Fishery Management Report No. 10-50

Recreational Fisheries of Northern Cook Inlet, 2009-2010: Report to the Alaska Board of Fisheries, February 2011

by

Samantha Oslund

and

Sam Ivey

December 2010

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

Symbols and Abbreviations

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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)

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. 10-50

RECREATIONAL FISHERIES OF NORTHERN COOK INLET, 2009-2010: REPORT TO THE BOARD OF FISHERIES, FEBRUARY 2011

by

Samantha Oslund,
and
Sam Ivey
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

December 2010

The Fishery Management Reports series was established in 1989 by the Division of Sport Fish for the publication of an overview of management activities and goals in a specific geographic area, and became a joint divisional series in 2004 with the Division of Commercial Fisheries. 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.

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

And

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

This document should be cited as:
Oslund, S. and S. Ivey. 2010. Recreational Fisheries of Northern Cook Inlet, 2009-2010: Report to the Alaska Board of Fisheries, February 2011. Alaska Department of Fish and Game, Fishery Management Report No. 10-50, Anchorage.

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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 2011. Included are a description and historical overview of each fishery, how each fishery is managed, and sport fishery performance and escapement for 2009 and 2010. Also included are brief descriptions of the personal use and subsistence fisheries of the area.

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 2011. Included are a description and historical overview of each fishery, how the fishery is managed, and sport fishery performance and escapement for 2009 and 2010.

The Northern Cook Inlet (NCI) sport fish management area (Figure 1) includes all freshwater drainages and adjacent marine waters of Upper Cook Inlet (UCI) between the southern tip of Chisik Island and the Eklutna River, excluding the upper Susitna River drainage upstream of 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 which are 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 upstream of 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 downstream of 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 downstream of its confluence with the Chulitna River and, primarily for management purposes, eastside drainages of the Susitna River within a ½ 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.

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, 2006 a-b, 2007, 2009 a-b, 2010a-

b, *In prep* a-b). 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. Unless noted otherwise, all estimates of effort, harvest and catch that follow are from the SWHS.

The NCIMA is composed of two complete SWHS reporting areas and a portion of a third (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 M fisheries outside of the NCIMA are not included in this report.

CHINOOK SALMON FISHERIES

Twelve proposals (197, 264-268, 271, 274, 275, and 279-281) either specifically or indirectly addressing Northern Cook Inlet Chinook salmon recreational fisheries will be addressed by the BOF in February 2011. 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 numerous in Alaska, smaller only than the Yukon, Kuskokwim and Nushagak river stocks[1]. 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 (see 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.

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[1] Delaney, K. and D. Vincent-Lang. *Unpublished*. Current status and recommendations for the future management of the Chinook salmon stocks of Northern Cook Inlet. A report to the Alaska Board of Fisheries, Anchorage, Alaska, November 1992. Alaska Department of Fish and Game, Division of Sport Fish, Anchorage. Subsequently referred to as Delaney and Vincent-Lang *Unpublished*.

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 can be found in Whitmore et al. *Unpublished*[2].

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 1990s. 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. From 2002-2006, harvests were stable, with an average of 27,913 fish harvested. The average total harvest of NCI Chinook salmon by all users was 32,000 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.[3] Escapement goals were revised during the February 2002 BOF meeting, 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

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[2] Whitmore, C. D. Sweet and L. Bartlett. *Unpublished*. Area Management Report for the recreational fisheries of Northern Cook Inlet, 1992. Located at Alaska Department of Fish and Game, Division of Sport Fish, 333 Raspberry Road, Anchorage.

[3] Bue, B. G., and J. J. Hasbrouck. Unpublished. Escapement goal review of salmon stocks of Upper Cook Inlet. Alaska Department of Fish and Game, Report to the Alaska Board of Fisheries, November 2001 (and February 2002), Anchorage. Subsequently referred to as Bue and Hasbrouck, *Unpublished*.

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. Escapement goals were mostly met through 2006 while harvest levels were stable. Harvest remained stable through the mid-2000s despite liberalizations to major fisheries. Harvest since 2006 has trended downward, becoming variable between fisheries. Only about half the escapement goals were achieved in 2008-2009 and only one goal was achieved in 2010 despite various emergency orders restricting major sport fisheries. The regulatory history of Chinook salmon in Northern Cook Inlet waters is presented 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. There are few Chinook salmon that 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 2,217 fish from 1977-2008 (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 23 years since 1983. The average Chinook salmon escapement index count through 2008 was 1,391 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, Division of Sport Fish began a program to stock Chinook salmon at the Eklutna Power Plant tailrace (Figure 7) in 1999. Ship Creek Chinook salmon are used as broodstock (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. Most fishing takes place in the ½ mile long power plant tailrace from the Old Glenn Highway to its confluence with the Knik River.

The tailrace was first stocked with Chinook salmon smolt in May 2002 (Table 6). A full complement of age classes was realized in 2006. The largest harvest to date of 1,084 fish was observed in 2007.

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 (see 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 and that inriver exploitation can exceed 50%. The Chinook weir program ended after 1995. In 1995, in response to poor Chinook salmon returns, BOF restricted the use of bait and limited the fishery to 6 a.m.-11 p.m. daily. From 1999-2008, the aerial index count of the escapements ranged from 1,100-2,100 fish and harvest varied from about 2,200-3,300 fish (Tables 4 and 5), indicating that the present regulatory framework is maintaining the necessary escapement to ensure a sustainable fishery over most years. Note that the index count is assumed to represent no more than half of the actual escapement.

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 (Loopstra 2010). 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.

Sport Fishery Performance and Escapement in 2009 and 2010

The 2009 sport harvest of Chinook salmon from the Little Susitna River was 1,653 fish, below the 2004-2008 average of 2,764 fish (Table 4). The Little Susitna River harvest accounted for approximately 19% of the total Chinook salmon sport harvest from NCIMA waters during 2009 (Table 7). During 2009, sport fish guides and anglers reported low to moderate catch rates at the Little Susitna River. Harvest numbers reported at the LSPUF fee booth indicated a below average run with catch rates similar to those observed in 2008. The Chinook fishery was closed on July 3 to eliminate the possibility of any additional pressure being directed at the fishery as a result of closure of Parks Highway streams prior to the last 3-day weekend of the season (Appendix A1). An aerial index of about 1,028 Chinook salmon was documented for the Little Susitna River in 2009 (Table 5), just above the SEG minimum of 900 fish. Catch rates reported by anglers at the Eklutna Tailrace were low through most of the Chinook fishing season. Department staff observations of fishing at Eklutna Tailrace substantiated the angler reports. Harvest of Chinook salmon at the Eklutna Tailrace in 2009 was about 500 fish. In 2009, about 200 fish were counted during the Moose Creek survey (Table 5).

During 2010 catch rates reported by guides and anglers were again below average on the Little Susitna River throughout the Chinook fishing season. As in 2009, an emergency order was issued to close the Little Susitna on July 2 simultaneous with closer of Unit 2 (Parks Highway streams) of the Susitna River (Appendix A). Water conditions in August provided for average visibility in which to conduct the annual index count. On July 19, 2010, 589 Chinook salmon were counted (Table 5), below the SEG range of 900-1,800 (Figure 6). Department staff observations of fishing at the Eklutna Tailrace indicated poor catches from late-May through mid-July. In 2010, an aerial survey conducted on Moose Creek counted 142 fish, 27% of the 1983-2008 average of 522 fish (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.

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). Until the new hatchery is at full production, goals for Willow Creek are currently: 1) maintain the present quality and quantity of natural Chinook salmon production, 2) produce through stocking an additional 2,000 returning Chinook salmon of which 1,750 Chinook spawn naturally, as assessed by aerial survey, 3) provide 10,000 angler-days of annual weekend and weekday fishing opportunity directed at stocked Chinook salmon in Willow Creek (Loopstra 2010). 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 complement of stocked fish returned (Sweet 1999; Whitmore and Sweet 1998, 1999; Rutz and Sweet 2000;Sweet and Rutz 2001; Sweet et al. 2003, 2004). The contribution of hatchery fish to the escapement in Willow Creek

and Deception Creek continues to be monitored by staff annually. An estimated 2% hatchery fish stray into the Willow Creek escapement annually (Table 8).

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 1999-2008, ESMU fisheries averaged about 36% of the total NCIMA Chinook salmon harvest (Table 7). Harvest steadily declined during this period, from about 16,900 Chinook salmon in 1999 to about 5,800 fish in 2008. Total eastside harvest has been less than Westside Susitna harvest since 1999. Historically, approximately 500-4,000 hatchery fish taken in the Willow Creek sport fishery have contributed to the annual eastside harvest. Due to disease issues in 2006 and decreased smolt size since 2007, the result of cold water rearing at Fort Richardson Hatchery, the number and/or quality of fish stocked has diminished over recent years (Table 9). Although the ramifications of reduced stocking are unmeasured, it is speculated that fewer hatchery adults have contributed to this fishery beginning in 2008.

Willow Creek, Talkeetna River, Sheep Creek and Montana Creek traditionally produce the largest harvest of Chinook salmon in the Eastside Susitna Management Unit. The 2004-2008 average annual harvest for these fisheries ranged from 589 fish in Sheep Creek to 2,818 fish in Willow Creek (Table 10).

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 11). Prairie Creek, a headwater tributary of the Talkeetna River, consistently receives the largest escapement with an average escapement of 4,794 Chinook salmon from 1999-2008 (Table 12). 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 12; Figure 11). In 2008, a combination of poor weather and water conditions prevented index counts on several ESMU streams including Little Willow and Sheep creeks and the Kashwitna River. Half of the six streams counted with associated SEGs, were within their respective escapement goal ranges (Figure 11); Willow, Goose, and Prairie creeks failed to attain escapement minimums.

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 (Unit 2 or Parks Highway streams), 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 the next three consecutive weeks. 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. The weekend-only fishing strategy has been cautiously liberalized since sport fisheries reopened in 1979 after a period of closure. Initially only Willow, Caswell, and Montana creeks were open for four consecutive Saturday-Sunday weekends beginning the second Saturday in June. In 1986, Little Willow, Goose, Sunshine, Sheep, and Birch creeks were added and in 1987, all eight eastside streams were liberalized by the addition of Monday to the fishing weekend. In 1989 the Kashwitna River was added as the ninth eastside fishery and Willow Creek was liberalized to continuous fishing through the third Monday in June and the next two consecutive three-day (Saturday-Monday) weekends. In 1999, all eastside fisheries followed suite with the regulations in place on Willow Creek. In 2005, Parks Highway streams were opened for an additional three-day weekend (Appendix A1).

The Talkeetna River and upper Susitna River drainages are open to Chinook salmon fishing from January 1 through July 13, from 6 a.m. to 11 p.m. 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 (see 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.

Sport Fishery Performance and Escapement in 2009 and 2010

The 2009 Chinook salmon harvest from the Eastside Susitna Management Unit was 3,462 fish, approximately 66% less than the 1999-2008 average harvest of 10,081 fish (Table 7). A below average return of Chinook salmon was observed along Parks Highway streams in 2009. An emergency order was issued to close all Unit 2 Parks Highway streams to Chinook salmon fishing for the final weekend fishery which in 2009 occurred over the Fourth of July weekend (Appendix A1). Five of eight SEGs were met in 2009. Escapement goals were not achieved on Willow, Sheep, and Goose creeks. A large beaver dam was noted as blocking fish passage on Goose Creek in which only 65 Chinook salmon were counted, the lowest on record (Figure 11).

During 2009 the Talkeetna River (Unit 5) which remained open to harvest throughout the season dominated the harvest among ESMU streams with an average harvest of 1,982 fish harvested. Willow and Montana creek harvests were 75% below average, whereas Sheep Creek was about half its average harvest (Table 10).

Information provided to the department from sport anglers and guides indicated returns to eastside Susitna tributaries continued to be below average in 2010. Department staff conducted two separate aerial surveys to substantiate public reports before issuing an emergency order to close Unit 2 Parks Highway streams to Chinook salmon harvest and reduce the annual limit from five to one fish over 20 inches on the Talkeetna (Unit 5) and Chulitna (Unit 6) rivers. The emergency order took effect on July 2 and resulted in closure of the last two, three-day weekends within Unit 2 (Appendix A1). Despite management action, seven of eight streams failed to achieve escapement minimums (Figure 11). Little Willow Creek narrowly achieved its escapement goal with 468 fish (SEG 450-1,800). Willow and Goose creeks each missed their respective goals for the fourth consecutive year. Sheep Creek was not counted in 2010 due to poor water visibility (Table 12).

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 that 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 its 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; these fish 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 fisheries 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) and again after 2000; ESMU dominated harvests 1992-1999. Within the unit, the Deshka River, Alexander Creek and Lake Creek historically supported the largest Chinook salmon fisheries (Table 13) until Alexander Creek was closed to Chinook salmon fishing in 2008. More recently, Deshka River, Lake Creek, and the Talachulitna River have generated the largest harvests in this unit, about 88% from 2004-2008. The Deshka River has historically provided the largest Chinook salmon harvest within the entire NCIMA (Table 13) except during the mid-1990s when the fishery was closed due to low observed escapements.

Harvest by major WSMU fisheries increased substantially from 1979-1993 (Table 13), probably 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 14). A weir has been used to census escapements to the Deshka River since 1995 (Table 14). From 1991-1996, Chinook salmon spawning abundance in WSMU tributaries fell below escapement goals (Table 14). 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 13). 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 14). In 1997-2007, the SEG or BEG was met for all streams, except Alexander Creek. In 2008, the Deshka River and Alexander Creek both did not achieve their escapement goals. Alexander Creek narrowly missed its goal in 2002 and 2003, but began a steep downward trend beginning in 2006; escapement counts were 885, 480, and 150 during 2006, 2007, and 2008, respectively (Table 14). Managers suspect northern pike have contributed to reduced Chinook salmon productivity in the Alexander Drainage (see northern pike section).

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, and Peters creeks, and the Talachulitna River) were also established in 2002 (Table 3). SEGs were based on historical aerial index counts of escapement[4]. The management objective for these five systems is to achieve the escapement goals while providing maximum levels of Chinook salmon fishing opportunity.

A weir has been the cornerstone for inseason management of the Chinook salmon fishery on the Deshka River since its inception in 1995. Over recent years, a preseason outlook of run size to the Deshka River has been used for early inseason management. The preseason outlook uses sibling regression to predict the number of returning age-5 and age-6 fish. It also uses a spawner-recruit relationship combined with the average proportion of age-4 spawners to predict the number of age-4 fish. Harvest is incorporated to estimate total run size. The SWHS is generally to estimate sport harvest, whereas marine harvest is estimated by taking a proportion of the combined catches in the Northern District directed commercial setnet, Tyonek subisistence, and Kustatan subdistrict commercial setnet fisheries. That proportion is the aerial survey count of the Deshka Chinook salmon escapement divided by the sum of all aerial Chinook salmon counts in the NCI area.

The Deshka weir has also provided insight into accuracy of the aerial count. Spawners have been counted by helicopter since 1979, with a single pass over all known spawning areas at the peak of spawning (Lafferty 1997). Because the Deshka River is the top producer of Chinook salmon in the NCIMA, a weir was installed in 1995 in order to monitor actual numbers in the escapement. Subsequent aerial counts were correlated with the escapements (weir count minus harvest above the weir) and averaged 40% of the escapement (Table 14). The aerial counts were used as an index of escapement even prior to the weir program. Poor aerial counts during the early 1990s suggested diminished runs and were the basis of areawide restrictions affecting Chinook salmon fisheries. The weir substantiated that the low aerial counts were an index of low escapements

Inseason liberalizations to the Deshka River Chinook salmon fishery were common 2000-2006 (Appendix A2) because 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 from 2002-2007 (Figure 12). In 2008, inseason information from the weir indicated a weak run. A step-down strategy was employed to first restrict the use of bait on June 14, and then impose total closure of the fishery on June 19. The final Deshka River weir count for 2008 totaled 7,533 Chinook salmon, below the BEG range of 13,000-28,000 and 75% less than the previous 5-year mean of 30,166 fish (Table 14).

The SEG for Alexander Creek has not been met in the past five consecutive years (Figure 12). Northern pike have likely reduced Chinook salmon productivity in this system through predation on juvenile salmon. As a result, the sport fishery was closed by BOF action in 2008. Currently

[4] Bue, B. G., and J. J. Hasbrouck. *Unpublished*. Escapement goal review of salmon stocks of Upper Cook Inlet. Alaska Department of Fish and Game, Report to the Alaska Board of Fisheries, November 2001 (and February 2002), Anchorage.

an effort is underway to suppress the pike population in Alexander Creek through annual gillnetting (see northern pike section).

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 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 fish daily and two in possession. A seasonal limit of five Cook Inlet Chinook salmon also applies. 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 2009 and 2010

In 2009, total Chinook salmon harvest from all WSMU streams was 4,700 fish, about one-third of the mean harvest during the early 2000s (Table 7) when harvest levels were stable. In April, before the fishery began, the Deshka River was restricted to no bait and harvest was restricted to Saturday-Monday, only (Appendix A2). This emergency order was based on a preseason run outlook near the low end of the escapement goal (13,000 fish) and uncertainty in estimating the number of returning age-4 fish. Inaccurate projections in 2007 and 2008 stemmed from lower than anticipated returns of age-4 fish during these years. The preseason outlook uses sibling regression to predict the number of returning age-5 and age-6 fish and a spawner-recruit relationship and the average proportion of age-4 spawners to predict the return of age-4 fish. In 2007 and 2008, age-4 fish totaled about 2,200 fish in each year, far less than anticipated (age-4 fish have averaged 8,700 since inception of the weir program)[5]. If the trend continued in 2009, the BEG might not be met. Further action was taken on May 20 as the BOF enacted an emergency regulation to reduce fishing time in the Northern District setnet fishery from twelve to six hours by allowing commercial salmon fishing to occur only between 7:00 a.m. and 1:00 p.m. On June 11, upon projecting a level of escapement insufficient to meet the escapement goal after the first-quarter of the historical run had passed, the Deshka River was closed entirely to sport fishing. In keeping with the Northern District King Management Plan, on June 11 the Northern District was closed to the harvest of Chinook salmon for the remaining two Monday fishing periods due to the closure of the Deshka Chinook salmon sport fishery. The final weir count of 11,967 was about 1,000 fish below the low end of the BEG 13,000-28,000. However, the low count was due to a record low return of age-5 and age-6 fish rather than a low return of age-4 fish, as projected (Richard Yanusz, Fishery Biologist, ADF&G, Division of Sport Fish, Palmer, Alaska, *personal communication*). Other streams within the WSMU area met escapement objectives in 2009 with the exception of Alexander Creek (Figure 12).

During the 2010 season angler success on Yentna tributaries and the Deshka River was variable from fair on the Yentna to good at the Deshka River. Despite good fishing success at the Deshka, weir counts indicated undershooting the escapement goal early in the season. An emergency order was issued June 9 to prohibit bait use (Appendix A2). Following suit, the

[5] *Unpublished.* Memorandum titled Outlook for the 2009 Deshka Chinook salmon run and accuracy of the 2008 outlook. Located at ADF&G, Division of Sport Fish, Palmer, Alaska.

Northern District set net fishery was reduced in time from 12 to 6 hours on the June 14 opener. Beginning June 13 the run began building and based on an escapement projection within the escapement goal range, the sport fish emergency order was rescinded by June 19. The final Deshka River weir count for 2010 totaled 18,594 Chinook salmon, within the BEG range of 13,000-28,000 (Table 14). Escapement goals were missed on the remaining three systems counted with associated goals: Talachulitna River and Lake and Alexander creeks. The aerial index count on Alexander Creek was 177 fish (SEG 2,100-6,000), marking the fifth consecutive year in failure to achieve its goal (Table 14; Figure12).

WEST COOK INLET MANAGEMENT UNIT CHINOOK SALMON FISHERIES

Fishery Description

Prior to 2000, the 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 15). 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 200, 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 950 fish from 2004-2008 (Table 15).

1. 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 16) and all goals were met in 2006. Since 2006, escapements on these three streams have trended downward and SEGs have been missed (Figure 14). A spawning escapement survey conducted on the Lewis River on July 17, 2007, 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.

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 2009 and 2010

The estimated 2009 West Cook Inlet harvest was 829 Chinook salmon, about three-quarters of the mean harvest during the early 2000s (Table 15) when harvest levels were stable. SEGs were not met for the Chuitna, Theodore, and Lewis rivers in 2009 (Figure 14).

1. In 2010 action was taken preseason to close the Chuitna, Theodore, and Lewis rivers to Chinook salmon fishing as a result of failure to achieve escapement goals from 2007-2009. The areas affected included all marine waters within a one half mile radius of the mouths of these rivers. As a result, the Northern District set net fishery was closed per the Northern District Chinook Salmon Management Plan from an ADF&G regulatory marker located one mile south of the Chuitna River to the Susitna River for the entire directed Chinook salmon fishery. No SEGs were met in 2010 for WCIMU streams (Figure 14; Table 16), marking the fourth consecutive year in which escapement goals were missed.

COHO SALMON FISHERIES

Proposals 21, 22, 200-202, 272, and 273 will address multiple issues regarding coho salmon fisheries and range from liberalizing to restricting fisheries. The coho proposals of the NCIMA will be addressed by the BOF in February 2011.

AREAWIDE OVERVIEW

Areawide Historical Harvest and Escapement

Sport harvests of coho salmon in the NCIMA ranged from 17,200-105,300 fish from 1977-2009, and averaged 83,398 fish during the last five years (Table 17). From 2004-2008, NCIMA harvests accounted for 18% of the coho salmon harvests in the Southcentral region and 11% of the statewide harvests (Table 17). Within the NCIMA, the KAMU, which includes the Little Susitna River, accounted for the largest harvest of coho salmon through 2009 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. Coho salmon harvest in the KAMU was dominated by harvests from the Little Susitna River until 2006. Jim Creek harvest has been slightly higher than Little Susitna River 2006-2009. Harvest by specific streams within the KAMU, ESMU, WSMU, and WCIMU are provided in tables 18, 20, 21, and 23, respectively.

Areawide 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.

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 operated 2009-2010 in cooperation with U.S. Fish and Wildlife Service (USFWS) to count both sockeye salmon escapement and coho. Prior to 2009, the weir was removed about August 15, half way through the historical coho salmon run. For 2009-2010 the weir remained in the creek until September 24.

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 area wide 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 swept much of the NCIMA during the third week of August 2006. Escapement and harvest levels observed in 2008 did not indicate any effects from this flood.

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 1977-2008, harvest of Little Susitna River coho salmon ranged from 2,800-27,600 fish with a mean harvest of 12,265 fish (Table 18). 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 19). In 1986 the weir was damaged for several

days by floodwaters and the count through the weir was incomplete (Table 19). 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 19), 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 1996-2008 (Tables 18 and 19), years after the stocking program ended and for which complete escapement counts are available. 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 19), 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 total length per day and in possession. Only unbaited, artificial lures are allowed in the Little Susitna River from October 1 through 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 (Tom Namtvedt [retired] and Richard Yanusz, Division of Sport Fish Biologists, Palmer, Alaska, *personal communication*). However, the Little Susitna River weir at its present location (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. Knik Arm streams, with the exception of the Little Susitna River, were liberalized to three coho per day in both 2009 and 2010 as coho runs for the Little Susitna were average in return (Appendix A3).

Fishery Performance and Escapement in 2009 and 2010

During 2009 fishing guides and anglers reported above average catches of coho salmon throughout the season. The SWHS showed 8,346 coho were harvested from the Little Susitna

River, below the 2004-2008 mean of 12,499 fish (Table 18). The final weir count was 9,523 fish (Table 19).

Sport fishing guides and anglers reported average catches early in the 2010 season, although angling success was below average based on yearly exit surveys conducted by State Parks to keep a record of anglers using the Little Susitna Public Use Facility and numbers of fish caught. A total of 9,214 coho salmon were counted through the Little Susitna River weir at RM 71 (Table 19), near the lower end of the SEG range. A high water event left the weir less than fully functional for approximately 8 hours August 28-29. However, observations from the field crew were that few fish likely escaped undetected. Therefore, it is unlikely the goal would have been attained even if the weir had remained fully intact.

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 three educational permit fisheries (Knik Tribal Council, Eklutna Village, and Big Lake Cultural Outreach).

Until 2006, the Little Susitna was, historically, the largest Knik Arm sport fishery in terms of both participation and coho salmon harvest (Table 18). Jim Creek harvest rates have been higher than the Little Susitna 2006-2009 but effort is slightly less than the Little Susitna. 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-mile-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 150,000 thermally-marked coho salmon annually to produce a return of 7,500 adult coho salmon and generate 10,000 angler-days of effort (Loopstra and Hansen 2010).

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 six sport fisheries (Fish, Cottonwood, Wasilla, and Jim creeks, the Little Susitna, and Eklutna Tailrace) averaged 20,226 coho salmon from 2004-2008 (Table 18). Jim Creek had the highest average during this time with 14,106 coho salmon harvested, whereas the three weekend-only fisheries averaged 541 fish at Fish Creek, 631 fish at Cottonwood Creek, and 620 fish at Wasilla Creek (Table 18).

