953	22,719	20,474	11,940	95,086	425,981	22	652,953	15

Table 16.-Coho salmon harvest and fishing effort from Knik Arm sport fisheries, 1977-2006.

				Other Knik Arm															
	Little Susitna River			Wasilla Creek		Cottonwood Creek		Fish Creek		Eklutna Tailrace		Jim Creek[a]		Total		Other		Total	
Year	Harvest	(Hatchery)[b]	Angler-days[c]	Harvest	Angler-days[c]	Harvest	Angler-days[c]	Harvest	Angler-days[c]	Harvest	Angler-days[c]	Harvest	Angler-days[c]	Harvest	Angler-days[c]	Harvest	Angler-days[c]	Harvest	Angler-days[c]
1977	3,415		11,063	472	2,805									472	2,805	479	68,081	4,366	81,949
1978	4,865		12,127	2,112	3,446									2,112	3,446	918	59,967	7,895	75,540
1979	3,382		21,301	1,211	4,024	1,198	5,345							2,409	9,369	1,348	47,741	7,139	78,411
1980	6,302		22,420	3,555	5,726	3,375	9,268							6,930	14,994	2,798	65,116	16,030	102,530
1981	5,940		26,162	814	4,019	1,373	8,663					1,801	4,904	3,988	17,586	556	61,304	10,484	105,052
1982	7,116		24,020	1,624	6,261	1,886	5,186					2,306	6,653	5,816	18,100	744	49,593	13,676	91,713
1983	2,835		35,477	345	3,239	518	5,944					774	9,183	1,637	18,366	1,667	84,546	6,139	138,389
1984	14,253		48,517	1,920	3,547	1,895	7,144			561	3,413	3,429	9,369	7,805	23,473	1,371	58,737	23,429	130,727
1985	7,764		37,498	1,900	3,115	1,005	4,560	284	903	557	2,995	2,523	8,970	6,269	20,543	306	64,585	14,339	122,626
1986	6,039	(109)	45,776	944	3,387	690	5,653	364	2,641	502	8,549	2,948	13,015	5,448	33,245	874	52,585	12,361	131,606
1987	13,003	(3,407)	35,659	1,195	2,173	1,159	2,934	833	2,898	2,318	11,663	3,676	6,990	9,181	26,658	3,603	77,850	25,787	140,167
1988	19,009	(9,638)	49,731	1,273	2,228	746	4,056	1,637	3,110	3,329	13,188	11,078	23,229	18,063	45,811	2,965	87,487	40,037	183,029
1989	14,129	(10,597)	54,708	975	2,406	876	3,069	784	3,314	1,666	10,342	4,220	11,141	8,521	30,272	1,196	61,932	23,846	146,912
1990	7,497	(2,242)	40,159	1,012	2,679	286	3,056	398	3,936	1,012	7,618	6,184	17,878	8,892	35,167	2,373	67,558	18,762	142,884
1991	16,450	(7,699)	50,838	844	2,893	176	1,623	486	3,693	631	5,892	2,920	13,736	5,057	27,837	679	67,930	22,186	146,605
1992	20,033	(3,406)	49,304	413	1,110	348	1,974	526	3,638	664	4,279	3,409	8,856	5,360	19,857	421	72,664	25,814	141,825
1993	27,610	(7,703)	42,249	1,133	1,774	736	3,077	741	2,341	1,337	4,523	2,878	6,824	6,825	18,539	1,328	57,426	35,763	118,214
1994	17,665	(6,165)	45,149	1,390	2,226	1,100	3,230	492	2,358	3,553	8,974	3,946	9,658	10,481	26,446	393	71,777	28,539	143,372
1995	14,451	(2,991)	41,119	445	1,373	340	2,598	435	2,256	990	11,453	3,549	10,893	5,759	28,573	440	56,462	20,650	126,154
1996	16,753	(3,418)	24,575	872	1,386	762	1,783	607	934	1,217	6,448	3,911	7,561	7,369	18,112	752	48,303	24,874	90,990
1997	7,756		27,883	708	1,188	372	2,070	148	1,104	728	3,835	1,786	5,349	3,742	13,546	275	54,301	11,773	95,730
1998	14,469		22,108	970	1,171	1,098	3,454	1,334	2,256	1,422	5,100	4,197	5,272	9,021	17,253	260	38,857	23,750	78,218
1999	8,864		30,437	313	990	537	3,506	233	2,182	1,453	6,150	2,612	6,860	5,148	19,688	417	62,517	14,429	112,642
2000	20,357		39,556	0	328	282	1,265	470	1,408	5,053	7,938	5,653	10,975	11,458	21,914	715	60,131	32,530	121,601
2001	17,071		33,521	0	419	647	2,627	361	1,670	3,399	10,166	8,374	13,028	12,781	27,910	254	49,596	30,106	111,027
2002	19,278		40,346	664	1,037	561	1,534	1,233	2,776	7,073	11,767	14,707	17,989	24,238	35,103	932	50,745	44,448	126,194
2003	13,672		31,993	261	757	665	2,238	112	758	3,128	8,423	6,415	13,474	10,581	25,650	330	46,335	24,583	103,978
2004	15,307		33,819	488	1,079	532	3,282	774	2,029	5,084	9,588	11,766	19,342	18,644	35,320	347	44,389	34,298	113,528
2005	10,203		27,490	347	684	668	1,484	535	1,461	4,899	19,339	10,114	19,605	16,563	42,573	234	45,700	27,000	115,763
Means																			
1977-2005	12,258		34,655	972	2,327	883	3,727	609	2,270	2,299	8,257	5,007	11,230	8,296	23,385	999	59,801	21,553	117,841
2001-2005	15,106		33,434	352	795	615	2,233	603	1,739	4,717	11,857	10,275	16,688	16,561	33,311	419	47,353	32,087	114,098
2006	12,399		28,547	857	869	789	3,867	281	948	6,104	20,465	19,259	25,271	27,290	51,420	264	34,920	39,953	114,887

Sources: 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, *In prep*.

[a] Includes other Knik River tributaries

[b] Bartlett and Conrad 1988; Bartlett and Vincent-Lang 1989; Bartlett and Sonnichsen 1990; Bartlett and Bingham 1991, 1993; Bartlett 1992, 1994, 1996 a,b.

[c] Participation directed at coho salmon represents only a portion of the annual effort.

Table 17.-Sport harvest of coho salmon from the Eastside Susitna Management Unit, by fishery, 1977-2006.

Year	Willow Creek	Little Willow Creek	Kashwitna River	Caswell Creek	Sheep Creek	Goose Creek	Montana Creek	Birch Creek	Sunshine Creek	Talkeetna River [a]	Other [b]	Total
1977	679	225			438		1,415			1,070	1,882	5,709
1978	905	151			478		2,451			2,200	2,388	8,573
1979	462	262		624	462		1,735		774	1,248	1,997	7,564
1980	1,207	494		1,124	430		2,684		1,534	661	2,234	10,368
1981	747	29		901	326		2,261		968	422	939	6,593
1982	1,069	398		776	367		3,060		1,719	996	1,782	10,167
1983	576	52	52	408	596		1,402		722	836	532	5,176
1984	1,846	1,147	162	1,247	661	449	4,502		1,733	1,509	660	13,916
1985	1,026	528		608	478		1,972		1,205	747	478	7,042
1986	944	363	871	472	1,343	363	1,488	980	4,029	3,376	1,961	16,190
1987	2,898	561	36	453	1,068	145	1,394	163	1,612	2,608	90	11,028
1988	4,875	1,237	327	1,455	3,165	291	2,219	691	2,146	2,929	183	19,518
1989	4,218	1,388	336	834	2,231	190	2,295	281	2,159	2,775	371	17,078
1990	2,711	639	197	2,596	991	180	778		704	2,539	408	11,743
1991	4,154	1,308	167	3,819	1,544	657	1,612	322	1,761	3,435	700	19,479
1992	8,591	1,830	713	5,393	4,049	502	3,595	858	2,259	5,531	469	33,790
1993	5,743	1,213	554	2,385	2,413	428	3,496	535	2,922	5,830	544	26,063
1994	4,504	1,452	328	1,569	1,586	478	2,619	281	1,906	5,476	671	20,870
1995	3,498	992	472	1,687	1,092	152	2,385	198	1,385	6,672	632	19,165
1996	5,176	1,892	360	668	1,896	430	3,118	258	2,612	7,325	439	24,174
1997	2,401	661	202	294	1,198	166	1,692	177	443	2,815	248	10,297
1998	5,908	1,185	670	564	3,417	382	2,720	920	1,589	5,340	382	23,086
1999	5,019	871	260	1,198	3,045	440	3,382	622	1,709	5,814	932	23,292
2000	8,679	2,885	994	1,702	3,348	1,181	5,454	1,160	3,274	7,703	1,368	37,748
2001	6,835	1,936	728	1,408	2,588	683	5,023	146	1,072	5,195	1,003	26,617
2002	6,040	1,513	494	797	2,995	204	4,644	288	3,238	5,640	1,330	27,183
2003	2,918	635	1,090	938	1,908	220	3,361	421	2,508	3,984	602	18,585
2004	2,981	1,290	251	189	2,636	248	4,866	223	2,070	4,454	1,276	20,484
2005	4,255	1,103	369	340	2,337	267	2,592	288	2,493	3,359	68	17,471
Mean												
2001-2005	4,606	1,295	586	734	2,493	324	4,097	273	2,276	4,526	856	22,068
2006	5,031	1,511	1,202	780	3,602	906	2,622	281	3,460	3,224	100	22,719

[a] Talkeetna River and tributaries including Clear Creek.

[b] Includes lakes and streams.

Table 18.-Sport harvest coho salmon from the Westside Susitna Management Unit, by fishery, 1977-2006.

Year	Alexander Creek	Deshka River	Rabideux Creek	Peters Creek	Yentna River	Lake Creek	Fish Creek [a]	Talachulitna River	Other [b]	Total
1977	1,562	559				1,203		346	2,929	6,599
1978	2,401	1,789				2,212		88	3,683	10,173
1979	1,560	973				2,671		125	3,707	9,036
1980	999	2,290				2,351		491	6,010	12,141
1981	891	632				1,035		240	3,142	5,940
1982	1,907	2,463				1,603		524	4,161	10,658
1983	408	1,036				1,392		84	690	3,610
1984	1,509	1,646		12		2,432		486	3,426	9,511
1985	1,455	2,637				4,105		224	2,849	11,270
1986	1,352	4,256				1,575	324	402	5,208	13,177
1987	1,539	2,789				1,358	362	235	2,463	8,746
1988	1,965	7,458		18		2,110	400	418	3,914	16,283
1989	2,207	8,947	409	47	103	1,907	549	688	3,369	18,226
1990	1,973	4,959	540	33	353	2,986	793	276	1,970	13,883
1991	2,296	8,111	32	221	718	4,221	1,081	828	2,999	20,507
1992	834	7,110	543	300	275	2,632	575	405	3,544	16,218
1993	1,719	6,530		67	227	3,101	920	152	2,738	15,454
1994	2,188	5,511		72	556	2,723	714	427	3,170	15,361
1995	2,692	2,275		183	569	4,736	1,058	1,031	4,604	17,148
1996	803	4,615		57	1,198	4,445	618	805	4,834	17,375
1997	1,307	1,169		89	591	1,445	332	793	1,397	7,123
1998	1,158	3,630			299	4,353	785	905	2,105	13,235
1999	1,418	4,034		65	1,093	6,931	2,261	1,453	740	17,995
2000	2,695	8,687		157	1,050	6,297	1,320	1,347	1,709	23,262
2001	1,972	6,556		0	620	5,610	1,958	1,142	1,363	19,221
2002	1,191	3,616		177	705	4,613	1,034	1,447	1,361	14,144
2003	1,071	4,946		155	1,162	5,263	959	1,543	973	16,072
2004	1,827	4,440	586	149	1,283	6,106	1,880	959	555	17,785
2005	757	3,616	168	96	678	8,684	2,292	583	1,392	18,266
Mean										
2001-2005	1,364	4,635		115	890	6,055	1,625	1,135	1,129	17,098
2006	119	6,042	837	105	3,040	6,330	1,433	1,127	1,441	20,474

[a] Fish Lake drainage (Yentna River drainage).

[b] May include harvest from West Cook Inlet Management Unit lakes and streams.

Table 19.-Sport harvest of coho salmon from the West Cook Inlet Management Unit, by fishery, 1977-2006.

Year	Chuitna River	Beluga River	Theodore River	Lewis River	Kustatan River	Polly Creek	Big River Lakes[a]	Silver Salmon Creek	Other Susitna River-North Foreland	Other South of North Foreland	Other[b]	Total
1977	316		113	103								532
1978	277		101	0								378
1979	287		50	0								337
1980	258		370	0								628
1981	594		10									604
1982	220		115			410						745
1983	554		10		1,800	188						2,552
1984	898		137		1,646							2,681
1985	1,095		261	75	4,889							6,320
1986	815		168		3,239							4,222
1987	1,684		996	145	5,723							8,548
1988	782		400	0	6,221							7,403
1989	1,228	419	502	112	5,413						9	7,683
1990	1,113		198	33	4,584		88					6,016
1991	1,791		513	181	5,768							8,253
1992	1,547	243	421		4,494	332						7,037
1993	1,313		236	194	6,457		158			751	1,217	10,326
1994	559		521		5,259		25			268	1,615	8,247
1995	1,407		372		4,237	641	75			559	891	8,182
1996	1,263		361		6,266	170	600		741	1,858	171	11,430
1997	1,156		187		3,605		305		574	632	33	6,492
1998	2,348		380		3,999		264		650	382	137	8,160
1999	1,614		290		3,178		463		1,282	2,047	465	9,339
2000	1,872		1,161		5,699		325		1,134	1,521		11,712
2001	3,284		1,029		4,920		508		1,210	2,998		13,949
2002	2,586		1,208	200	5,795		490		1,725	761	615	13,380
2003	1,467	426	225	197	3,967	190	2,830	2269	429	1,611	628	14,239
2004	1,655	520	645	90	3,984	39	2,648	1389	225	3,471	1103	15,769
2005	972	120	229	524	3,551		3,916	1568	491	913	288	12,572
Mean												
2001-2005	1,993		667		4,443		2,078		816	1,951	659	13,982
2006	531	313	282	177	3,556	73	3,953	997	360	1,538	160	11,940

Note: Estimates as reported through the SWHS based on fewer than 30 responses, and therefore indicate only that fishing occurred in the drainages, and an approximate order of magnitude (Mills and Howe 1992).

[a] Wolverine Creek and other tributaries of Big River Lakes.

[b] Includes lakes and streams. Beginning in 1999 includes saltwater shoreline.

Table 20.-Coho salmon escapement counts for Knik Arm Management Unit stocks, 1981-2007.

	Little Susitna Weir[a,b]						Wasilla Creek Drainage Index[a]				Matanuska River[a]	Matanuska River Bend Side Channel	Knik River Drainage Index[a]		
Year	Stocked Fish	Total Weir	Fish Creek Weir[c]	Cotton-wood Ck Weir	Cotton-wood Ck[a] Index	Wasilla/ Spring Ck Weir	Wasilla Creek Mainstem	Spring Creek (Upper)	Spring Creek (Flats)	Wasilla Creek Total	Yellow Creek		McRoberts Creek	Upper Jim Creek	Jim Ck Index Total
1981			2,382	2,436 [h]	423		238	[d]	64	302					[d]
1982			5,201	2,064 [h]	737		171	[d]	105	276	[d]				[d]
1983			2,342		506		4	[d]	28	32	[d]				[d]
1984			4,510		935		876		90	966	[d]				[d]
1985			5,089		334		16	150	81	247	65		662		662
1986		6,999[e]	2,166		121		[d]	141	147	288	20		439		439
1987			3,871		360		251	110	42	403	58		667		667
1988	4,428	20,491	2,162		293		[d]	82	30	112	110		1,911		1,911
1989	6,862	15,232	3,479		147		[d]	67	39	106	226		597		597
1990	3,370	14,310	2,719		167		34	38	12	84	146		599	589	1,188
1991	8,322	37,601	1,297		158		118	16	5	139	136		484	418	902
1992	2,324	20,393	1,705		6		3	11	0	14	57		11	59	70
1993	9,615	33,378	2,328		265		[d]	67	69	136	490		503	535	1,038
1994	5,124	27,820	350		232		282	76	60	418	172		506	2,119	2,625
1995	1,069	11,817	390		242		46	20	38	104	220		702	1,288	1,990
1996		15,803	682		168		84	30	29	143	101		72	439	511
1997		9,894[e]	2,578	936	386		156	38	35	229	367		701	563	1,264
1998		15,159	5,463	2,114	537	3,614/163	120[f]	31[f]	25	176	302		922	560	1,482
1999		3,017[e]	1,766	478 [j]	131 [i]	1,579[i]/8	211	40	16	267	88		12	320	332
2000		15,436	5,979 [j]	1,888 [j]	876 [i]	6,154/0	380[f]	224	50	654	169		657	2,561	3,218
2001		30,587	10,047 [j]	3,525 [j]	983 [i]	6,508/276	453	37	15	505	419		1,019	575	1,594
2002		47,938	15,187 [j]	4,270 [j]	1,191 [i]	12,495	933	188	75	1,196	65		2,473	1,630	4,103
2003		10,877	2,142 [j]	791 [j]	229 [i]	2,962	227	17	50	294	53		1,421	393	1,814
2004		40,199	3,255 [c,j]	2,038 [j]	430 [i]	no weir	934	114	100	1,148	0		4,652	1,045	5,697
2005		16,839[e]	3,836 [c,j]	no weir	619 [i]		[d]	[d]	130	130	305		1,464	1,883	3,347
2006		8,786[e]	5,723 [cj]		912 [i]		294[k]	171	272	737	47		2,389	1,750	4,139
Means															
1981-2006	5,139	20,129	3,717	2,054	438		278	79	77	350	164		1,039	984	1,800
1997-2006		19,873	5,598		629		412	96	77	534	182		1,571	1,128	2,699
2002-2006		24,928	6,029		676		597	123	125	701	94		2,480	1,340	3,820
SEG Range	10,100-17,700												450-700		
2007		17,573	9,618 [cj]		1,024 [i]		380	50	0	430	50	27	725	1,150	1,875

-continued-

Table 20.-Page 2 of 2.