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 2004-2008; when the weir was removed prior to August 15 and before the majority of the run. In cooperation with the USFWS, six weeks was added to weir time (after August 15) for 2009-2010 to encompass the majority of the coho run for Fish Creek (Table 19).

Fishery Management and Objectives

Fish, Cottonwood, and Wasilla creeks (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 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 through 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 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 (Table19). The BEG for Wasilla Creek was eliminated in 2002 because of a lack of historical escapement data. 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 19). 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, and Fish creeks and the Little Susitna River have been found to be significantly correlated (Tom Namtvedt and Richard Yanusz, *personal communication*). 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 on the Little Susitna River and Cottonwood, Fish, and Wasilla creeks on August 16, 2008. Coho bag limits were increased from two per day to three per day in waters of the Knik Arm drainage excluding the Little Susitna River effective August 19, 2009. An increase from two to three coho per day for the same area was in effect August 7, 2010, but excluded the Little Susitna River and Jim Creek. The 2009 and 2010 liberalizations were based heavily on Fish Creek weir counts.

Effort and harvest have more than double on Jim Creek since about 2002 (Table 18). Managers are cautiously monitoring this system for any signs of overharvest. Adjustments to the fishery in order to maintain or lower harvest may be necessary in the future. 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 19). 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 total 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 2009 and 2010

Total sport harvest of coho salmon in Knik Arm streams (excluding Little Susitna River) was 22,023 fish in 2009, the 2004-2008 mean was 20,226 fish (Table 18). Anglers reported good catches at Jim Creek in 2009 and 2010. Limited inseason information on sport fishing success is available for Fish, Cottonwood, and Wasilla creeks because of the very limited open season and little angler effort. The daily bag and possession limit for coho salmon was increased from two per day to three per day excluding the Little Susitna River, and another day was added to the weekend-only fisheries of Cottonwood, Fish, and Wasilla creeks (Appendix A3). Eklutna Tailrace had an above average harvest in 2009 of 6,767. The 2004-2008 mean harvest was 4,328. Index survey counts varied by fishery (Table 19). The upper limit of the SEG for McRoberts Creek (Jim Creek drainage) was exceeded in 2009, but failed to meet the lower end of the goal in 2010 (Table 19).

In 2010, a strong run of coho salmon at Fish Creek prompted liberalization to three per day and three in possession in waters open to salmon fishing in the KAMU with the exception of Jim Creek and the Little Susitna River. Also, another day was added to the weekend-only fisheries of Cottonwood, Fish, and Wasilla creeks (Appendix A3).

In 2010, 242 coho salmon were counted on McRoberts Creek (Jim Creek drainage), below the lower bound of the SEG (Figure 16). Index counts of 927 fish on Wasilla and 189 fish on the Matanuska River–Bartko side channel were above average, whereas the Cottonwood Creek index count of 756 fish was below its 5-year and 10-year means (Table 19). The Fish Creek sockeye salmon weir concluded on September 23 with a count of 6,977 coho salmon. The count was above the five-year mean of 4,226 fish. In cooperation with the USFWS, six weeks was added to weir time (after August 15) for 2009-2010 to encompass the majority of the coho run for Fish Creek (Table 19).

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 19,670 fish in the ESMU and 17,143 fish in the WSMU from 2004-2008 (Table 17). The contribution from the ESMU and WSMU to the total NCIMA coho salmon harvest during 2004-2008 was 24% and 21%, respectively.

From 2004-2008, Willow Creek, Montana Creek, and the Talkeetna River produced the largest coho salmon harvests in the ESMU, averaging 3,930, 3,545, and 3,466 fish, respectively, and accounting for approximately 60% of the Eastside Susitna harvest (Table 20). During that period, coho salmon harvest averaged 4,015 fish from the Deshka River, 1,403 fish from Fish Lakes Creek, and 5,970 fish from Lake Creek (Table 18).

Total coho salmon abundance in the Susitna River drainage has been estimated only once, in 2002, at 663,000 fish, with 46% going up the Yentna River (Willette et al. 2003). Abundance in portions of this vast drainage has also 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 22). It is important to recognize that significant coho salmon returns occur in tributaries of the Susitna River downstream of RM 80 (Merizon et al. 2010). 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 1981-2008 (Westerman and Willette 2010). 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 duration of the 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 1985-2008 (Table 22).

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 22). 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 total length. Bag and possession limits were increased in the WSMU at the January 2005 BOF meeting to three fish 16 inches or more in total 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 small streams are indexed on an annual basis: Rabideux, Birch, Question, and Answer creeks (Table 21). There are no SEGs within the ESMU and WSMU.

Sport Fishery Performance and Escapement in 2009 and 2010

The 2009 sport coho salmon harvest was an estimated 15,335 fish from the ESMU, and 14,464 fish from the WSMU (Table 20), below the 2004-2008 means. All escapement index counts for ESMU and WSMU streams were below average for 2009 and 2010 (Table 22). The Deshka weir count of 27,348 fish was average in 2009.

During 2010, fishing guides and anglers reported average to below average catches of coho salmon for the WSMU and ESMU throughout much of the season. A below average run was

realized for the Deshka River. The final 2010 weir count for the Deshka River was 10,393 fish (Table 22).

The department conducted surveys to index escapement of coho salmon on three of the additional ESMU streams: Question, Answer, and Birch creeks (Table 22).

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 13,589 fish in the WCIMU from 2004-2008 (Table 17). 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 2004-2008 was an estimated 3,803 fish (Table 23). The second and third major coho producers are tributaries of Big River Lakes, with a 2004-2008 sport harvest average of 3,144 fish and the Chuitna River with 1,227 coho salmon harvested during the same period (Table 23).

During recent years the department has collected no coho salmon escapement information in the WCIMU, so 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 2009 and 2010

The 2009 sport harvest of coho salmon from WCI unit was an estimated 9,801 fish (Table 15), just below the 2004-2008 mean of 13,589. The largest harvest of coho salmon came from the tributaries of Big River Lakes with an estimated harvest of 3,032 fish, just below the 2004-2008 mean of 3,144 fish. The Kustatan River, normally supporting the largest harvests, had a harvest of 2,639 fish, below the mean average of 3,803 fish for 2004-2008. Inseason catch information received in 2010 from sport anglers and guides indicated an average return.

SOCKEYE SALMON FISHERIES

Proposals 276-278, addressing the establishment of a youth-only fishery and a sport fishery on Fish Creek, will be addressed by the BOF in February 2011. The BOF will consider other proposals addressing the prosecution of sockeye salmon fisheries in UCI in February 2011. 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 UCI proposals.

FISHERY DESCRIPTION

The Yentna River is thought to support about 77% of the Susitna River sockeye escapement (Fair et al. 2009). 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, has grown over recent years 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; 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 24-26). Any surpluses of sockeye above escapement needs at Fish Creek of the KAMU are targeted by a personal use fishery (see Personal use and Subsistence Fisheries section). The only sport fishery currently on Fish Creek is directed at the harvest of coho salmon and begins the second Saturday in August. Fewer than 200 sockeye salmon are harvested in this sport fishery, on average (Table 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. See Personal Use and Subsistence Fisheries section for further information.

HISTORICAL HARVEST AND ESCAPEMENT

Sport harvests of sockeye salmon in the NCIMA ranged from 3,100-23,200 fish during 1977-2008 and averaged 13,600 fish (Table 27). 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) whereas ESMU harvests are predominately from the Talkeetna River, specifically Larson Creek (Table 25). The Talkeetna River accounted for 85% of the ESMU harvest from 2004-2008. Lake Creek is the largest fishery in the WSMU, but the WCIMU harvest is predominately from Wolverine Creek (Big River lakes; tables 26 and 28). 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.

Sockeye salmon populations are present in numerous streams throughout the KAMU, some of which were surveyed sporadically in the past (Table 29). Bodenburg Creek, a Knik River tributary, was surveyed annually from 1968-2010, except for 1984 (Table 30).

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 (Kyle and Chlupach 1990). From 1968-2008, escapement of sockeye salmon ranged from 2,700 fish in 1973 to 192,400 fish in 1984 and averaged 50,800 fish (Table 29; Figure 18). Escapements were below the historical average from 1998-2001 and 2004-2008.

Escapement of sockeye salmon to the Susitna River drainage was documented annually since 1978 at the Yentna River sonar site operated by the Division of Commercial Fisheries 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 29). Within the NCIMA, Division of Commercial Fisheries 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 29). 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 resulted in incomplete counts 2004-2006 (Table 29).

FISHERY MANAGEMENT AND OBJECTIVES

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

The management objective for sockeye salmon in the NCIMA sport fisheries is to attain established escapement goals as measured at various weirs and a sonar site 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. Yentna River sockeye salmon were estimated by side scan sonar located at RM 4 of the Yentna River through 2008 and evaluated against an SEG of 90,000-160,000 fish. Under the Northern District Salmon Management Plan, when runs were greater than 4,000,000 sockeye salmon to the Kenai River, an OEG of 75,000-180,000 fish became the escapement goal. The Yentna SEG and OEG were discontinued after 2008 and replaced with three weir based SEGs: Chelatna Lake (SEG 20,000-65,000), Judd Lake (SEG 25,000-55,000), and Larson Lake (15,000-50,000).

From 2004-2007, sockeye salmon sport fisheries occurring on the Susitna River were restricted through various emergency orders prohibiting retention. 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.

In light of 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 was conducted from 2006-2008. Abundance estimates were generated using a combination of fish wheels and weirs, and the distribution of spawners was assessed. Mainstem Susitna River sockeye were estimated at 107,000 (Table 29) fish in 2006 using PIT tags deployed at Flathorn and recovered at Sunshine (Yanusz et al. 2007). Neither the estimate based on PIT tags nor the estimates based on radio tags met conditions for a reliable capture-recapture experiment for the Yentna River during 2006. Sockeye salmon abundance estimates for the mainstem Susitna River were 87,883 in 2007 and 70,772 in 2008, and for the Yentna River were 239,849 in 2007 and 288,988 in 2008, based on radio tags (Table 29; Fair et al. 2009).

Part of this project was directed at establishment of a genetic baseline for Susitna sockeye salmon. Microsatellite and Single Nucleotide Polymorphism (SNPs) technology were used to further the department's understanding of stock identification, and, in turn, exploitation of Susitna origin sockeye among various fisheries. Proportions and numbers of Susitna-origin

sockeye salmon harvested in these fisheries from 2005-2009 may be found in Barclay et al. (2010).

In 2008, following guidelines set forth in the *Policy for Management of Sustainable Salmon Fisheries Policy* for the State of Alaska[6], the BOF designated Susitna River sockeye salmon a stock of yield concern based on a failure to achieve the Yentna SEG in 5 of 8 years (Table 29) and lower than expected yields[7]. An action plan ensued, directing management of the Central District drift gillnet fishery to continue under restrictive guidelines set forth in the plan, and implementation of a restrictive measure within the *Northern District Salmon Management Plan* that limits fishing to one third of the normally allotted gear (one set gillnet not more than 35 fathoms in length) from July 20 to August 7. In late 2008, a sockeye salmon escapement goal review was conducted out of cycle (Fair et al. 2009) to address uncertainty in estimating Yentna River sockeye escapements using Bendix sonar. Review indicated the sonar based SEG should be abandoned and replaced with three weir based SEGs. Currently, fish wheel selectivity experiments are being conducted at the Yentna River sonar site. These projects might allow adjustments of historical Bendix sonar numbers to better reflect true escapements. DIDSON sonar is currently used to estimate Yentna River sockeye salmon passage while sources of error inherent with this system are being tested. Inseason management of the sport fisheries has not taken place since implementation of the action plan. The action plan states sport harvest will not be used to determine escapements or in developing escapement goals. Further, the Susitna sport fisheries will remain open with a three fish bag unless directed otherwise by the BOF and any harvest restrictions will be realized in commercial fisheries, in most cases. Weir counts at Judd, Chelatna, and Larson lakes are to be used for post season evaluation of run size.

SPORT FISHERY PERFORMANCE AND ESCAPEMENT IN 2009 AND 2010

The total sockeye salmon harvest across the NCIMA in 2009 was 19,940 fish, above the 5-year average harvest of 15,360 fish (Table 27). Increase in harvest was due entirely to a record harvest of 6,137 fish in the Talkeetna River; more than double the 10-year mean (Table 25; Figure 17). Larson Creek is the primary sockeye fishery in the Talkeetna Drainage. A harvest of 1,256 fish at Lake Creek of the WSMU was average (Table 26), while a harvest of 3,746 fish at Wolverine Creek (Big River Lakes) in the WCIMU was slightly below average (Table 28). In the KAMU, harvest on the Little Susitna dropped to 40% of its 5-year mean of 1,972 fish (Table 24) and the sockeye fishery at Jim Creek produced 2,612 fish, about 1,000 fish above its 5-year mean. Although no directed sport fishery occurs at Fish Creek for sockeye salmon, 83,480 sockeye were counted through the weir; and the personal use fishery was opened by emergency order (see PU section). In 2009, the newly established SEGs at Judd and Larson lakes were met, while a count of 17,865 sockeye salmon at the Chelatna Lake weir was below its SEG of 20,000-65,000 fish (Table 29).

In 2010, fishing success varied across the NCIMA. Anglers fishing KAMU streams reported good sockeye catches while those fishing Susitna River stocks were fair. A foot survey of Bodenburg Creek revealed a record count of 722 sockeye salmon, more than double the 10-year mean of about 300 fish. A record 126,836 sockeye salmon were counted through the weir at Fish Creek, exceeding the SEG of 20,000-70,000 fish. Cook Inlet Aquaculture Association estimated 631,700 smolt emigrated from Big Lake in 2008 (CIAA 2009). This large number, in

[6] www.adfg.state.ak.us/special/susalpol.pdf
[7] Susitna Sockeye Salmon Action Plan

part, may be responsible for the above average returns to Fish Creek in 2009 and 2010. SEGs at Larson and Chelatna lake weirs were met, while a count of 18,361 sockeye salmon at Judd Lake was below its SEG of 25,000-55,000 fish (Table 29).

NORTHERN PIKE FISHERIES

The BOF will consider eight proposals (270, 271, and 284-289) 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. 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 lb) 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 31). 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 2004-2008 average harvest in the NCIMA was 10,207 fish, about twice the historical average of 5,459 fish (Table 31).

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 31). 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) by allowing use of five lines while fishing through the ice. Five line areas were further expanded at the 2008 BOF meeting with the addition of several tributaries of the Susitna drainage that were thought to contain nearly only pike. Additional water bodies 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 total length, no limit; 22-30 inches, no retention; and over 30 inches, one 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. Evaluation took place in 2008. Length frequencies were found to be similar between pike sampled 1995-1996 and 2008 (Appendix C). The slot limit may have maintained the historical size structure, providing continued opportunity to harvest trophy-sized pike, whereas liberalized regulations on other popular lakes such as Figure 8 and Flathorn lakes have generally resulted in low numbers of large pike. Either case can result in angler dissatisfaction since liberal regulations tends to result in high abundance of smaller pike while a slot strategy allows mostly harvest of small pike (less than 22 inches). To remedy dissatisfaction with the slot limit, in 2009, the BOF met out of cycle to eliminate the slot limit and replace it with a size limit that would allow harvest of medium-size pike (22-27 inches), but still somewhat protect trophy pike. This new strategy allows unlimited harvest of pike less than 27 inches in total length and a daily bag limit of one pike over 27 inches in total length.

The current management strategy was based on recommendations stemming from a study conducted from 1994 to 1996 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, Fish Lake Creek of the Yentna River, and Three Mile River and lakes of WCI. 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.

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). In 2010, a regional effort was made to prioritize northern pike waters in the Matanuska-Susitna, Anchorage, and Kenai areas for eradication or suppression. Prioritization was based on many factors, including threat to species existence, threat to an existing fishery, the magnitude of the fishery, economic impact, cultural significance, feasibility, probability of success, etc[8]. All waters have not been prioritized as of yet, though Alexander Creek was fully evaluated using this priority matrix and rated a number one priority for suppression. Legislative funding was secured to initiate a full-scale gillnetting effort on side channel sloughs of Alexander Creek to begin spring 2011. See Appendix C for a history of northern pike in the Alexander Creek drainage, impacts to anadromous and resident fish species, and past studies conducted on pike within this system.

SPORT FISHERY PERFORMANCE IN 2009 AND 2010

The NCIMA estimated harvest of northern pike during the 2009 season was 8,488 fish, approximately 83% of the 2004-2008 mean harvest of 10,207 fish. The KAMU and WSMU each accounted for the majority of the harvest, with the remainder from the ESMU and WCIMU (Table 31). The Nancy Lake Complex and Flathorn lakes contributed to approximately 58% of the KAMU mean catch from 2004-2008 (Table 32). Alexander Creek Drainage was the main producer of northern pike (>50%) on the WSMU throughout the same period (Table 33). Estimated harvest and catch of northern pike during 2010 is expected to be similar to 2009.

STOCKED LAKE FISHERIES

The BOF will consider two proposals (290-291) addressing the use of more than one line and stocking in NCIMA stocked lakes.

Currently 82 lakes in the NCIMA are stocked on an annual or biennial basis, including one research lake that is closed to fishing. These lakes range from 2 to 362 surface acres and are stocked with a variety of sizes and species of game fish including: rainbow trout, coho salmon, Chinook salmon, Arctic grayling, and Arctic char.

In most cases stocked landlocked lakes represent new fisheries because game fish were not present before stocking occurred. Stocked lakes benefit anglers and related businesses by providing diverse, year-round fishing opportunities and by diverting angling pressure from wild stocks. The majority of the stocking is directed toward road-accessible lakes that tend to draw entire family groups for some combination of fishing, camping, picnicking, boating, snow machining and ice skating.

HISTORICAL STOCKING PROGRAM

The stocking program began in 1952 when two lakes received 22,000 rainbow trout fry. Eight species of salmonids have been stocked since 1952. Steelhead/rainbow trout from the Karluk River (Kodiak) and four strains of Alaska rainbow trout (Naknek River, Talarik Creek, Swanson River and Big Lake), as well as rainbow trout from federal and private hatcheries located in Idaho, Montana, Oregon and Washington have been stocked. Landlocked salmon fisheries have

[8] Region II Invasive Northern Pike Priorities. *Memorandum*. Alaska Department of Fish and Game, Division of Sport Fish, Anchorage.

been supported by coho salmon from Washington State and at least nine Alaskan egg take sources, and Chinook salmon from three Alaskan sources. Since 1979 only indigenous Alaskan fish have been stocked in the NCIMA. Arctic grayling egg take sources have been Junction Lake, Tolsona Lake and Moose Creek. Arctic char, originating from egg takes at Aleknagik Lake, and lake trout from Paxson Lake were first stocked in 1988.

The final egg take from Big Lake strain rainbow trout broodstock at Fort Richardson Hatchery took place in 1993. All resulting fingerlings were stocked in Big Lake drainage lakes and all remaining broodstock was stocked in Anchorage area landlocked lakes and in Big Lake. Swanson River strain rainbow trout are the sole rainbow trout broodstock source remaining at the Ft. Richardson Hatchery. Beginning in 1994, Big Lake drainage system lakes having intermittent outlets have been stocked with triploid all-female Swanson River strain rainbow trout.

CURRENT STOCKING PROGRAM

Rainbow trout, coho salmon, Arctic char and Arctic grayling are now the primary species used in the stocking program. Rainbow trout comprised 60% of all fish stocked in landlocked lakes within the NCIMA from 2004-2008. Annual releases of all species during 2004-2008 ranged from 679,779 to 1,076,013 fish (Table 34).

The majority of rainbow trout released into NCIMA waters are fingerlings. Most fingerlings weigh 1-2 grams and are released in July and August. Prior to the loss of hot water at the Elmendorf Hatchery, catchable rainbow trout, weighed about 100 grams. Catchables are stocked in nonproductive lakes to increase angling opportunities and help maintain good catch rates in heavily fished lakes. Since the loss of hot water for catchable rearing, catchables stocked in 2009-2010 ranged from 17 grams to 39 grams and are classified as sub-catchables. Nearly 15% of the rainbow trout stocked in the NCIMA are catchable size at introduction. Anglers expended an average of 23,352 fishing days to catch 24,660 rainbow trout in 2009 (Table 35 and 36).

Coho salmon are normally stocked in May at about 3 to 5 grams each. These fish achieve a harvestable size (6 to 11 inches) at age 2, the year following release. Most coho salmon are either harvested or die after becoming sexually mature by age 3. Stocked salmon support important winter fishing opportunities in the NCIMA (Table 37).

Historically, Arctic grayling were stocked in early summer as catchables weighing 70 to 80 grams. Currently, sub-catchable grayling weigh between 18 grams and 24 grams. Grayling fingerling will continue to be stocked until catchable grayling are once again available from the new Anchorage hatchery. Chinook salmon were stocked as catchables, weighing about 100 grams, in early November providing winter ice fishing opportunities in three heavily fished lakes. The sub-catchables from 2009 weighed 37 grams. Arctic char are stocked as catchables weighing about 57-67 grams in May, providing more diversity for sport fishing (Table 38).

STOCKING PROGRAM EVALUATIONS

Research has accompanied development of the area's stocking program since the early 1970s. The primary objective of this research has been to develop cost-effective stocking practices that provide both expanded and diverse fishing opportunities. A survey of anglers fishing stocked lakes in the NCIMA in 1977 revealed that 70% preferred to fish for rainbow trout, 19% desired landlocked coho salmon and 11% listed Arctic grayling as their choice (Watsjold 1978).

Lake stocking research has also been directed toward the following: evaluation and selection of rainbow trout broodstock, development of effective stocking densities and size of stocked fish for various lake environments, establishment of optimal time and frequency of stockings in various landlocked lake environments, evaluation of sterile coho salmon and rainbow trout for stocking lakes that have open or intermittent linkage with drainages that support wild fish, and evaluation of female diploid rainbow trout to eliminate high mortality associated with spawning males (Bentz et al. 1991). Although research indicates that the contributions from the landlocked lake stocking program have been significant to date, poor survival of stocked fish has also been documented.

Studies have also documented growth of stocked rainbow trout fingerlings released in July and August weighing 1-2 grams. By June of the year following introduction, age 1 fingerlings will typically range from 3-6 inches in total length, at age 2 from 6 to 11 inches, at age 3 from 11 to 16 inches, and at age 4-5 from 16 plus inches in total length. Approximately 70% to 80% of the rainbow trout harvested from stocked lakes are age 2 and about 15% to 20% are age 3. Few stocked rainbow trout exceed age 5 and relatively few rainbow trout achieve harvestable size prior to age 2 (Havens et al. 1995).

FISHERY MANAGEMENT AND OBJECTIVES

Presently there are three lake management plans addressing stocking for NCIMA lakes: *Finger Lake Management Plan, Kepler-Bradley Complex Management Plan and Matanuska-Susitna Valley Small Lakes Management Plan* (Loopstra 2010).

The primary objective of the stocking program is to provide additional fishing opportunities in a cost-effective manner on a sustainable basis by stocking lakes with game fish that are indigenous to Alaska. An additional objective is to reduce effort on the area's wild stocks and ensure that stocking does not negatively impact wild stock genetics or other fisheries. All stocking is conducted in accordance with guidelines set forth in the *Statewide Stocking Plan for Recreational Fisheries* (Loopstra 2010).

Stocked landlocked lakes fall under the maximum sustained yield management concept. Bag and possession limits under this management concept are five rainbow trout, only one over 20 inches, with an annual limit of two fish over 20 inches, except in the stocked lakes of the Knik Arm and Susitna River areas, where the annual limit is ten rainbow trout 20 inches or longer. Although stocked lakes are primarily managed for put-and-take fisheries, three stocked lakes (Long Lake in the Kepler/Bradley complex, Wishbone Lake, and X Lake) have been established for catch-and-release fishing. These three lakes allow only unbaited, artificial lures, and are closed November 1 to April 30.

SPORT FISHERY PERFORMANCE IN 2009 AND 2010

In 2009, 75 lakes were stocked with 984,946 game fish. The majority of these lakes are located in the Knik Arm Management Unit and the remainder in the Eastside Susitna Management Unit. Releases in 2009 included 712,151 rainbow trout; 143,984 coho salmon; 70,686 Arctic grayling; 43,805 Chinook salmon and 14,410 Arctic char.

An estimated 23,352 angler-days of participation resulted from the area's landlocked stocking program in 2009 (Jennings et al. *In prep)* Table 35), excluding effort at lakes having both stocked and indigenous game fish. The 2009 catch from stocked landlocked lakes included an

estimated 24,660 rainbow trout, of which 5,086 (21%) were harvested; 11,233 landlocked salmon of which 11% were harvested; 4,476 Arctic grayling, of which 26% were harvested; and 2,499 Arctic char, of which 37% were harvested.

In 2009, the Kepler Lake Complex (including Kepler, Bradley, Canoe, Echo, Irene, Long, Matanuska, and Victor) supported 6,881 angler-days of effort. Finger Lake supported 6,821 angler-days of effort (Table 35). Collectively, these two sites yielded approximately 36% of the effort associated with stocked landlocked lakes within the NCIMA (Jennings et al. *In prep*).

PERSONAL USE AND SUBSISTENCE FISHERIES

The BOF will consider five proposals 195-199 (personal use), 102-103 (subsistence) addressing personal use fisheries within the NCIMA. Three proposals would open new personal use salmon fisheries, one proposal would increase season dates and area, and one proposal would open a fishery by regulation instead of emergency order.

OVERVIEW

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

Fish Creek sockeye salmon have long been used in commercial and subsistence[9], 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 39). The personal use fishery has been opened in both 2009 and 2010.

The *Upper Cook Inlet Subsistence Management Plan* provided for a subsistence set gillnet fishery in marine waters in the Northern District of UCI 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.

[9] Engel, L. and D. Vincent-Lang. *Unpublished*. Area Management Report for the recreational fisheries of Northern Cook Inlet. Report to the Alaska Board of Fisheries, November 1992. Alaska Department of Fish and Game, Division of Sport Fish, Anchorage.

FISHERY DESCRIPTIONS

The current personal use fisheries within the NCIMA include a sockeye salmon dip net fishery in Fish Creek, a dip net fishery for Alaska residents 60 or older on the Beluga River, and a personal use smelt fishery, the majority of which takes place in the Susitna River. During the 2008 the board opted to create a personal use fishery for residents over the age of 60 in the Beluga Area. This fishery was predicated on the loss of fishing opportunity in the Beluga area as a result of pike predation on sockeye salmon in Three Mile Creek, lack of access to area fisheries, and poor Chinook salmon returns to WCI streams. A permit holder may obtain his or her annual limit of 25 salmon per head of household and 10 additional salmon per listed dependent. No Chinook salmon may be retained and a cap of 500 other salmon is enforced. All Chinook salmon caught must be released immediately. This permit is only good for the Beluga River and does not allow the permittee to participate in any other Alaskan personal use fishery.

There is also a small harvest of smelt in the Knik Unit at the mouth of Fish Creek (Table 40).

Subsistence fisheries include the Yentna River subsistence fish wheel fishery and the Tyonek subsistence fishery. The Yentna subsistence fishery occurs in the mainstem Yentna River from its confluence with Martin Creek upstream to its confluence with the Skwentna River, and is prosecuted only by fish wheel. The Tyonek subsistence fishery occurs adjacent to the village of Tyonek; harvest occurs by gillnets.

FISH CREEK SOCKEYE SALMON 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 CIAA and 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. Production goals were 9 million sockeye salmon eggs of Fish Creek brood, from which sockeye salmon fry and smolt were released annually into the Big Lake drainage. Stocking was discontinued after the 2008 release.

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 39). The fishery was closed by EO after the third day in 2001 and has been opened twice since, in 2009 and 2010. Prosecution of this fishery is dependent on projected escapements into Fish Creek. Levels of escapement have been mostly below average since about 1998, until 2009.

The personal use dip net fishery on Beluga River began in 2008. The peak of salmon harvest in this fishery to date is 225 salmon in 2009 (Table 41).

The average Susitna River smelt harvest from 1996–2008 was 4,026 fish and ranged from 10-16,900 fish (Table 40). 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 ADF&G staff in the Palmer office, 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.

Average annual harvest in the upper Yentna River subsistence fishery is 488 fish from 1996-2009. Sockeye salmon are the primary species harvested. For the same period, the average sockeye harvest is 374 fish (Table 42).

The Tyonek subsistence fishery average Chinook harvest from 1981-2009 is 1,269 fish, followed by an average harvest of 131 sockeye and 128 coho salmon. Very few chum and pink salmon are harvested in this subsistence fishery (Table 43).

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. 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 UCI 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 UCI 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.

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 29). At the same meeting, an SEG of 20,000-70,000 fish was recommended based on wild fish (pre-hatchery) escapements from 1938-1978 (see 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

one-quarter the survival rates of other sockeye-producing systems during the late 1980s. Further, wild survival to the smolt stage was lower than hatchery-origin 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; and 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. The Fish Creek personal use fishery was not opened 2001-2008.

The BOF established the Skwentna River personal use salmon fishery in March 1996. As a result of actions by the State of Alaska Supreme Court and the BOF, it was reinstituted as the Upper Yentna River subsistence salmon fishery beginning in 1998. The open season for this subsistence fishery is July 15 through July 31, from 4:00 a.m. until 8:00 p.m. on Mondays, Wednesdays, and Fridays.

Regulations for a Tyonek subsistence fishery were established in 1980. Participants are allowed to harvest all salmon species. Residents of Tyonek are the major participants in the fishery. The season starts on May 15 and continues through October 15. The fishery is open May 15-June 15 on Tuesdays, Thursdays, and Fridays, from 4:00 a.m.-8 p.m. From June 16 through October 15, fishing shifts to Saturdays only. This fishery is prosecuted by gillnet 10 fathoms in length by 45 meshes deep, with six inch mesh. A cap of 4,200 Chinook salmon is enforced on this fishery.

FISHERY PERFORMANCE AND ESCAPEMENT IN 2009 AND 2010

With runs projecting to exceed the upper end of the escapement goal, the personal use fishery on Fish Creek was opened for the first time since 2001 in 2009 and 2010 due to strong returns to the Fish Creek system as measured by the Fish Creek weir. The total weir count in 2009 and 2010 was 83,480 and 126,836 fish, respectively (Table 29). Over 10,000 fish were harvested in 2009 and the dip net fishery was open one week, August 1-August 7, from 6a.m. to 11p.m. The fishery was limited to sockeye retention in 2009. The Fish Creek personal use dip net fishery was opened again in 2010 with projections exceeding 70,000 sockeye. The fishery was open to the retention of salmon except Chinook. Dates for the 2010 fishery were July 24-July 31 and fishing times remained consistent with 2009 from 6a.m.-11p.m. Harvest from the 2010 season was over 20,000 sockeye (Table 40). Contributions of hatchery fish to the Fish Creek escapement are estimated to be 67% for 2010 and have ranged from 2% in 2002 to 73% in 2006 (Table 44).

Average annual harvest in the upper Yentna River subsistence fishery is 488 salmon from 1996-2009 (Table 42). Mean harvest per permit holder is 25 fish over the same period. Sockeye salmon are the target species, although some coho, pink, and chum salmon are also harvested. No Chinook salmon harvest is allowed. A total of 786 salmon were harvested in 2010.

Chinook salmon dominate the harvest in the Tyonek subsistence fishery, with a smaller harvest of coho and sockeye salmon. Few pink and chum salmon are harvested. From 1981-2009, the average number of permits issued was 72 (Table 43). The total salmon harvest in 2009 was 1,090 fish, and in 2010 the harvest of 1,061 is considered preliminary at the time of this publication.

The 2009 NCIMA estimated smelt harvest was 3,520 fish, all from the Susitna River (Table 40). No smelt were reported harvested in the KAMU. 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 2004-2008 mean harvest in the WSMU was 3,616 smelt. Inseason observations of run strength by staff in 2009 and 2010 indicate good returns. The smelt harvest in 2010 is expected to be similar to the 2004-2008 mean.

RAINBOW TROUT FISHERIES

The BOF will consider two proposals (283 and 291) addressing rainbow trout regulatory changes in February 2011.

FISHERY DESCRIPTION

The majority of wild rainbow trout angling occurs in the Knik Arm and Eastside Susitna Management Units (Table 45). Wild rainbow trout fisheries of the Eastside Susitna Unit extend from Willow Creek north along the Susitna River as far as Portage Creek and include Talkeetna River and the relatively smaller tributaries of the Chulitna River and East Fork Chulitna River. Most tributaries of the Eastside Unit are coldwater streams originating in the Talkeetna Mountains. Access is primarily the George Parks Hwy and by jet boat. The Westside Susitna Unit includes tributaries of the Yentna River and all streams entering the Susitna River from the west (Figure 7). Westside tributaries are a mix of streams either originating out of lake systems or from the Alaska Range. Access to these fisheries is by raft, power boat or airplane. Because of the shallow nature of many of the westside streams, drop-off float trips are common. Many lodges accommodate anglers fishing the Westside Unit.

HISTORICAL HARVEST

Rainbow trout are a highly sought-after sport fish within the NCIMA. To ensure sustained yield, various research projects have been conducted. Assessment of migration and the age and length characteristics of rainbow trout stocks were the primary focus of several investigations, including studies on rainbow trout stocks of the Deshka River, Lake Creek and Talachulitna River in 1989 and 1990 (Bradley 1990, 1991), the Kashwitna River in 1991, Peters Creek in 1992 (Rutz 1992, 1993) and the North Fork Kashwitna in 1996. Onsite creel surveys were also conducted at Lake Creek during 1988 (Vincent-Lang and Hepler 1989) and 1989 (Bradley 1990).

There were significant differences in age composition and mean length-at-age among Susitna River tributaries sampled during 1989-1992 (Rutz 1992, 1993). Rainbow trout tagged during 1991 and 1992 indicated low numbers of trout over 510 mm in total length, the size limit for trophy trout defined in the *Criteria for Establishing Special Management for Trout*. This lack of adequately-sized fish, combined with the relatively slow growth rate of Susitna River basin trout in comparison to other Alaska waters containing trophy trout, suggests that these Susitna River rainbow trout stocks are not viable candidates for management as trophy fisheries (Rutz 1992).

Northern pike investigations conducted in the mid-1990s revealed the potential for a reduction of Susitna River drainage rainbow trout stocks as a direct result of northern pike colonization and proliferation throughout the area. Several lake and riverine populations of rainbow trout in the Westside Susitna Management Unit have been severely impacted by northern pike predation (Rutz 1999; Appendix B1).

NCIMA rainbow trout harvests ranged from 9,547 to 74,962 fish and averaged 35,960 fish from 1977-2008 (Mills 1979-1980, 1981a-b, 1982-1994; Howe et al. 1995, 1996, 2001 a-d; Walker et al. 2003; Jennings et al. 2004 Table 45), accounting for 39% of the average harvest in Region II and 27% in the state. From 1990 (when estimates of catch became available) through 2008, the average catch of rainbow trout in the NCIMA was 145,407 fish (Table 45).

Rainbow trout harvested from the Knik Arm Management Unit during this time period accounted for approximately 70% of the total NCIMA harvest. The Knik Management Unit also dominates the catch, the majority of which is from stocked lakes. A large percentage of catch and harvest is a result of the stocked lakes program.

The Westside Susitna unit accounted for 14% of the NCIMA harvest and the Eastside Susitna unit accounted for 13% from 1977-2008. Harvest of Susitna River (Eastside and Westside units combined) rainbow trout from 2004-2008 averaged 2,205 fish (Table 45). The West Cook Inlet Management Unit made up 1% of the NCIMA harvest from 1977-2008.

In the Eastside Susitna Unit, Willow and Montana creeks produced the largest rainbow trout harvests until 1997, when the BOF designated them as catch-and-release fisheries for rainbow trout and Arctic grayling. The Deshka River and Lake Creek generally provide the largest harvests of rainbow trout among WSMU fisheries while Lake Creek and Talachulitna River usually produce the largest catches (Tables 46 and47). In general, a comparison of long and short-term means among Susitna River tributaries shows a noticeable drop in rainbow trout harvest and an increase in catch. Increased catch rates indicate growing fisheries on the Susitna River.

FISHERY MANAGEMENT AND OBJECTIVES

Management of wild rainbow trout in the NCIMA has undergone numerous changes (Appendix B3). A statewide management plan (5 ACC 75.220) and policy (5 ACC 75.222) for the management of sustainable wild trout fisheries was adopted by the BOF in March 2003 as a means of uniformly managing wild trout stocks across Alaska. The goal of the policy is to protect the largely intact wild trout populations unique to Alaska by conservatively managing for optimal sustained yield. Under the optimal sustained yield concept, fishery benefits including quality of experience, diversity of opportunity, conservative consumptive harvest opportunity, and economic benefits are considered while maintaining healthy stock status (e.g., biologically desirable size compositions and abundance levels) and genetic diversity. Conservative management of wild trout in the NCIMA follows these standards: a bag and possession limit of two trout of which only one may be over 20 inches in total length with an annual limit of two trout over 20 inches in total length. Beginning in 1987, prior to development of statewide management standards, wild rainbow trout fisheries of NCIMA were managed under the conservative yield concept, aimed at maintaining historical size and age compositions and abundance.

In addition, many tributaries or sections of tributaries in the NCIMA are designated as rainbow trout special management waters, either as trophy rainbow trout waters or as catch-and-release-only waters. A major portion of the Eastside Susitna Management Unit, from the junction of the Susitna and Talkeetna rivers upstream to Devils Canyon, has been managed for trophy-size trout (trout over 20 inches) since 1987. Under this strategy, only one trout 20 inches or more in total length is allowed daily with a seasonal limit of two trout over 20 inches. All trout less than 20 inches must be released immediately. An unbaited, single-hook lure requirement complements this strategy.

Catch-and-release rainbow trout fisheries include the Talachulitna River, most of the Lake Creek drainage, much of the Deshka River, the Fish Creek drainage located within the Talkeetna River drainage, the North Fork of the Kashwitna River, and Willow and Montana creeks. Unbaited, single-hook lures are mandatory in all catch-and-release waters. Catch-and-release strategies perpetuate quality fishing rather than protect or rebuild depressed stocks (see Engel and Vincent-Lang *Unpublished*).

Wild trout fisheries are not supplemented with hatchery trout in the Susitna River drainage. Past public testimony has suggested little interest in the use of hatchery fish to augment wild stocks and the current stocking policy supports the public's stance. Stocked rainbow trout are generally managed for maximum yield (see the Stocked Fisheries section above).

SPORT FISHERY PERFORMANCE IN 2009 AND 2010

The 2009 harvest of rainbow trout in the Knik Arm Management Unit was 7,981 fish, respectively. The 2004-2008 mean harvest for this stock was 14,356 fish (Table 45).

In 2009, most rainbow trout harvests in the KAMU were from the stocked lake fisheries: the Kepler Lake complex (2,497 fish), Finger Lake (893 fish), Memory Lake (502 fish), Big Lake (299 fish), and Nancy Lake Complex (274 fish). Rainbow trout catches in KAMU during these years were highest at Kepler Lake complex (14,712 fish), Finger Lake (4,867 fish), followed by Big Lake (2,963 fish), and Nancy Lake Complex (1,711 fish) (Tables 48 and 49). The Little Susitna River rainbow trout catches varied from 792 fish in 2008 to 644 fish in 2009, slightly below the 2004-2008 mean of 1,102 fish (Table 49). The Memory Lake catch in 2009 of 1,687 fish was well above the 2004-2008 mean of 922 fish (Table 49).

In the Eastside Susitna management unit the 2009 harvest of 756 rainbow trout represents the smallest harvest on record for this stock dating back to 1977. The Westside Susitna management unit harvest of 865 fish was slightly less than the 2004-2008 mean (Table 50 and 46).

The 2009 catch for the Eastside Susitna Management Unit was 36,707 rainbow trout; this was less than the previous 5-year mean of 44,411 fish. The 2009 Westside Susitna Management Unit catch was also below the 5-year mean with 27,455 fish (Table 51 and 47).

In 1997 Willow and Montana creeks, previously the largest producers of rainbow trout harvest of the eastside Susitna River drainage became catch-and-release fisheries. This accounted for a large portion of the drop in harvest for the Eastside Susitna Management Unit from previous years. These two fisheries along with the Talkeetna River, dominate Eastside Susitna Management Unit catch in 2009 (Table 51).

Catch from Westside Susitna River fisheries is dominated by Lake Creek. During 2009 only an estimated 27 rainbow trout were harvested in Lake Creek from a catch of 10,215 fish (Tables 46 and 47). The Deshka River, also a Westside Susitna tributary, yielded a rainbow trout catch of 3,093 fish and harvest of 562. The Talachulitna River drainage, which is a catch-and-release-only fishery, produced a catch of 6,331 rainbow trout. The rainbow trout catch at Alexander Creek of 64 fish is well below the 5-year mean of 158 fish. It is believed that northern pike predation is responsible for the decline in Alexander Creek rainbow trout catches since 1990.

The vast majority of the rainbow trout harvest in the Knik Arm Unit resulted from stocked lake fisheries (Table 49), as discussed in the Stocked Lake Fisheries section above.

REFERENCES CITED

ADF&G (Alaska Department of Fish and Game). 2002. Alaska aquatic nuisance species management plan. . Alaska Department of Fish and Game, Division of Commercial Fisheries, Juneau.

ADF&G (Alaska Department of Fish and Game). 2007. Management plan for invasive northern pike in Alaska. Alaska Department of Fish and Game, Southcentral Northern Pike Control Committee, Anchorage.

Barclay, A. W., C. Habicht, T. Tobias, and T. M. Willette. 2010. Genetic stock identification of Upper Cook Inlet sockeye salmon harvest, 2009. Alaska Department of Fish and Game, Fishery Data Series No. 10–93, Anchorage.

Bartlett, L. D. 1992. Creel, escapement, and stock statistics for coho salmon on the Little Susitna River, Alaska, during 1991. Alaska Department of Fish and Game, Fishery Data Series No. 92-24, Anchorage.

Bartlett, L. D. 1994. Creel, escapement, and stock statistics for coho salmon on the Little Susitna River, Alaska, during 1993. Alaska Department of Fish and Game, Fishery Data Series No. 94-29, Anchorage.

Bartlett, L. D. 1996a. Escapement and stock statistics for coho salmon of the Little Susitna River and selected streams of the Matanuska-Susitna Valley, Alaska, 1995. Alaska Department of Fish and Game, Fishery Data Series No. 96-39, Anchorage.

Bartlett, L. D. 1996b. Escapement and stock statistics for Coho salmon on the Little Susitna River and selected Matanuska-Susitna Valley, Alaska streams during 1994. Alaska Department of Fish and Game, Fishery Data Series No. 96-16, Anchorage.

Bartlett, L. D., and A. E. Bingham. 1991. Creel and escapement statistics for coho salmon on the Little Susitna River, Alaska, during 1990. Alaska Department of Fish and Game, Fishery Data Series No. 91-46, Anchorage.

Bartlett, L. D., and A. E. Bingham. 1993. Creel, escapement, and stock statistics for coho salmon on the Little Susitna River, Alaska, during 1992. Alaska Department of Fish and Game, Fishery Data Series No. 93-32, Anchorage.

Bartlett, L. D., and R. H. Conrad. 1988. Effort and catch statistics for the sport fishery for coho salmon in the Little Susitna River with estimates of escapement, 1987. Alaska Department of Fish and Game, Fishery Data Series No. 51, Anchorage.

Bartlett, L. D., and S. Sonnichsen. 1990. Creel and escapement statistics for coho salmon and Chinook salmon on the Little Susitna River, Alaska, during 1989. Alaska Department of Fish and Game, Fishery Data Series No. 90-59, Anchorage.

Bartlett, L. D., and D. Vincent-Lang. 1989. Creel and escapement statistics for coho and Chinook salmon stocks of the Little Susitna River, Alaska, during 1988. Alaska Department of Fish and Game, Fishery Data Series No. 86, Juneau.

Bentz, R. W., Jr. 1982. Inventory and cataloging of the sport fish and sport fish waters in upper Cook Inlet. Alaska Department of Fish and Game. Federal Aid in Fish Restoration, Annual Performance Report, 1981-1982, Project F-9-14, 23 (G-I-D), Juneau.

Bentz, R. W., Jr. 1983. Inventory and cataloging of the sport fish and sport fish waters in upper Cook Inlet. Alaska Department of Fish and Game. Federal Aid in Fish Restoration, Annual Performance Report, 1982-1983, Project F-9-15, 24 (G-I-D), Juneau.

Bentz, R. W., Jr., A. C. Havens, G. H. Sanders, and C. L. Skaugstad. 1991. A summary of sport fish stocking evaluations in Alaska, 1985-1989. Alaska Department of Fish and Game, Fishery Manuscript No. 91- 7, Anchorage.

Bradley, T. J. 1990. Cook Inlet rainbow trout studies 1989. Alaska Department of Fish and Game, Fishery Data Series No. 90-60, Anchorage.

REFERENCES CITED (Continued)

Bradley, T. J. 1991. Cook Inlet rainbow trout studies 1990. Alaska Department of Fish and Game, Fishery Data Series No. 91-54, Anchorage.

Brannian, L., and J. Fox. 1996. Upper Cook Inlet subsistence and personal use fisheries, report to the Alaska Board of Fisheries, 1996. Alaska Department of Fish and Game, Division of Commercial Fisheries Management and Development. Regional Information Report N0. 2A96-03, Anchorage.

CIAA (Cook Inlet Aquaculture Association). 1981. Big River Lakes pre-enhancement investigation, 1981. Cook Inlet Aquaculture Association, Kenai, Alaska.

CIAA (Cook Inlet Aquaculture Association). 1982. Big River Lakes pre-enhancement investigation, 1982. Cook Inlet Aquaculture Association, Kenai, Alaska.

CIAA (Cook Inlet Aquaculture Association). 1984. Big River Lakes pre-enhancement investigation, 1983. Cook Inlet Aquaculture Association, Kenai, Alaska.

CIAA (Cook Inlet Aquaculture Association). 1987. Shell Lake project progress report: 1986 adult enumeration, 1987 smolt enumeration. Cook Inlet Aquaculture Association, Kenai.

CIAA (Cook Inlet Aquaculture Association). 1991. Hewitt Lake sockeye salmon enhancement report for 1990. Cook Inlet Aquaculture Association, Kenai.

CIAA (Cook Inlet Aquaculture Association). 1998a. Chelatna Lake sockeye salmon enhancement progress report, 1995.. Cook Inlet Aquaculture Association, Kenai.

CIAA (Cook Inlet Aquaculture Association). 1998b. Technical report, Larson Lake project. Progress Report 1984-1987. Cook Inlet Aquaculture Association, Kenai.

CIAA (Cook Inlet Aquaculture Association). 2009. Sockeye salmon enhancement; final report 2007-2008. Cook Inlet Aquaculture Association, Kenai, Alaska.

Davis, R. Z. 2000. Upper Cook Inlet salmon escapement studies 1999. Alaska Department of Fish and Game, Division of Commercial Fisheries, Regional Information Report 2A00-22, Anchorage.

Davis, R. Z., and B. E. King. 1997. Upper Cook Inlet escapement studies, 1996. Alaska Department of Fish and Game, Division of Commercial Fisheries, Regional Information Report 2A97-23, Anchorage.

Fair, L. F., T. M. Willette, and J. Erickson. 2009. Escapement goal review for Susitna River sockeye salmon, 2009. Alaska Department of Fish and Game, Fishery Manuscript Series No. 09-01, Anchorage.

Hasbrouck, J. J., and J. A. Edmundson. 2007. Escapement goals for salmon stocks in Upper Cook Inlet, Alaska: report to the Alaska Board of Fisheries, January 2005. Alaska Department of Fish and Game, Special Publication No. 07-10, Anchorage.

Havens, A. C., T. Bradley, and C. Baer. 1995. Lake stocking manual for nonanadromous fisheries in Southcentral Alaska. Alaska Department of Fish and Game, Special Publication No. 95-2, Anchorage.

Hepler, K. R., and R. W. Bentz. 1984. Chinook salmon population and angler user studies of upper Cook Inlet waters. Alaska Department of Fish and Game. Federal Aid in Fish Restoration, Annual Performance Report, 1983-1984, Project F-9-16, 25 (G-II-M), Juneau.

Hepler, K. R., and R. W. Bentz. 1985. Chinook salmon population and angler use studies of Northern Cook Inlet waters. Alaska Department of Fish and Game. Federal Aid in Fish Restoration. Annual Performance Report, 1984-1985, Project F-9-17, 26 (G-II-M), Juneau.

Hepler, K. R., and R. W. Bentz. 1986. East Susitna Chinook salmon - West Susitna Chinook salmon. Alaska Department of Fish and Game. Federal Aid in Fish Restoration, Annual Performance Report, 1985-1986, Project F-10-1, 27 (S-32-7), Juneau.

REFERENCES CITED (Continued)

Hepler, K. R., and R. W. Bentz. 1987. Harvest, effort, and escapement statistics for selected Chinook salmon (*Oncorhynchus tshawytscha*) sport fisheries in northern cook Inlet, Alaska, 1986. Alaska Department of Fish and Game, Fishery Data Series No. 8, Juneau.

Hepler, K. R., R. H. Conrad, and D. Vincent-Lang. 1988. Estimates of effort and harvest for selected sport fisheries for Chinook salmon in northern Cook Inlet, Alaska, 1987. Alaska Department of Fish and Game, Fishery Data Series No. 59, Juneau.

Hepler, K. R., A. G. Hoffmann, and D. Vincent-Lang. 1989. Estimates of effort and harvest for selected sport fisheries for Chinook salmon in northern Cook Inlet, Alaska, 1988. Alaska Department of Fish and Game, Fishery Data Series No. 85, Juneau.

Howe, A. L., G. Fidler, A. E. Bingham, and M. J. Mills. 1996. Harvest, catch, and participation in Alaska sport fisheries during 1995. Alaska Department of Fish and Game, Fishery Data Series No. 96-32, Anchorage.

Howe, A. L., G. Fidler, and M. J. Mills. 1995. Harvest, catch, and participation in Alaska sport fisheries during 1994. Alaska Department of Fish and Game, Fishery Data Series No. 95-24, Anchorage.