[a] Foot surveys unless otherwise noted.

[b] Weir located at River Mile 34 in 1986, 1988-1995; RM 71, 1996-2007.

[c] 1982-1991 weir count plus stream survey; 1992, 1993 weir count; 1994-1996 and 2004-2007 weir was removed on August 15 before the majority of the coho run. In 1997 the weir was out on September 1.

[d] No survey conducted.

[e] Incomplete or partial count due to weir submersion.

[f] Count conducted late due to high water.

[g] Grand total includes Little Susitna index and weir, Fish Creek weir, Cottonwood Creek index, Wasilla Creek index total, Yellow Creek, McRoberts Creek/Jim Creek total and Eklutna Tailrace.

[h] Combination weir and foot survey. Weir was removed prior to completion of coho run.

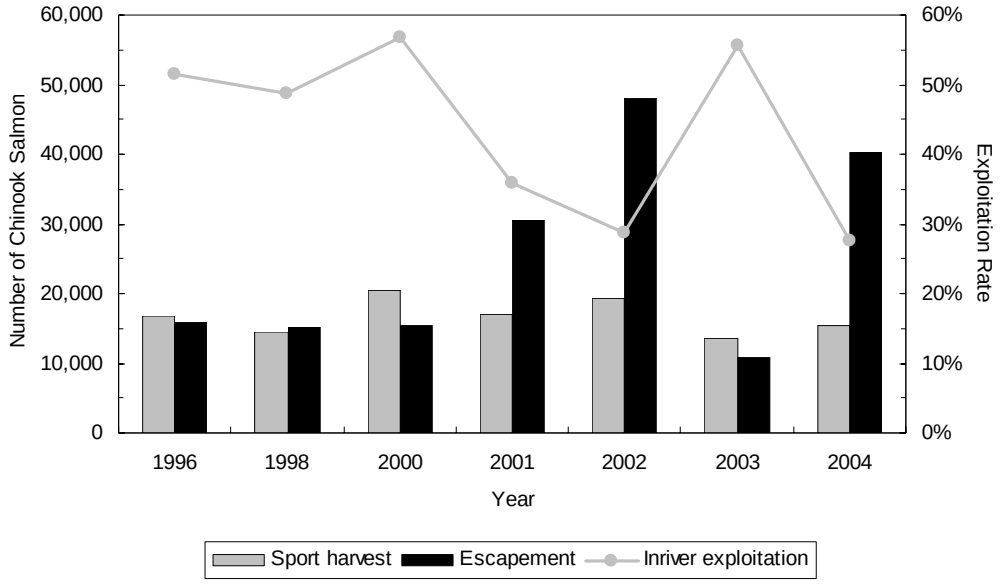
[i] Beginning in 1999 highest count of three counts in a 2-week period.

[j] Includes fish counted below weir at close of season.

[k] Poor count conditions

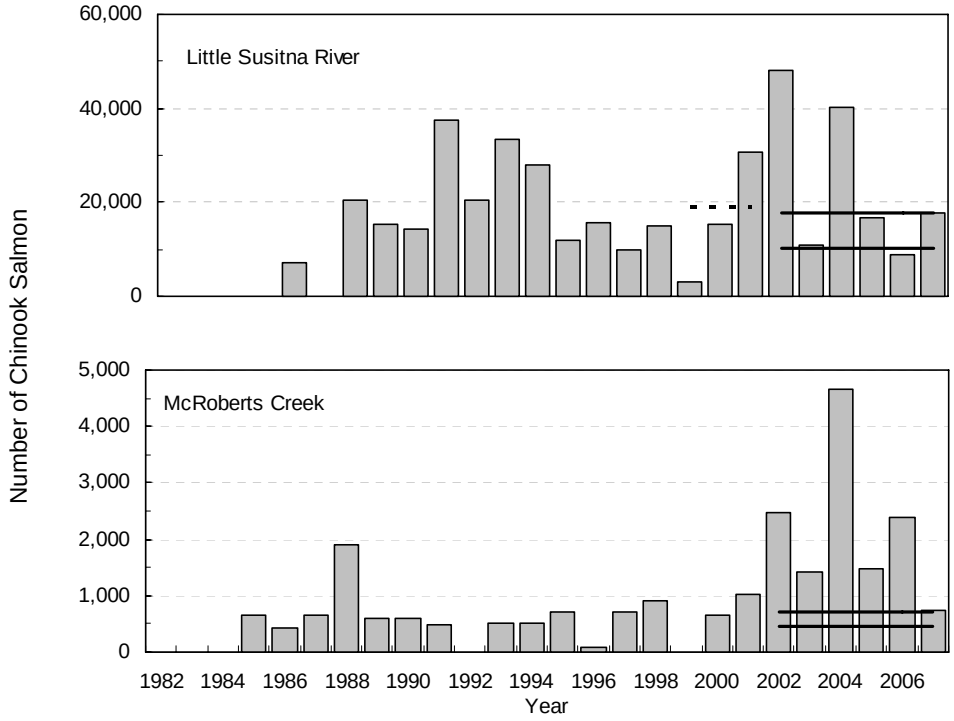
[l] Total does not represent actual escapement due to incomplete or partial count on the Little Susitna River weir.

[m] Other historical counts including Little Susitna and Eklutna indexes and Jim Creek weir may be found in Sweet et al. 2004.



Notes: Escapement counts in 1997 and 1999 were incomplete due to flooding.

Figure 15.-Coho salmon harvest, escapement, and inriver exploitation from the Little Susitna River sport fishery for years counts were completed at a weir located at rm 71.



Notes: Y-axis scales vary by stock. Bars are escapement, solid lines represent current escapement goal ranges, and dashed lines represent previous escapement goals.

Figure 16.-Little Susitna River weir and McRoberts Creek index counts of coho salmon, 1982-2007, and escapement goals.

Table 21.-Eastside Susitna Management Unit and Westside Susitna Management Unit coho salmon escapement counts, 1981-2007.

	Westside Susitna Management Unit				Eastside Susitna Management Unit[a]					
Year	Yentna River[b]	Deshka River[c]	Rabideux Creek Index	Total	Birch Creek index	Question Creek Index	Answer Creek Index	Total	Susitna River[d]	Total
1981	17,017		[e]	17,017	[e]	[e]	[e]	[e]	37,000	54,017
1982	34,089		[e]	34,089	[e]	[e]	[e]	[e]	80,000	114,089
1983	8,867		[e]	8,867	[e]	[e]	[e]	[e]	24,000	32,867
1984	18,172		480	18,652	236	60	57	353	[e]	19,005
1985	9,181		82	9,263	30	89	9	128	[e]	9,391
1986	23,457		[e]	23,457	25	[e]	[e]	25	[e]	23,482
1987	6,279		50[f]	6,329	46	149	10	205	[e]	6,534
1988	12,173		230	12,403	63	337	160	560	[e]	12,963
1989	25,695		20	25,715	180	31	66	277	[e]	25,992
1990	21,346		20	21,366	36	41	6	83	[e]	21,449
1991	57,275		185	57,460	300	492	51	843	[e]	58,303
1992	29,073		[e]	29,073	167	227	181	575	[e]	29,648
1993	37,752		[e]	37,752	178	370	34	582	[e]	38,334
1994	25,173		105	25,278	224	339	0[g]	563	[e]	25,841
1995	74,406	12,824	39	87,269	127	155	35	317	[e]	87,586
1996	34,420		[e]	34,420	458	238	43	739	[e]	35,159
1997	13,670	8,063	114	21,847	217	186	57	460	[e]	22,307
1998	24,769	6,773	56	31,598	356	519	45	920	[e]	32,518
1999	37,933	4,563	169	42,665	153	128	470	751	[e]	43,416
2000	40,921	26,387	354	67,662	809	1,040	899	2,748	[e]	70,410
2001	47,077	29,927	656	77,660	1,470	450	371	2,291	[e]	79,951
2002	75,090	24,612	[e]	99,702	1,158	1,010	249	2,417	[e]	102,119
2003	45,222	17,305	344	62,871	[e]	407	131	538	[e]	63,409
2004	92,343	62,940	[e]	155,283	[e]	822	111	933	[e]	156,216
2005	76,890	47,887	[e]	124,777	1,014	537	35	1,586	[e]	126,363
2006	132,889	59,419	3063	195,371	883	299	270	1,452	[e]	196,823
Means										
1981-2006	39,276	32,085[h]	373	51,071	387	360	150	841	47,000	57,238
2002-2006	86,836	42,711 [h]	1,704	134,576	949	516	137	1,127		135,703
1997-2006	63,682	32,085 [h]	774	95,288	835	579	287	1,515		96,803
2007	39,957	10,575	[e]	50,532	167	241	26	434	[e]	50,966

[a] Survey conducted by walking portions of the creek.

[b] Sonar counts, dates of assessment vary; estimates for 1981-1984 encompass the entire coho salmon migration. Davis 2000. Estimates after 1984 are partial due to the sonar site closure part way through the coho return.

[c] Weir count. 1995 rm 17, 1997-2000 rm 7: 1998, 1999, 2002, and 2005 weir was underwater for an extended time during coho season resulting in an incomplete count.

[d] Sonar counts upstream of rm 80.

[e] No survey conducted.

[f] Poor survey conditions.

[g] Beaver dam downstream of index area blocking passage of fish.

[h] Mean includes only complete counts years at rm 7: 1997, 2000-2001, 2003-2005, and 2007.

Table 22.-Sport harvest of sockeye salmon in the Knik Arm Management Unit, by fishery, 1977-2006.

Year	Little Susitna	Knik River[a]	Eklutna Tailrace	Cottonwood Creek	Big Lake[b]	Other	Total
1977	888					688	1,576
1978	859					380	1,239
1979	1,478			1,525		613	3,616
1980	2,127			2,660		887	5,674
1981	1,619	450		3,245		766	6,080
1982	1,865	880		608		1268	4,621
1983	2,787	1,277		1,632		8601	14,297
1984	6,385	823	187	661		1184	9,240
1985	2,894	1,037	142	1,179	109	251	5,612
1986	3,616	905	28	789	39	632	6,009
1987	3,513	1,105	254	869	1,087	1,957	8,785
1988	2,310	1,928	200	346	2,037	1,255	8,076
1989	2,315	1,322	204	683	2,900	1,616	9,040
1990	891	2,219	29	271	2,238	940	6,588
1991	1,722	1,459	19	47	565	1156	4,968
1992	1,274	1,471	173	633	1,241	557	5,349
1993	2,487	1,041	211	453	598	1136	5,926
1994	1,809	1,258	133	807	476	599	5,082
1995	1,116	990	190	895	651	507	4,349
1996	2,286	1,077	84	444	68	348	4,307
1997	1,845	864	100	1,008	122	156	4,095
1998	872	1,220	57	2,906	154	290	5,499
1999	1,282	614	151	1,080	432	99	3,658
2000	3,661	1,543	764	1,118	21	429	7,536
2001	1,959	922	999	314	10	124	4,328
2002	2,133	1,268	529	319	147	223	4,619
2003	3,337	1,554	122	961	57	575	6,606
2004	2,776	2,499	491	719	400	263	7,148
2005	1,442	848	362	538	79	191	3,460
Mean							
2001-2005	2,422	1,542	376	634	171	313	5,458
2006	1,556	2,173	289	279	0	325	4,622

[a] Knik River and tributaries including Jim Creek.

[b] Big Lake drainage streams.

Table 23.-Sport harvest of sockeye salmon in the Eastside Susitna Management Unit, by fishery, 1977-2006.

Year	Willow Creek	Sheep Creek	Montana Creek	Sunshine Creek	Talkeetna River[a]	Other	Total
1977	831	450	978		334	1,001	3,594
1978	56	14	85		28	84	267
1979	94	31	346	157	31	361	1,020
1980	83	0	257	116	6	411	873
1981	77	105	182	220	29	220	833
1982	94	88	514	189	115	555	1,555
1983	425	370	534	685	534	673	3,221
1984	249	62	561	100	636	1,097	2,705
1985	139	30	279	249	508	260	1,465
1986	290	0	363	290	1,597	1,489	4,029
1987	254	163	163	181	580	705	2,046
1988	564	273	364	18	1,110	528	2,857
1989	414	169	296	363	617	668	2,527
1990	208	149	149	119	1,506	546	2,677
1991	397	168	44	88	1,280	920	2,897
1992	526	189	370	394	1,356	633	3,468
1993	528	39	237	183	2,560	590	4,137
1994	383	102	85	133	2,278	462	3,443
1995	430	98	481	220	2,082	371	3,682
1996	113	8	88	43	2,053	370	2,675
1997	119	190	144	60	4,931	407	5,851
1998	86	103	195	68	4,546	861	5,859
1999	162	112	248	0	3,197	889	4,608
2000	307	122	346	199	4,683	852	6,509
2001	244	269	584	48	4,797	834	6,776
2002	215	122	199	31	2,615	245	3,427
2003	147	74	267	116	1,574	556	2,734
2004	110	20	336	109	2,399	133	3,107
2005	85	84	113	24	1,280	91	1,677
Mean 2001-2005	139	75	229	70	1,967	256	2,736
2006	378	18	499	44	110	363	1,412

[a] Talkeetna River and tributaries including Clear Creek and Larson Creek.

Table 24.-Sport harvest of sockeye salmon from the Westside Susitna Management Unit, by fishery, 1977-2006.

Year	Alexander Creek	Deshka River	Yentna River	Lake Creek	Fish Creek[a]	Talachulitna River	Other[b]	Total
1977	349	0		658		457	1,322	2,786
1978	183	0		254		141	1,056	1,634
1979	79	0		440		47	992	1,558
1980	52	0		267		112	680	1,111
1981	67	0		211		172	958	1,408
1982	335	0		252		63	2,231	2,881
1983	69	0		726		41	2,684	3,520
1984	87	125		374		262	2,567	3,415
1985	261	50		137		50	1,804	2,302
1986	0	11		547	1,273	424	1,821	4,076
1987	72	272		435	398	290	960	2,427
1988	55	146		291	146	800	1,729	3,167
1989	260	217	139	121	165	251	1,154	2,307
1990	30	189	20	358	89	189	1,063	1,938
1991	136	262	0	262	475	78	1,870	3,083
1992	123	82	107	115	189	205	2,095	2,916
1993	45	87	103	489	412	171	854	2,161
1994	38	0	237	430	142	237	835	1,919
1995	94	42	239	392	178	191	970	2,106
1996	0	8	0	137	68	108	794	1,115
1997	61	11	410	1,656	209	335	427	3,109
1998	86	57	232	868	168	181	871	2,463
1999	205	50	324	2,604	865	337	894	5,279
2000	1,440	339	761	1,767	226	162	251	4,946
2001	544	249	397	3,149	714	159	1,099	6,311
2002	257	67	94	526	238	278	421	1,881
2003	138	0	137	6,900	162	233	1,090	8,660
2004	0	154	247	1,977	392	339	249	3,358
2005	0	70	54	1,622	410	34	29	2,219
Mean								
2001-2005	99	73	133	2,756	301	221	447	4,030
2006	66	92	48	214	0	195	11	626

[a] Yentna River drainage.

[b] May include harvest from West Cook Inlet waters.

Table 25.-Sport harvest of sockeye salmon in the West Cook Inlet Management Unit, by fishery, 1977-2006.

Year	Chuitna River	Kustatan River	Big River Lakes[a]	Susitna River-North Foreland	Susitna River-South of North Foreland	Other	Total
1977	6					0	6
1978	0					0	0
1979	0					0	0
1980	0					0	0
1981	48					0	48
1982	10					0	10
1983	356	110				0	466
1984	62	187				0	249
1985	274	162				25	461
1986	22	0				67	89
1987	272	0				0	272
1988	437	18				18	473
1989	43	165				321	529
1990	139	10	437			50	636
1991	552	203				10	765
1992	8	131				49	188
1993	46	289	976		229	815	2,355
1994	0	285	1,013		114	623	2,035
1995	62	44	998		159	41	1,304
1996	228	102	2,028	127	152	314	2,951
1997	170	274	1,171	150	409	0	2,174
1998	235	314	1,282	266	288	137	2,522
1999	194	186	1,783	76	464	287	2,990
2000	58	210	3,047	210	677	42	4,244
2001	634	293	992	201	1,030	0	3,150
2002	585	232	664	24	160	354	2,019
2003	179	397	3,491	94	372	175	4,708
2004	23	89	2,793	294	23	101	3,323
2005	123	95	3,401	121	139	146	4,025
Mean 2001-2005	228	203	2,587	133	174	194	3,519
2006	0	95	3,980	306	458	154	4,993

[a] Majority of harvest occurs at the mouth of Wolverine Creek.