Howe, A. L., R. J. Walker, C. Olnes, K. Sundet, and A. E. Bingham. 2001a. Revised Edition. Harvest, catch, and participation in Alaska sport fisheries during 1996. Alaska Department of Fish and Game, Fishery Data Series No. 97-29 (revised), Anchorage.

Howe, A. L., R. J. Walker, C. Olnes, K. Sundet, and A. E. Bingham. 2001b. Revised Edition. Harvest, catch, and participation in Alaska sport fisheries during 1997. Alaska Department of Fish and Game, Fishery Data Series No. 98-25 (revised), Anchorage.

Howe, A. L., R. J. Walker, C. Olnes, K. Sundet, and A. E. Bingham. 2001c. Revised Edition. Participation, catch, and harvest in Alaska sport fisheries during 1998. Alaska Department of Fish and Game, Fishery Data Series No. 99-41 (revised), Anchorage.

Howe, A. L., R. J. Walker, C. Olnes, K. Sundet, and A. E. Bingham. 2001d. Participation, catch, and harvest in Alaska sport fisheries during 1999. Alaska Department of Fish and Game, Fishery Data Series No. 01-08, Anchorage.

Ivey, S. *In prep.* Deshka River Chinook and coho salmon escapement studies, 1995-2004. Alaska Department of Fish and Game, Fishery Data Series, Anchorage.

Jennings, G. B., K. Sundet, and A. E. Bingham. 2007. Participation, catch, and harvest in Alaska sport fisheries during 2004. Alaska Department of Fish and Game, Fishery Data Series No. 07-40, Anchorage.

Jennings, G. B., K. Sundet, and A. E. Bingham. 2009a. Estimates of participation, catch, and harvest in Alaska sport fisheries during 2005. Alaska Department of Fish and Game, Fishery Data Series No. 09-47, Anchorage.

Jennings, G. B., K. Sundet, and A. E. Bingham. 2009b. Estimates of participation, catch, and harvest in Alaska sport fisheries during 2006. Alaska Department of Fish and Game, Fishery Data Series No. 09-54, Anchorage.

Jennings, G. B., K. Sundet, and A. E. Bingham. 2010a. Estimates of participation, catch, and harvest in Alaska sport fisheries during 2007. Alaska Department of Fish and Game, Fishery Data Series No. 10-02, Anchorage.

Jennings, G. B., K. Sundet, and A. E. Bingham. 2010b. Estimates of participation, catch, and harvest in Alaska sport fisheries during 2008. Alaska Department of Fish and Game, Fishery Data Series No. 10-22, Anchorage.

Jennings, G. B., K. Sundet, and A. E. Bingham. *In prep a*. Estimates of participation, catch, and harvest in Alaska sport fisheries during 2009. Alaska Department of Fish and Game, Fishery Data Series, Anchorage.

Jennings, G. B., K. Sundet, and A. E. Bingham. *In prep b*. Estimates of participation, catch, and harvest in Alaska sport fisheries during 2010. Alaska Department of Fish and Game, Fishery Data Series, Anchorage.

Jennings, G. B., K. Sundet, A. E. Bingham, and D. Sigurdsson. 2004. Participation, catch, and harvest in Alaska sport fisheries during 2001. Alaska Department of Fish and Game, Fishery Data Series No. 04-11, Anchorage.

REFERENCES CITED (Continued)

Jennings, G. B., K. Sundet, A. E. Bingham, and D. Sigurdsson. 2006a. Participation, catch, and harvest in Alaska sport fisheries during 2002. Alaska Department of Fish and Game, Fishery Data Series No. 06-34, Anchorage.

Jennings, G. B., K. Sundet, A. E. Bingham, and D. Sigurdsson. 2006b. Participation, catch, and harvest in Alaska sport fisheries during 2003. Alaska Department of Fish and Game, Fishery Data Series No. 06-44, Anchorage.

Kyle, G. B., and R. S. Chlupach. 1990. Enhancement of Big Lake sockeye salmon (*Oncorhynchus nerka*): summary of fisheries production, 1976–1989. Alaska Department of Fish and Game, Fisheries Rehabilitation, Enhancement, and Development Division Report 106 (available from: Alaska Department of Fish and Game, Division of Commercial Fisheries, Juneau).

Lafferty, R. 1997. Summary of escapement index counts of Chinook salmon in the Northern Cook Inlet management area, 1958-1996. Alaska Department of Fish and Game, Fishery Data Series No. 97-8, Anchorage.

Litchfield, V. P., and T. M. Willette. 2002. Fish Creek sockeye salmon - technical review. Alaska Department of Fish and Game, Division of Commercial Fisheries, Regional Information Report 2A01-30, Anchorage.

Loopstra, D. 2007. Statewide stocking plan for recreational fisheries, 2007-2011. Alaska Department of Fish and Game, Division of Sport Fish, Sport Fish Hatchery Program, Online Report, Anchorage.

Loopstra, D. P., and P. A. Hansen. 2010. Coho and Chinook salmon smolt releases into Cook Inlet, Prince William Sound, and Resurrection Bay, Alaska, 2007. Alaska Department of Fish and Game, Fishery Data Series No. 10-04, Anchorage.

Merizon, R. A., R. J. Yanusz, D. J. Reed, and T. R. Spencer. 2010. Distribution of spawning Susitna River chum Oncorhynchus keta and coho O. kisutch salmon, 2009. Alaska Department of Fish and Game, Fishery Data Series No. 10-72, Anchorage.

Mills, M. J. 1979. Alaska statewide sport fish harvest studies. Alaska Department of Fish and Game, Federal Aid in Fish Restoration, Annual Performance Report 1978-1979, Project F-9-11, 20 (SW-I-A), Juneau.

Mills, M. J. 1980. Alaska statewide sport fish harvest studies. Alaska Department of Fish and Game. Federal Aid in Fish Restoration, Annual Performance Report, 1979-1980, Project F-9-12, 21 (SW-I-A), Juneau.

Mills, M. J. 1981a. Alaska statewide sport fish harvest studies - 1980 data. Alaska Department of Fish and Game, Federal Aid in Fish Restoration and Anadromous Fish Studies, Annual Performance Report 1980-1981, Project F-9-13, 22 (SW-I-A), Juneau.

Mills, M. J. 1981b. Alaska statewide sport fish harvest studies. Alaska Department of Fish and Game, Federal Aid in Fish Restoration, Annual Performance Report 1980-1981, Project F-9-13, 22 (SW-I-A), Juneau.

Mills, M. J. 1981c. Alaska statewide sport fish harvest studies. 1979 data. Alaska Department of Fish and Game, Federal Aid in Fish Restoration, Annual Performance Report 1980-1981, Project F-9-13, 22 (SW-I-A), Juneau.

Mills, M. J. 1982. Alaska statewide sport fish harvest studies. Alaska Department of Fish and Game, Federal Aid in Fish Restoration, Annual Performance Report 1981-1982, Project F-9-14, 23 (SW-I-A), Juneau.

Mills, M. J. 1983. Alaska statewide sport fish harvest studies. Alaska Department of Fish and Game, Federal Aid in Fish Restoration, Annual Performance Report 1982-1983, Project F-9-15, 24 (SW-I-A), Juneau.

Mills, M. J. 1984. Alaska statewide sport fish harvest studies. Alaska Department of Fish and Game, Federal Aid in Fish Restoration, Annual Performance Report 1983-1984, Project F-9-16, 25 (SW-I-A), Juneau.

Mills, M. J. 1985. Alaska statewide sport fish harvest studies. Alaska Department of Fish and Game, Federal Aid in Fish Restoration, Annual Performance Report 1984-1985, Project F-9-17, 26 (SW-I-A), Juneau.

Mills, M. J. 1986. Alaska statewide sport fish harvest studies. Alaska Department of Fish and Game, Federal Aid in Fish Restoration, Annual Performance Report 1985-1986, Project F-10-1, 27 (RT-2), Juneau.

Mills, M. J. 1987. Alaska statewide sport fisheries harvest report, 1986. Alaska Department of Fish and Game, Fishery Data Series No. 2, Juneau.

REFERENCES CITED (Continued)

Mills, M. J. 1988. Alaska statewide sport fisheries harvest report, 1987. Alaska Department of Fish and Game, Fishery Data Series No. 52, Juneau.

Mills, M. J. 1989. Alaska statewide sport fisheries harvest report, 1988. Alaska Department of Fish and Game, Fishery Data Series No. 122, Juneau.

Mills, M. J. 1990. Harvest and participation in Alaska sport fisheries during 1989. Alaska Department of Fish and Game, Fishery Data Series No. 90-44, Anchorage.

Mills, M. J. 1991. Harvest, catch, and participation in Alaska sport fisheries during 1990. Alaska Department of Fish and Game, Fishery Data Series No. 91-58, Anchorage.

Mills, M. J. 1992. Harvest, catch, and participation in Alaska sport fisheries during 1991. Alaska Department of Fish and Game, Fishery Data Series No. 92-40, Anchorage.

Mills, M. J. 1993. Harvest, catch, and participation in Alaska sport fisheries during 1992. Alaska Department of Fish and Game, Fishery Data Series No. 93-42, Anchorage.

Mills, M. J. 1994. Harvest, catch, and participation in Alaska sport fisheries during 1993. Alaska Department of Fish and Game, Fishery Data Series No. 94-28, Anchorage.

Peltz, L., and D. E. Sweet. 1992. Performance of the Chinook salmon enhancement program in Willow Creek, Alaska, 1985-1991. Alaska Department of Fish and Game, Fishery Data Series No. 92-33, Anchorage.

Peltz, L. R., and D. E. Sweet. 1993. Performance of the Chinook salmon enhancement program in Willow Creek, Alaska, 1985-1992. Alaska Department of Fish and Game, Fishery Data Series No. 93-22, Anchorage.

Reimer, A. M., and D. Sigurdsson. 2004. Upper Cook Inlet personal use salmon fisheries, 1996-2003. Alaska Department of Fish and Game, Fishery Data Series No. 04-31, Anchorage.

Roth, K. J., and M. E. Stratton. 1984. The migration and growth of juvenile salmon in the Susitna River. Alaska Department of Fish and Game, Susitna Hydro Aquatic Studies Report Series, Report No. 7, Part 1, Anchorage.

Rutz, D., and D. Sweet. 2000. Area management report for the recreational fisheries of Northern Cook Inlet, 1999. Alaska Department of Fish and Game, Fishery Management Report No. 00-08, Anchorage.

Rutz, D. S. 1992. Age and size statistics for rainbow trout collected in the Susitna River drainage during 1991. Alaska Department of Fish and Game, Fishery Data Series No. 92-26, Anchorage.

Rutz, D. S. 1993. Age and size statistics for rainbow trout collected in the Susitna River drainage during 1992. Alaska Department of Fish and Game, Fishery Data Series No. 93-55, Anchorage.

Rutz, D. S. 1999. Movements, food availability and stomach contents of northern pike in selected Susitna River drainages, 1996-1997. Alaska Department of Fish and Game, Fishery Data Series No. 99-5, Anchorage.

Shields, P. 2007. Upper Cook Inlet commercial fisheries annual management report, 2006. Alaska Department of Fish and Game, Fishery Management Report No. 07-36, Anchorage.

Sweet, D., S. Ivey, and D. Rutz. 2003. Area management report for the recreational fisheries of Northern Cook Inlet, 2001 and 2002. Alaska Department of Fish and Game, Fishery Management Report No. 03-10, Anchorage.

Sweet, D., S. Ivey, and D. Rutz. 2004. Area management report for the recreational fisheries of Northern Cook Inlet, 2003. Alaska Department of Fish and Game, Fishery Management Report No. 04-05, Anchorage.

Sweet, D., and D. Rutz. 2001. Area management report for the recreational fisheries of Northern Cook Inlet, 2000. Alaska Department of Fish and Game, Fishery Management Report No. 01-09, Anchorage.

Sweet, D. E. 1999. Performance of the Chinook salmon enhancement program in Willow Creek, Alaska, through 1996. Alaska Department of Fish and Game, Fishery Manuscript No. 99-2, Anchorage.

Sweet, D. E., A. E. Bingham, and K. A. Webster. 1991. Estimates of effort and harvest for selected sport fisheries for Chinook salmon in Northern Cook Inlet, Alaska, 1990. Alaska Department of Fish and Game, Fishery Data Series No. 91-61, Anchorage.

REFERENCES CITED (Continued)

Sweet, D. E., and L. R. Peltz. 1994. Performance of the Chinook salmon enhancement program in Willow Creek, Alaska, 1985-1993. Alaska Department of Fish and Game, Fishery Manuscript No. 94-3, Anchorage.

Sweet, D. E., and K. A. Webster. 1990. Estimates of effort and harvest for selected sport fisheries for Chinook salmon in northern Cook Inlet, Alaska, 1989. Alaska Department of Fish and Game, Fishery Data Series No. 90-32, Anchorage.

Tarbox, K. E., B. E. King, and D. L. Waltemyer. 1983. Cook Inlet sockeye salmon studies. Alaska Department of Fish and Game, Division of Commercial Fisheries, Anadromous Fish Conservation Act Project Report No AFC-62, Anchorage.

Vincent-Lang, D., M. Alexandersdottir, and D. McBride. 1993. Mortality of coho salmon caught and released using sport tackle in the Little Susitna River, Alaska. Fisheries Research 15:339-356

Vincent-Lang, D., and K. Hepler. 1989. Estimates of sport effort and catch and harvest of rainbow trout and coho salmon in Lake Creek, Alaska, during 1988. Alaska Department of Fish and Game, Fishery Data Series No. 81, Juneau.

Walker, R. J., C. Olnes, K. Sundet, A. L. Howe, and A. E. Bingham. 2003. Participation, catch, and harvest in Alaska sport fisheries during 2000. Alaska Department of Fish and Game, Fishery Data Series No. 03-05, Anchorage.

Watsjold, D. A. 1978. Inventory, cataloging and population sampling of the sport fish and sport fish waters in upper Cook Inlet. Alaska Department of Fish and Game. Federal Aid in Fish Restoration, Annual Performance Report, 1977-1978, Project F-9-10, 19 (G-I-D), Juneau.

Watsjold, D. A. 1980. Inventory and cataloging of the sport fish and sport fish waters in upper Cook Inlet. Alaska Department of Fish and Game, Sport Fish Division. Federal Aid in Fish Restoration, Annual Performance Report, 1980-1981, Project F-9-12(21)G-I-D, Juneau.

Watsjold, D. A. 1981. Inventory and cataloging of the sport fish and sport fish waters in upper Cook Inlet. Alaska Department of Fish and Game. Federal Aid in Fish Restoration, Annual Performance Report, 1980-1981, Project F-9-13, 22 (G-I-D),. Juneau.

Westerman, D. L., and T. M. Willette. 2010. Upper Cook Inlet salmon escapement studies, 2008. Alaska Department of Fish and Game, Fishery Data Series No. 10-16, Anchorage.

Whitmore, C., and D. Sweet. 1997. Area management report for the recreational fisheries of Northern Cook Inlet, 1996. Alaska Department of Fish and Game, Fishery Management Report No. 97-3, Anchorage.

Whitmore, C., and D. Sweet. 1998. Area management report for the recreational fisheries of Northern Cook Inlet, 1997. Alaska Department of Fish and Game, Fishery Management Report No. 98-4, Anchorage.

Whitmore, C., and D. Sweet. 1999. Area management report for the recreational fisheries of Northern Cook Inlet, 1998. Alaska Department of Fish and Game, Fishery Management Report No. 99-1, Anchorage.

Whitmore, C., D. Sweet, and L. Bartlett. 1996. Area management report for the recreational fisheries of Northern Cook Inlet, 1995. Alaska Department of Fish and Game, Fishery Management Report No. 96-2, Anchorage.

Whitmore, C., D. Sweet, L. Bartlett, A. Havens, and L. Restad. 1994. 1993 Area management report for the recreational fisheries of northern Cook Inlet. Alaska Department of Fish and Game, Fishery Management Report No. 94-6, Anchorage.

Whitmore, C., D. E. Sweet, and L. D. Bartlett. 1995. Area management report for the recreational fisheries of Northern Cook Inlet, 1994. Alaska Department of Fish and Game, Fishery Management Report No. 95-6, Anchorage.

Yanusz, R., R. Merizon, D. Evans, M. Willette, T. Spencer, and S. Raborn. 2007. Inriver abundance and distribution of spawning Susitna River sockeye salmon Oncorhynchus nerka, 2006. Alaska Department of Fish and Game, Fishery Data Series No. 07-83, Anchorage.

TABLES AND FIGURES

Table 1.–Estimated harvests, by all user groups, of Chinook salmon of Northern Cook Inlet origin, 1893–2009.

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	19,974
1898	13,111	1940	50,413	1982	29,595
1899	13,682	1941	83,858	1983	33,481
1900	21,346	1942	76,144	1984	44,266
1901	27,455	1943	89,105	1985	47,381
1902	39,210	1944	68,168	1986	69,218
1903	52,818	1945	55,362	1987	66,299
1904	24,058	1946	51,425	1988	73,986
1905	14,134	1947	85,443	1989	86,709
1906	17,936	1948	84,797	1990	73,381
1907	50,355	1949	89,025	1991	76,602
1908	27,019	1950	130,274	1992	96,877
1909	47,699	1951	150,010	1993	103,845
1910	39,222	1952	59,600	1994	66,612
1911	44,676	1953	71,544	1995	38,719
1912	38,293	1954	52,260	1996	42,820
1913	50,922	1955	37,199	1997	47,125
1914	38,043	1956	52,248	1998	49,481
1915	67,034	1957	34,214	1999	70,424
1916	50,316	1958	18,278	2000	70,427
1917	52,399	1959	26,226	2001	64,289
1918	27,909	1960	22,031	2002	56,362
1919	19,041	1961	15,822	2003	59,738
1920	31,650	1962	16,216	2004	58,919
1921	11,157	1963	14,106	2005	61,806
1922	24,824	1964	3,698	2006	62,736
1923	23,929	1965	7,801	2007	55,966
1924	21,610	1966	815	2008	37,245
1925	40,826	1967	623	2009	24,694
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		

Table 2.–Estimated harvests of Chinook salmon originating from the Northern Cook Inlet Management Area, 1977–2009.

	Commercial[ab]			Recreational[b]						
Year	NCI[c]	Kustatan	Total	Knik Arm Drainages	Eastside Susitna	Westside Susitna	West Cook Inlet	Total	Subsistence[d]	Grand 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	1,590	17,146
1983	933	163	1,096	1,255	2,852	9,568	1,185	14,860	2,665	18,621
1984	1,004	214	1,218	2,057	4,428	12,106	1,833	20,424	2,200	23,842
1985	1,890	211	2,101	1,889	4,342	13,644	2,029	21,904	1,472	25,477
1986	15,488	308	15,796	1,524	8,569	13,402	2,378	25,873	1,676	43,345
1987	12,701	176	12,877	2,476	8,603	13,350	1,477	25,906	1,610	40,393
1988	12,836	123	12,959	2,916	9,139	15,970	1,695	29,720	1,587	44,266
1989	12,731	1,144	13,875	4,341	9,783	19,343	2,325	35,792	1,250	50,917
1990	9,582	1,084	10,666	2,022	9,423	17,425	2,097	30,967	781	42,414
1991	6,859	925	7,784	2,277	9,083	21,836	762	33,958	902	42,644
1992	4,554	964	5,518	3,969	21,307	18,737	1,213	45,226	907	51,651
1993	3,277	424	3,701	3,602	22,688	21,142	1,955	49,387	1,370	54,458
1994	3,185	449	3,634	4,303	14,970	10,248	1,583	31,104	770	35,508
1995	4,130	198	4,328	1,707	7,872	6,265	693	16,537	1,317	22,182
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	1,183	31,518
2004	2,058	430	2,488	2,556	8,498	15,694	795	27,543	1,345	31,376
2005	3,373	87	3,460	3,692	8,453	15,945	592	28,682	982	33,124
2006	4,261	244	4,505	3,813	7,339	16,454	1,038	28,644	943	34,092
2007	3,822	37	3,859	4,326	8,337	11,370	1,380	25,413	1,281	30,553
2008	3,983	198	4,181	2,843	5,834	6,805	437	15,919	1,226	21,326
2009	1,630	107	1,737	2,152	3,462	4,713	829	11,156	645	13,538
2010	1,750	52	1,802	Data not available					812[e]	2,614

[a] Fox and Shields 2005.

[b] Mills 1979–1994; Howe et al. 1995, 1996, 2001a–d, Walker et al 2003, Jennings et al. *In prep a* and *b*.

[c] Northern District total.

[d] Source of data is (Shields 2007). Includes Tyonek subsistence fishery 1980–2003 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 Northern Cook Inlet Management Area waters.

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-sustainable escapement goal; BEG-biological escapement goal.

Table 4.–Harvest of Chinook salmon from the Knik Arm Management Unit, 1977–2009.

Year	Little Susitna R.	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
2006	3,303	484	26	3,813
2007	3,210	1,084	32	4,326
2008	2,219	594	30	2,843
1977–2008 Mean	2,217	588	64	2,391
2004–2008 Mean	2,764	625	36	3,425
2009	1,653	499	0	2,152

Table 5.–Escapement of Chinook salmon, Knik Arm Management Unit, 1977–2010.

	Little Susitna River			Little Susitna R.		
Year	Weir	Aerial	Moose Creek[a]	Old Escapement Goal	Lower	Upper
1979	ND	[b]	253			
1980	ND	[b]	[b]			
1981	ND	[b]	238			
1982	ND	[b]	406			
1983	ND	929	452			
1984	ND	558	541			
1985	ND	1,005	475			
1986	ND	[b]	419			
1987	ND	1,386	957			
1988	7,374	3,197	1,072			
1989	4,367	[b]	999			
1990	ND	922	545			
1991	ND	892	704			
1992	ND	1,441	959			
1993	ND	[bc]	175[d]	850		
1994	2,981	1,221[c]	894	850		
1995	2,809	1,714[c]	488	850		
1996	ND	1,079[c]	652	850		
1997	ND	[bc]	652	850		
1998	ND	1,091[c]	214	850		
1999	ND	[bc]	744	850		
2000	ND	1,094[c]	198	850		
2001	ND	1,238[c]	275	850		
2002	ND	1,660[e]	310		900	1800
2003	ND	1,114[e]	471		900	1800
2004	ND	1,694[e]	197		900	1800
2005	ND	2,095[e]	254		900	1800
2006	ND	1,855[e]	216		900	1800
2007	ND	1,731[e]	330		900	1800
2008	ND	1,297[e]	384		900	1800
1983–2008 Mean		1,391	522			
1999–2008 Mean		1,531	338			
2004–2008 Mean		1,734	276			
2009	ND	1,028[e]	201		900	1800
2010	ND	589[e]	142		900	1800

Note: ND = no data.

[a] Foot survey (1977–1994); helicopter survey (1995–2006).

[b] No count conducted, water too turbid.

[c] Biological Escapement Goal (BEG) = 850 fish.

[d] Late count.

[e] Sustainable Escapement Goal (SEG) = 900 to 1,800 fish.

Table 6.–Chinook salmon smolt stocked and adult sport fish harvest at Eklutna Tailrace, 2002–2010.

Year	Brood Year	Total Smolt Released	Mark Type[a]	Mean Weight (g)	Release Date	Brood Stock	Hatchery	Harvest [b]
2002	2001	106,991	TM	11.3	5/20	Ship Creek	Elmendorf	0
2003	2002	218,492	TM	12.8 (50.05%) 12.0 (49.95%)	6/3, 6/4	Ship Creek	Fort Richardson	399
2004	2002 [c]	215,165	TM	13.4	5/19	Ship Creek	Fort Richardson	23
2005	2003	164,586	TM	14.0	6/1	Ship Creek	Fort Richardson	941
2006	2004	213,250	TM	10.6	5/31, 6/1	Ship Creek	Fort Richardson	484
2007	2005	110,978	TM	8.9	5/30	Ship Creek	Fort Richardson	1,084
2008	2006	114,136	TM	9.1	5/27	Ship Creek	Fort Richardson	594
2009	2007	77,785	TM	7.1	6/8	Ship Creek	Fort Richardson	499
2010	2008	152,014	TM	9.1	6/19	Ship Creek	Fort Richardson	N/A

[a] TM=thermal mark.

[b] Harvest estimates from Statewide Harvest Surveys (Jennings et al. 2006 a-b; Jennings et al. 2009, *In prep* a-b).

[c] Cold water rearing conditions required growth over two winters to reach optimal release size.

Table 7.–Harvest of Chinook salmon from eastside Susitna River, westside Susitna River, West Cook Inlet and Knik Arm drainages, 1979–2009.

	Eastside Susitna River						
Year	Hatchery	Non-hatchery	Total	Westside Susitna River	West Cook Inlet	Knik Arm	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	795	2,556	27,543
2005	981	7,472	8,453	15,945	592	3,692	28,682
2006	[a]		7,339	16,454	1,038	3,813	28,644
2007	[a]		8,337	11,370	1,380	4,326	25,413
2008	[a]		5,834	6,805	437	2,843	15,919
1999–2008 Mean	1,653	9,675	10,081	13,605	955	3,079	27,720
2004–2008 Mean	975	7,501	7,692	13,254	848	3,446	25,240
2009	[a]		3,462	4,713	829	2,152	11,156

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

Table 8.–Contribution of hatchery-reared Chinook salmon to the sport harvest at Willow Creek and the escapements at Willow and Deception creeks, 2005–2010.

		Willow Creek						Deception Creek		
	Brood Year	Harvest [a]			Escapement [b]			Escapement [b]		
Year	(Age)	n	# Recov	Contrib [c]	n	# Recov	Contrib [c]	n	# Recov	Contrib [c]
2005	2000- (0.4)		63	7.0%		0	0.0%		ND	ND
	2001- (0.3)		272	29.9%		2	0.9%		ND	ND
	2002- (0.2)		6	0.7%		0	0.0%		ND	ND
	2002- (1.1)		2	0.2%		0	0.0%		ND	ND
	2003- (0.1)		18	2.0%		0	0.0%		ND	ND
	Total	965	361	39.8% [d]	331	2	0.9% [d]	174	113	64.9% [e]
2006 [f]	2001- (0.4)		ND	ND		1	0.4%		ND	ND
	2002- (0.3)		ND	ND		0	0.0%		ND	ND
	2003- (1.1)		ND	ND		1	0.4%		ND	ND
	2003- (0.1)		ND	ND		1	0.4%		ND	ND
	Total	ND	ND	ND	277	3	1.1% [d]	248	151	60.9% [e]
2007	2003- (1.2)		ND	ND		1	0.7%			
	Total	ND	ND	ND	274	1	0.7% [d]	258	175	67.8% [e]
2008		ND	ND	ND	118	3	2.5%	156	105	67.3% [e]
2009		ND	ND	ND	117	4	3.4%	96	46	50.0% [e]
2010		ND	ND	ND	104	2	1.9%	25	7	28.0% [e]

Note: n = the total number of fish sampled; # Recov = number of adipose fin clipped (hatchery reared) fish with coded wire tags recovered at the Tag Lab; Contrib = percent contribution; ND = no data because no attempts were made to collect it.

[a] Creel survey.

[b] Carcass sampling.

[c] Percent contribution may differ from the quotient of number recovered to number sampled due to head or tag loss.

[d] Sum of contribution by brood year. Tags from the heads of adipose clipped fish were decoded at the State Mark, Tag, and Age Lab in Juneau, AK.

[e] Ratio of adipose clipped (marked) fish to total fish inspected during a carcass survey.

[f] The Willow Creek creel survey was discontinued in 2006; no sport fish harvests on this stream were sampled that year.

Table 9.–Number of Chinook salmon smolt stocked in Willow Creek drainage, 1983–2010.

Brood Year	Release location[a]	Total smolt release	Number coded-wire-tagged	Mean Weight(g)	Release Date
1983	Deception	101,256	8,152	18.0	6/13/1985
1984	Deception	214,384	11,038	13.8	6/11-12/1985
	Deception	218,743	10,708	14.0	6/20/1985
1985	Deception	49,668	9,933	16.7	5/1/1986
	Deception	127,904	18,400	12.2	5/10/1986
	Deception	147,877		11.4	5/10/1986
		325,449	28,333		
1987	Deception	201,091	20,936	10.9	7/12/1988
1988	Deception	240,885	19,851	13.0	5/31/1989
1989	Deception	219,362	41,570	14.4	5/24/1990
	Deception	219,432	40,575	13.4	5/24/1990
	Deception	216,697	40,438	13.9	5/24/1990
		655,491	122,583		
1990	Deception	168,777		11.2	5/21/1991
	Deception	70,258	31,167	12.3	5/31/1991
	Willow	73,756		12.3	5/28/1991
	Willow	78,878	31,167	12.3	5/30/1991
		391,669	62,334		
1991	Deception	179,724	33,464	13.5	5/29/1992
	Deception	35,752		14.5	6/9/1992
		215,476	33,464		
1992	Deception	160,194	39,420	14.9	6/1/1993
1993	Deception	177,913	45,921	13.3	5/24-25/1994
1994	Deception	184,740	46,256	13.5	5/25/1995
1995	Deception	186,918	47,145	14.4	6/12-17/1996
1996	Deception	209,944	207,973	12.2	6/11-20/1997
1997	Deception	197,392	195,615	11.5	6/17-26/1998
1998	Deception	201,586	199,772	11.5	6/14,16,17/1999
1999[b]	Deception	7,500			
	Deception	198,996			
		206,946	205,051	12.6	6/2,13,14/2000
2000	Deception	207,465	204,560	14.2	6/18,19/2001
2001	Deception	197,277	196,608	12.1	6/21,24/2002
2002	Deception	100,635	101,407	14.5	6/19/2003
	Deception	113,523	104,101	12.2	6/8/2004
		214,158	205,508		
2003	Deception	99,047	97,660	15.7	6/9/2004
	Deception	163,016	162,415	12.6	6/6/2005
		262,063	260,075		
2004	Deception	50,426	50,376	12.5	6/8/2006
2005	Deception	103,016	103,016	9.5	5/29/2007
2006	Deception	112,219	111,321	11.0	6/16/2008
2007	Deception	111,322	111,322	6.8	6/4/2009
2008	Deception	155,125	155,125	8.4	5/27/2010

[a] Prior to 1996 the Deception Creek release site was at the mouth of Deception Creek. Beginning in 1996 the release site was at the four-mile road crossing.

[b] In 2000 the stocking truck got stuck on Four Mile Road. Approximately 7,500 smolt were bucketed to Deception Creek at Four Mile Road, the remaining smolt were released at Hatcher Pass Road bridge near the mouth of Deception Creek.

Table 10.–Eastside Susitna River drainage Chinook salmon harvest by fishery, 1977–2009.

Year	Willow Creek	Lt. 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
2006	2,141	449	210	264	707	27	1,672	97	211	1,561	0	7,339
2007	2,258	870	223	190	964	31	1,294	0	0	2,476	31	8,337
2008	1,101	505	237	30	589	134	1,188	46	431	1,479	94	5,834
2004–2008												
Mean	2,157	578	181	180	810	135	1,311	86	174	1,990	40	7,643
2009	499	85	212	17	393	0	257	0	0	1,982	210	3,655

[a] Talkeetna River and tributaries including Clear Creek.

[b] Includes lakes and streams.

Table 11.–Northern Cook Inlet Management Area Chinook salmon escapement index counts (aerial), 1979–2010.

Year	Susitna River			Knik Arm[a]	West Cook Inlet	Total NCIMA
	Eastside	Westside	Total			
1979	5,082	39,552	44,634	253	2,540	47,427
1980	No Data					
1981	7,419	2,025	9,444	238	3,601	13,283
1982	10,700	25,224	35,924	406	7,384	43,714
1983	17,859	42,850	60,709	1,381	5,562	67,652
1984	25,678	27,974	53,652	1,099	5,043	59,794
1985	18,177	38,932	57,109	1,480	4,619	63,208
1986	15,828	32,330	48,158	419	6,114	54,691
1987	26,535	23,936	50,471	2,343	2,423	55,237
1988	26,255	40,963	67,218	4,269	5,546	77,033
1989	23,117	4,818	27,935	999	2,468	31,402
1990	25,040	28,042	53,082	1,467	1,329	55,878
1991	21,773	19,425	41,198	1,596	1,348	44,142
1992	15,782	18,899	34,681	2,400	2,835	39,916
1993	13,066	18,028	31,094	175	3,882	35,151
1994	11,904	9,423	21,327	2,115	2,121	25,563
1995	21,778	15,828	37,606	2,202	2,223	42,031
1996	22,084	16,802	38,886	1,731	2,392	43,009
1997	35,927	38,437	74,364	652	5,087	80,103
1998	24,393	32,958	57,351	1,305	4,805	63,461
1999	24,306	30,260	54,566	744	7,812	63,122
2000	20,161	11,137	31,298	1,292	3,964	36,554
2001	23,047	15,102	38,149	1,513	4,394	44,056
2002	35,137	28,066	63,203	1,970	3,649	68,822
2003	15,341	24,294	39,635	1,585	4,974	46,194
2004	22,567	54,421	76,988	1,891	5,038	83,917
2005	21,780	27,774	49,554	2,349	2,730	54,633
2006	16,934	23,074	40,008	2,071	4,206	46,285
2007	23,229	18,645	41,874	2,061	2,439	46,374
2008	10,789	5,609	16,398	1,681	1,051	19,130
1979-2008 Mean	20,058	24,649	44,707	1,506	3,848	50,061
1999-2008 Mean	21,329	23,838	45,167	1,716	4,026	50,909
2004-2008 Mean	19,060	25,905	44,964	2,011	3,093	50,068
2009	12,686	9,971	22,657	1,229	1,622	25,508
2010	7,449	3,293	10,742	731	993	12,466

Note: NCIMA = Northern Cook Inlet Management Area

[a] Majority from the Little Susitna River.

Table 12.–Eastside Susitna River Management Unit Chinook salmon escapement index counts (aerial), 1979–2010.

Year	Willow Creek [a]	Deception Creek Total	Deception Creek Nonhatch	Little Willow Cr	Sheep Creek	Goose Creek	Montana Creek	Clear Creek	Praire Creek	Chulitna River	Portage Creek	Indian River	Kashwitna River	Other [b]	Total
1979	848	239		327	778	[c]	1,094	[d] 864		[c]	[c] 190	285	457	[c]	5,082
1980															0
1981	991	366		459	1,013	262	814		[c] 1,875		[c] 659	422	558	[c]	7,419
1982	592	229 [e]		316	527	140	887	[d] 982	3,844	863	1,111	1,053	156	268	10,700
1983	777	121 [e]		1,042	975	477	1,641	[d] 938	3,200	4,058	3,140	1,193	297	[c]	17,859
1984	2,789	675 [e]			1,028	258	2,309	[d] 1,520	9,000	4,191	2,341	1,456	111	[c]	25,678
1985	1,856	1,044 [e]		1,305	1,634	401	1,767	[d] 2,430	6,500	783	[f]	[f]	457	4,066	18,177
1986	2,059	521 [e]	364	2,133	1,285	630		[c] [c]	8,500		[c] [c]	[c]	700	[c]	15,828
1987	2,768	692 [e]	518	1,320	895	416	1,320	[d] [c]	9,138	5,252	2,616	1,246	872	[c]	26,535
1988	2,496	790 [e]	537	1,515	1,215	1,076	2,016	[d] 4,850	9,280		[c] 1,402	456	1,159	[c]	26,255
1989	5,060	800 [e]	623	1,325	610	835	2,701	[d] [c]	9,463		[c] 1,309	659	355	[c]	23,117
1990	2,365	700 [e]	420	1,115	634	552	1,269	2,380	9,113	2,681	1,886	1,473	872	[c]	25,040
1991	2,006	747 [e]	515	498	154	[g] 968	1,215	1,974	6,770	4,410	1,223	1,468	340	[c]	21,773
1992	1,660	983 [e]	423	673		[c] 369	1,560	1,530	4,453	2,527	1,078	479	470	[c]	15,782
1993	2,227	1,011 [e]	502	705		[c] 347	1,281	886	3,023	2,070	629	362	525	[c]	13,066
1994	1,479	766	388	712	542	375	1,143	1,204	2,254	1,806	857	336	430	[c]	11,904
1995	3,792	834	445	1,210	1,049	374	2,110	1,928	3,884	3,460	1,505	796	836	[c]	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	[c]	22,084
1997	4,841	1,340	[c]	2,390		[c] 308	3,073	5,100	7,710	5,618	3,086	1,700	761	[c]	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	[c]	24,393
1999	2,081	1,000	801	1,837		[c] 268	2,088	2,216	5,871	5,455	1,797	1,049	644	[c]	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	[c]	20,161
2001	3,188	1,975	943	2,084		[c] [c]	1,930	2,096	5,191	2,353	[g] 2,334	1,292	604	[c]	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	[c]	35,137
2003	3,964	914	288	879		[c] 175	2,576		[c] 4,095		[c] 827 [d]	1,365	546	[c]	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
2007	1,373	604	194	1,103	400	105	1,936	3,310	5,036	5,166	2,284	1,017	895		23,229
2008	1,255 [g]	255 [g]			[c]	[c] 117	1,357	1,795	3,039	2,514	169	288		[c]	10,789
1979-2008 Mean	2,371	858	497	1,238	844	418	1,824	2,270	5,552	3,524	1,604	859	580	1,267	19,390
1999-2008 Mean	2,489	1,054	483	1,503	674	308	2,008	2,435	4,794	4,063	1,683	872	608	368	21,329
2004-2008 Mean	2,059	817	342	1,483	506	283	1,972	2,393	4,215	3,108	1,504	657	576	368	19,060
2009	1,133	[c]		776	500	65	[j] 1,460	1,205	3,500	2,093	1,228	409	317		12,686
2010	1,173			468		[c] 76	[j] 755	903	3,022	1,052					7,449
SEG [h]	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					

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

Table 13.–Westside Susitna River drainage Chinook salmon harvest by fishery, 1977–2009.

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
2006	1,396	7,753	40	1,964	33	4,070	103	452	643	0	16,454
2007	412	5,696	0	827	465	2,881	68	1021	0	0	11,370
2008	0	2,036	0	1,009	220	2,756	89	435	260	0	6,805
2004-2008 Mean	831	6,373	13	1,057	161	3,574	191	610	422	14	13,244
2009	0	723	35	863	148	2273	174	258	239	0	4,713

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

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

Table 14.–Westside Susitna River Management Unit Chinook salmon escapement index counts, 1979–2010.

Year	Alexander Creek	Deshka River Aerial index	Deshka River Weir [a]	Peters Creek	Lake Creek	Talachulitna River	Cache Creek	Other Streams [b]	Aerial Total
1979	6,215	27,385	NA	108	4,196	1,648	[c]	ND	39,552
1980	[c]	[c]	NA	[c]	[c]	[c]	[c]	ND	ND
1981	[c]	[c]	NA	[c]	[c]	2,025	[c]	ND	2,025
1982	2,546	16,000	NA	[c]	3,577	3,101	[c]	ND	25,224
1983	3,755	19,237	NA	2,272	7,075	10,014	497	ND	42,850
1984	4,620	16,892	NA	324	[c]	6,138	[c]	ND	27,974
1985	6,241	18,151	NA	2,901	5,803	5,145	206	485	38,932
1986	5,225	21,080	NA	1,915	[c]	3,686	424	ND	32,330
1987	2,152	15,028	NA	1,302	4,898	[c]	556	ND	23,936
1988	6,273	19,200	NA	3,927	6,633	4,112	818	ND	40,963
1989	3,497	[c]	NA	959	[c]	[c]	362	ND	4,818
1990	2,596	18,166	NA	2,027	2,075	2,694	484	ND	28,042
1991	2,727	8,112 [d]	NA	2,458	3,011	2,457	499	161	19,425
1992	3,710	7,736	NA	996	2,322	3,648	487	ND	18,899
1993	2,763	5,769	NA	1,668	2,869	3,269	1,690	ND	18,028
1994	1,514	2,665	NA	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 [e]	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 [d]	[c]	35,242	1,648	4,035	2,414	709	ND	11,137
2001	2,282	[c]	29,004	4,226	4,661	3,309	624	ND	15,102
2002	1,936	8,749	29,428	2,959	4,852	7,824	671	1,075	28,066
2003	2,012	[c]	39,496	3,998	8,153	9,573	558	ND	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 [d]	31,150	1,114	5,300	6,152	1,230	1,894	23,074
2007	480	6,712	18,714	1,225	4,081	3,871	551	1,725	18,645
2008	150 [d]	[c]	7,533	[c]	2,004	2,964	[c]	491	5,609
1979-2008 Mean	3,038	13,768	27,948	2,075	4,388	4,288	838	969	24,649
1999-2008 mean	1,841	12,523	31,588	2,637	4,991	5,376	859	1,387	23,838
2004-2008 Mean	1,174	13,371	30,611	1,901	5,066	5,149	863	1,608	25,905
2009	275	3,954	11,967	1,283	1,394	2,608	[c]	457	9,971
2010	177	[c]	18,594	[c]	1,617	1,499	[c]	209	3,502
Escapement Goal	2,100-6,000 [f]	[g]	13,000-28,000 [h]	1,000-2,600 [f]	2,500-7,100 [f]	2,200-5,000 [f]			

Note: NA = not applicable; ND = no data because no attempts were made to collect it.

[a] No weir on the Deshka River prior to 1995. Weir count, not an actual escapement count.

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

[c] No count due to poor water visibility.

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

[e] High water delayed the deployment of the weir until June 16, 1998. Therefore, this weir count is low and may represent only half of the return.

[f] Sustainable Escapement Goal (SEG) established in 2001 (Bue and Hasbrouck *Unpublished*).

[g] Aerial escapement goals for Deska River Chinook salmon: 11,200 fish (1994-1998); 8,750 fish (1999-2001); and discontinued thereafter (2002-2009).

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

[i] Preliminary.

Table 15.–West Cook Inlet drainage Chinook salmon harvest by fishery, 1977–2009.

Year	Chuitna River	Beluga River	Theodore River	Lewis River	Susitna R.– N. Foreland	South of N. 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	84	795
2005	294	105	0	0	24	92	77	592
2006	445	66	0	0	160	32	335	1,038
2007	984	143	0	0	33	47	173	1,380
2008	46	15	0	0	217	159	0	437
2004-2008 Mean	420	121	0	0	107	66	134	848
2009	109	51	0	0	112	204	353	829

Table 16.–West Cook Inlet Management Unit Chinook salmon escapement index counts, 1979–2010.

Year	Chuitna River	Theodore River	Lewis River	Coal Creek	Other Streams[a]	Total WCI
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	1000	609		5,038
2005	1,307	478	441	504		2,730
2006	1,911	958	341	996		4,206
2007	1,180	486	0 [d]	773		2,439
2008	586	345	120			1,051
1979-2008 Mean	1,889	1,043	518	707	677	3,848
1999-2008 Mean	1,833	948	488	841		4,026
2004-2008 Mean	1,584	552	380	721		3,093
2009	1,040	352	111	119 [e]		1,622
2010	735	202	56			993
SEG [c]	1,200-2,900	500-1,700	250-800			

"-" = value can't be computed due to limitations of the data.

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

[b] No count conducted, turbid water.

[c] SEG = sustainable escapement goal.

[d] River diverged into open muskeg 1/2 mile below bridge. No water in mainstem.

[e] Mainstem too glacial to count. Only counted above forks.

Table 17.–Northern Cook Inlet Management Area recreational harvest of coho salmon by management unit, 1977–2009.

	Northern Cook Inlet Management Area					South-central			
Year	Knik Arm	Eastside Susitna	Westside Susitna	West Cook Inlet	Total Harvest	Region Total	% by NCIMA	Alaska Total	% by NCIMA
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	16,179	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
2006	39,953	22,719	20,474	11,940	95,086	425,981	22	652,953	15
2007	27,733	13,464	14,065	12,580	67,842	444,032	15	716,815	9
2008	35,996	24,211	15,126	14,673	90,006	426,916	21	676,376	13
1977-2008 Mean	22,772	17,480	14,001	7,729	61,983	276,268	24	435,239	16
2004-2008 Mean	32,996	19,670	17,143	13,589	83,398	465,517	18	769,120	11
% of NCIMA 2004-2008	40	24	21	16					
2009	37,271	15,335	14,464	9,801	76,871	426,916	18	676,376	11

Table 18.–Coho salmon harvest and fishing effort from Knik Arm sport fisheries, 1977–2009.

	Little Susitna River			Other Knik Arm															
				Jim Creek[a]		Wasilla Creek		Cottonwood Creek		Fish Creek		Eklutna Tailrace		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	1,801	4,904	814	4,019	1,373	8,663					3,988	17,586	556	61,304	10,484	105,052
1982	7,116		24,020	2,306	6,653	1,624	6,261	1,886	5,186					5,816	18,100	744	49,593	13,676	91,713
1983	2,835		35,477	774	9,183	345	3,239	518	5,944					1,637	18,366	1,667	84,546	6,139	138,389
1984	14,253		48,517	3,429	9,369	1,920	3,547	1,895	7,144			561	3,413	7,805	23,473	1,371	58,737	23,429	130,727
1985	7,764		37,498	2,523	8,970	1,900	3,115	1,005	4,560	284	903	557	2,995	6,269	20,543	306	64,585	14,339	122,626
1986	6,039	109	45,776	2,948	13,015	944	3,387	690	5,653	364	2,641	502	8,549	5,448	33,245	874	52,585	12,361	131,606
1987	13,003	3,407	35,659	3,676	6,990	1,195	2,173	1,159	2,934	833	2,898	2,318	11,663	9,181	26,658	3,603	77,850	25,787	140,167
1988	19,009	9,638	49,731	11,078	23,229	1,273	2,228	746	4,056	1,637	3,110	3,329	13,188	18,063	45,811	2,965	87,487	40,037	183,029
1989	14,129	10,597	54,708	4,220	11,141	975	2,406	876	3,069	784	3,314	1,666	10,342	8,521	30,272	1,196	61,932	23,846	146,912
1990	7,497	2,242	40,159	6,184	17,878	1,012	2,679	286	3,056	398	3,936	1,012	7,618	8,892	35,167	2,373	67,558	18,762	142,884
1991	16,450	7,699	50,838	2,920	13,736	844	2,893	176	1,623	486	3,693	631	5,892	5,057	27,837	679	67,930	22,186	146,605
1992	20,033	3,406	49,304	3,409	8,856	413	1,110	348	1,974	526	3,638	664	4,279	5,360	19,857	421	72,664	25,814	141,825
1993	27,610	7,703	42,249	2,878	6,824	1,133	1,774	736	3,077	741	2,341	1,337	4,523	6,825	18,539	1,328	57,426	35,763	118,214
1994	17,665	6,165	45,149	3,946	9,658	1,390	2,226	1,100	3,230	492	2,358	3,553	8,974	10,481	26,446	393	71,777	28,539	143,372
1995	14,451	2,991	41,119	3,549	10,893	445	1,373	340	2,598	435	2,256	990	11,453	5,759	28,573	440	56,462	20,650	126,154
1996	16,753	3,418	24,575	3,911	7,561	872	1,386	762	1,783	607	934	1,217	6,448	7,369	18,112	752	48,303	24,874	90,990
1997	7,756	0	27,883	1,786	5,349	708	1,188	372	2,070	148	1,104	728	3,835	3,742	13,546	275	54,301	11,773	95,730
1998	14,469	0	22,108	4,197	5,272	970	1,171	1,098	3,454	1,334	2,256	1,422	5,100	9,021	17,253	260	38,857	23,750	78,218
1999	8,864	0	30,437	2,612	6,860	313	990	537	3,506	233	2,182	1,453	6,150	5,148	19,688	417	62,517	14,429	112,642
2000	20,357	0	39,556	5,653	10,975	0	328	282	1,265	470	1,408	5,053	7,938	11,458	21,914	715	60,131	32,530	121,601
2001	17,071	0	33,521	8,374	13,028	0	419	647	2,627	361	1,670	3,399	10,166	12,781	27,910	254	49,596	30,106	111,027
2002	19,278	0	40,346	14,707	17,989	664	1,037	561	1,534	1,233	2,776	7,073	11,767	24,238	35,103	932	50,745	44,448	126,194
2003	13,672		31,993	6,415	13,474	261	757	665	2,238	112	758	3,128	8,423	10,581	25,650	330	46,335	24,583	103,978
2004	15,307	0	33,819	11,766	19,342	488	1,079	532	3,282	774	2,029	5,084	9,588	18,644	35,320	347	44,389	34,298	113,528
2005	10,203	0	27,490	10,114	19,605	347	684	668	1,484	535	1,461	4,899	19,339	16,563	42,573	234	45,700	27,000	115,763
2006	12,399	0	28,547	19,259	25,271	857	869	789	3,867	281	948	6,104	20,465	27,290	51,420	264	39,828	39,953	119,795
2007	11,089	0	23,233	11,848	21,342	324	1,194	856	3,448	120	907	3,298	22,619	16,446	49,510	198	47,938	27,733	120,681
2008	13,498	0	31,989	17,545	27,874	1,086	1,394	308	2,718	993	1,343	2,253	20,586	22,185	53,915	313	50,668	35,996	136,572
Means																			
1977-2008	12,265		34,024	6,208	12,687	952	2,216	859	3,689	591	2,119	2,489	9,813	9,578	26,031	930	58,520	22,772	118,576
2004-2008	12,499		29,016	14,106	22,687	620	1,044	631	2,960	541	1,338	4,328	18,519	20,226	46,548	271	45,705	32,996	121,268
2009	8,346		28,151	11,573	16,486	1,002	1,619	1,503	2,512	1,178	2,050	6,767	22,625	22,023	45,292	6,902	20,914	37,271	122,508

[a] Includes other Knik River tributaries.

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

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

Table 19.–Knik Arm drainage coho salmon escapement counts, 1981–2009.