Table 26.-Sport harvest of sockeye salmon in the Northern Cook Inlet Management Area, by management unit, 1977-2006.

Year	Knik Arm	Eastside Susitna	Westside Susitna	West Cook Inlet	Total
1977	1,576	3,594	2,786	6	7,962
1978	1,239	267	1,634	0	3,140
1979	3,616	1,020	1,558	0	6,194
1980	5,674	873	1,111	0	7,658
1981	6,080	833	1,408	48	8,369
1982	4,621	1,555	2,881	10	9,067
1983	14,297	3,221	3,520	466	21,504
1984	9,240	2,705	3,415	249	15,609
1985	5,612	1,465	2,302	461	9,840
1986	6,009	4,029	4,076	89	14,203
1987	8,785	2,046	2,427	272	13,530
1988	8,076	2,857	3,167	473	14,573
1989	9,040	2,527	2,307	529	14,403
1990	6,588	2,677	1,938	636	11,839
1991	4,968	2,897	3,083	765	11,713
1992	5,349	3,468	2,916	188	11,921
1993	5,926	4,137	2,161	2,355	14,579
1994	5,082	3,443	1,919	2,035	12,479
1995	4,349	3,682	2,106	1,304	11,441
1996	4,307	2,675	1,115	2,951	11,048
1997	4,095	5,851	3,109	2,174	15,229
1998	5,499	5,859	2,463	2,522	16,343
1999	3,658	4,608	5,279	2,990	16,535
2000	7,536	6,509	4,946	4,244	23,235
2001	4,328	6,776	6,311	3,150	20,565
2002	4,619	3,427	1,881	2,019	11,946
2003	6,606	2,734	8,660	4,708	22,708
2004	7,148	3,107	3,358	3,323	16,936
2005	3,460	1,677	2,219	4,025	11,381
Means					
1977-2005	5,772	3,121	2,967	1,448	13,309
2001-2005	5,458	2,736	4,030	3,519	15,743
2006	4,622	1,412	626	4,993	11,653

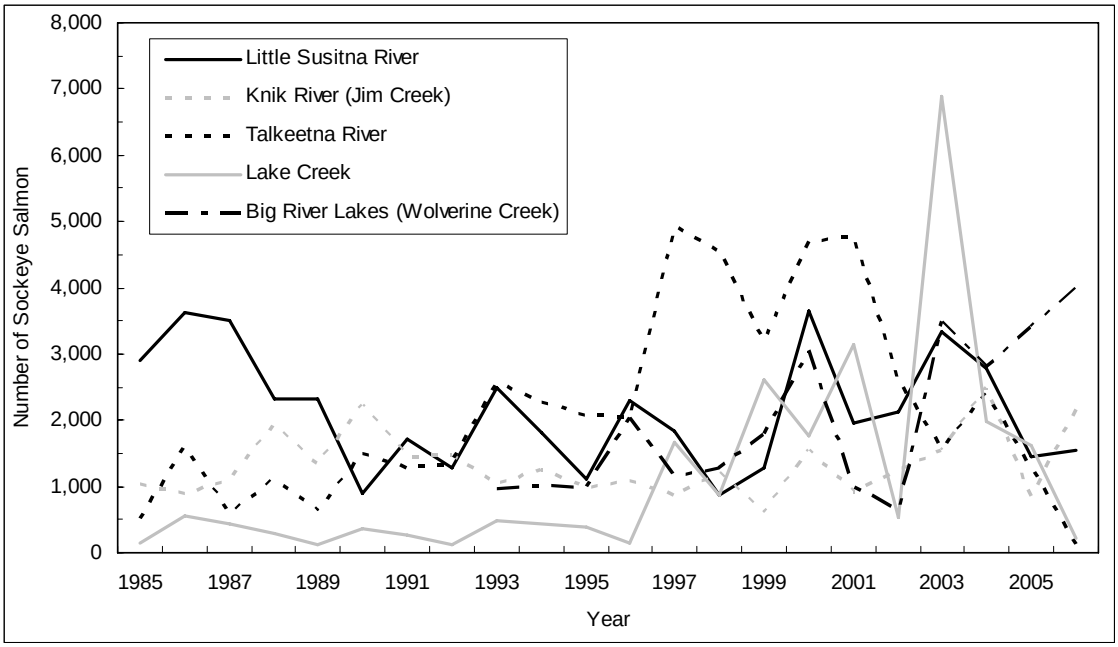


Figure 17.-Sport harvest of sockeye salmon from five major fisheries of the Northern Cook Inlet Management Area, 1985-2006.

Table 27.-Harvest, catch, and effort of sockeye salmon from Wolverine Creek as estimated by the SWHS and guide reports, 1996-2005.

	SWHS			Reported by Guides[b]	
Year	Harvest	Catch	Effort (angler-days)[a]	Harvest	Number of Anglers
1996	2,028	5,216	1,251		
1997	1,171	3,242	976		
1998	1,282	3,343	729		
1999	1,783	2,922	1,341		
2000	3,047	5,966	2,054		
2001	992	3,057	902	9,261	7,565
2002	664	1,327	678	11,366	9,090
2003	3,491	6,632	3497	10,386	8,672
2004	2,793	6,961	3,322	10,032	7,377
2005	3,401	8,486	3,262	11,513	9,203

[a] All species.

[b] From reports by charter service guides.

Table 28.-Sockeye salmon counts from Yentna and Crescent River sonar, Chelatna, Hewitt, Judd and Larson lakes, Fish, Cottonwood, Wasilla, Jim and Packers creeks weirs, and the Little Susitna River weir, 1968-2006.

	Knik Arm Management Unit					Eastside Susitna Management Unit			Westside Susitna Management Unit						West Cook Inlet Management Unit		
Year	Jim Ck Weir [a]	Fish Ck Weir [b,c]	Little Susitna R Weir [d]	Cotton-wood Ck Weir	Wasilla Ck Weir	Larson Lk Weir	Byers Lk	Stephan Lk	Yentna R Sonar	Hewitt Lk Weir	Chelatna Lk Weir	Swan Lk	Judd Lk. Weir	Shell Lk Weir	Wolverine Ck [i]	Crescent R Sonar	Packers Ck Weir
1968		19,616 [h]															
1969		12,456															
1970		25,000															
1971		31,470															
1972		6,981															
1973		2,705															
1974		16,225															
1975		29,882															
1976		14,032															
1977		5,183															
1978		3,555							94,000								
1979		68,739							157,000							87,000	
1980		62,828							191,000							91,000	16,477
1981		50,479							340,000						17,822 [j]	41,000	13,024
1982		28,164							216,000						32,950 [j]	59,000	15,687
1983		118,797							112,000						18,189 [j]	92,000	18,403
1984		192,352				35,254 [g]			194,000							118,000	30,684
1985		68,577				37,874 [g]			228,000							129,000	36,850
1986		29,800				32,322 [g]			92,000					4,237 [n]		N/C	29,604
1987		91,215				16,753 [g]			66,000							119,000	35,401
1988		71,603	2,642						52,347							57,716	18,607
1989		67,224	6,203						96,269							71,064	22,304
1990		48,717							140,379	12,943 [e]						52,180	31,868
1991		50,500							105,000							44,500	41,275
1992		72,108							66,057							58,227	28,361
1993	3,548	117,619							141,694		20,235 [f]					37,556	40,869
1994	5,197	100,638	16,918						128,032		28,303 [f]					30,355	30,788
1995		115,101	7,129						121,479		20,104 [f]					52,250	29,473

-continued-

Table 28.-Page 2 of 3.

	Knik Arm Management Unit					Eastside Susitna Management Unit			Westside Susitna Management Unit						West Cook Inlet Management Unit		
Year	Jim Ck Weir [a]	Fish Ck Weir [b,c]	Little Susitna R Weir [d]	Cotton-wood Ck Weir	Wasilla Ck Weir	Larson Lk Weir	Byers Lk	Stephan Lk	Yentna R Sonar	Hewitt Lk Weir	Chelatna Lk Weir	Swan Lk	Judd Lk. Weir	Shell Lk Weir	Wolverine Ck [i]	Crescent R Sonar	Packers Ck Weir
1996		63,164							90,781		28,684 [f]					28,729	17,767
1997		55,035		8,224		40,112			157,797		84,899 [f]					70,768	19,364
1998		22,865		27,930	840	63,514			119,623		27,284 [f]		34,416			62,257	17,732
1999		26,725		39,572	854	18,943			99,029							68,985	16,860
2000		19,533		16,921	245	11,822			123,749							56,599	20,151
2001		43,498		15,229	198				83,532							78,081	
2002		90,482		6,791	1,354				78,430							62,833	
2003		91,952		4,601	757				181,404							122,909	
2004		22,157		3,127					71,281						10,541 [m]	103,183	
2005		14,215				9,959			36,921						15,625 [l,m]	125,787	
2006		32,562				56,305	3,074		92,045	2,507	13,266		40,630	69,747	2,000 [l,m]	92,533	
Means																	
Overall	4,373	51,378	8,223	15,299	708	32,286	3,074		126,753	7,725	31,825		37,523	36,992	16,188	74,537	25,312
1997-2006		41,902							104,381							84,394	
2002-2006		22,978							66,749							107,168	
SEG		20,000-70,000							90,000-160,000							25,000-50,000	15,000-25,000
OEG									75,000-180,000 [k]								
2007		27,948				47,819	1,701	4,120	79,901		11,671 [o]	5,489	58,134	26,784		79,406	

[a] Bartlett *Unpublished* b and c.

[b] Measured by weir (1968 excepted). Years 1980-1993 include downstream foot surveys upon removing weir.

[c] Years hatchery sockeye salmon contributed to the escapement were 1979-1981, 1983-2007.

[d] Bartlett and Vincent-Lang 1989; Bartlett and Sonnichsen 1990; Bartlett 1996a,b.

[e] CIAA 1991.

[f] CIAA 1998a.

[g] CIAA 1998b.

[h] A counting screen was used instead of a weir.

[i] Tributary of Big River Lakes. Weir operated by CIAA 1981-1983. Remote camera operated by ADG&G 2004-2006.

[j] CIAA 1981-1982, 1984.

[k] Optimal escapement goal takes affect when sockeye salmon returns to the Kenai River exceed 4,000,000 fish.

[l] Includes 5,000 fish counted at the mouth in 2005 and 2,000 counted in 2006 on the day the camera was pulled.

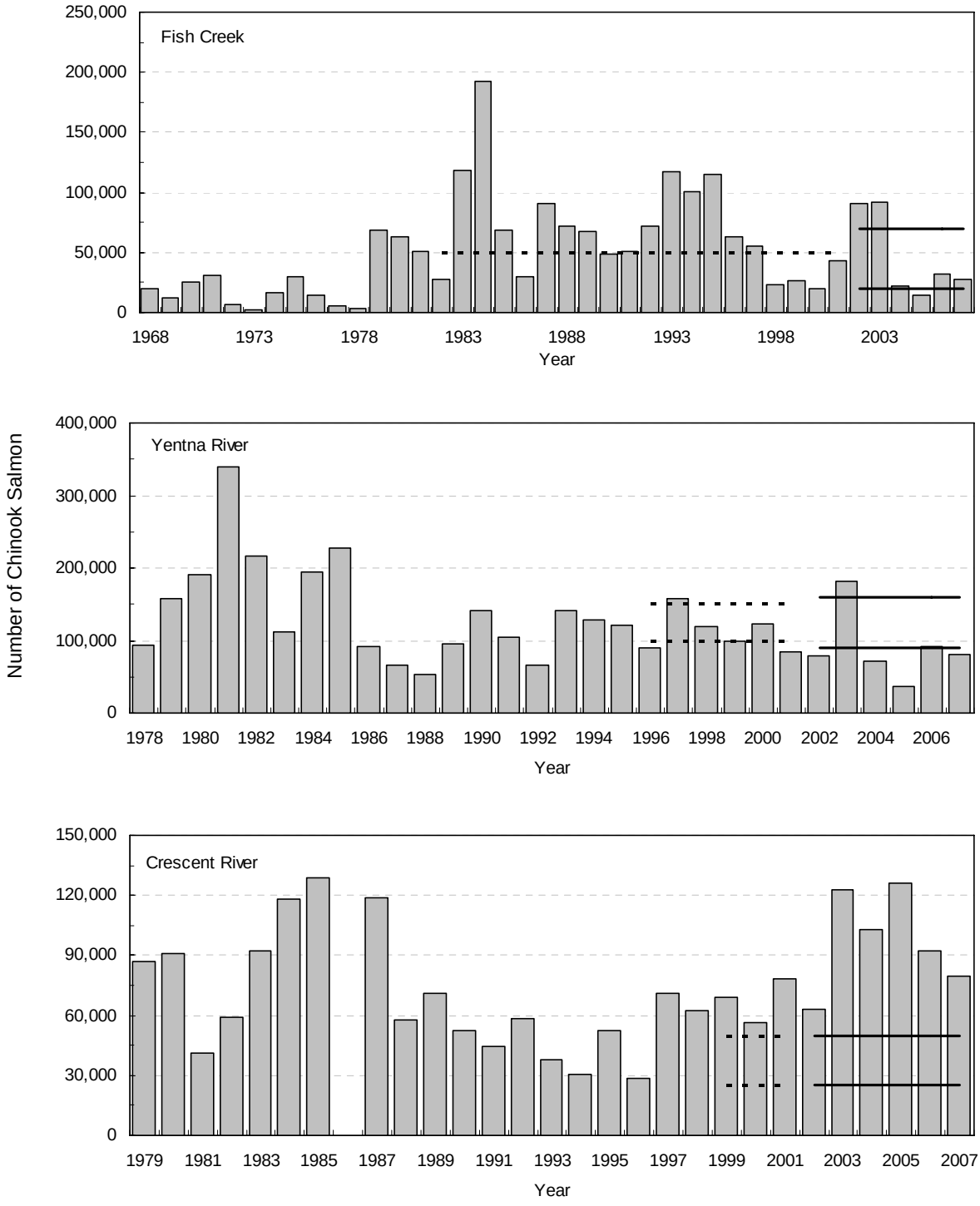
[m] Incomplete count. During 2005, encountered problems with VCR tapes self-ejecting. A Digital Video Recorder (DVR) Camera system was down for two weeks during the 2005 and not operational through the majority of the 2006 run.

[n] CIAA 1987.

[o] Incomplete count.

Table 29.-Bodenburg Creek escapement index surveys, 1968-2007.

Date	Sockeye	Chum
Aug 1968	350	0
Sep 1969	125	0
8/25/1970	83	0
9/5/1971	110	0
8/31/1972	464	0
8/27/1973	208	0
9/6/1974	169	0
9/3/1975	148	0
9/19/1975	0	3
9/8/1976	111	0
8/29/1977	178	0
8/29/1978	541	0
8/29/1979	321	0
8/25/1980	483	0
8/19/1981	260	0
9/17/1982	722	0
8/31/1983	359	0
1984	No count	
9/5/1985	232	0
9/4/1986	119	120
9/3/1987	77	1
8/8/1988	86	7
8/31/1989	190	6
9/7/1990	195	3
8/27/1991	0	1
9/6/1991	160	0
8/29/1992	54	0
9/2/1992	66	4
8/24/1993	212	14
8/25/1994	220	0
9/6/1994	0	93
8/28/1995	156	219
9/4/1996	111	0
8/28/1997	142	4
8/21/1998	156	13
8/30/1999	257	21
8/28/2000	228	5
8/29/2001	232	8
8/30/2002	320	25
8/22/2003	402	3
8/26/2004	283	0
8/29/2005	269	0
8/28/2006	367	6
8/24/2007	164	2
Mean	217	13



Notes: Y-axis scales vary by stock. Bars are escapement, solid lines represent current escapement goal ranges, and dashed lines represent previous escapement goals.

Figure 18.-Sockeye salmon counts from the Fish Creek weir, Yentna River sonar, and Crescent River sonar, and escapement goals.

Table 30.-Northern Cook Inlet Management Area sport catch and harvest of northern pike, by management unit, 1977-2005.

	Northern Cook Inlet Management Area[a]													
	Knik Arm Management Unit[b]		Eastside Susitna Management Unit		Westside Susitna Management Unit		West Cook Inlet Management Unit		Total		Southcentral Region		Statewide	
Year	Catch[c]	Harvest	Catch[c]	Harvest	Catch[c]	Harvest	Catch[c]	Harvest	Catch[c]	Harvest	Harvest	% NCIMA	Number	% NCIMA
1977		0				132		0		132	321	41.1	11,982	1.1
1978		0				316		0		316	767	41.2	12,520	2.5
1979		0				382		0		382	762	50.1	12,741	3.0
1980		0				232		0		232	1,358	17.1	17,000	1.4
1981		0				125		0		125	1,411	8.9	16,536	0.8
1982		0				607		0		607	1,707	35.6	18,964	3.2
1983		0				944		0		944	2,642	35.7	21,476	4.4
1984		0				1,821		0		1,821	4,424	41.2	18,641	9.8
1985		156				1,248		0		1,404	2,240	62.7	17,943	7.8
1986		458				1,519		0		1,977	2,894	68.3	21,890	9.0
1987		924				1,540		0		2,464	4,839	50.9	19,079	12.9
1988		364				2,818		291		3,473	3,598	96.5	23,440	14.8
1989		863				2,257		0		3,120	4,434	70.4	21,659	14.4
1990	2,593	754			14,465	2,088		0	17,058	2,842	3,655	77.8	15,985	17.8
1991	7,021	2,709			11,193	3,931		0	18,214	6,640	8,704	76.3	29,611	22.4
1992	7,097	2,605			13,828	2,777		0	20,925	5,382	7,314	73.6	18,616	28.9
1993	10,141	2,102	0	0	24,077	3,619	19	0	34,237	5,721	7,131	80.2	19,366	29.5
1994	2,816	1,328	0	0	5,436	2,556	18	9	8,270	3,893	5,800	67.1	25,558	15.2
1995	825	522	0	0	15,414	3,024	0	0	16,239	3,546	5,323	66.6	19,006	18.7
1996	12,220	4,021	368	11	17,657	3,902	0	0	30,245	7,934	10,503	75.5	23,043	34.4
1997	9,137	4,858	795	95	16,266	4,026	75	45	26,273	9,024	10,489	86.0	16,603	54.4
1998	10,223	4,272	130	130	17,928	3,753	321	25	28,602	8,180	9,595	85.3	15,617	52.4
1999	14,231	6,785	441	260	14,348	3,686	334	93	29,354	10,824	13,327	81.2	19,766	54.8
2000	16,717	5,698	308	101	27,381	3,692	234	86	44,640	9,577	12,019	79.7	18,062	53.0
2001	15,457	6,544	776	55	25,147	5,479	1,042	661	42,422	12,739	16,673	76.4	23,623	53.9
2002	13,079	5,716	647	618	18,450	5,865	284	119	32,460	12,318	14,862	82.9	22,567	54.6
2003	14,094	4,026	11	0	14,818	3,816	355	182	29,278	8,024	11,282	71.1	17,388	46.1
2004	11,179	4,961	119	91	21,878	6,626	704	493	33,880	12,171	17,122	71.1	28,799	42.3
2005	11,347	6,160	513	104	25,704	4,889	330	153	37,894	11,306	13,802	81.9	24,819	45.6
Means 1977-2005	9,886	2,270	316	113	17,749	2,678	286	74	28,124	5,073	6,862	63.9	19,734	24.5
2001-2005	13,031	5,481	413	174	21,199	5,335	543	322	35,187	11,312	14,748	76.7	23,439	48.5
2006	14,754	6,664	312	137	15,685	4,318	799	285	31,550	11,404	13,261	86.0	18,184	62.7

[a] No reported catch or harvest from Eastside Susitna or West Cook Inlet management units until 1993.

[b] Harvest of northern pike prior to 1985 may have been included in other fish species category.

[c] Catch estimates available beginning in 1990.

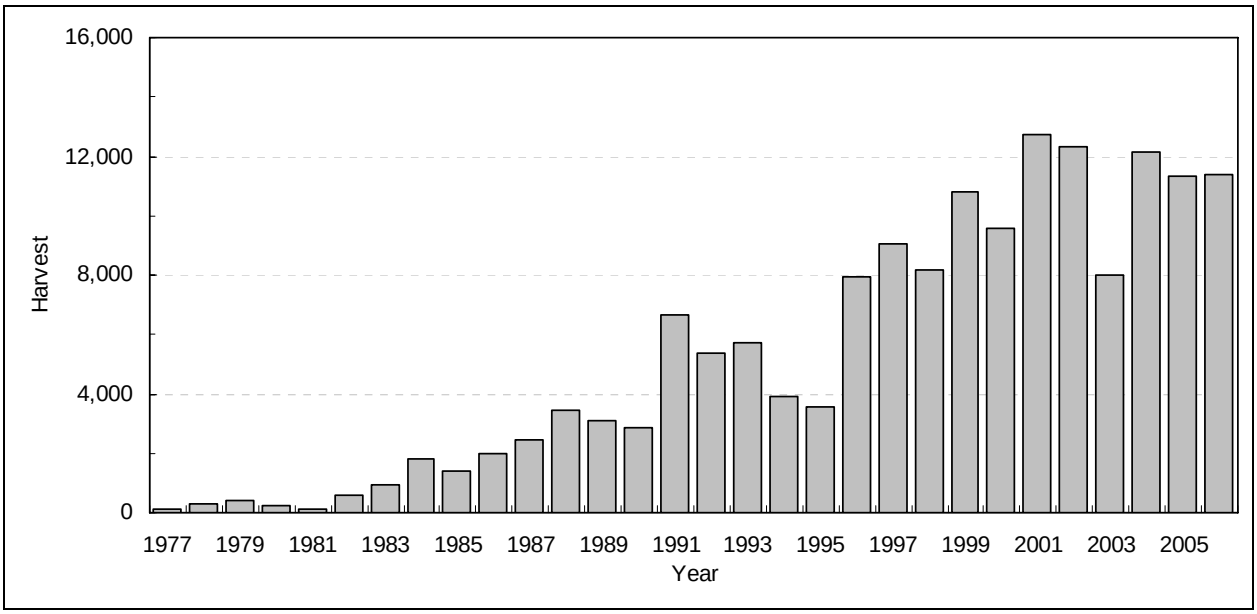


Figure 19.-Sport harvest of northern pike in the Northern Cook Inlet Management Area, 1977-2006.

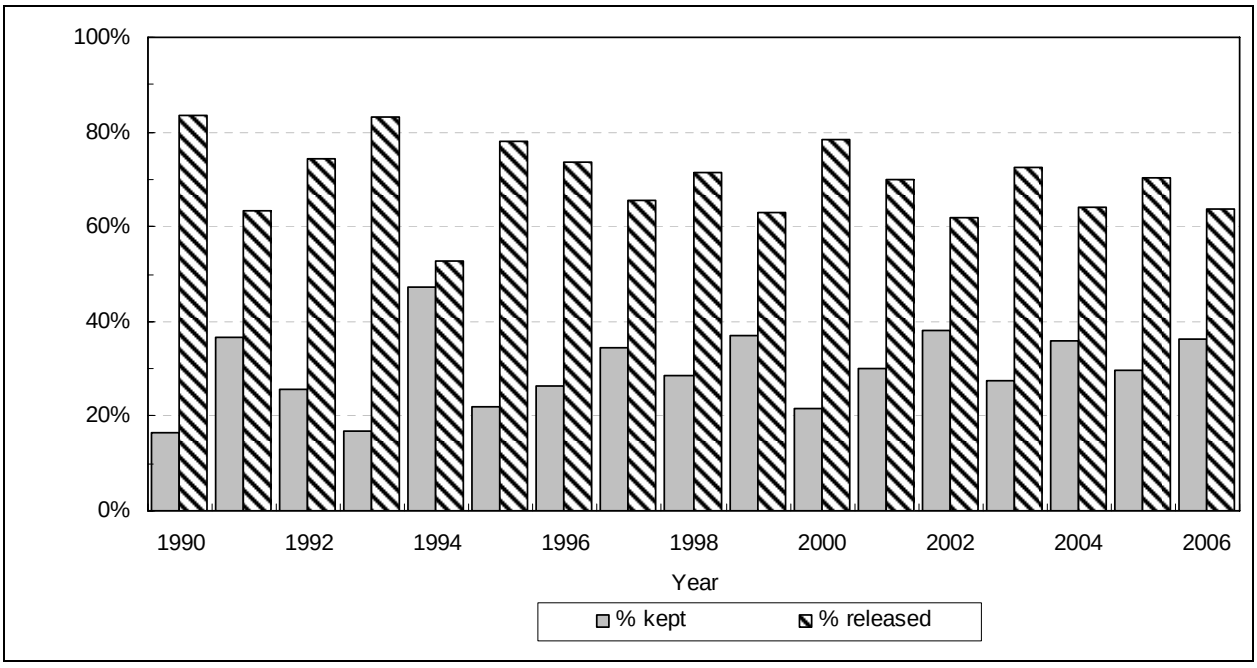


Figure 20.-Percent of sport-caught northern pike that were kept and released in the Northern Cook Inlet Management Area, 1990-2006.

Table 31.-Sport catch of northern pike in the Knik Arm Management Unit, by fishery, 1990-2006.

Year	Little Susitna	Knik River [a]	Figure 8 Lake	Cottonwood Creek	Big Lake [b]	Flathorn Lake	Nancy Lake [c]	Other [d]	Total
1990	0	0	0	0	0	66	2314	213	2,593
1991	0	0	0	0	0	560	6,385	76	7,021
1992	0	0	0	0	0	948	5,970	179	7,097
1993	0	0	0	0	0	1786	6,445	1910	10,141
1994	0	0	0	0	64	709	1846	197	2,816
1995	59	0	0	0	0	722	0	44	825
1996	0	0	0	0	13	3,852	7,210	1145	12,220
1997	0	0	1,553	0	7	3,152	3,759	666	9,137
1998	150	0	1002	0	202	4241	3,761	867	10,223
1999	0	0	2305	0	159	1321	9,336	1,110	14,231
2000	66	0	1946	0	667	3,708	8,685	1645	16,717
2001	129	0	1499	0	235	3,123	7,840	2631	15,457
2002	76	0	4078	0	0	3,869	991	4065	13,079
2003	0	0	1,388	0	48	6,676	1,312	4670	14,094
2004	150	0	3,389	0	0	1,740	5,354	546	11,179
2005	118	0	2,160	0	0	1,959	5,254	1856	11,347
Mean 2001-2005	86	0	2,754	0	12	3,561	3,228	2,784	12,425
2006	0	0	3,141	0	71	5,744	5,606	192	14,754

[a] Knik River and tributaries including Jim Creek.

[b] Big Lake and drainage streams.

[c] Nancy Lake complex lakes.

[d] Includes lakes and streams.

Table 32.-Sport catch of northern pike in the Westside Susitna Management Unit, by fishery, 1990-2006.

Year	Alexander Creek	Deshka River	Peters Creek	Lake Creek	Fish Creek [a]	Trapper Lake	Other Streams [b]	Other Lakes [b]	Total
1990	3,149	0	0	589	3,065		691	6,971	14,465
1991	2,866	0	0	376	2,490	1,997	13	3,451	11,193
1992	3,912	0	0	196	1,170	1,349	693	6,508	13,828
1993	12,172	0	0	596	3,885	4,128	3,098	198	24,077
1994	2,306	96	0	318	839	881	832	164	5,436
1995	7,651	0	0	334	1,288	2,359	2,862	920	15,414
1996	7,814	172	0	306	1,347	6,033	1,985		17,657
1997	9,362	272	0	81	1,804	1,948	246	2,175	15,888
1998	10,386	113	0	1,015	418	1,729	556	3,704	17,921
1999	5,018	555	0	284	1,269	3,162		4,060	14,348
2000	13,834	753	0	426	1,870		2,887	7,611	27,381
2001	18,103	962	0	1,030	1,467	891	2,694	0	25,147
2002	9,627	297	0	237	2,266	999	4,142	882	18,450
2003	6,649	515	0	799	2,228	2,066	2,192	352	14,801
2004	11,833	1,645	0	444	921	1,456	4,010	1,569	21,878
2005	10,717	927	0	1,074	1,815	2,182	7,676	1,313	25,704
Mean 2001-2005	9,707	846	0	639	1,808	1,676	4,505	1,029	20,208
2006	2,886	1,596	0	812	5,524	1,971	2,248	621	15,658

[a] Fish Lake drainage (Yentna River drainage).

[b] May include harvest from West Cook Inlet waters through 1995.

Table 33.-Sport harvest of burbot in the Northern Cook Inlet Management Area, by management unit, 1977-2005.

Year	Knik Arm	Eastside	Westside	Total
1977	290	619	115	1,024
1978	452	271	153	876
1979	291	427	454	1,172
1980	310	367	706	1,383
1981	87	220	211	518
1982	681	199	776	1,656
1983	597	901	807	2,305
1984	336	1,133	1,309	2,778
1985	210	1,085	560	1,855
1986	804	1,380	715	2,899
1987	325	1,175	3,640	5,140
1988	291	600	944	1,835
1989	372	395	192	959
1990	262	1,345	1,534	3,141
1991	477	407	97	981
1992	500	608	304	1,412
1993	482	909	264	1,655
1994	512	674	1,090	2,276
1995	151	517	190	858
1996	218	284	396	898
1997	709	304	861	1,874
1998	121	208	1,029	1,358
1999	369	230	672	1,271
2000	1,130	242	1,130	2,502
2001	230	214	245	689
2002	1,069	211	91	1,371
2003	438	511	397	1,346
2004	171	238	320	729
2005	805	260	292	1,357
1977-2005 Mean	438	549	672	1,659
2001-2005 Mean	543	287	269	1,098
2006	550	406	126	1,082

Table 34.-Sport harvest by fishery, and total catch, of burbot in the Knik Arm Management Unit, 1977-2006.

Year	Little Susitna	Knik River [a]	Fish Creek [b]	Flathorn Lake	Big Lake	Nancy L. Complex	Other Streams [c]	Other Lakes	Harvest Total	Catch Total
1977	6				73	148	63		290	
1978	9				18	145	280		452	
1979	55			0	0	9	227		291	
1980	9			0	43	34	224		310	
1981	29	0		0	0	29	29		87	
1982	10	0		0	461	210	0		681	
1983	52	0		0	94	357	31	63	597	
1984	25	0		0	75	62	37	137	336	
1985	35	0	0	0	70	105	0	0	210	
1986	22	0	0	0	335	34	0	413	804	
1987	54	0	18	0	36	217	0	0	325	
1988	36	0	0	0	55	127	0	73	291	
1989	27	0	0	0	163	82	0	100	372	
1990	82	0	0	0	82	98	0	0	262	344
1991	40	13	0	0	66	358	0	0	477	863
1992	102	0	0	0	110	118	0	170	500	771
1993	43	0	107	0	278	54	0	0	482	771
1994	10	0	140	0	279	83	0	0	512	708
1995	0	0	0	0	110	7	0	34	151	377
1996	0	0	0	163	41	14	0	0	218	339
1997	13	0	0	0	696	0	0	0	709	3,106
1998	0	0	0	0	121	0	0	0	121	478
1999	0	0	0	13	331	25	0	0	369	817
2000	359	231	291	7	0		242	0	1,130	1,797
2001	0	0	7	0	202	14	0	7	230	393
2002	0	0	0	0	765	0	0	304	1,069	1,681
2003	0	0	0	0	394	11	0	33	438	756
2004	0	0	0	0	171	0	0	0	171	321
2005	25	0	0	0	598	136	0	46	805	1,393
Mean 2001-2005	6	0	0	0	482	37	0	96	621	1,038
2006	0	0	0	0	514	25	11	0	550	3,091

[a] Knik River and tributaries including Jim Creek.

[b] Big Lake drainage.

[c] Includes lakes and streams, 1977-1982.

Table 35.-Sport harvest by fishery, and total catch, of burbot from the Eastside Susitna Management Unit, 1977-2006.

Year	Willow Creek	Little Willow	Kashwitna River	Caswell Creek	Sheep Creek	Goose Creek	Montana Creek	Birch Creek	Sunshine Creek	Talkeetna River [a]	Other Streams [b]	Lakes	Harvest Total	Catch Total
1977	26	0			45		110			0	438		619	
1978	9	0			18		9			27	208		271	
1979	18	0		0	64		9		45	9	282		427	
1980	0	0		26	45		13		39	32	212		367	
1981	48	0		0	0		0		115	0	57		220	
1982	63	0		0	0		0		73	0	63		199	
1983	21	0	0	31	10		0		367	84	126	262	901	
1984	0	0	12	87	648	37	75		100	62	112	0	1,133	
1985	105	175		70	0		0		0	420	315	0	1,085	
1986	0	0	109	0	0	0	0	73	835	0	290	73	1,380	
1987	0	54	18	127	18	72	72	72	344	145	253	0	1,175	
1988	18	0	18	309	18	0	0	0	73	55	0	109	600	
1989	9	18	46	18	0	9	0	65	185	9	18	18	395	
1990	84	0	34	185	34	269	0		638	67	34	0	1,345	1,864
1991	0	55	22	66	11	44	22	77	0	88	22	0	407	957
1992	0	0	0	110	0	51	0	144	68	211	16	8	608	1,132
1993	21	85	0	32	75	0	0	118	133	310	135	0	909	1,458
1994	0	17	13	228	0	0	0	31	228	74	31	52	674	1,208
1995	0	0	0	115	0	0	63	11	69	122	34	103	517	837
1996	16	0	0	33	0	0	0	0	16	89	0	130	284	602
1997	0	0	0	26	32	0	39	52	39	39	0	77	304	573
1998	12	0	8	0	12	0	9	12	71	34	0	50	208	470
1999	0	0	0	0	0	13	16	76	53	0	72	0	230	503
2000	0	0	0	0	0	0	14	0	19	180	29	0	242	457
2001	7	0	14	0	0	0	7	43	115	0	28	0	214	357
2002	0	0	0	28	36	0	43	0	104	0	0	0	211	351
2003	0	0	0	0	9	0	0	32	0	332	43	95	511	716
2004	0	0	10	10	38	0	18	0	71	0	0	91	238	403
2005	0	0	74	12	0	0	62	0	37	25	0	50	260	705
Mean 2001-2005	0	0	21	13	21	0	31	8	53	89	11	59	305	544
2006	0	0	0	12	13	0	0	25	25	331	0	0	406	630

[a] Talkeetna River and tributaries including Clear Creek.