						Wasilla Cr drainage									Jim Cr drainage			
	Little Susitna R [b]		Fish Cr			Weir		Index [a]				Matanuska R				Index [a]		
	Stocked			Cottonwood Cr		Wasilla	Spring	Wasilla Cr	Spring Cr			Yellow Cr		Bartko side		McRoberts	Upper Jim	
Year	fish	Weir	Weir [c]	Weir	Index [a]	Cr	Cr	(mainstem)	(upper)	(Flats)	Total	Index [a]	Wolverine Cr [a]	channel [a]	Weir	Cr	Cr	Total
1981			2,382	2,436 [d]	423			238	[e]	64	302	[e]						[e]
1982			5,201	2,064 [d]	737			171	[e]	105	276	[e]						[e]
1983			2,342		506			4	[e]	28	32	[e]						[e]
1984			4,510		935			876		90	966	[e]						[e]
1985			5,089		334			16	150	81	247	65				662		662
1986		6,999 [f]	2,166		121			[e]	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			[e]	82	30	112	110				1,911		1,911
1989	6,862	15,232	3,479		147			[e]	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			[e]	67	69	136	490			5,532	503	535	1,038
1994	5,124	27,820	350		232			282	76	60	418	172			6,451	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 [f]	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 [g]	31 [g]	25	176	302				922	560	1,482
1999		3,017 [f]	1,766	458 [h]	131 [i]	1,579 [i]	8	211	40	16	267	88				12	320	332
2000		15,436	5,218	[h] 1,482 [h]	876 [i]	6,154	0	380 [g]	224	50	654	169				657	2,561	3,218
2001		30,587	9,247	[h] 2,921 [h]	983 [i]	6,508	276	453	37	15	505	419				1,019	575	1,594
2002		47,938	14,651	[h] 4,081 [h]	1,191 [i]	12,495	162	933	188	75	1,196	65				2,473	1,630	4,103
2003		10,877	1,231	[h] 706 [h]	229 [i]	2,962	[j]	227	17	50	294	53				1,421	393	1,814
2004		40,199	1,415	[c h] 1,772 [h]	430 [i]	[j]		934	114	100	1,148	0				4,652	1,045	5,697
2005		16,839 [f]	3,011	[c h] [j]	619 [i]			[e]	[e]	130	130	305				1,464	1,883	3,347
2006		8,786 [f]	4,967	[c h]	912 [i]			294 [k]	171	272	737	47				2,389	1,750	4,139
2007		17,573	6,868	[c h]	1,024 [i]			380 [k]	50	0	430	50				725	1,150	1,875
2008		18,485	4,868	[c h]	1,821 [i]			1,461	63	12	1,536	0				1,890	1,029	2,919
1981-2008 Mean	5,139	19,938	3,641	1,897	508	5,552	-	334	77	58	395	153	-	-	-	1,062	995	1,849
1999-2008 Mean	-	20,974	5,324	-	822	-	-	586	100	72	690	120	-	-	-	1,670	1,234	2,904
2004-2008 Mean	-	20,376	4,226	-	961	-	-	767	100	103	796	80	-	-	-	2,224	1,371	3,595
2009		9,523	8,214 [h]		942 [i]			936	28	14	978	[l]	150	440		1,331	1,193	2,524
2010		9,214	6,977 [h]		756 [i]			927	290	6	1,223	[l]		189		242	420	662
SEG range	10,100-17,700															450-700		

Note: "-" = value can't be calculated due to limitations of the data.

[a] Foot surveys unless otherwise noted.

[b] Weir located at River Mile 34 in 1986 and 1988-1995; weir located at RM 71 from 1996-2010.

[c] 1982-1991 weir count plus stream survey; 1992, 1993 weir count; 1994-1996 and 2004-2008 weir was removed on August 15 before the majority of the coho run. In 1997 the weir was out on September 1.

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

[e] No survey conducted.

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

[g] Count conducted late due to high water.

[h] Coho salmon counted below weir after it was pulled: Fish Creek 2000-2010: 761 (2000), 800 (2001), 536 (2002), 911 (2003), 1,840 (2004), 825 (2005), 756 (2006), 2,750 (2007), 4,735 (2008), 452 (2009), 57 (2010); Cottonwood Creek1999-2004: 20 (1999), 406 (2000), 604 (2001), 189 (2002), 85 (2003), 266 (2004).

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

[j] Weir discontinued.

[k] Poor counting conditions.

[l] Index discontinued after more than half the index area was destroyed by the Matanuska River.

Table 20.–Eastside Susitna River drainage coho salmon harvest by fishery, 1977–2009.

Year	Willow Creek	Lt. 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
2006	5,031	1,511	1,202	780	3,602	906	2,622	281	3,460	3,224	100	22,719
2007	3,625	853	253	185	2,707	75	2,017	149	1,318	2,166	116	13,464
2008	3,760	1,340	2,880	649	2,125	594	5,628	58	2,928	4,128	121	24,211
2004-2008 Mean	3,930	1,219	991	429	2,681	418	3,545	200	2,454	3,466	336	19,670
2009	3,232	1,027	525	607	1,594	635	3,087	320	816	3,114	1,713	16,670

[a] Talkeetna River and tributaries including Clear Creek.

[b] Includes lakes and streams.

Table 21.–Westside Susitna River drainage coho salmon harvest by fishery, 1977–2009.

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
2006	119	6,042	837	105	3,040	6,330	1,433	1,127	1,441	20,474
2007	328	2,550	134	454	3,512	3,685	842	1,804	756	14,065
2008	10	3,426	714	227	3,563	4,147	567	1,511	961	15,126
2004-2008 Mean	608	4,015	488	206	2,415	5,790	1,403	1,197	1,021	17,143
2009	501	4,060	23	472	2,607	4,417	417	675	1,292	14,464

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

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

Table 22.–Eastside and westside Susitna River drainage coho salmon escapement counts, 1981–2010.

	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
2007	39,957	10,575	[e]	50,532	167	241	26	434	[e]	50,966
2008	33,934	12,724	10,043	56,701	798	273	382	1,453	[e]	58,154
1981-2008 Mean	39,110	24,923	942	51,253	395	352	154	849	47,000	57,047
1999-2008 Mean	62,226	29,634	2,438	93,322	807	521	294	1,460		94,783
2004-2008 Mean	75,203	35,142	6,553	116,533	716	434	165	1,172		117,704
2009	[j]	27,348	345 [i]	27,693	219 [i]	9 [i]	166 [i]	394	[e]	28,087
2010		10,393	161	10,554	117	41	2	160		10,714

[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). All estimates from 1985-2008 are partial because Yentna River sonar shut down before the end of the coho run. Yentna River 2005 and 2006 coho salmon estimates reported by Westerman and Willette (2007a-b).

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

[d] Mark-recapture estimates of abundance upstream of Susitna River (rm 80). Source - (ADF&G 1981, 1983; Barrett et al. 1984).

[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 Deshka River weir (rm 7): 1997, 2000-2001, and 2003-2005.

[I] Extreme low water conditions.

[j] Bendix sonar discontinued.

Table 23.–West Cook Inlet drainage coho salmon harvest by fishery, 1977–2009.

Year	Chuitna River	Beluga River	Theodore River	Lewis River	Kustatan River	Polly Creek	Big River Lakes [a]	Silver Salmon Creek	Other Susitna R.-N. Foreland	Other South of N. 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	2830	2269	429	1,611	628	14,239
2004	1,655	520	645	90	3,984	39	2648	1389	225	3,471	1103	15,769
2005	972	120	229	524	3,551		3916	1568	491	913	288	12,572
2006	531	313	282	177	3,556	73	3,953	997	360	1,538	160	11,940
2007	1,577	537	811	82	4,057	45	1,644	1,041	792	820	1,174	12,580
2008	1,401	490	31	29	3,868	285	3,560	356	122	967	3,564	14,673
2004-2008 Mean	1,227		400		3,803		3,144		398	1,542	1,258	13,507
2009	707	154	313	73	2,639	106	3,032	1,133	1,009	548	87	9,801

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

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

Table 24.–Knik Arm drainage sockeye salmon harvest by fishery, 1977-2009.

Year	Little Susitna [a]	Knik River [b]	Eklutna Tailrace	Wasilla Creek	Cottonwood Creek	Big Lake [c]	Other [d]	Total
1977	888			274			414	1,576
1978	859			0			380	1,239
1979	1,478			0	1,525		613	3,616
1980	2,127			0	2,660		887	5,674
1981	1,619	450		0	3,245		766	6,080
1982	1,865	880		0	608		1268	4,621
1983	2,787	1,277		0	1,632		8601	14,297
1984	6,385	823	187	200	661		984	9,240
1985	2,894	1,037	142	120	1,179	109	131	5,612
1986	3,616	905	28	61	789	39	571	6,009
1987	3,513	1,105	254	18	869	1,087	1939	8,785
1988	2,310	1,928	200	36	346	2,037	1219	8,076
1989	2,315	1,322	204	98	683	2,900	1518	9,040
1990	891	2,219	29	19	271	2,238	921	6,588
1991	1,722	1,459	19	56	47	565	1100	4,968
1992	1,274	1,471	173	8	633	1,241	549	5,349
1993	2,487	1,041	211	134	453	598	1002	5,926
1994	1,809	1,258	133	76	807	476	523	5,082
1995	1,116	990	190	31	895	651	476	4,349
1996	2,286	1,077	84	42	444	68	306	4,307
1997	1,845	864	100	20	1,008	122	136	4,095
1998	872	1,220	57	212	2,906	154	78	5,499
1999	1,282	614	151	11	1,080	432	88	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	12	319	147	211	4,619
2003	3,337	1,554	122	0	961	57	575	6,606
2004	2,776	2,499	491	33	719	400	230	7,148
2005	1,442	848	362	0	538	79	191	3,460
2006	1,556	2,173	289	260	279	0	65	4,622
2007	2,387	3,001	397	70	766	289	120	7,030
2008	1,699	4,187	81	30	672	26	215	6,910
2004-2008 Mean	1,972	2,542	324	79	595	159	164	5,834
2009	1,152	2,612	865	165	341	647	215	5,997

[a] Majority of harvest from Nancy Lake Creek.

[b] Knik River and tributaries including Jim Creek.

[c] Big Lake drainage streams.

[d] Includes Nancy Lake complex lakes, all marine, and miscellaneous lakes and streams.

Table 25.–Eastside Susitna River drainage sockeye salmon harvest by fishery, 1977–2009.

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]	Other Lakes	Total
1977	831	305			450		978			334	696		3,594
1978	56	28			14		85			28	56		267
1979	94	141		0	31		346		157	31	220		1,020
1980	83	77		77	0		257		116	6	257		873
1981	77	67		38	105		182		220	29	115		833
1982	94	105		52	88		514		189	115	398		1,555
1983	425	110	0	151	370		534		685	534	343	69	3,221
1984	249	337	0	87	62	0	561		100	636	636	37	2,705
1985	139	80		110	30		279		249	508	70	0	1,465
1986	290	0	109	0	0	0	363	182	290	1,597	1,198	0	4,029
1987	254	72	54	0	163	0	163	72	181	580	507	0	2,046
1988	564	55	18	164	273	36	364	255	18	1,110	0	0	2,857
1989	414	51	59	110	169	17	296	76	363	617	25	330	2,527
1990	208	149	99	69	149	50	149	0	119	1,506	179	0	2,677
1991	397	71	62	230	168	0	44	97	88	1,280	460	0	2,897
1992	526	164	33	123	189	58	370	140	394	1,356	115	0	3,468
1993	528	120	0	106	39	0	237	241	183	2,560	113	10	4,137
1994	383	28	0	82	102	0	85	66	133	2,278	286	0	3,443
1995	430	73	0	0	98	52	481	0	220	2,082	145	101	3,682
1996	113	191	0	95	8	67	88	0	43	2,053	17	0	2,675
1997	119	85	41	30	190	70	144	11	60	4,931	170	0	5,851
1998	86	43	0	0	103	0	195	30	68	4,546	788	0	5,859
1999	162	64	11	0	112	32	248	184	0	3,197	382	216	4,608
2000	307	55	0	42	122	0	346	213	199	4,683	225	317	6,509
2001	244	70	58	0	269	48	584	77	48	4,797	344	237	6,776
2002	215	31	0	0	122	30	199	0	31	2,615	110	74	3,427
2003	147	63	0	0	74	27	267	105	116	1,574	361	0	2,734
2004	110	45	0	0	20	0	336	33	109	2,399	55	0	3,107
2005	85	91	0	0	84	0	113	0	24	1,280	0	0	1,677
2006	378	55	183	0	18	0	499	0	44	110	60	65	1,412
2007	90	201	0	0	45	0	89	0	0	952	93	0	1,470
2008	45	30	0	0	32	120	794	205	75	1,517	157	0	2,975
2004-2008 Mean	142	84	37	0	40	24	366	48	50	1,252	73	13	2,128
2009	96	13	36	0	48	17	184	299	50	6,137	444	0	7,324

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

[b] Other includes lakes and streams for 1977-1982.

Table 26.–Westside Susitna River drainage sockeye salmon harvest by fishery, 1977–2009.

Year	Alexander Creek	Deshka River	Rabideux Creek	Yentna River	Lake Creek	Fish Creek [a]	Talachulitna River	Judd Lake	Other Streams [b]	Other Lakes [b]	Total
1977	349	0			658		457	24	842	456	2,786
1978	183	0			254		141	70	662	324	1,634
1979	79	0			440		47	220	362	410	1,557
1980	52	0			267		112	267	34	379	1,111
1981	67	0			211		172		594	364	1,408
1982	335	0			252		63		1,320	911	2,881
1983	69	0			726		41	0	1,370	1,314	3,549
1984	87	125			374		262	312	1,395	860	3,415
1985	261	50			137		50		772	1,032	2,302
1986	0	11			547	1,273	424	514	1,173	134	4,076
1987	72	272			435	398	290	580	163	217	2,427
1988	55	146			291	146	800	182	1,038	509	3,167
1989	260	217	9	139	121	165	251	130	547	468	2,307
1990	30	189	0	20	358	89	189		646	417	1,938
1991	136	262	155	0	262	475	78	233	968	514	3,083
1992	123	82	0	107	115	189	205		1,331	764	2,916
1993	45	87		103	489	412	171		724	130	2,161
1994	38	0		237	430	142	237		653	182	1,919
1995	94	42		239	392	178	191		879	91	2,106
1996	0	8		0	137	68	108		794		1,115
1997	61	11		410	1,656	209	335		427	0	3,109
1998	86	57	0	232	868	168	181		871		2,463
1999	205	50		324	2,604	865	337		894	0	5,279
2000	1,440	339		761	1,767	226	162		251		4,946
2001	544	249		397	3,149	714	159		1062	37	6,311
2002	257	67		94	526	238	278		421	0	1,881
2003	138	0		137	6,900	162	233		1090	0	8,660
2004	0	154		247	1,977	392	339		249		3,358
2005	0	70		54	1,622	410	34		29		2,219
2006	66	92	11	48	214	0	195	0			626
2007	30	128	0	604	1,341	221	816	37	0	0	3,177
2008	0	0	0	141	737	197	246	107	0	0	1,428
2004-2008 Mean	19	89		219	1,178	244	326		70	0	2,162
2009	0	10	0	547	1,256	37	11	0	497	0	2,358

[a] Yentna River drainage.

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

Table 27.–Northern Cook Inlet Management Area recreational harvest of sockeye salmon by management unit, 1977–2009.

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	1,557	0	6,193
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	3,549	466	21,533
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
2006	4,622	1,412	626	4,993	11,653
2007	7,030	1,470	3,177	8,187	19,864
2008	6,910	2,975	1,428	5,652	16,965
Means					
1977-2008	5,811	3,012	2,854	1,901	13,577
2004-2008	5,834	2,128	2,162	5,236	15,360
2009	5,997	7,324	2,358	4,261	19,940

Table 28.–West Cook Inlet drainage sockeye salmon harvest by fishery, 1977–2009.

Year	Chuitna River	Theodore River	Lewis River	Kustatan River	Big River Lakes [a]	Susitna R.-N. Foreland	South of N. Foreland	Other [b]	Total
1977	6	0	0						6
1978	0	0	0						0
1979	0	0	0						0
1980	0	0	0						0
1981	48	0							48
1982	10	0							10
1983	356	0		110					466
1984	62	0		187					249
1985	274	25	0	162					461
1986	22	67		0					89
1987	272	0	0	0					272
1988	437	18	0	18					473
1989	43	52	0	165				269	529
1990	139	50	0	10	437				636
1991	552	10	0	203					765
1992	8	49		131					188
1993	46	35	0	289	976		229	780	2,355
1994	0	9		285	1,013		114	614	2,035
1995	62	0		44	998		159	41	1,304
1996	228	0		102	2,028	127	152	314	2,951
1997	170	0		274	1,171	150	409	0	2,174
1998	235	8		314	1,282	266	288	129	2,522
1999	194	0		186	1,783	76	464	287	2,990
2000	58	42		210	3,047	210	677	0	4,244
2001	634	0		293	992	201	1,030	0	3,150
2002	585	0	0	232	664	24	160	354	2,019
2003	179	24	0	397	3,491	94	372	151	4,708
2004	23	0		89	2,793	294	23	101	3,323
2005	123			95	3,401	121	139	146	4,025
2006	0	11	0	95	3,980	306	458	143	4,993
2007	104	0	0	102	7,028	252	568	133	8,187
2008	0	0	0	429	4,436	238	393	156	5,652
2004-2008 Mean	50	3		162	4,328	242	316	136	5,236
2009	0	0	0	157	3,746	120	238	0	4,261

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

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

Table 29.–Sockeye salmon escapement estimates from Northern Cook Inlet Management Area drainages by management unit, 1969–2010.

	Management Units																	
	Knik Arm					Eastside Susitna		Westside Susitna							West Cook Inlet			
Year	Little Susitna R weir [a]	Fish Ck weir [b]	Cottonwood Ck weir	Wasilla Ck weir	Jim Ck weir [c]	Larson Lk weir	Stephan Lk weir	Yentna R sonar	Chelatna Lk weir	Judd Lk. weir	Shell Lk weir	Hewitt Lk weir	Byers Lk	Swan Lk	Crescent R sonar	Packers Ck weir [q]	Wolverine Ck [d]	
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																
1979		68,739[e]													87,000			
1980		62,828[e, f]						139,401[p]							91,000	16,477		
1981		50,479[e, f]						113,847[p]							41,000	13,024	17,822	[g]
1982		28,164 [f]						104,414[p]							59,000	15,687	32,950	[g]
1983		118,797[e, f]						149,375[p]							92,000	18,403	18,189	[g]
1984		192,352[e, f]				35,254[h]		107,124[p]							118,000	30,684		
1985		68,577[e, f]				37,874[h]		92,000			4,237 [i]				129,000	36,850		
1986		29,800[e, f]				32,322[h]		66,000							N/C	29,604		
1987		91,215[e, f]				16,753[h]		52,347							119,000	35,401		
1988	2,642	71,603[e, f]						96,269							57,716	18,607		
1989	6,203	67,224[e, f]						140,379				12,943 [j]			71,064	22,304		
1990		48,717[e, f]						105,000							52,180	31,868		
1991		50,500[e, f]						66,057							44,500	41,275		
1992		72,108[e, f]						141,694	20,235[k]						58,227	28,361		
1993		117,619[e, f]			3,548			128,032	28,303[k]						37,556	40,869		
1994	16,918	100,638[e]			5,197			121,479	20,104[k]						30,355	30,788		
1995	7,129	115,101[e]						90,781	28,684[k]						52,250	29,473		
1996		63,164[e]						157,797	84,899[k]						28,729	17,767		
1997		55,035[e]	8,224			40,112		119,623	27,284[k]	34,416					70,768	19,364		
1998		22,865[e]	27,930	840		63,514		99,029							62,257	17,732		
1999		26,725[e]	39,572	854		18,943		123,749							68,985	16,860		
2000		19,533[e]	16,921	245		11,822		83,532							56,599	20,151		
2001		43,498[e]	15,229	198				78,430							78,081	no count		
2002		90,482[e]	6,791	1,354				181,404							62,833	no count		
2003		91,952[e]	4,601	757				71,281							122,909	no count		
2004		22,157[e]	3,127					36,921							103,183	no count	10,541	[l]
2005		14,215[e]				9,959		92,045	13,266	40,630	69,747	2,507	3,074		125,787	22,000	15,625	[l, m]
2006		32,562[e]				56,305		79,901	11,671	58,134	26,784		1,701	5,489	92,533	no count	2,000	[l, m]
2007		27,948[e]				47,819	4,120	90,146	73,469	54,304	2,624		1,492	4,037	79,406	46,637		
2008		19,339[e]				35,040	5,000								62,030	25,247		

-continued-

Table 29.–Page 2 of 2.

	Management Units																		
	Knik Arm					Eastside Susitna		Westside Susitna								West Cook Inlet			
Year	Little Susitna Rweir	Fish Ck weir	Cottonwood Ck weir	Wasilla Ck weir	Jim Ck weir	Larson Lk weir	Stephen Lk weir	Yentna R sonar	Chelatna Lk weir	Judd Lk weir	Shell Lk weir	Hewitt Lk	Byers Lk	Swan Lk		Crescent R sonar	Packers ck weir[q]	Wolverine Ck [d]	
1979-2008 Mean		62,798	15,299	708	-	33,810	-	104,573	34,213	-	-	-	-	-		74,274	26,060		-
1999-2008 Mean	-	38,841	-	-	-	-	-	93,644	-	-	-	-	-	-		85,235	-		-
2004-2008 Mean	-	23,244	-	-	-	-	-	74,059	-	-	-	-	-	-		92,588	-		-
2009		83,480[e]				41,929		[n]	17,865	43,153	4,961					no count	46,637		
2010		126,836[e]				20,324		[n]	37,784	18,361	2,222					86,333	no count		
SEG		20,000-70,000				15,000-50,000		[o]	20,000-65,000	25,000-55,000						25,000-50,000	15,000-30,000		

Note: "-" = value can't be computed due to limitations of the data. *SEG* = sustainable escapement goal. *OEG* = optimum escapement goal.

[a] Sources (Bartlett and Vincent-Lang 1989; Bartlett and Sonnichsen 1990; Bartlett 1996 a-b).

[b] Fish Creek weir locations: river mile (rm) 0.6 (1969-1982), about rm 7.5 (1983-1991), and rm 3.0 (1992-2006).

[c] Larry Bartlett, Alaska Department of Fish and Game Division of Sport Fish biologist, *personal communication*.

[d] Tributary of Big River Lakes. Weir operated by Cook Inlet Aquaculture Association (CIAA) from 1981 to 1983. Remote camera operated by ADG&G from 2004 to 2006.

[e] Hatchery-reared sockeye salmon contributed to Fish Creek drainage escapements in 1979-1981 and 1983-2010.

[f] Foot survey counts below the Fish Creek weir site include in 1980-1993 data.

[g] CIAA 1981, 1982, 1984

[h] CIAA 1998b.

[i] CIAA 1987.

[j] CIAA 1991.

[k] CIAA 1998a.

[l] Incomplete count. Problems with the video cassette recording (VCR) tapes self-ejecting and the digital video recorder (DVR) camera system was down for two weeks in 2005. Problems with the DVR camera system continued in 2006, and it did not operate for most of the season.

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

[n] Bendix sonar counts discontinued.

[o] SEG of 90,000-160,000 and OEG of 75,000-185,000 discontinued after 2008.

[p] Davis 2000.

[q] Remote camera used to count fish beginning 2005.

Table 30.–Bodenburg Creek (Knik River drainage) salmon escapement index surveys, 1968–2010.

			Escapement index	
Year	Month	Date	Sockeye salmon	Chum salmon
1968	Aug	ND	350	0
1969	Sept	ND	125	0
1970	Aug	25	83	0
1971	Sept	5	110	0
1972	Aug	31	464	0
1973	Aug	27	208	0
1974	Sept	6	169	0
1975	Sept	3	148	0
	Sept	19	0	3
1976	Sept	8	111	0
1977	Aug	29	178	0
1978	Aug	29	541	0
1979	Aug	29	321	0
1980	Aug	25	483	0
1981	Aug	19	260	0
1982	Sept	17	722	0
1983	Aug	31	359	0
1984	ND	ND	ND	ND
1985	Sept	5	232	0
1986	Sept	4	119	120
1987	Sept	3	77	1
1988	ND	ND	ND	ND
1989	Aug	31	190	6
1990	Sept	7	195	3
1991	Aug	27	0	1
	Sept	6	160	0
1992	Aug	29	54	0
	Sept	2	66	4
1993	Aug	24	212	14
1994	Aug	25	220	0
	Sept	6	0	93
1995	Aug	28	156	219
1996	Sept	4	111	0
1997	Aug	28	142	4
1998	Aug	21	156	13
1999	Aug	30	257	21
2000	Aug	28	228	5
2001	Aug	29	232	8
2002	Aug	30	320	25
2003	Aug	22	402	3
2004	Aug	26	283	0
2005	Aug	29	269	0
2006	Aug	28	367	6
2007	Aug	24	164	2
2008	Aug	28	442	0
1968-2008 Mean			225	13
1999-2008 Mean			296	7
2004-2008 Mean			305	1.6
2009	Aug	26	540	0
2010	Aug	30	722	24

Note: ND = no data because no attempts were made to collect it.