[b] Includes lakes and streams, 1977-1982.

Table 36.-Sport harvest by fishery, and total catch, of burbot in the Westside Susitna Management Unit, 1977-2006.

Year	Alexander Creek	Deshka River	Yentna River	Lake Creek	Fish Lakes [a]	Rabideux Creek	Other Streams [b]	Other Lakes [b]	Harvest Total	Catch Total
1977	0	3		42			51	19	115	
1978	0	0		0			117	36	153	
1979	36	309		64			45	0	454	
1980	0	224		0			448	34	706	
1981	29	96		29			57	0	211	
1982	84	252		0			10	430	776	
1983	0	126		283			125	273	807	
1984	12	237		100			199	761	1,309	
1985	0	140		140			105	175	560	
1986	0	257		67	89		302	0	715	
1987	18	1,123		507	145		1,738	109	3,640	
1988	36	36		327	218		127	200	944	
1989	0	96	19	0	19		58	0	192	
1990	51	118	34	556	438		84	253	1,534	1,870
1991	9	35	0	0	9	35	9	0	97	203
1992	0	42	0	0	76	76	76	34	304	709
1993	11	42	0	0	21		190	0	264	854
1994	0	115	166	45	135		598	31	1,090	1,247
1995	0	0	21	0	23		146	0	190	230
1996	0	0	0	14	16		366	0	396	860
1997	13	0	32	0	0		816	0	861	1,099
1998	0	23	0	3	4		999	0	1,029	1,207
1999	38	38	0	28	76		492	0	672	859
2000	359	231	291	7	0		242	0	1130	1,797
2001	0	94	122	0	0		29	0	245	371
2002	0	45	31	0	15		0	0	91	441
2003	0	54	162	28	0		153	0	397	650
2004	0	30	212	0	8		60	10	320	630
2005	0	124	12	15	0		141	0	292	664
Mean 2001-2005	0	63	104	11	6		89	3	275	596
2006	0	0	101	0	0		25	0	126	344

[a] Fish Lake drainage (Yentna River drainage).

[b] May include harvest from West Cook Inlet waters through 1998.

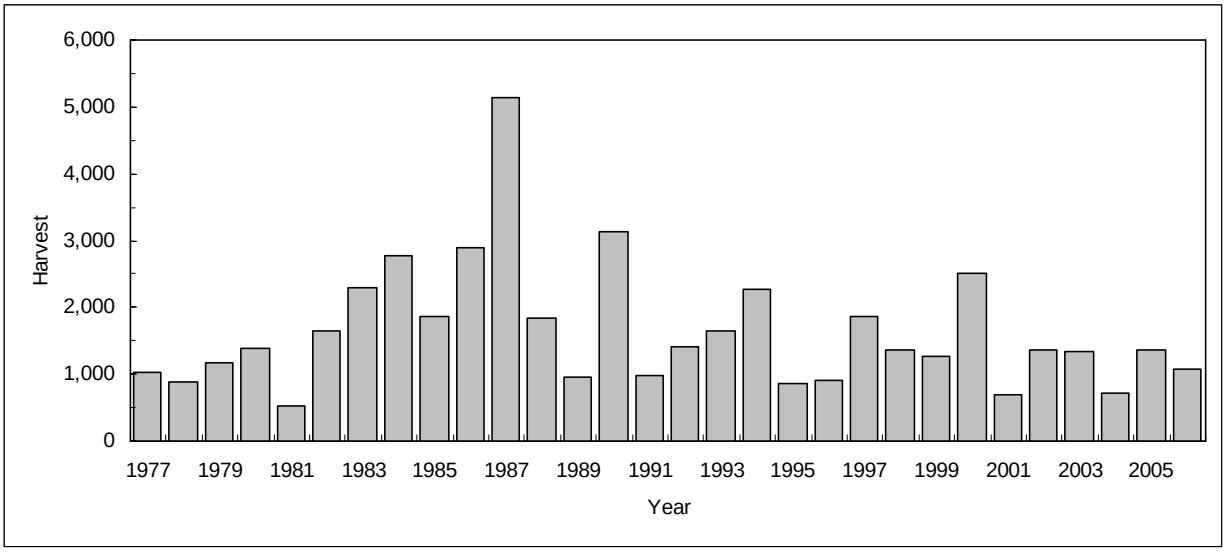


Figure 21.-Sport harvest of burbot in the Northern Cook Inlet Management Area, 1977-2006.

Table 37.-Fish Creek salmon harvests, by commercial set gillnet and personal use dip net, 1987-2006.

	Commercial Gillnet [a]						Personal Use Dip Net					
Year	Sockeye	Coho	Chum	Pink	Chinook	Total	Sockeye	Coho	Chum	Pink	Chinook	Total
1987	24,090	2,043	403	264	[b]	26,800	2,200					2,200
1988	38,251	11,604	325	591	9	50,780	3,000					3,000
1989	47,925	6,075	4,979	545	4	59,528	5,000					5,000
1990	23,450	5,708	5,308	696	4	35,166	6,500					6,500
1991	10,459	1,630	961	21	[b]	13,071	14,369		549	567		15,485
1992	10,748	1,817	1,289	573	[b]	14,427	19,002		607	678		20,287
1993	47,751	831	990	29	[b]	49,601	37,224	973	503	2,068		40,768
994	7,528	809	357	141	0	8,835	16,012	1,336	248	632		18,228
1995	19,477	1,999	1,018	72	5	22,571	9,102	2,640	99	290		12,131
1996	35,245	1,802	448	25	0	37,520	17,260	2,414	153	331	37	20,195
1997	13,791	85	31	1	1	13,909	3,277	63	4	53	0	3,397
1998	2,597	548	105	0	0	3,250	4,036	649	29	80	1	4,795
1999	No fishery						1,083	17	0	12	0	1,112
2000	No fishery						6,925	958	29	83	0	7,995
2001	No fishery						463 [c]	13	1	4	1	482
2002	Fishery eliminated by BOF						No fishery					
2003							No fishery					
2004							No fishery					
2005							No fishery					
2006							No fishery					
Mean	23,443	2,913	1,351	247	3	27,955	9,697	1,007	202	436	7	10,772

Source: Personal use 1987-1995 from Mills 1988-1994, Howe et al. 1995, 1996; commercial harvests from 1996-2000 are estimates from returned permits.

[a] Harvest from statistical area 247-50.

[b] Not reported.

[c] Closed by Emergency Order on July 12 at 11:00 pm (3 days of harvest).

Table 38.-Harvest of smelt in the Westside Susitna Management Unit and Knik Arm Management Unit, by fishery, 1985-2006.

	Westside Susitna Management Unit						Knik Arm Management Unit				
Year	Alexander Creek	Deshka River	Yentna River	Lake Creek	Susitna River	Total	Marine Fish Creek	Other Marine	Fresh Water	Total	Total
1985	0	0		0	1,680	1,680	0	560	0	560	2,240
1986	0	7,300		0	0	7,300	0	3,351	0	3,351	10,651
1987	0	0		0	9,265	9,265	0	0	0	0	9,265
1988	1,547	0		1,083	6,219	8,849	0	0	0	0	8,849
1989	0	0	0	785	1,539	2,324	0	0	0	0	2,324
1990	707	842	3,368	674	0	5,591	0	0	0	0	5,591
1991	3,774	245	0	0	2,113	6,132	0	0	0	0	6,132
1992	379	0	1,082	0	14,062	15,523	0	0	0	0	15,523
1993	0	2,236	0	0	4,360	6,596	0	0	0	0	6,596
1994	0	458	3,438	235	5,352	9,483	0	2,292	0	2,292	11,775
1995	0	0	1,382	0	3,167	4,549	0	0	0	0	4,549
1996	364	0	364	0	1,455	2,183	0	0	0	0	2,183
1997	0	0	2,703	0	5,812	8,515	0	0	0	0	8,515
1998	0	0	2,050	0	3,745	5,795	0	0	0	0	5,795
1999	571	6,499	3,038	0	16,923	27,031	2,708	0	0	2,708	29,739
2000	7	1,363	2,725	0	1,397	5,492	0	2,725	3,406	6,131	11,623
2001	0	0	3,935	0	4,772	8,707	0	675	899	1,574	10,281
2002	0	2,228	1,061	0	9	3,298	0	0	0	0	3,298
2003	911	0	0	0	4,554	5,465	0	1,214	364	1,578	7,043
2004	0	2,550	2,252	0	7,760	12,562	0	0	11	11	12,573
2005	0	1,979	0	0	1,089	3,068	0	0	0	0	3,068
Mean 2001-2005	228	1,689	828	0	3,353	6,098	0	304	94	397	6,496
2006	0	0	0	0	0	0	0	0	71	71	71

APPENDIX A. REGULATORY HISTORIES OF SELECTED FISHERIES

Appendix A1.-Chinook salmon regulatory history for NCIMA waters.

Chinook salmon fishing in NCIMA waters was open from statehood through 1963. During 1964 through 1966 Chinook salmon fishing in fresh water was closed. During 1967 through 1970 Alexander Creek, Clear Creek, Deshka River and Lake Creek were open in their entirety. This fishery operated over a 15-day season during the middle of June on a 250 fish, over 20 inches in length, harvest quota system. Achievement of the quota may have resulted in early season closure. A 1 fish per day 2 per season bag limit for fish over 20 inches in length was in place and a punch card was a requirement of participation in the fishery. In 1971 the harvest quota was eliminated. During 1971 and 1972, in addition to the 15-day season in Alexander Creek, Deshka River, and Lake Creek, a more restrictive fishery was allowed (few days) in Clear Creek and portions of the Little Susitna River, Ship Creek (Anchorage) and Willow Creek; however, a punch card was still required. In 1973, the area Chinook salmon fishery was closed to the harvest of Chinook salmon 20 inches or larger in length and remained so through 1978.

Selected Susitna River streams were reopened to Chinook salmon fishing in 1979 after being closed for several years because of low stock abundance. Cautious incremental expansion has characterized the area's Chinook salmon fisheries since they reopened. From 1979 through 1982 Chinook salmon fishing was permitted at Alexander Creek, Lake Creek and at the Deshka River from the fourth Saturday in May through July 6. These streams drain into the Susitna River from the west. Clear Creek, a tributary of the Talkeetna River, also had a similar Chinook salmon season. In addition, three eastside tributaries of the Susitna River, Willow, Caswell and Montana creeks, were open on Saturdays and Sundays only for 4 consecutive weekends commencing on the second Saturday in June. Harvest quotas, ranging from 200 to 7,000 Chinook salmon, governed these fisheries from 1979 through 1982. The Chuitna River, a coastal stream near Beluga, and the entire Yentna and Talkeetna river drainages were opened to Chinook salmon fishing in 1983. The opening date for Chinook salmon fisheries that provided continuous daily fishing was also changed to January 1.

In 1984 the remaining coastal streams near Beluga and all waters draining into the westside of the Susitna River downstream from the Deshka River were opened to Chinook salmon fishing. In 1986, portions of five road-accessible streams on the east side of the Susitna River opened to weekend-only fishing. These streams were Little Willow, Goose, Sunshine, Sheep and Birch creeks.

Expanded Chinook salmon fishing opportunity continued in 1987 when Monday fishing was added to all former weekend-only fisheries that drain into the Susitna River from the east. Saturday through Monday fishing was also allowed on the Susitna River and all flowing waters within one-quarter mile of the Susitna River (excluding the Kashwitna River) between the Deshka and Talkeetna rivers. These "corridor" fisheries were open for 4 continuous "weekends" similar to the previously mentioned Saturday through Monday fisheries. Chinook salmon fishing was permitted for the first time on the Susitna River drainage upstream from the Susitna River's confluence with the Talkeetna River to Devils Canyon but excluding the Chulitna River drainage. Unbaited, single-hook, artificial lures were mandatory in this area. The season extended from January 1 through July 13. The season for all Susitna River and coastal fisheries that formerly closed on July 6 was extended to July 13 in 1987.

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In 1989, Chinook salmon fishing was allowed within a one-quarter mile radius of the mouth of the Kashwitna River. That same year fishing was permitted daily at Willow Creek between January 1 and the third Monday in June and on Saturday through Monday for 2 consecutive weeks starting the fourth Saturday in June.

Bag and possession limits were 1 Chinook salmon 20 inches or over in length in 1979. The following year bag and possession limits changed to 2 Chinook salmon 20 inches or over in length but only 1 Chinook salmon could be over 28 inches in length. In 1981 the bag limit was reduced to 1 Chinook salmon 20 inches or more in length and in possession. This limit remained in effect through 1985. A 5 fish (20 inches or more in length) per year limit governed all Cook Inlet Chinook salmon fisheries from 1979 through 1985. This limit applied collectively to Northern Cook Inlet fresh water, Cook Inlet salt water and the Kenai Peninsula.

In 1986, bag and possession limits for the western drainages of the Susitna River were changed to 2 Chinook salmon, 16 inches or more in length daily and 4 in possession and remained so through 1992. Only 1 fish daily and 2 in possession could be over 28 inches. Similar limits also applied to the West Cook Inlet coastal fisheries. Bag and possession limits for eastern drainages of the Susitna River in 1986 were 1 Chinook salmon, 16 inches or more in length, and 2 in possession. The seasonal limit was 5 Chinook salmon 16 inches or more in length. Anglers were required to list their Chinook salmon harvest on nontransferable harvest records from 1979 through 1988. The date and location of harvested Chinook salmon were recorded. A $5 permit stamp was mandatory for Chinook salmon fishing from 1980 through 1982. The harvest record and yearly limit was eliminated for all NCI Chinook salmon fisheries in 1989.

During the November 1992 BOF meeting several regulations were changed in the Susitna West-Cook Inlet Management Area to be in effect for the 1993 season. A seasonal limit of 5 Chinook salmon was established for all waters of Cook Inlet. Individuals or companies engaged in freshwater sport fish guiding were prohibited from participating or engaging in sport fishing while clients were present or within his or her control or responsibility during the Chinook salmon season except when guiding a client subject to the Americans with Disabilities Act.

In effect for the 1993 season in the West Cook Inlet area the Chinook salmon fishing season was reduced in length to end on June 30. The bag and possession limits were reduced in areas open to the retention of Chinook salmon 16 inches or more in length to 1 daily and 1 in possession.

Additionally, in the following areas of West Cook Inlet only unbaited, artificial lures could be used and Chinook salmon 16 inches or more in length could not be possessed or retained; all Chinook salmon caught had to be released immediately: (1) Chuitna River Drainage: upstream of a department marker located adjacent to the old cable crossing; (2) Theodore River Drainage: upstream of a department marker located approximately 1 mile upstream of the Beluga/Anchorage high voltage power lines; and (3) Lewis River Drainage: upstream of a department marker located approximately 1 river mile upstream of the main Beluga haul road bridge.

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Action during the November 1992 meeting also reduced the Chinook salmon bag and possession limit in the Susitna River drainage including all flowing waters draining into the west side of the Susitna River downstream of and including the Deshka River. The bag and possession limits for Chinook salmon over 16 inches were reduced to 1 daily and 2 in possession.

In addition to BOF action, legislative action during June of 1992 established provisions that prohibited resident or nonresident anglers from fishing in Alaska without a king salmon stamp beginning in 1993.

In anticipation of an inadequate return to the Deshka River, prior to the 1994 Chinook season an emergency order was issued reducing the Chinook salmon possession limit to 1 fish and eliminated the use of bait in the Deshka River May 1 through July 14. As the 1994 Chinook season progressed it became apparent a weak return was occurring in the entire Susitna River drainage and particularly in the Deshka River. In response to this an emergency order was issued closing all waters of the Deshka River to sport fishing for Chinook salmon and prohibiting the use of bait in all waters of the Susitna River drainage downstream of the Deshka River which flow into the Susitna River from the east and the Alexander Creek drainage, all waters of the Yentna River drainage, all waters of the Talkeetna River drainage, and all waters of the Chulitna River drainage, June 17 through July 13, 1994.

The BOF during its October 1994 work session choose to delegate to the department the authority to change regulations for the 1995 fishing season. These regulation changes were as follows:

1. The Deshka River and Prairie Creek are closed to fishing for Chinook salmon.
2. Alexander Creek above the confluence of Trail Creek is closed to fishing for Chinook salmon.
3. The bag and possession limits in the Susitna River and Little Susitna River drainages have been reduced to 1 Chinook salmon over 16 inches in length.
4. The use of bait throughout the NCIMA is prohibited (excluding the Anchorage Management Unit).
5. Fishing in the NCIMA is allowed only between the hours of 6:00 a.m. and 11:00 p.m. May 15 through July 13. This time restriction will not apply to that portion of the Susitna River drainage currently opened to weekend-only fishing (e.g. between, but not including, the Deshka River and the Talkeetna River) and the Anchorage Management Unit.
6. The first opening of the Northern District commercial Chinook salmon fishery will occur by emergency order. Additional opening of this fishery will be dependent upon inseason indications of run strength.

The only new regulation for the 1996 season was the closure of the Lewis River to king salmon fishing, including catch-and-release for king salmon.

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The Alaska Board of Fisheries convened in Anchorage, Alaska during November 11-17, 1996. A brief summary of regulatory changes affecting the Susitna-West Cook Inlet Area Chinook salmon fisheries as adopted by the Board of Fisheries follows.

5 AAC 21.366. Northern District King Salmon Management Plan

- To fulfill changes to the Upper Cook Inlet King Salmon Management Plan, as adopted by the Board of Fisheries, the Department of Fish and Game shall manage the Northern District commercial king salmon fishery as follows:

1. (3) The harvest shall not exceed 12,500 king salmon.
2. (8) The season closes on June 24, unless closed earlier by emergency order.
3. (9) The number of regular periods shall be determined by the department based on preseason expectations of king salmon run strength.
4. (10) The area from 1 mile south of the Theodore River to the Susitna River is closed to fishing; provisions of this paragraph do not apply after December 31, 1998.
5. (11) If at least 90% of the biological escapement goal for the Theodore River (BEG = 750) or Chuitna River (BEG = 1,400) is not met during the 1997 fishing season, the area from 1 mile south of the Chuitna River to the Susitna River will be closed to commercial fishing during the 1998 fishing season; the provisions of this paragraph do not apply after December 31, 1998.
6. (12) In addition to (11) above, if at least 90% of the biological escapement goal for the Chuitna River has not been met during the 1997 fishing season, the area from 1 mile south of the Chuitna River to the Susitna River will be closed to sport fishing for king salmon during the 1998 fishing season; the provisions of this paragraph do not apply after December 31, 1998.

5 AAC 61.010. Fishing Seasons:

- The Alexander Creek drainage is open to the retention (harvest) of king salmon from January 1 through June 30 downstream from an ADF&G regulatory marker at Granite Creek.

5 AAC 61.020. Bag Limits, Possession Limits, and Size Limits:

- In all waters of Alexander Creek drainage between an ADF&G regulatory marker located at Granite Creek, upstream to an ADF&G regulatory marker located 400 yards upstream of Trail Creek, king salmon 16 inches or more in length may not be possessed or retained. All king salmon caught must be released immediately.

5 AAC 61.035. Methods and Means:

- Only unbaited, single-hook, artificial lures may be used from January 1 through June 30 in all waters of the Alexander Creek drainage between an ADF&G regulatory marker located at Granite Creek to an ADF&G regulatory marker located 400 yards upstream of Trail Creek.

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5 AAC 61.050. Waters Closed to Sport Fishing:

1. Peters Creek (Susitna River drainage) is closed to sport fishing for king salmon upstream from an ADF&G regulatory marker, located approximately 1 mile upstream from its confluence with the Kahiltna River.
2. The Theodore River is closed to sport fishing for king salmon. The provisions of this paragraph do not apply after December 31, 1998.

5 AAC 61.020. Bag Limits, Possession Limits, and Size Limits:

1. In all waters of the Susitna River drainage between the confluence of the Deshka River and the confluence of the Talkeetna River: after taking a king salmon 16 inches or more in length, a person may not fish for any species of fish in any water open to king salmon fishing during that same day.
2. In the Little Susitna River from its mouth to the Parks Highway bridge at Houston: after taking a king salmon 16 inches or more in length, a person may not fish for any species of fish in any water open to king salmon fishing during that same day.
3. In all waters of the Susitna-West Cook Inlet Management Area, excluding the Susitna River between its confluence with the Deshka River and its confluence with the Talkeetna River: after taking a king salmon 16 inches or more in length, a person may not fish for king salmon during that same day.

5 AAC 61.020. Bag Limits, Possession Limits, and Size Limits:

- The bag and possession limits of king salmon 16 inches or more in length taken from the Little Susitna River drainage are 1 fish per day and in possession.

During 1997 the Deshka River was open to king salmon fishing on June 21 though July 13. Fishing was limited to the lower 2 miles of river and all Chinook salmon regulations applying to the Susitna River from its mouth to its confluence with the Deshka River were in effect for the Deshka River.

In 1998 the Deshka River was open to king salmon fishing from its confluence with the Susitna River upstream 5 miles to a Department marker. The seasonal bag limit for king salmon over 16 inches from the Deshka River was set at 2. In addition, all Chinook salmon regulations applying to the Susitna River from its mouth to its confluence with the Deshka River were in effect for the Deshka River. Inseason EOs affecting Chinook salmon fishing opened Willow Creek June 20-22 to correct an oversight in the regulations and added one Friday to Chinook fishing in the Susitna River between the Deshka River and the Talkeetna River (excluding both).

The BOF made the following changes for the 1999 season. The Deshka River will be open to king salmon fishing from its mouth upstream to Chijuk Creek a distance of approximately 17 river miles from January 1 to July 13. Other area regulations apply such as 1 fish per day bag and possession limits, a 5 fish seasonal limit, and once an angler harvests his or her king salmon they must quit fishing for king salmon the remainder of the day. Additionally fishing is allowed only between the hours of 6:00 a.m. to 11:00 p.m., no bait is allowed and guides cannot fish while guiding clients.

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The area open for retention of king salmon on Alexander Creek was extended from its mouth upstream to Trail Creek. This provides anglers with an additional 11 miles of stream from the 1997 and 1998 seasons in which they may harvest king salmon on Alexander Creek.

The Theodore River was opened to catch-and-release fishing for king salmon from January 1 through June 30, only single hook artificial lures will be allowed. Other West Cook Inlet Area regulations apply as follows: fishing is allowed only between the hours of 6:00 a.m. to 11:00 p.m., bait is prohibited, and guides cannot fish while guiding.

There will be increased fishing opportunities for the road-accessible Parks Highway streams (Eastside Susitna River tributaries) during the early part of June. The Parks Highway streams (Eastside Susitna River tributaries) will open to king salmon fishing from January 1 through the third Monday in June and for the next two consecutive 3-day weekends. This regulation identifying the fishing season is consistent with that on Willow Creek.

On the Little Susitna River, anglers will be allowed to use treble hooks year-round downstream of the Parks Highway Bridge. Existing bait restrictions were modified to allow the use of bait during the month of September.

The area open to king salmon fishing on the Kashwitna River was extended from its mouth upstream to the Parks Highway Bridge, a distance of 2 miles. The Kashwitna River, a Parks Highway stream, will be regulated under the new season regulation implemented for the Parks Highway streams.

In all waters of the Westside-Susitna River and West Cook Inlet Management Areas (excluding waters between the Deshka River and the Talkeetna River mouths), anglers will be allowed to continue to fish for king salmon (catch-and-release) once they have harvested their limit excluding Alexander Creek, Lake Creek, Deshka River, Fish Lake Creek and Clear Creek. In these streams you will be required to quit fishing for king salmon for the day once you have harvested your limit.

By EO Willow, Little Willow, Sheep and Montana creeks were open to king salmon fishing for an additional weekend, July 10 through July 12, 1999.

The 2000 season began with no regulation changes from 1999. When it was determined that the Deshka River was experiencing an exceptional return of Chinook, an EO was issued that allowed the use of bait in the first 17 miles of the Deshka River and within a ¼-mile radius of the mouth of the Deshka River with the Susitna River, June 8 through July 13, 2000. Two additional EOs were issued in 2000. One opened Willow, Little Willow, Sheep and Montana creeks to king salmon fishing for an additional day, July 4, 2000, and the other opened East Fork Chulitna River, Willow, Little Willow, Sheep and Montana creeks to king salmon fishing for an additional 3-day weekend, July 8 through July 10, 2000.

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During the January 2001 BOF meeting a "jack" king salmon was defined as any king 20 inches or less in length statewide. In all fresh waters open to king salmon fishing the bag/possession limit for "jacks" is 10. These limits are in addition to any limits for kings over 20 inches in length and do not count against annual or seasonal limits. This new definition increased the length requirement for kings that must be recorded for the five fish seasonal limit from 16 inches to 20 inches.

E.O. No. 2-KS-2-15-01 extended king salmon season in the Susitna River drainage upstream from its confluence with the Deshka River to its confluence with the Talkeetna River including Susitna River tributaries Willow Creek to Trapper Creek and the East Fork of the Chulitna River (including the first ¼ mile of Honolulu Creek only). These waters which were scheduled to close on Monday July 2 were opened through Wednesday, July 4 at 12:00 midnight.

In June of 2001 it was determined that the Deshka River was experiencing an exceptional return of Chinook. An EO was issued that allowed the use of bait in the first 17 miles of the Deshka River and within a ¼-mile radius of the mouth of the Deshka River with the Susitna River, June 12 through July 13. Three additional EOs were issued in 2001. One extended king salmon fishing on the Chuitna River downstream of the cable crossing July 1 through July 5. Another opened Willow Creek to king fishing June 29 at 12:01 a.m. adding one additional day of fishing. The last EO extended king salmon season in the Susitna River drainage upstream from its confluence with the Deshka River to its confluence with the Talkeetna River including Susitna River tributaries Willow Creek to Trapper Creek and the East Fork of the Chulitna River (including the first ¼ mile of Honolulu Creek only). These waters which were scheduled to close on Monday July 2 were opened through Wednesday, July 4 at 12:00 midnight.

A BOF meeting was held in February of 2002 resulting in the following king salmon regulations changes:

1. Allow catch-and-release fishing for kings in the East Fork of the Chulitna River January 1 through July 13. Only one single-hook, unbaited artificial lure may be used January 1 through July 13.
2. Increase possession limit to two kings for West Susitna River tributaries (excluding Alexander Creek).
3. In the Northern District King Salmon Management Plan: The commercial setnet fishery will open on the first Monday on or after May 25 and close June 24. The number of commercial periods will depend upon expected northern Cook Inlet king salmon run strengths and there shall be no more than three commercial openings targeting kings. The area from an ADF&G marker located 1 mile south of the Theodore River to the Susitna River is open to fishing in the second regular period only. If the Theodore, Lewis or Ivan rivers are closed to sport fishing, the area from an ADF&G regulatory marker located 1 mile south of the Theodore River to the Susitna River is closed to commercial king salmon fishing for the remainder of the directed king salmon fishery. If the Deshka River is closed to sport fishing, the commercial king salmon fishery throughout the Northern District is closed for the remainder of the directed king salmon fishery. If the Chuitna River is closed to sport fishing, the area from an ADF&G marker located 1 mile south of the Chuitna River to the

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Susitna River is closed to commercial king salmon fishing for the remainder of the directed king salmon fishery.

4. Allow a catch-and-release fishery in the entire Theodore and Lewis rivers. No bait, single hook only.

These regulations were not signed into law prior to the start of the 2002 season. Because of this delay the following EOs were issued to allow the new regulations to be in effect during the beginning of the fishing season:

1. Increased the possession limit to two king salmon in all Westside Susitna River tributaries except Alexander Creek.
2. Opened the entire Theodore and Lewis rivers to catch-and-release for king salmon through June 30. Single hook, no bait.
3. Allowed the use of bait in the first 17 miles of the Deshka River and within a ¼ mile radius of the mouth of the Deshka River with the Susitna River, June 8 through July 13, 2002.

All regulations became effective midway through the season. As in past years an EO was issued which extended king salmon season in Willow, Sheep and Montana creeks 3 days, July 5-7 from 6:00 a.m. to 11:00 p.m.

In 2003 there were no new regulations. As in past years an EO was issued which extended king salmon season in Willow, Sheep and Montana creeks 3 days, July 4-6 from 6:00 a.m. to 11:00 p.m. In mid June when an exceptional return was realized for Deshka River, an EO was issued to increase the bag and possession limit of king salmon greater than 20 inches in the Deshka River from one per day and two in possession to two per day and four in possession.

During 2004, two EO's were issued to liberalize the Deshka River Chinook salmon fishery. The first EO allowed use of bait in the first 17 miles of the river May 28 through July 13. The second EO increased the daily bag and possession limits from one per day and two in possession to two per day and four in possession on that portion of river open to Chinook salmon fishing (first 17 miles). An EO was issued to open the Chinook salmon fishery at Eklutna Tailrace on April 15.

A BOF meeting was held January 2005. Sport fish regulatory changes included:

1. Anglers were allowed to use bait earlier in the Deshka River commencing May 15th.
2. The Parks Highway streams were opened for an additional 3-day weekend for king salmon fishing. For 2005 the Parks Highway streams were open from January 1 – June 20 and on June 25-27, July 2-4 and July 9-11.
3. The area open to king salmon fishing on the Kashwitna River was increased by approximately one mile, from the Parks Highway Bridge to the Alaska Railroad Bridge.
4. Anglers may no longer fish for king salmon 20" or less in waters closed to king salmon fishing.

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5. Eklutna Tailrace and all waters within a ½ mile radius of its confluence with the Knik River were opened to fishing for king salmon from January 1st through December 31st. Once an angler retains a bag limit of king salmon 20" or longer they may not fish in any water open to king salmon fishing on that same day.

Commercial fish regulatory changes included:

1. The Northern District King Salmon Management Plan was altered by limiting fishing periods to a maximum of three and increasing fishing time per period from six hours to 12 hours. The gear restriction of two nets from August 1 to August 10 was removed.
2. The Big River Sockeye Salmon Management Plan was amended to allow fishing in a portion of the Kalgin Island Subdistrict along the western shore from Light Point (60° 29.00' N. lat., 151° 50.50' W. long.) to the Kalgin Island Light on the southern end of the island at 60° 20.80' N. lat., 152° 05.09' W. long. Note: this fishery is closed if 1,000 Chinook salmon are harvested.

Two EO's were issued inseason to liberalize the Deshka River Chinook salmon fishery:

1. On May 27, the daily bag and possession limit for Chinook salmon was increased from one per day, two in possession to two per day, four in possession. Fishing time was increased to 24 hours per day.
2. The fishery was extended from July 14 through July 31.

In 2006, an EO increased the bag limit and fishing time on the Deshka River, effective on May 26. The daily bag and possession limit was increased to two per day, four in possession and fishing time was increased to 24 hours per day.

On May 25, 2007, an EO increased the bag limit and fishing time on the Deshka River. The daily bag and possession limit was increased to two per day, four in possession and fishing time was increased to 24 hours per day.

Appendix A2.-Deshka River Chinook salmon regulatory changes, 1977-2007.