Table 31.–Northern Cook Inlet Management Area recreational catch and harvest of northern pike by management unit, 1977-2009.

	Northern Cook Inlet Management Area[a]										Soutcentral Region		Statewide	
	Knik Arm[b]		Eastside Susitna		Westside Susitna		West Cook Inlet		Total					
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
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
2007	6,013	3,050	2,833	1,355	12,640	3,526	225	225	21,711	8,156	11,062	73.7	17,174	47.5
2008	3,612	1,752	4,750	468	15,776	5,683	229	96	24,367	7,999	9,270	86.3	12,959	61.7
Means 1977-2008	9,608	2,415	750	214	17,268	2,850	311	86	27,769	5,459	7,268	66	19,394	28
2004-2008	9,381	4,517	1,705	431	18,337	5,008	457	250	29,880	10,207	12,903	79.8	20,387	51.9
2009	10,213	4,647	1,318	385	14,389	3,368	1,983	88	27,903	8,488	9,270	91.6	12,959	65.5

[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.

Table 32.–Knik Arm drainage northern pike catch by fishery, 1990–2009.

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
2006	0	0	3,141	0	71	5,744	5,606	192	14,754
2007	12	0	825	0	246	2,645	4,230	700	8,658
2008	0	0	724	0	98	4,399	2,572	218	8,011
2004-2008 Mean	95	0	2,503	0	57	3,473	4,150	2,754	13,031
2009	88	0	1,294	27	1,262	614	6,678	864	10,827

Note: Northern pike grouped with other fish prior to 1985.

[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 33.–Westside Susitna River drainage northern pike catch by fishery, 1990–2009.

Year	Alexander Creek [a]	Deshka River	Peters Creek	Lake Creek	Fish Creek [b]	Trapper Lake	Other Streams [c]	Other Lakes [c]	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	1030	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	2066	2,192	352	14,801
2004	11,833	1645	0	444	921	1456	4,010	1,569	21,878
2005	10,717	927	0	1074	1,815	2182	7,676	1,313	25,704
2006	2,886	1596	0	812	5,524	1971	2,248	621	15,658
2007	7,172	322	10	20	2,262	2099	280	475	12,640
2008	2,400	586	0	447	688	10626	377	652	15,776
2004-2008 Mean	7,002	1,015	2	559	2,242	3,667	2,918	926	18,331
2009	8,622	540	0	104	1,093	2760	327	1,796	15,242

[a] Alexander Creek drainage (Alexander Lake, Sucker Lake).

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

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

Table 34.–Number of fish (actual and planned) stocked in Northern Cook Inlet Management Area waters, 2008–2011.

Species/Life Stage/Site	2008[a] (Actual)	2009[a] (Actual)	2010[a] (Actual)	2011[a] (Planned)	FTP #	Expiration Date
Chinook Salmon Anadromous Smolt						
Eklutna Tailrace (Knik River)	114,136	77,785	152,014	150,000	10A-0112	12/31/2014
Deception Creek	112,219	111,322	155,125	150,000	08A-0001	12/31/2012
Total	226,355	189,107	307,139	300,000		
Coho Salmon Anadromous Smolt						
Eklutna Tailrace (Knik River)	118,139	120,200	131,123	120,000	010A-0111	12/31/2015
Coho Salmon Landlocked Fingerlings						
Barley Lake	0	3,092	2,903	900	10A-0109	12/31/2015
Bear Paw Lake	0	6,470	5,440	4,500	10A-0109	12/31/2015
Carpenter Lake	0	14,149	40,700	15,000	10A-0109	12/31/2015
Christiansen Lake	10,194	30,054	18,907	15,200	10A-0109	12/31/2015
Diamond Lake	3,500	18,792	29,756	11,000	10A-0109	12/31/2015
Echo Lake	2,000	5,019	2,300	2,300	10A-0109	12/31/2015
Johnson Lake	0	1,520	1,000	1,000	10A-0109	12/31/2015
Kalmbach Lake	0	19,585	11,000	11,000	10A-0109	12/31/2015
Klaire Lake	0	1516	900	900	10A-0109	12/31/2015
Loberg (Junction) Lake	1,100	3,100	0	1,100	10A-0109	12/31/2015
Lucille Lake	8,852	16,052	19,627	8,000	08A-0019	12/31/2012
Victor Lake	0	3,028	2,700	2,700	10A-0109	12/31/2015
Willow Lake	3,114	6,368	3,000	3,000	08A-0018	12/31/2012
Total	25,646	128,745	138,233	76,600		
Chinook Salmon Landlocked Catchables						
Finger Lake	19,951	29826	0	0	05A-0060	12/31/2014
Knik Lake	2,974	3132	0	0	05A-0060	12/31/2014
Matanuska Lake	2,562	2810	0	0	05A-0060	12/31/2014
Memory Lake	1,830	2037	0	0	05A-0060	12/31/2014
Prator Lake	0	0	0	0	05A-0060	12/31/2014
Victor Lake	0	0	0	0	05A-0060	12/31/2014
Total	27,317	37,805	0	0[b]		
Chinook Salmon Landlocked Fingerling						
Finger Lake	3000	3,000	114,148	0	05A-0060	12/31/2014
Knik Lake	320	750	27,098	0	05A-0060	12/31/2014
Matanuska	280	1,500	67,160	0	05A-0060	12/31/2014
Memory Lake	300	750	0	0	05A-0060	12/31/2014
Total	3,900	6,000	208,406	0		
Rainbow Trout Landlocked Catchables						
Bruce Lake	1575	2075	2,086	0	Pending	renewal [c]
Canoe Lake	3,062	4,378	4,100	0	Pending	renewal
Echo Lake	2,484	2976	3,211	0	Pending	renewal
Irene Lake	2,773	3794	3,700	0	Pending	renewal
Kepler/Bradley Lake	6,285	19,621	8,848	0	Pending	renewal
Knik Lake	3,178	5192	4,295	0	Pending	renewal
Loberg (Junction) Lake	1733	3933	2,200	0	Pending	renewal
Long Lake (Mile 86 Glenn Hwy.)	7,199	8,690	7,494	0	Pending	renewal
Matanuska Lake	6,687	11,908	10,010	0	Pending	renewal
Meirs Lake	1912	2508	2,600	0	Pending	renewal
Memory Lake	3,881	5310	5,154	0	Pending	renewal
Ravine Lake	2,025	2868	4,320	0	Pending	renewal
Rocky Lake	1800	5210	2,209	0	Pending	renewal
Total	44,594	78,463	60,227	0[b]		
Rainbow Trout Landlocked Fingerlings						
Barley Lake	2,011	2,300	1,700	0	Pending	renewal
Bear Paw Lake	2,300	3,000	6,165	2,300	Pending	renewal
Bench Lake	0	1700	0	1,700	Pending	renewal
Benka	6,500	10,000	6,066	6,000	Pending	renewal
Beverly Lake	4,000	4,200	4,200	4,200	Pending	renewal
Big Beaver Lake	15,300	16,100	16,100	16,100	Pending	renewal
Boot Lake	2,186	3,800	2,933	3,200	Pending	renewal
Brocker lake	2,500	2100	2,250	2,100	Pending	renewal
Butterfly Lake	10,054	10,000	0	0	Pending	renewal
Carpenter Lake	20,000	48,179	22,371	22,400	Pending	renewal
Canoe Lake	0	2,000	0	0	Pending	renewal
Caswell #3 Lake	3,000	3000	3,000	3,000	Pending	renewal
Christiansen Lake	13,302	25,719	11,435	11,600	Pending	renewal

-continued-

Table 34.–Page 2 of 3.

Species/Life Stage/Site	2008[a] (Actual)	2009[a] (Actual)	2010[a] (Actual)	2011[a] (Planned)	FTP #	Expiration Date
Rainbow Trout Landlocked Fingerlings (continued)						
Crooked Lake	10,400	10,200	10,900	10,200	Pending	renewal
Crystal Lake	17,638	17373	17,300	17,300	Pending	renewal
Dawn Lake	2,300	2,400	2,400	2,400	Pending	renewal
Diamond Lake	13,900	30,666	13,500	13,900	Pending	renewal
Echo Lake	0	6,000	0	0	Pending	renewal
Farmer Lake	1,521	1,300	1,000	1,100	Pending	renewal
Finger Lake	88,323	66,064	58,982	33,200	Pending	renewal
Florence Lake	5,500	6,600	5,500	5,500	Pending	renewal
Gate Lake	0	0	1,000	1,000	Pending	renewal
Golden Lake	1,500	1,800	1,485	1,500	Pending	renewal
Homestead Lake	1,600	1,700	1,700	1,700	Pending	renewal
Honeybee Lake	6,800	8,198	7,714	6,800	Pending	renewal
Ida Lake	9,616	11,803	5,400	4,600	Pending	renewal
Irene Lake	0	6,000	0	0	Pending	renewal
Johnson		4611	0	2,000	Pending	renewal
Kalmbach Lake	12,278	27,666	12,150	12,500	Pending	renewal
Kepler/Bradley Lake	0	2500	8,848	0	Pending	renewal
Knik Lake	0	3374	0	0	Pending	renewal
Knob Lake	0	0	2,500	2,500	Pending	renewal
Lalen Lake	8,700	9,200	9,200	9,200	Pending	renewal
Little Beaver Lake	4,200	4,400	4,400	4,400	Pending	renewal
Little Lonely Lake	8,400	12520	8,433	8,400	Pending	renewal
Loberg (Junction) Lake	0	4000	0	0	Pending	renewal
Long Lake (K/B)	10,400	21,924	5,400	7,000	Pending	renewal
Long Mile 86	0	0	40,000	0	Pending	renewal
Loon Lake	13,600	14,300	14,300	14,300	Pending	renewal
Lorraine Lake	13,200	16,000	13,500	13,200	Pending	renewal
Lucille Lake	21,100	0	2,500	2,500	Pending	renewal
Lynne Lake	8,000	13,200	10,028	11,000	Pending	renewal
Marion Lake	11,400	13,500	11,250	11,300	Pending	renewal
Matanuska Lake	0	4,000	0	0	Pending	renewal
Meirs Lake	0	5,000	2,000	0	Pending	renewal
Morvro Lake	4300	0	4,500	0	Pending	renewal
North Friend Lake	8,000	8,100	8,100	8,100	Pending	renewal
North Rolly Lake	5,900	12,200	5,900	12,200	Pending	renewal
Peggy Lake	5500	6000	4,800	0	Pending	renewal
Reed Lake	2,000	2,500	2,000	2,000	Pending	renewal
Rhein Lake	10,200	10,175	9,400	10,200	Pending	renewal
Ruby Lake	2300	0	2,400	0	Pending	renewal
Seventeenmile Lake	20,909	23,406	31,571	10,000	Pending	renewal
Seymour Lake	21,700	22,900	22,300	22,300	Pending	renewal
Slipper (Eska) Lake	2,000	1,500	2,500	2,500	Pending	renewal
South Friend Lake	6,500	5,600	5,600	5,600	Pending	renewal
Threemile Lake	2989	0	3,000	0	Pending	renewal
Tigger Lake	2,500	4,500	2,566	2,500	Pending	renewal
Twin Island Lake	15,108	15,100	15,100	15,100	Pending	renewal
Vera Lake	11,100	11,052	11,100	11,100	Pending	renewal
Visnaw Lake	12,500	13,100	13,100	13,100	Pending	renewal
Walby Lake	0	1,000	2,500	2,500	Pending	renewal
Weiner Lake	4,402	1,000	2,500	2,500	Pending	renewal
West Beaver	7,900	8,250	8,250	8,250	Pending	renewal
West Sunshine Lake	4500	4400	4,500	4,500	Pending	renewal
Willow Lake	10178	0	0	0	Pending	renewal
Wishbone Lake	0	2600	0	2,600	Pending	renewal
Wolf Lake	8,800	9,300	0	9,300	Pending	renewal
"X" Lake	5100	6,000	5,100	0	Pending	renewal
"Y" Lake	4,000	6,500	3,966	4,000	Pending	renewal
Total	529,915	633,580	518,363	418,450		
Arctic Grayling Landlocked Fingerling						
Canoe Lake	6,015	8,143	4,000	4,000	10A-0108	12/31/2015
Finger Lake	12000	21,860	8,000	8,000	10A-0108	12/31/2015
Florence Lake	2,000	2,204	1,000	1,000	10A-0108	12/31/2015
Ida Lake	6,035	5534	3,703	3,700	10A-0108	12/31/2015
Kepler/Bradley Lake	4,550	9381	3,000	3,000	10A-0108	12/31/2015
Knik Lake	3476	5,363	2,775	2,000	10A-0108	12/31/2015

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Table 34.–Page 3 of 3.

Species/Life Stage/Site	2008[a] (Actual)	2009[a] (Actual)	2010[a] (Actual)	2011[a] (Planned)	FTP #	Expiration Date
Arctic Grayling Landlocked Fingerling (continued)						
Lorraine Lake	12000	7,462	5,100	4,600	10A-0108	12/31/2015
Meirs Lake	4100	9,376	5,000	4,000	10A-0108	12/31/2015
Reed Lake	1,010	1,531	1,000	1,000	10A-0108	12/31/2015
Total	51,186	70,854	33,578	31,300		
Arctic Char Landlocked Catchables						
Benka Lake	0	1,441	0	1,000	010A-0110	12/31/2014
Carpenter Lake	1,699	466	1,869	0	010A-0110	12/31/2014
Echo Lake	1,017	675	1,706	0	010A-0110	12/31/2014
Finger Lake	4,474	2,193	0	1,500	010A-0110	12/31/2014
Irene Lake	0	2,025	0	750	010A-0110	12/31/2014
Johnson Lake	304	0	300	0	010A-0110	12/31/2014
Long Lake (Mile 86 Glenn Hwy.)	6,801	3,310	3,637	0	010A-0110	12/31/2014
Lynne Lake	918	681	800	0	010A-0110	12/31/2014
Marion Lake	0	1,493	0	900	010A-0110	12/31/2014
Matanuska Lake	1,134	1,530	0	900	010A-0110	12/31/2014
Memory Lake	392	3,532	400	0	010A-0110	12/31/2014
Prator Lake	567	1,509	500	0	010A-0110	12/31/2014
Rush Lake	200	0	0	0	010A-0110	12/31/2014
Seventeenmile Lake	885	2,789	0	800	010A-0110	12/31/2014
Total	18,391	18,391	9,212	5,850		
Arctic Char Landlocked Fingerlings						
Carpenter Lake	0	0	3,754	0	10A-0010	12/31/2014
Finger Lake	0	0	0	0	10A-0010	12/31/2014
					10A-0010	12/31/2014
Irene Lake	0	0	0	0	10A-0010	12/31/2014
Johnson Lake	0	0	0	0	10A-0010	12/31/2014
Long Lake (Mile 86 Glenn Hwy.)	0	0	38,902	0	10A-0010	12/31/2014
					10A-0010	12/31/2014
Lynne Lake	0	0	0	0	10A-0010	12/31/2014
Matanuska Lake	0	0	0	0	10A-0010	12/31/2014
Seventeenmile Lake	0	0	0	0	10A-0010	12/31/2014
Total	0	0	42,656	0		
Total Anadromous Stockings	344,494	309,307	438,262	420,000		
Total Stockings	1,045,443	1,283,145	1,448,937	952,200		

[a] Size of catchables decreased to sub-catchable size due to loss of hot water at hatchery.

[b] Catchable Chinook salmon and rainbow trout are not available because of Elmendorf Hatchery closure 2011.

[C] New permit requests are currently in review for approvals.

Table 35.–Sport fish catch and harvest from stocked lakes in Northern Cook Inlet Management Area, 2009.

SWHS 66 fishing sites	Days fished[a]	% of effort	Landlocked salmon Catch	Harvest	% harvest	Arctic char Catch	Harvest	% harvest	Rainbow trout Catch	Harvest	% harvest	Arctic grayling Catch	Harvest	% harvest	Northern pike Catch	Harvest	% harvest	TOTAL Catch	Harvest	% harvest
Barley	54	0.2%	182	58					0	0	0%							182	58	32%
Bear Paw	21	0.1%							0	0	0%							0	0	0%
Bench (Glenn Hwy, fly-in)	0	0.0%							0	0	0%							0	0	0%
Benka	510	2.2%				84	0	0%	237	20	8%							321	20	6%
Beverly	61	0.3%							95	9	0%							95	9	0%
Big Beaver	0	0.0%	0	0	0%				0	0	0%							0	0	0%
Bradley (Kepler Lk complex)	717	3.1%							1,153	34	3%							1,153	34	3%
Bruce	199	0.9%							34	0	0%							34	0	0%
Canoe (Kepler Lk complex)	761	3.3%							1,881	222	12%	2,691	78	3%				4,572	300	7%
Carpenter	77	0.3%	67	67	100%				118	100	85%							185	167	90%
Christiansen	695	3.0%	3,168	528	0%				1040	276	27%							4,208	804	19%
Crooked	780	3.3%							187	27	14%							187	27	14%
Crystal (near Willow)	95	0.4%							108	22	20%							108	22	20%
Diamond	303	1.3%							45	27	60%							45	27	60%
Echo (Kepler Lk complex)	329	1.4%				54	54		228	94	41%							282	148	52%
Eska (also Slipper Lk)	0	0.0%							0	0	0%							0	0	0%
Farmer	127	0.5%							594	0	0%							594	0	0%
Finger	6,821	29.2%	6,254	517	8%	1,501	489	33%	4,867	893	18%	106	18		194	194	0%	12,922	2,111	16%
Florence	0	0.0%							0	0	0%							0	0	0%
Homestead	0	0.0%							0	0	0%							0	0	0%
Honeybee	0	0.0%							0	0	0%							0	0	0%
Ida (Thirtymile Lk)	84	0.4%							53	36	68%	0	0	0%				53	36	68%
Irene (Kepler Lk complex)	320	1.4%				45	0	0%	861	0	0%							906	0	0%
Kalmbach (also Baptist Lk)	331	1.4%	293	73	25%				249	63	25%							542	136	25%
Kashwitna	160	0.7%							121	52	43%							121	52	43%
Kepler	794	3.4%							1,214	144	12%	76	76	100%				1,290	220	17%
Klaire	0	0.0%							0	0	0%							0	0	0%
Knik	645	2.8%	264	0	0%				277	216	78%	50	0	0%	71	71	100%	662	287	43%
Knob	38	0.2%							0	0	0%	33	17	52%				33	17	52%
Lalen	205	0.9%							491	113	23%							491	113	23%
Little Beaver	21	0.1%							69	0	0%							69	0	0%
Little Lonely	0	0.0%							0	0	0%							0	0	0%
Loberg (Junction)	0	0.0%	0	0	0%				0	0	0%							0	0	0%
Long (Kepler Lk complex)	819	3.5%							2,589	0	0%							2,589	0	0%
Long (Mile 85 Glenn Hwy)	1,132	4.8%				309	277	90%	1,488	515	35%	1156	788	68%				2,953	1,580	54%
Loon	76	0.3%	0	0	0%				90	36	40%							90	36	40%
Lorraine	306	1.3%							475	224	47%							475	224	47%
Lucille	575	2.5%							777	148	19%							777	148	19%
Lynne	0	0.0%				0	0	0%	0	0	0%							0	0	0%
Marion	0	0.0%				0	0	0%	0	0	0%							0	0	0%
Matanuska (Kepler Lk complex)	470	2.0%	389	0	0%	377	0	0%	281	229	81%							1,047	229	22%
Meirs (in Palmer)	39	0.2%							125	39	31%	176	0	0%				301	39	13%
Memory	1,928	8.3%	616	22	4%	67	33		1,687	502	30%				264	123	47%	2,634	680	26%
Mile 180	42	0.2%							0	0	0%	18	18	100%				18	18	0%
Morvro	132	0.6%							31	31	100%							31	31	0%

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SWHS 66 fishing sites	Days fished[a]	% of effort	Landlocked salmon Catch	Harvest	% harvest	Arctic char Catch	Harvest	% harvest	Rainbow trout Catch	Harvest	% harvest	Arctic grayling Catch	Harvest	% harvest	Northern pike Catch	Harvest	% harvest	TOTAL Catch	Harvest	% harvest
North Friend (also Montana Lk)	0	0.0%	0	0	0%				0	0	0%							0	0	0%
North Rolly (Nancy Lk Rec systam)	14	0.1%							0	0	0%							0	0	0%
Peggy	271	1.2%							166	18	11%							166	18	11%
Prator	0	0.0%							0	0	0%				0	0	0%	0	0	0%
Ravine	42	0.2%							34	34	100%							34	34	100%
Reed Lake	80	0.3%							34	34	100%							34	34	100%
Rhein (Nancy Lk Rec system)	0	0.0%							0	0	0%							0	0	0%
Rocky	139	0.6%							0	0	0%				264	0	0%	264	0	0%
Ruby	239	1.0%							678	192	28%							678	192	28%
Seventeenmile	136	0.6%				62	62	100%	449	220	49%							511	282	55%
Seymour (was Herring Lk)	353	1.5%							274	54	20%							274	54	20%
South Friend (also Montana Lk)	0	0.0%							0	0	0%							0	0	0%
South Rolly (Nancy Lk Rec system)	734	3.1%							52	17	33%				299	176	59%	351	193	55%
Tanaina (Nancy Lk Rec system)	0	0.0%							0	0	0%							0	0	0%
Tigger (Talkeetna Lks)	0	0.0%							0	0	0%							0	0	0%
Twin Island	738	3.2%							574	274	48%							574	274	48%
Vera	0	0.0%							0	0	0%							0	0	0%
Visnaw	0	0.0%							0	0	0%							0	0	0%
Walby	279	1.2%							241	0	0%							241	0	0%
Weiner	152	0.7%							58	38	66%	170	158	93%				228	196	86%
West Beaver	159	0.7%							310	103	33%							310	103	33%
Willow	179	0.8%							0	0	0%							0	0	0%
Wishbone	100	0.4%							224	0	0%							224	0	0%
Wolf	14	0.1%							30	30	100%							30	30	0%
X & Y (Talkeetna Lks)	56	0.2%							71	0	0%							71	0	0%
TOTALS	23,352	100%	11,233	1,265	11%	2,499	915	37%	24,660	5,086	21%	4,476	1,153	26%	1,092	564	52%	43,960	8,983	20%

Note: Catch = fish harvested plus fish released; Harvest = fish kept; Catch and harvest estimates from Statewide Harvest Survey (SWHS; Alaska Department of Fish and Game, Division of Sport Fish, Research and Technical Services, Anchorage, published database of survey estimates, accessed 10/7/2010. Project Leader Gretchen Jennings).

[a] *Days fished* are not species-specific, but rather days fished for all species combined (including species not listed on this table).

Table 36.–Number of rainbow trout stocked into NCIMA stocked lakes, catch, harvest and effort as measured by the SWHS, 1998–2010.

Year	Number of Fingerlings	Number of Catchables	Total stocked	Catch	Harvest	% Harvested	Angler-days[a]
1998	347,677	46,142	393,819	40,447	11,184	28%	22,196
1999	401,589	71,745	473,334	53,290	14,970	28%	32,526
2000	533,296	74,796	608,092	80,514	19,393	24%	33,399
2001	407,644	92,446	500,090	47,029	14,098	30%	28,796
2002	409,293	61,432	470,725	57,004	19,016	33%	27,695
2003	581,617	70,529	652,146	52,337	14,371	27%	26,486
2004	395,398	67,161	462,559	47,526	13,428	28%	22,770
2005	328,713	51,320	380,033	40,400	10,938	27%	26,739
2006	262,109	20,825	282,934	33,779	9,681	29%	22,939
2007	587,391	56,377	643,768	21,264	6,346	30%	17,276
2008	529,915	44,594	574,509	42,209	12,930	31%	33,185
2009	633,580	78,463	712,043	25,067	5,174	21%	23,640
2010	520,183	56,235	576,418		data not available		
Mean	456,800	69,179	508,681	45,072	12,627	28%	26,471
	90%	14%					

[a] Total effort for all stocked lake's species.
[b] 2005 hot water source was lost at Elmendorf hatchery and size of catchables significantly decreases through 2010.

Table 37.–Number of coho stocked into NCIMA stocked lakes, catch, harvest and effort as measured by the SWHS, 1998–2010.

Year	Number of Fingerlings	Number of Catchables	Total stocked	Catch	Harvest	% Harvested	Angler-days[a]
1998	0	0	0	9,728	4,188	43%	20,329
1999[b]	91,199	0	91,199	14,531	8,398	58%	32,526
2000	91,100	0	91,100	23,608	10,973	46%	33,399
2001	114,687	0	114,687	21,913	6,323	29%	28,796
2002	94,345	0	94,345	13,708	7,319	53%	27,736
2003	108,186	0	108,186	11,869	5,574	47%	26,486
2004[c]	78,104	0	78,104	14,616	5,606	38%	27,770
2005	69,915	0	69,915	17,516	6,712	38%	26,739
2006	88,884	0	88,884	10,310	3,438	33%	22,939
2007	83,967	0	83,967	4,212	1,504	36%	17,260
2008	25,646	0	25,646	5,110	2,130	42%	33,185
2009	143,948	0	143,948	11,233	1,265	11%	23,640
2010	138,233	0	138,233		data not available		
Mean	86,786	0	82,517	13,196	5,286	40%	26,734
	105%	0%					

[a] Total effort for all stocked lake's species.
[b] First year of coho fingerling stocking.
[c] Chinook salmon were added in 2004; both coho and Chinook are counted in the SWHS.