Year	Fishery dates	Area and time restrictions	Method/Gear restrictions	Bag & possession	Seasonal NCI limit	Other requirements
1977	closed to adults			20" or less only		
1978	closed to adults			20" or less only		
1979	4th Sat. in May - July 6	mouth to Laub's Homestead marker		1/day over 20" & 1 possession	5 over 20"	Punch card required
1980	4th Sat. in May - July 6	mouth to forks		2/day over 20", only 1 over 28" & 2 possession	5 over 20"	Punch card required
1981	4th Sat. in May - July 6	mouth to forks		1/day over 20" & 2 possession	5 over 20"	Harvest record sticker
1982	4th Sat. in May - July 6	mouth to forks		1/day over 20" & 2 possession	5 over 20"	Permit stamp. Record on back of license
1983	January 1 - July 6	mouth to forks		1/day over 20" & 2 possession	5 over 20"	Harvest record back of license
1984	January 1 - July 6	mouth to forks		1/day over 20" & 2 possession	5 over 20"	Harvest record back of license
1985	January 1 - July 6	mouth to forks		1/day over 20" & 2 possession	5 over 20"	Harvest record back of license
1986	January 1 - July 6	mouth to forks		over 16": 2/day & 4 possession, only 1/day & 2 possession over 28"	5 over 16"	Harvest record back of license
1987	January 1 - July 13	mouth to forks		over 16": 2/day & 4 possession, only 1/day & 2 possession over 28"	5 over 16"	Harvest record back of license
1988	January 1 - July 13	mouth to forks		over 16": 2/day & 4 possession, only 1/day & 2 possession over 28"	5 over 16"	Harvest record back of license
1989	January 1 - July 13	mouth to forks		over 16": 2/day & 4 possession, only 1/day & 2 possession over 28"	5 over 16"	
1990	January 1 - July 13	mouth to forks		over 16": 2/day & 4 possession, only 1/day & 2 possession over 28"	5 over 16"	
1991	January 1 - July 13	mouth to forks		over 16": 2/day & 4 possession, only 1/day & 2 possession over 28"	5 over 16"	
1992	January 1 - July 13	mouth to forks	no bait between Trapper Creek and forks on June 22 by EO	1/day over 16" & 1 possession. Release of fish over 16" between Trapper and forks on June 22 by EO	5 over 16"	

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Year	Fishery dates	Area and time restrictions	Method/Gear restrictions	Bag & possession	Seasonal NCI limit	Other requirements
1993	January 1 - July 13	mouth to forks	artificial only until May 15	1/day over 16" & 2 possession	5 over 16"	King stamp. Harvest record back of license
1994	closed June 17 by EO	mouth to forks	artificial only until May 16	1/day over 16" & 2 possession	5 over 16"	King stamp. Harvest record back of license
1995	Closed					
1996	Closed					
1997	opened June 21 by EO	lower 2 miles of river	artificial only	1/day over 16" & 1 possession	5 over 16"	King stamp. Harvest record back of license
1998	January 1 - July 13	lower 5 miles of river	artificial only	1/day over 16" & 1 possession	5 over 16", only 2 from Deshka	King stamp. Harvest record back of license
1999	January 1 - July 13	mouth to Chijuk Creek, 6 am-11 pm	artificial only	1/day over 16" & 1 possession	5 over 16"	King stamp. Harvest record back of license
2000	January 1 - July 13	mouth to Chijuk Creek, 6 am-11 pm	bait allowed June 8 by EO	1/day over 16" & 1 possession	5 over 16"	King stamp. Harvest record back of license
2001	January 1 - July 13	mouth to Chijuk Creek, 6 am-11 pm	bait allowed June 12 by EO	1/day over 20" & 1 possession	5 over 20"	King stamp. Harvest record back of license
2002	January 1 - July 13	mouth to Chijuk Creek, 6 am-11 pm	bait allowed June8 by regulation	1/day over 20" & 2 possession	5 over 20"	King stamp. Harvest record back of license
2003	January 1 - July 13	mouth to Chijuk Creek, 6 am-11 pm	bait allowed June8 by regulation	2/day over 20" & 4 possession on June 18 by EO	5 over 20"	King stamp. Harvest record back of license
2004	January 1 - July 13	mouth to Chijuk Creek, 6 am-11 pm	bait allowed May 28 by EO	2/day over 20" & 4 possession on June 12 by EO	5 over 20"	King stamp. Harvest record back of license
2005	January 1-July 13. Extended through July 31 by EO.	mouth to Chijuk Creek. Opened 24-hr May 27 by EO	bait allowed May 15 by regulation	2/day over 20" & 4 possession on May 27 by EO	5 over 20"	King stamp. Harvest record back of license
2006	January 1 - July 13	mouth to Chijuk Creek. Opened 24-hr May 26 by EO.	bait allowed May 15 by regulation	2/day over 20" & 4 possession on May 26 by EO	5 over 20"	King stamp. Harvest record back of license
2007	January 1 - July 13	mouth to Chijuk Creek. Opened 24-hr May 26 by EO.	bait allowed May 15 by regulation	2/day over 20" & 4 possession on May 25 by EO	5 over 20"	King stamp. Harvest record back of license

Source: Ivey *In prep.*

Appendix A3.-Coho salmon regulatory history for NCIMA waters, 1991-2007.

1991

1. Little Susitna River Coho Salmon Management Plan (5 AAC 61.060). Initiated in 1991 season. One coho salmon January 1 through August 5, three coho salmon August 6 through December 31, increase to 5 coho salmon below weir and at Nancy Lake Creek when 7,500 projected above Parks Highway, quit fishing when bag limit harvested below Burma Landing. Previously there was a 3 salmon daily bag limit, all 3 of which could be coho salmon.

Emergency Orders:

1. E.O. No. 2-SS-2-27-91 closed to fishing that portion of the Little Susitna River from the fish counting weir located at River Mile 32.5 downstream for a distance of 1,500 feet. Effective July 27 through September 14, 1991.
2. E.O. No. 2-RS-1-29-91 closed sockeye salmon fishing in all waters north of the latitude of Anchor Point. Effective 7:00 a.m. July 26 through December 31, 1991.
3. E.O. No. 2-RS-2-33-91 opened the Fish Creek personal use dip net fishery. Effective July 30 through August 9, 1991.
4. E.O. No. 2-RS-2-34-91 reopened the Little Susitna River drainage and all freshwater drainages of Knik Arm to fishing for sockeye salmon. Effective noon, July 29 through December 31, 1991.
5. E.O. No. 2-RS-2-36-91 rescinded E.O. No. 2-RS-1-29-91, thereby reopening recreational sockeye salmon fisheries within waters of the Kenai Peninsula and Susitna-West Cook Inlet regulatory areas and marine waters of Cook Inlet north of Anchor Point. Effective 7:00 a.m. August 2 through December 31, 1991.
6. E.O. No. 2-CS-2-38-91 closed the Eklutna Power Plant tailrace to sport fishing from the Old Glenn Highway downstream to department markers placed approximately 100 yards upstream of the confluence of the tailrace and the Knik River. Effective noon, August 6 through December 31, 1991.
7. E.O. No. 2-SS-2-42-91 increased bag and possession limits to 5 coho salmon at the Little Susitna River downstream from the department's salmon counting weir at River Mile 32.5. Effective noon, August 14 through December 31, 1991.

1992

1. Little Susitna River Coho Salmon Management Plan modified. In effect for 1993 season. Only unbaited artificial lures may be used in the Little Susitna River from July 15 through August 5. The bag and possession limits for coho salmon 16 inches or more in length during this time period were increased to 3 daily and in possession.
2. Aimed at rainbow trout. Only unbaited artificial lures may be used in all flowing waters of the Susitna-West Cook Inlet area September 1 though May 15. Initiated in 1993 season.

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3. Changes in the Cook Inlet Personal Use Salmon Dip Net Fishery Management Plan (5 AAC 77.540) pertaining to the Fish Creek dip net fishery. 1993 was the first year coho salmon were allowed in the harvest. Daily bag and possession limit 6 salmon.
4. BOF found that most of Cook Inlet was a nonsubsistence zone and repealed the Upper Cook Inlet Subsistence Salmon Management Plan (5 AAC 01.592) thus eliminating the subsistence fishery in Upper Cook Inlet for the 1993 season (eliminated the Knik set gillnet fishery). This plan was reinstated by court action for the 1994 season. The only area that remained open to subsistence fishing in the Upper Cook Inlet area during 1993 was the Tyonek subdistrict of the Northern District on the west side of Cook Inlet.

Emergency Orders:

1. E.O. No. 2-RS-2-21-92 opened the Fish Creek personal use dip net fishery. Dip net fishing was allowed for 3 consecutive days followed by a 1 day closure on a continuing basis. Effective 6:00 a.m. July 23 through August 6, 1992.
2. E.O. No. 2-SS-2-22-92 closed to fishing that portion of the Little Susitna River from the fish counting weir located at River Mile 33 downstream for a distance of 1,500 feet. Effective July 25 through September 14, 1992.
3. E.O. No. 2-RS-2-28-92 closed the Susitna River drainage to sockeye salmon fishing. Effective July 31 through December 31, 1992.
4. E.O. No. 2-SS-2-29-92 increased bag and possession limits to 5 coho salmon 16 inches or more in length downstream from the department's counting weir at River Mile 32.5. Effective August 15 through December 31, 1992.

1993

Emergency Orders:

1. E.O. No. 2-RS-2-23-93 opened the Fish Creek personal use fishery. The dip net fishery opened 9:00 a.m. July 24 and closed midnight August 6, with the fishery being closed July 26, July 30, and August 3, 1993.
2. E.O. No. 2-SS-2-25-93 closed to fishing that portion of the Little Susitna River from the fish counting weir located at River Mile 33 downstream for a distance of 1,500 feet. Effective July 23 through September 15, 1993.
3. E.O. No. 2-SS-2-32-93 increased the bag and possession limits to 5 coho salmon at the Little Susitna River downstream from the department's counting weir at River Mile 32.5. Effective August 11 through December 31, 1993.
4. E.O. No. 2-SS-2-33-93 closed to fishing that portion of Jim Creek from the fish counting weir located at River Mile 1 downstream for a distance of 500 feet. Effective August 12 through November 1, 1993.

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1994

Emergency Orders:

1. E.O. No. 2-RS-2-28-94 opened the Fish Creek personal use fishery. The dip net fishery opened 9:00 a.m. July 27 and closed midnight August 5, with the fishery being closed July 29 and August 2, 1994.
2. E.O. No 2-RS-2-33-94 supersedes E.O. 2-RS-2-28-94 extending the Fish Creek Personal Use Dip Net Fishery through midnight August 9. Effective August 7, 1994 through August 9, 1994.
3. E.O. No. 2-KS-2-05-94 closed to fishing that portion of the Little Susitna River from the fish counting weir located at River Mile 33 downstream for a distance of 1,500 feet. Effective May 25 through September 15, 1994.
4. E.O. No. 2-SS-2-32-94 increased the bag and possession limits to 5 coho salmon at the Little Susitna River downstream from the department's counting weir at River Mile 32.5. Effective August 6 through December 31, 1994.
5. E.O. No. 2-SS-2-29-94 closed that portion of Jim Creek to fishing from the fish counting weir located at River Mile 1 downstream for a distance of 1,000 feet. Effective July 26, 1994 through November 1, 1994.

1995

1. Upper Cook Inlet Subsistence Salmon Management Plan was repealed by the BOF in 1995. BOF took action to allow subsistence fishery as a personal use fishery. The Knik set gillnet fishery was executed as a personal use fishery in 1995.

Emergency Orders:

1. E.O. No. 2-KS-2-07-95 closed to fishing that portion of the Little Susitna River from the fish counting weir located at River Mile 33 downstream for a distance of 1,900 feet. Effective May 25 through September 15, 1995.
2. E.O. No. 2-RS-02-32-95 opened the Fish Creek personal use fishery. The dip net fishery opened 5:00 a.m. July 26 and closed midnight August 8, with the fishery being closed July 28 and August 1 and August 4, 1995.
3. E.O. No. 2-SS-02-40-95 increased the bag and possession limits to 5 coho salmon at the Little Susitna River downstream from the department's counting weir at River Mile 32.5. Effective August 9 through December 31, 1995.

1996

1. The Upper Cook Inlet Personal Use Salmon Fishery Management Plan (5 AAC 77.540) establishes time, area, methods and means for taking salmon for personal use. This plan first went into effect during the 1996 season. It provides for personal use dip net fisheries in the Kenai and Kasilof rivers and Fish Creek. Additionally, limited personal use gillnet fishing opportunity is provided near the terminus of the Kasilof River. No Knik set gillnet fishery was provided.

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2. Changes were made to the Fish Creek Sockeye Management Plan (5 AAC 21.364) concerning the Fish Creek Personal Use Dipnet fishery. The dip net fishery will now run July 10 through July 31 with a bag limit of 25 salmon per head of household plus 10 salmon per each household member. A permit is required.
3. The Skwentna River Personal Use Salmon Fishery Management Plan (5 AAC 77.526) establishes a subsistence fish wheel fishery in the Yentna River downstream of its confluence with the Skwentna River. This fishery was implemented as a personal use fishery during the 1996 and 1997 seasons.
4. Little Susitna River Coho Salmon Management Plan was modified. The option to increase the bag and possession limits of coho salmon in specified areas of the Little Susitna River when the escapement goal of 7,500 nonhatchery fish upstream of the Parks Highway is projected, was repealed. The bag and possession limits of salmon other than king salmon in the Little Susitna River are 3 fish per day and in possession.
5. At the November 1996 meeting the BOF modified 5 AAC 61.035. Only unbaited, single-hook, artificial lures may be used in all flowing waters of the Alexander Creek drainage upstream of an ADF&G regulatory marker located 400 yards upstream of the confluence of Trail Creek.

1997

Emergency Orders:

1. E.O. No. 2-RS-2-25-97 closed Fish Creek dipnetting from 11:00 a.m. July 23 through 11:00 p.m. July 25, 1997.
2. E.O. No. 2-RS-2-28-97 closed Fish Creek dipnetting for the remainder of the 1997 season on July 26, 1997.
3. E.O. No. 2-SS-02-31-97 prohibited use of bait and reduced daily bag and possession limit of coho salmon to one in all waters of Cook Inlet on August 9, 1997. Areas not included were Eklutna Tailrace, Ship, Bird, and Campbell creeks.
4. E.O. No. 2-SS-2-34-97 closed Wasilla Creek downstream from the railroad bridge, including Rabbit Slough and Spring Creek, to sport fishing August 23 through October 31, 1997.

1998

1. The Upper Yentna River Subsistence Salmon Fishery (5 AAC 01.593) establishes a subsistence fish wheel fishery in the Yentna River downstream of its confluence with the Skwentna River. This fishery was implemented as a personal use fishery during the 1996 and 1997 seasons. State Supreme Court and BOF action changed it to a subsistence fishery beginning in 1998. This change did not affect coho salmon harvest.

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Emergency Orders:

1. E.O. No. 2-KS-2-14-98 closes the Deshka River to all fishing 1,200 feet downstream and 300 feet upstream of the fish counting weir.
2. E.O. No. 2-RS-2-15-98 closes Fish Creek to dipnetting effective July 25, 1998 through July 31, 1998.

1999

1. Recreational fishing time on Fish, Wasilla and Cottonwood creeks has been reduced. Fishing hours were restricted from 24-hour fishing days to 12-hour fishing days (6:00 a.m. to 6:00 p.m.) in these Saturday and Sunday only fisheries. Once an angler has harvested a bag limit of three salmon, he/she may no longer fish on this stream for the remainder of the day.
2. In all waters of West Cook Inlet South of the Susitna River (i.e. Chuitna, Lewis, Theodore & McArthur River) once an angler has harvested a bag limit of 3 coho salmon he/she may no longer fish on this stream for the remainder of the day. These same streams are closed to coho salmon fishing from October 1-December 31.
3. For the Little Susitna River existing bait restrictions were modified to allow the use of bait during the month of September.
4. Little Susitna River Coho Salmon Management Plan was modified. The escapement goal of 7,500 coho salmon was changed to an escapement range of 9,600-19,200 nonhatchery fish.

Emergency Orders:

1. E.O. No. 2-KS-2-05-99 closed the Deshka River to fishing from 1,000 yards downstream to 200 yards upstream of the fish counting weir.
2. E.O. No. 2-RS-2-15-99 closed Fish Creek to dipnetting on July 26, 1999.
3. E.O. No. 2-SS-2-20-99 reduced the bag limit to 1 coho salmon and no bait for Cottonwood, Wasilla and Fish creeks and the Little Susitna River, on August 19, 1999.

2000

During the BOF meeting in February 2000 the following recreational fishery restrictions were put in place to address coho salmon conservation concerns.

The coho bag and possession limits in the Knik Arm (excluding the stocked coho fishery in the Eklutna Tailrace) and the Susitna River were reduced to 2. The West Cook Inlet bag and possession limits north of the West Foreland were reduced to 2 daily and 4 in possession. South of the West Foreland they remained at 3 daily and 6 in possession.

Wasilla Creek, Jim Lake, Upper Jim Creek and McRoberts Creeks were closed to coho fishing.

After taking a limit of coho from Fish and Cottonwood creeks a person may not fish that same day in Fish and Cottonwoods creeks in waters open to salmon fishing.

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The sockeye return to Fish Creek was poor again this year and the dip net fishery was closed early by EO.

Emergency Orders: The two coho daily bag limit caused some confusion on the Little Susitna River so an EO was issued to clarify the new regulation.

1. E.O. No. 2-SS-2-17-00 stated after keeping 2 coho below RM 32.5 Little Susitna River, an angler must quit fishing in the Little Susitna River for the remainder of the day, July 28-December 31.
2. E.O. No. 2-RS-2-16-00 closed Fish Creek to dipnetting on July 26, 2000.

2001

There were no new regulations concerning coho for the 2001 season.

Emergency Orders: Only one EO was issued affecting coho salmon harvest.

1. E.O. No. 2-RS-2-17-01 closed Fish Creek to dipnetting on July 12 at 11:00 p.m.

2002

The BOF met in February 2002 and adopted new regulations affecting coho.

1. The Larson Creek drainage upstream of a marker ¼ mile upstream from its mouth is closed to sport fishing for all salmon year-round.
2. Nancy Lake Creek drainage upstream of a marker ¼ mile upstream from its mouth is closed to all salmon fishing including catch-and-release.
3. The Clearwater and Roscoe creek drainages are closed year-round to all fishing upstream from a marker ½ mile upstream of their confluences with the Chinitna River.
4. Open Fish Creek personal use fishery by EO when escapement goal is projected.
5. Open Wasilla Creek from its mouth to the Alaska Railroad bridge for salmon fishing (excluding king salmon). Saturday and Sunday only from 6:00 a.m.–6:00 p.m. only.
6. Eliminate use of bait on Little Susitna River July 14, upstream of the Little Susitna Public Use Facility.

Emergency Orders: Only one EO was issued affecting coho salmon harvest.

1. E.O. No. 2-SS-2-29-02 in Fish Creek increased coho bag limit to 3 per day and allowed 24-hour per day fishing on Saturdays and Sundays beginning August 17 at 12:01 a.m. through December 31.

2003

No new regulations adopted for 2003 and no EOs issued.

2004

No new regulations adopted for 2004 and no EOs issued.

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2005

The BOF met January 2005. Sport fish regulatory changes included:

1. A person may no longer fish in waters open to salmon fishing the same day they take a limit of salmon 16 inches or greater from Wasilla Creek.
2. Excluding Alexander Creek, the bag and possession limit for coho salmon on Westside Susitna streams was increased from two per day, four in possession to three per day, six in possession.
3. Anglers may no longer fish for other salmon (coho, pinks, chums) 16" or less in waters closed to fishing for other salmon.

The BOF adopted the following commercial fishery regulations:

1. Central District Drift Gillnet Fishery Management Plan (5 AAC 21.353)

- The drift fishery opens the third Monday in June or June 19 whichever is later.
- From July 9 through July 15,
    - Drift gillnet fishing is restricted for two regular fishing periods to the Kenai and Kasilof Sections and Drift Area One described below.
    - In runs of over 2 million sockeye salmon to the Kenai River there may be one additional 12-hour period in the Kenai and Kasilof Sections of the Upper Subdistrict and in Drift Area One.
- From July 16 through July 31,
    - In runs of less than 2 million sockeye salmon to the Kenai River there will be two regular 12-hour fishing periods restricted to the Kenai and Kasilof Sections of the Upper Subdistrict and Drift Area one;
    - In runs of between 2 and 4 million sockeye salmon to the Kenai River; there will be two regular 12-hour fishing periods restricted to the Kenai and Kasilof Sections of the Upper Subdistrict and in Drift Areas One & Two;
    - In runs of over 4 million sockeye salmon to the Kenai River, there are no mandatory restrictions.
- From August 11 until closed by emergency order,
    - Drift Areas three & Four are open for regular periods;
    - Chinitna Bay may be opened by emergency order.

New Drift Fishing Areas:

(1) Drift Area One: includes those waters of the Central District south of Kalgin Island at 60° 20.43' N. lat.;

(2) Drift Area Two: includes those waters of the Central District enclosed by a line from 60° 20.43' N. lat., 151° 54.83' W. long. to a point at 60° 41.08' N. lat., 151° 39.00' W. long. to a point at 60° 41.08' N. lat., 151° 24.00' W. long. to a point at 60° 27.10' N. lat., 151° 25.70' W. long. to a point at 60° 20.43' N. lat., 151° 28.55' W. long.;

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(3) Drift Area Three; includes those waters of the Central District within one mile of mean lower low water (zero tide) south of a point on the West Foreland at 60° 42.70' N. lat., 151° 42.30' W. long.;

(4) Drift Area Four; includes those waters of the Central District enclosed by a line from 60° 04.70' N. lat., 152° 34.74' W. long. to the Kalgin Buoy at 60° 04.70' N. lat., 152° 09.90' W. long. to a point at 59° 46.15' N. lat., 152° 18.62' W. long. to a point on the western shore at 59° 46.15' N. lat., 153° 00.20' W. long., not including the waters of the Chinitna Bay Subdistrict.

Other commercial fishery regulatory changes included:

- Up to 50 fathoms of the 150 fathoms of allowable drift gillnet gear per boat may be monofilament mesh; you must register with ADF&G prior to using monofilament gear.
- Spotter planes are allowed during the fishing period.
- Pink salmon fishery during even years was reauthorized; mesh size restriction was removed.
- Up to 35 fathoms of set gillnet gear per permit may be monofilament mesh with no more than one net per permit having monofilament mesh; you must register with ADF&G prior to using monofilament gear.

No emergency orders were issued affecting coho salmon fisheries in 2005.

2006

No new regulations adopted in 2006.

Emergency orders:

1. E.O. No. 2-SS-2-41-06 increased the daily bag limit of coho salmon to thee daily in that portion of the Little Susitna River open to salmon fishing beginning August 19.
2. E.O. No. 2-SS-2-44-06 increased salmon fishing time on Wasilla Creek to 24 hours per day while keeping the Saturday and Sunday, weekend only restriction and increased the bag limit for coho salmon to three daily in those waters open to salmon fishing on August 19.
3. E.O. No. 2-SS-43-06 increased salmon (other than king salmon) fishing time on Fish Creek to 24 hours per day while keeping the Saturday and Sunday, weekend only restriction and increased the bag limit for coho salmon to three daily in those waters open to salmon fishing on August 19.
4. E.O. No. 2-SS-2-42-06 increased salmon fishing time on Cottonwood Creek to 24 hours per day while keeping the Saturday and Sunday, weekend only restriction and increased the bag limit for coho salmon to three daily in those waters open to salmon fishing on August 19.

2007

No new regulations adopted in 2007.

Emergency orders:

1. E.O. No. 2-SS-2-36-07 Prohibits retention of Coho salmon while sport fishing in the Kink Arm Management Area, excluding Eklutna Tail Race and fish creek effective September 4.
2. E.O. No. 2-SS-2-37-07 rescinded E.O. No. 2-SS-2-36-07 on September 11.

Appendix A4.-Northern Pike regulatory history for NCIMA waters.

1989

1. The board adopted a proposal to establish a bag limit of 10 per day 10 in possession on Northern Pike in Susitna-West Cook Inlet Area.

1997

2. Sport fishing for northern pike using five (5) lines is allowed in specified lakes of the Susitna-West Cook Inlet Area provided: hooks are single hooks with a gap between the point and shank no smaller than three-quarters inch, the lines are closely attended, and all species of fish other than northern pike are immediately released. Specified lakes include: Alexander Lake, Sucker Lake, Trapper Lake, Flathorn Lake, Whiskey Lake, Hewitt Lake, Donkey Lake, Three Mile Lake (Beluga area), Neil Lake, Kroto Lake, and lakes of the Nancy Lake Recreation Area excluding Nancy and Big No Luck Lake.
3. The 10 fish bag and possession limits on northern pike in the Susitna-West Cook Inlet Area were repealed.

1998

4. Established a slot limit for northern pike in Alexander and Trapper lakes. No bag and possession limits are in effect for pike less than 22 inches in length. Northern pike between 22 inches and 30 inches in length may not be retained. The bag and possession limits for pike 30 inches or greater in length are 1 per day and 1 in possession. Additionally, the action taken for Alexander and Trapper lakes reduced the number of lines allowed when fishing through the ice for northern pike from 5 lines to 2 lines, and prohibited the use of spears and bow and arrows for taking of northern pike.
5. Action resulted in allowing the use of bow and arrow for taking northern pike in NCI waters.
6. Action resulted in eliminating the ¾-inch single-hook size restriction when fishing through the ice on select northern Cook Inlet lakes where 5 lines are allowed.

2002

1. The use of five lines while ice fishing for pike apply to seven additional lakes in Northern Cook Inlet: Trapper Lake, Big No Luck Lake, Figure Eight Lake, Cabin Lake, Lower Vern Lake, Upper Vern Lake and Lockwood Lake. On Trapper Lake, there is no longer a "slot limit" for pike; bait, multiple hooks, spears, and bow and arrow gear are now allowed. For the purposes of sport fishing, legal bow and arrow gear includes crossbows. When fishing through the ice for pike, anglers may use two hooks on a single line, provided that both hooks are attached to one single piece of bait.

APPENDIX B. PRESENCE OF NORTHERN PIKE IN WATERS OF THE NORTHERN COOK INLET MANAGEMENT AREA

Appendix B1.-Confirmed and suspected presence of northern pike in waters of the Northern Cook Inlet Management Area.

Primary classification	Secondary Classification	Site	Presence Documented	Presence Suspected
Susitna Basin Lakes	Alexander Creek	Alexander Lake	X	
Susitna Basin Lakes	Alexander Creek	Sucker Lake	X	
Susitna Basin Lakes	Alexander Creek	Trail Lake	X	
Susitna Basin Lakes	Alexander Creek	Rabbit Lake	X	
Susitna Basin Lakes	Lower Susitna	Flathorn Lake	X	
Susitna Basin Lakes	Lower Susitna	Figure 8 Lake	X	
Susitna Basin Lakes	Mid Susitna	Witsoe Lake	X	
Susitna Basin Lakes	Mid Susitna	Witsol Lake	X	
Susitna Basin Lakes	Mid Susitna	Lockwood Lake	X	
Susitna Basin Lakes	Mid Susitna	Lady Slipper	X	
Susitna Basin Lakes	Mid Susitna	Unnamed	X	
Susitna Basin Lakes	Mid Susitna	Unnamed	X	
Susitna Basin Lakes	Mid Susitna	Unnamed	X	
Susitna Basin Lakes	Mid Susitna	Vern Lake	X	
Susitna Basin Lakes	Mid Susitna	Ding Dong	X	
Susitna Basin Lakes	Mid Susitna	Yensus Lake		X
Susitna Basin Lakes	Yentna River	Whiskey Lake	X	
Susitna Basin Lakes	Yentna River	Bulchitna Lake	X	
Susitna Basin Lakes	Yentna River	Fish Creek Lake 1	X	
Susitna Basin Lakes	Yentna River	Fish Creek Lake 2	X	
Susitna Basin Lakes	Yentna River	Fish Creek Lake 3	X	
Susitna Basin Lakes	Yentna River	Fish Creek Lake 4	X	
Susitna Basin Lakes	Yentna River	Donkey Lake	X	
Susitna Basin Lakes	Yentna River	Hewitt Lake	X	
Susitna Basin Lakes	Yentna River	No Name (Big Bend)	X	
Susitna Basin Lakes	Yentna River	Chelatna Lake	X	
Susitna Basin Lakes	Yentna River	Cabin Lake (Big Bend)	X	
Susitna Basin Lakes	Yentna River	Pear Lake (Upper Skwenta)	X	
Susitna Basin Lakes	Yentna River	Stickleback Lake	X	
Susitna Basin Lakes	Skwentna River	Eight Mile Lake	X	
Susitna Basin Lakes	Skwentna River	Seven Mile Lake	X	
Susitna Basin Lakes	Skwentna River	No Name (Herk Strip)	X	
Susitna Basin Lakes	Skwentna River	One Stone Lake	X	
Susitna Basin Lakes	Skwentna River	Shell Lake	X	
Susitna Basin Lakes	Deshka River	Parker Lake	X	
Susitna Basin Lakes	Deshka River	Trapper Lake	X	
Susitna Basin Lakes	Deshka River	No Name Lake	X	
Susitna Basin Lakes	Deshka River	Ambler Lake	X	
Susitna Basin Lakes	Deshka River	Rocky Lake	X	
Susitna Basin Lakes	Deshka River	Neil Lake	X	
Susitna Basin Lakes	Deshka River	Kroto Lake	X	
Susitna Basin Lakes	Deshka River	No Name 1mi SW Parker	X	

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Primary classification	Secondary Classification	Site	Presence Documented	Presence Suspected
Susitna Basin Lakes	Deshka River	No Name 2 mi SW Parker	X	
Susitna Basin Lakes	Upper Susitna	Kashwitna Lake		X
Susitna Basin Lakes	Upper Susitna	Caswell Lake		X
Susitna Basin Lakes	Upper Susitna	Fish Lake (Birch Ck)		X
Susitna Basin Lakes	Upper Susitna	Sawmill Lake		X
Susitna Basin Lakes	Upper Susitna	Swan Lake	X	
Susitna Basin Lakes	Nancy Lake Area	Nancy Lake	X	
Susitna Basin Lakes	Nancy Lake Area	Redshirt Lake	X	
Susitna Basin Lakes	Nancy Lake Area	Lynx Lake	X	
Susitna Basin Lakes	Nancy Lake Area	Cow Lake	X	
Susitna Basin Lakes	Nancy Lake Area	Little Chicken Lake	X	
Susitna Basin Lakes	Nancy Lake Area	Big No Luck Lake	X	
Susitna Basin Lakes	Nancy Lake Area	South Rolly Lake	X	
Susitna Basin Lakes	Nancy Lake Area	North Rolly Lake	X	
Susitna Basin Lakes	Nancy Lake Area	Denaina Lake (Tanaina)	X	
Susitna Basin Lakes	Nancy Lake Area	Milo Lake	X	
Susitna Basin Lakes	Nancy Lake Area	Frazer Lake	X	
Susitna Basin Lakes	Nancy Lake Area	Little Frazer Lake	X	
Susitna Basin Lakes	Nancy Lake Area	James Lake	X	
Susitna Basin Lakes	Nancy Lake Area	Owl Lake	X	
Susitna Basin Lakes	Nancy Lake Area	Char Lake	X	
Susitna Basin Lakes	Nancy Lake Area	Ardaw Lake	X	
Susitna Basin Lakes	Nancy Lake Area	Phoebe Lake	X	
Susitna Basin Lakes	Nancy Lake Area	Chicken Lake	X	
Susitna Basin Lakes	Nancy Lake Area	Echo Pond #1	X	
Susitna Basin Lakes	Nancy Lake Area	Echo Pond #2	X	
Susitna Basin Lakes	Nancy Lake Area	Echo Pond #3	X	
Susitna Basin Lakes	Nancy Lake Area	Candle Stick Lake	X	
Susitna Basin Lakes	Nancy Lake Area	Bains Pond #1	X	
Susitna Basin Lakes	Nancy Lake Area	Bains Pond #2	X	
Susitna Basin Lakes	Nancy Lake Area	Bains Pond #3	X	
Susitna Tributaries		Fish Creek (Flathorn)	X	
Susitna Tributaries		Fish Creek (Kroto)	X	
Susitna Tributaries		Lake Creek	X	
Susitna Tributaries		Fish Lake Creek	X	
Susitna Tributaries		Alexander Creek	X	
Susitna Tributaries		Trappers Creek	X	
Susitna Tributaries		Sucker Creek	X	
Susitna Tributaries		Montana Creek	X	
Susitna Tributaries		Rolly Creek	X	
Susitna Tributaries		Moose Creek	X	
Susitna Tributaries		Bottle Creek	X	
Susitna Tributaries		Hewitt Creek	X	

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Primary classification	Secondary Classification	Site	Presence Documented	Presence Suspected
Susitna Tributaries		Donkey Creek	X	
Susitna Tributaries		Indian Creek (Yentna)	X	
Susitna Tributaries		Indian (Chulitna)		X
Susitna Tributaries		Rabideux Creek	X	
Susitna Tributaries		Fish Lake Creek	X	
Susitna Tributaries		Kutna Creek (Yentna)	X	
Susitna Tributaries		Shell Creek	X	
Susitna Tributaries		Eightmile Creek	X	
Susitna Tributaries		Caswell Creek	X	
Susitna Tributaries		Witsoe Creek	X	
Susitna Tributaries		Trapper (Talkeetna)		X
Susitna Tributaries		Talachulitna Creek		X
Susitna Tributaries		Johnson Creek	X	
Susitna Tributaries		Otter Creek	X	
Susitna Tributaries		Unnamed (Lower Su)	X	
Susitna Tributaries		Sunshine Creek		X
Susitna Tributaries		Anderson Creek		X
Susitna Tributaries		Wiggel Creek		X
Susitna Tributaries		Birch Creek		X
Susitna Tributaries		Yentna River	X	
Susitna Tributaries		Skwentna River	X	
Susitna Tributaries		Chulitna River		X
Susitna Tributaries		Tokositna	X	
Susitna Tributaries		Deshka River	X	
Knik Arm Drainage	Big Lake Drainage	Fish Creek (Big Lake)		X
Knik Arm Drainage	Big Lake Drainage	Meadow Creek (Big Lake)		X
Knik Arm Drainage	Big Lake Drainage	Big Lake	X	
Knik Arm Drainage	Big Lake Drainage	Blodgett Lake		X
Knik Arm Drainage	Big Lake Drainage	West Beaver Lake		X
Knik Arm Drainage	Big Lake Drainage	Rainbow Lake		X
Knik Arm Drainage	Cottonwood Creek	Cottonwood Creek		X
Knik Arm Drainage	Cottonwood Creek	Cottonwood Lake		X
Knik Arm Drainage	Cottonwood Creek	Andersen Lake	X	
Knik Arm Drainage	Cottonwood Creek	Wasilla Lake		X
Knik Arm Drainage	Cottonwood Creek	Mud Lake		X
Knik Arm Drainage		Little Susitna River	X	
Knik Arm Drainage	Little Susitna River	Horseshoe Lake (Little-Su)		X
Knik Arm Drainage	Knik River	Swan Lake		X
Knik Arm Drainage	Knik River	Jim Lake/Jim Creek		X
Knik Arm Drainage		Knik Lake	X	
Knik Arm Drainage		Mink Creek	X	
Knik Arm Drainage		Fire Creek	X	
West Cook Inlet		Chuit River	X	

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Primary classification	Secondary Classification	Site	Presence Documented	Presence Suspected
West Cook Inlet		Chuitbunga Lake	X	
West Cook Inlet		Threemile Creek	X	
West Cook Inlet	Threemile Creek	Threemile lakes	X	
West Cook Inlet		Tukallah Lake	X	
West Cook Inlet		Nikolai River	X	
Mat-Valley Lakes		Big Lake cut-off Lake	X	
Mat-Valley Lakes		Crystal Lake (Willow)	X	
Mat-Valley Lakes		Shirley Lake (Willow)		X
Mat-Valley Lakes		Long Lake (Willow)	X	
Mat-Valley Lakes		Prator Lake	X	
Mat-Valley Lakes		Memory Lake	X	
Mat-Valley Lakes		Finger Lake		X
Mat-Valley Lakes		Wallace Lake	X	
Anchorage Lakes		Sand Lake	X	
Anchorage Lakes		Delong Lake	X	
Anchorage Lakes		Lower Fire Lake	X	
Anchorage Lakes		Upper Fire Lake	X	