Table 38.–Northern Cook Inlet Management Area lake stocking summary for nonanadromous fish, 2009–2010.

LAKE STOCKED	SURFACE ACRES	DATE STOCKED (2009)	NUMBER STOCKED (2009)	DATE STOCKED (2010)	NUMBER STOCKED (2010)	BROODSTOCK (TREATMENT) 2009 [a]	BROODSTOCK (TREATMENT) 2010 [a]	2N/3N (2009/2010)	HATCHERY	STOCKING SIZE (2009)	STOCKING SIZE (2010)	STOCKING METHODb
Rainbow Trout												
Barley	19	9/14/2009	2,300	6/9/2010	1,700	09 Swanson R	10 Swanson R	3N AF / 2N MX	Ft. Richardson	1.90g	5.90g	T/BU
Bearpaw	45	8/24/2009	3,000	5/28/2010	2,700	09 Swanson R	10 Swanson R	2N MX / 3N AF	Ft. Richardson	1.10g	7.10g	T/BU
				6/15/2010	3,465		10 Swanson R	2N MX	Ft. Richardson	N/A	5.90g	T/BU
Bench	52	9/3/2009	1,700	Not Stocked	0	09 Swanson R	N/A	3N AF	Ft. Richardson	1.40g	N/A	A
Benka	123	8/24/2009	7,000	6/15/2010	6,066	09 Swanson R	10 Swanson R	2N MX	Ft. Richardson	1.40g	5.90g	T
		9/23/2009	3,000			09 Swanson R		2N MX	Ft. Richardson	2.20g	0.00	T
Beverly	42	9/10/2009	4,200	8/18/2010	4,200	09 Swanson R	10 Swanson R	3N AF	Ft. Richardson	1.90g	1.40g	T/BU
Big Beaver	161	9/8/2009	16,100	8/13/2010	16,100	09 Swanson R	10 Swanson R	3N AF	Ft. Richardson	1.70g	1.10g	T
Boot	34	9/9/0009	3,800	6/15/2010	2,933	09 Swanson R	10 Swanson R	2N MX	Ft. Richardson	1.90g	5.90g	T/BU
Brocker	44.2	9/14/2009	2,100	6/9/2010	2,250	09 Swanson R	10 Swanson R	3N AF	Ft. Richardson	1.90g	5.90g	T
Bruce	27	5/27/2009	2,075	5/11/2010	2,086	08 Swanson R	09 Swanson R	2N MX / 3N AF	Elmendorf	28.40g	22.50g	T
Butterfly	50	9/14/2009	10,000	Not Stocked	0	09 Swanson R		3N AF	Ft. Richardson	1.90g	N/A	T/BU
Canoe	21	6/16/2009	4,378	5/18/2010	4,100	08 Swanson R	09 Swanson R	2N MX	Elmendorf	37.0g	22.50g	T/BU
		8/21/2009	2,000			09 Swanson R		2N MX	Ft. Richardson	1.10g	0.00	T/BU
Carpenter	176	8/13/2009	19,979	5/28/2010	22,371	09 Swanson R	10 Swanson R	2N MX	Ft. Richardson	9.90g	7.10g	T
		9/14/2009	28,200			09 Swanson R		2N MX	Ft. Richardson	1.90g		T
Caswell #3	33	8/24/2009	3,000	8/16/2010	3,000	09 Swanson R	10 Swanson R	3N AF	Ft. Richardson	1.10g	1.10g	T
Christiansen	179	8/24/2009	15,011	6/15/2010	11,435	09 Swanson R	10 Swanson R	3N AF / 2N MX	Ft. Richardson	1.10g	5.90g	T
		6/25/2009	2,920			08 Swanson R		2N MX	Elmendorf	34.80g		T
		9/23/2009	7,788			09 Swanson R		2N MX	Ft. Richardson	2.20g		T
Crooked	250	9/8/2009	10,200	8/13/2010	10,900	09 Swanson R	10 Swanson R	3N AF	Ft. Richardson	1.70g	1.10g	T
Crystal	132	9/9/2009	17,373	8/20/2010	17,300	09 Swanson R	10 Swanson R	3N AF	Ft. Richardson	1.70g	1.40g	T
Dawn	12	9/8/2009	2,400	8/13/2010	2,400	09 Swanson R	10 Swanson R	3N AF	Ft. Richardson	1.70g	1.10g	T/BU
Diamond	139	9/8/2009	17,000	6/15/2010	13,500	09 Swanson R	10 Swanson R	2N MX	Ft. Richardson	1.70g	5.90g	T
		6/30/2009	13,666			09 Swanson R		2N MX	Ft. Richardson	8.40g		T
Echo	23	6/10/2009	2,976	5/5/2010	3,211	08 Swanson R	09 Swanson R	3N AF	Elmendorf	38.90g	17.50g	T
		8/21/2009	6,000			09 Swanson R		2N MX	Ft. Richardson	1.10g		T/BU
Farmer	21	9/14/2009	1,300	6/9/2010	1,000	09 Swanson R	10 Swanson R	2N MX	Ft. Richardson	1.90g	3.20g	T/BU
Finger	362	6/26/2009	3,851	5/26/2010	38,571	08 Swanson R	10 Swanson R	2N MX	Ft. Richardson	34.80g	7.10g	T
		6/23/2009	8,859	9/17/2010	20,411	08 Swanson R	10 Swanson R	2N MX	El/Ft. Rich	31.70g	2.50g	T
		8/11/2009	10,122			09 Swanson R		2N MX	Ft. Richardson	9.90g		T
		8/21/2009	43,232			09 Swanson R		2N MX	Ft. Richardson	1.80g		T
Florence	55	9/9/2009	6,600	6/15/2010	5,500	09 Swanson R	10 Swanson R	2N MX	Ft. Richardson	1.90g	5.90g	T/BU
Gate	8.5	Not Stocked	0	8/16/2010	1,000	N/A	10 Swanson R	3N AF	Ft. Richardson	0.00	1.10g	T
Golden	13	9/10/2009	1,800	6/15/2010	1,485	09 Swanson R	10 Swanson R	2N MX	Ft. Richardson	1.90g	5.90g	T
Homestead	17	9/8/2009	1,700	8/13/2010	1,700	09 Swanson R	10 Swanson R	3N AF	Ft. Richardson	1.70g	1.10g	T/BU
Honeybee	58	9/9/2009	8,198	5/28/2010	7,714	09 Swanson R	10 Swanson R	3N AF	Ft. Richardson	1.70g	7.10g	T/BU
Ida	46	9/3/2009	6,100	5/26/2010	5,400	09 Swanson R	10 Swanson R	2N MX	Ft. Richardson	1.70g	7.10g	T/BU
		6/29/2009	5,703			09 Swanson R		2N MX	Ft. Richardson	8.40g		T/BU
Irene	18	6/16/2009	3,794	5/18/2010	3,700	08 Swanson R	09 Swanson R	2N MX	Elmendorf	37.0g	22.50g	T/BU
		8/21/2009	6,000			09 Swanson R		2N MX	Ft. Richardson	1.10g		T/BU
Johnson	40	6/30/2009	2,211	Not Stocked	0	09 Swanson R		2N MX	Ft. Richardson	8.40g		T/BU
		9/3/2009	2,400			09 Swanson R		2N MX	Ft. Richardson	1.70g		T/BU
Kalmbach	125	6/30/2009	12,666	6/15/2010	12,150	09 Swanson R	10 Swanson R	2N MX	Ft. Richardson	8.40g	5.90g	T
		9/10/2009	15,000			09 Swanson R		2N MX	Ft. Richardson	1.90g		T

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Table 38.–Page 2 of 5.

LAKE STOCKED	SURFACE ACRES	DATE STOCKED (2009)	NUMBER STOCKED (2009)	DATE STOCKED (2010)	NUMBER STOCKED (2010)	BROODSTOCK (TREATMENT) 2009 [a]	BROODSTOCK (TREATMENT) 2010 [a]	2N/3N (2009/2010)	HATCHERY	STOCKING SIZE (2009)	STOCKING SIZE (2010)	STOCKING METHODb
Rainbow Trout												
Kashwitna	160	Not Stocked	0	Not Stocked	0					0.00		T
Kepler-Bradley	58	5/21/2009	10,340	5/5/2010	9,176	08 Swanson R	09 Swanson R	3N AF	Elmendorf	28.40g	17.50g	T
		6/23/2009	9,281	9/17/2010	8,848	08 Swanson R	10 Swanson R	2N MX	Ft. Richardson	31.70g	2.50g	T
		8/21/2009	2,500			09 Swanson R		2N MX	Ft. Richardson	1.10g		T
Knik	50	6/10/2009	5,192	5/11/2010	4,295	08 Swanson R	09 Swanson R	3N AF	Elmendorf	38.90g	22.50g	T
		8/11/2009	3,374			09 Swanson R		2N MX	Ft. Richardson	9.90g		T
Knob	52	Not Stocked	0	8/11/2010	2,500	09 Swanson R	10 Swanson R	3N AF	Ft. Richardson	N/A	1.10g	T
Lalen	92	9/10/2009	9,200	8/18/2010	9,200	09 Swanson R	10 Swanson R	3N AF	Ft. Richardson	1.90g	1.40g	T
Little Beaver	44	9/8/2009	4,400	8/13/2010	4,400	09 Swanson R	10 Swanson R	3N AF	Ft. Richardson	1.70g	1.10g	T
Little Lonely	56	9/9/2009	9,929	6/15/2010	8,433	09 Swanson R	10 Swanson R	2N MX	Ft. Richardson	1.70g	5.90g	T
		10/27/2009	2,591			09 Swanson R		2N MX	Ft. Richardson	7.10g		T
Loberg	11	6/17/2009	2,153	5/18/2010	2,200	08 Swanson R	09 Swanson R	2N MX	Elmendorf	38.90g	22.50g	T
		6/26/2009	1,780			08 Swanson R		2N MX	Elmendorf	34.80g		T
		8/21/2009	4,000			09 Swanson R		2N MX	Ft. Richardson	1.10g		T
Long [K/B]	74	6/23/2009	9,028	8/12/2010	5,400	08 Swanson R	10 Swanson R	2N MX	Ft. Richardson	31.70g	1.10g	T/BU
		6/29/2009	6,914			09 Swanson R		2N MX	Ft. Richardson	8.40g		T/BU
		8/21/2009	6,000			09 Swanson R		2N MX	Ft. Richardson	1.10g		T/BU
Long (Mi. 86)	106	6/1/2009	8,690	5/5/2010	7,494	08 Swanson R	09 Swanson R	2N MX	Elmendorf	31.70g	17.50g	T
				9/21/2010	40,000		10 Swanson R	2N MX	Ft. Richardson	0.00	2.80g	T
Loon	108	9/10/2009	14,300	8/18/2010	14,300	09 Swanson R	10 Swanson R	3N AF	Ft. Richardson	1.90g	1.40g	T
Lorraine	132	9/14/2009	16,000	6/9/2010	13,500	09 Swanson R	10 Swanson R	2N MX	Ft. Richardson	1.90g	5.90g	T/4W
Lucille	362	Not Stocked	0	8/9/2010	2,500		10 Swanson R	3N AF	Ft. Richardson	0.00	1.10g	T
Lynne	70	9/9/2009	13,200	5/28/2010	10,028	09 Swanson R	10 Swanson R	3N AF	Ft. Richardson	1.90g	7.10g	T
Marion	113	9/8/2009	13,500	6/15/2010	11,250	09 Swanson R	10 Swanson R	2N MX	Ft. Richardson	1.70g	5.90g	T/BU
Matanuska	62	5/12/2009	7,339	5/11/2010	10,010	08 Swanson R	09 Swanson R	2N MX	Elmendorf	33.40g	19.90g	T
		6/10/2009	4,569			08 Swanson R		2N MX	Elmendorf	38.90g		T
		8/21/2009	4,000			09 Swanson R		2N MX	Ft. Richardson	1.10g		T
Meirs	17	5/21/20009	2,508	5/5/2010	2,600	08 Swanson R	09 Swanson R	2N MX	Elmendorf	28.40g	17.50g	T
		8/21/2009	5,000	9/21/2010	2,000	09 Swanson R	10 Swanson R	2N MX	Ft. Richardson	1.10g	2.80g	T
Memory	84	5/27/2009	5,310	5/11/2010	5,154	08 Swanson R	09 Swanson R	2N MX	Elmendorf	28.40g	22.50g	T
Morvro	87	Not Stocked	0	8/18/2010	4,500		10 Swanson R	3N AF	Ft. Richardson	0.00	1.40g	T/BU
North Friend	81	8/24/2009	8,100	8/16/2010	8,100	09 Swanson R	10 Swanson R	3N AF	Ft. Richardson	1.10g	1.10g	T/BU
North Rolly	122	9/9/2009	12,200	8/20/2010	5,900	09 Swanson R	10 Swanson R	3N AF	Ft. Richardson	1.70g	1.40g	T/BU
Peggy	53	8/24/2009	6,000	8/16/2010	4,800	09 Swanson R	10 Swanson R	2N MX	Ft. Richardson	1.10g	1.10g	T/BU
Ravine	12	6/1/2009	2,868	5/26/2010	4,320	08 Swanson R	10 Swanson R	2N MX	Elmendorf	31.70g	19.90g	T/BU
Reed	20	8/21/2009	2,500	8/12/2010	2,000	09 Swanson R	10 Swanson R	3N AF	Ft. Richardson	1.10g	1.10g	T/BU
Rhein	84	9/9/2009	10,175	8/20/2010	9,400	09 Swanson R	10 Swanson R	3N AF	Ft. Richardson	1.70g	1.40g	T/BU
Rocky	59	5/27/2009	2,510	5/11/2010	2,209	08 Swanson R	09 Swanson R	2N MX	Elmendorf	28.40g	22.50g	T
		6/26/2009	2,700			08 Swanson R		2N MX	Elmendorf	34.80g		T
Ruby	24	Not Stocked	0	8/26/2010	2,400		10 Swanson R	3N AF	Ft. Richardson	0.00	1.40g	A
Seventeenmile	100	6/29/2009	11,406	5/26/2010	11,571	09 Swanson R	10 Swanson R	2N MX	Ft. Richardson	8.40g	7.10g	T
		9/3/2009	12,000	9/21/2010	20,000	09 Swanson R	10 Swanson R	2N MX	Ft. Richardson	1.70g	2.80g	T
Seymour	229	9/10/2009	22,900	8/18/2010	22,300	09 Swanson R	10 Swanson R	3N AF	Ft. Richardson	1.90g	1.40g	T
Slipper	9	8/21/2009	1,500	8/11/2010	2,500	09 Swanson R	10 Swanson R	3N AF	Ft. Richardson	1.10g	1.10g	T

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Table 38.–Page 3 of 5.

LAKE STOCKED	SURFACE ACRES	DATE STOCKED (2009)	NUMBER STOCKED (2009)	DATE STOCKED (2010)	NUMBER STOCKED (2010)	BROODSTOCK (TREATMENT) 2009 [a]	BROODSTOCK (TREATMENT) 2010 [a]	2N/3N (2009/2010)	HATCHERY	STOCKING SIZE (2009)	STOCKING SIZE (2010)	STOCKING METHODb
Rainbow Trout												
South Friend	56	8/24/2009	5,600	8/16/2010	5,600	09 Swanson R	10 Swanson R	3N AF	Ft. Richardson	1.10g	1.10g	T/BU
South Rolly	108	Not Stocked	0	Not Stocked	0							T
Tigger	19	8/24/2009	3,000	6/15/2010	2,566	09 Swanson R	10 Swanson R	2N MX	Ft. Richardson	1.10g	5.90g	T/BU
		9/23/2009	1,500			09 Swanson R		2N MX	Ft. Richardson	2.20g		T/BU
Threemile	119	Not Stocked	0	8/13/2010	3,000		10 Swanson R	3N AF	Ft. Richardson	0.00	1.10g	T
Twin Island	151	9/14/2009	15,100	8/13/2010	15,100	09 Swanson R	10 Swanson R	3N AF	Ft. Richardson	1.90g	1.10g	T/4W
Vera	111	9/9/2009	11,052	8/20/2010	11,100	09 Swanson R	10 Swanson R	3N AF	Ft. Richardson	1.70g	1.40g	T/BU
Visnaw	131	9/10/2009	13,100	8/18/2010	13,100	09 Swanson R	10 Swanson R	3N AF	Ft. Richardson	1.90g	1.40g	T
Walby	54	8/21/2009	1,000	8/12/2010	2,500	09 Swanson R	10 Swanson R	3N AF	Ft. Richardson	1.10g	1.10g	T
Weiner	21	9/3/2009	1,000	8/11/2010	2,500	09 Swanson R	10 Swanson R	3N AF	Ft. Richardson	1.40g	1.10g	T
West Beaver	103	9/8/2009	8,250	8/13/2010	8,250	09 Swanson R	10 Swanson R	3N AF	Ft. Richardson	1.70g	1.10g	T
West Sunshine	22	9/23/2009	4,400	8/16/2010	4,500	09 Swanson R	10 Swanson R	3N AF	Ft. Richardson	1.90g	1.10g	T/BU
Willow	143	Not Stocked	0	Not Stocked	0			3N AF	Ft. Richardson	0.00		T
Wishbone	53	8/25/2009	2,600	Not Stocked	0	09 Swanson R		3N AF	Ft. Richardson	1.10g		T/4W
Wolf	62	9/16/2009	9,300	Not Stocked	0	09 Swanson R		3N AF	Ft. Richardson	1.90g		T/BU
"X"	101	8/24/2009	6,000	8/16/2010	5,100	09 Swanson R	10 Swanson R	3N AF	Ft. Richardson	1.10g	1.10g	T/BU
"Y"	40	8/24/2009	5,000	6/15/2010	3,966	09 Swanson R	10 Swanson R	3N AF	Ft. Richardson	1.10g	5.90g	T/BU
		9/23/2009	1,500			09 Swanson R		2N MX	Ft. Richardson	2.30g		T/BU
Total 75 Lakes	4,822		712,061		578,918							

2009	Diploid	Triploid	Total	2010	Diploid	Triploid	Total
Catchables	88,231	14,980	103,211	Catchables	37,467	18,768	56,235
Fingerling	385,990	222,950	608,940	Fingerling	262,220	257,963	520,183
Total:	474,221	237,930	712,151	Total:	299,687	276,731	576,418

Coho salmon (nonanadromous)												
Barley	19	8/13/2009	3,092	6/9/2010	2,903	08 Bear Lake	09 Bear Lake	3N AF	Ft. Richardson	2.50g	0.90g	T/BU
Bearpaw	45	6/25/2009	4,470	6/15/2010	5,440	08 Bear Lake	09 Bear Lake	2N MX / 3N AF	Ft. Richardson	1.70g	1.20g	T
		8/24/2009	2,000			08 Bear Lake	09 Bear Lake	2N MX	Ft. Richardson	2.80g		T
Carpenter	176	6/17/2009	15,194	6/9/2010	25,233	08 Bear Lake	09 Bear Lake	2N MX / 3N AF	Ft. Richardson	1.70g	0.90g	T
		8/13/2009	5,128	9/16/2010	15,467	08 Bear Lake	09 Bear Lake	2N MX	Ft. Richardson	2.50g	5.40g	T
		9/23/2009	9,066			08 Bear Lake	09 Bear Lake	3N AF	Ft. Richardson	4.90g		T
Christiansen	179	6/25/2009	14,411	6/15/2010	18,907	08 Bear Lake	09 Bear Lake	2N MX / 3N AF	Ft. Richardson	1.70g	1.20g	T
		8/24/2009	5,000			08 Bear Lake	09 Bear Lake	2N MX	Ft. Richardson	2.80g		T
		9/23/2009	10,643			08 Bear Lake	09 Bear Lake	3N AF	Ft. Richardson	4.90g		T
Diamond	139	6/30/2009	18,792	6/15/2010	13,000	08 Bear Lake	09 Bear Lake	2N MX / 3N AF	Ft. Richardson	2.80g	1.20g	T
				9/16/2010	16,756		09 Bear Lake	2N MX	Ft. Richardson	0	5.40g	T
Echo	23	6/30/2009	3,019	8/9/2010	2,300	08 Bear Lake	09 Bear Lake	2N MX	Ft. Richardson	2.20g	2.80g	T
		8/24/2009	2,000			08 Bear Lake	09 Bear Lake	2N MX	Ft. Richardson	2.80g		T
Johnson	40	6/30/2009	1,520	8/9/2010	1,000	08 Bear Lake	09 Bear Lake	2N MX	Ft. Richardson	2.20g	2.80g	T
Kalmbach	125	6/30/2009	19,585	6/15/2010	11,000	08 Bear Lake	09 Bear Lake	2N MX / 3N AF	Ft. Richardson	2.80g	1.20g	T
Klaire	7	6/30/2009	1,516	8/9/2010	900	08 Bear Lake	09 Bear Lake	2N MX	Ft. Richardson	2.20g	2.80g	T/BU
Loberg	11	6/17/2009	1,100	Not Stocked	0	08 Bear Lake	09 Bear Lake	2N MX	Ft. Richardson	1.70g		T
		8/24/2009	2,000			08 Bear Lake	09 Bear Lake	2N MX	Ft. Richardson	2.80g		T
Lucille	362	6/30/2009	16,052	8/9/2010	8,000	08 Bear Lake	09 Bear Lake	3N AF	Ft. Richardson	1.90g	2.80g	T
				9/17/2010	11,627		09 Bear Lake	3N AF	Ft. Richardson	4.0g		T

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Table 38.–Page 4 of 5.

LAKE STOCKED	SURFACE ACRES	DATE STOCKED (2009)	NUMBER STOCKED (2009)	DATE STOCKED (2010)	NUMBER STOCKED (2010)	BROODSTOCK (TREATMENT) 2009 [a]	BROODSTOCK (TREATMENT) 2010 [a]	2N/3N (2009/2010)	HATCHERY	STOCKING SIZE (2009)	STOCKING SIZE (2010)	STOCKING METHODb
Coho salmon (nonanadromous)												
Victor	14	6/30/2009	3,028	8/9/2010	2,700	08 Bear Lake	09 Bear Lake	2N MX	Ft. Richardson	2.20g	2.80g	T/BU
Willow	143	6/30/2009	6,368	8/9/2010	3,000	08 Bear Lake	09 Bear Lake	3N AF	Ft. Richardson	1.90g	2.80g	T
Total 13 lakes	1283		143,984		138,233							
2009												
Total 12 lakes												
2010												

2009	Diploid	Triploid	Total	2010	Diploid	Triploid	Total
Fingerling	74,843	69,141	143,984	Fingerling	39,123	99,100	138,223

Chinook salmon (nonanadromous)												
Finger	362	7/6/2009	3,000	6/14/2010	77,230	2008 Willow Ck.	2009 Willow Ck.	2N MX	Ft. Richardson	1.90g	2.20g	T
		9/30/2009	29,826	6/1/2010	36,918	2007 Willow Ck.	2009 Willow Ck.	2N MX	Ft. Richardson	37.0g	2.50g	T
Knik	50	7/6/2009	750	6/14/2010	27,098	2008 Willow Ck.	2009 Willow Ck.	2N MX	Ft. Richardson	1.90g	2.20g	T
		9/30/2009	3,132			2007 Willow Ck.		3N AF	Ft. Richardson	37.0g		T
Matanuska	62	7/6/2009	1,500	6/14/2010	31,163	2008 Willow Ck.	2009 Willow Ck.	2N MX	Ft. Richardson	1.90g	2.20g	T
		9/30/2009	2,810	7/1/2010	35,997	2007 Willow Ck.	2009 Willow Ck.	2N MX	Ft. Richardson	37.0g	2.50g	T
Memory	84	7/30/2009	750	Not Stocked	0	2008 Willow Ck.		2N MX	Ft. Richardson	1.90g		T
		9/30/2009	2,037			2007 Willow Ck.		2N MX	Ft. Richardson	37.0g		T
Total 4 Lakes	488		43,805		208,406							

2009	Diploid	Triploid	Total	2010	Diploid	Triploid	Total
Fingerling	6,000	37,805	43,805	Fingerling	208,406	0	208,406

Arctic Grayling												
Canoe	21	7/29/2009	4,024	8/12/2010	4,000	2009 Chena R	2010 Chena R	2N MX	Ft. Richardson	0.90g	1.40g	T
		8/21/2009	4,119			2009 Chena R		2N MX	Ft. Richardson	1.90g		T
Finger	362	8/5/2009	15,803	8/12/2010	8,000	2009 Chena R	2010 Chena R	3N AF / 2N MX	Ft. Richardson	1.40g	1.40g	T
		8/11/2009	6,057			2009 Chena R		2N MX	Ft. Richardson	1.20g		T
Florence	55	8/11/2009	2,204	8/20/2010	1,000	2009 Chena R	2010 Chena R	2N MX	Ft. Richardson	1.20g	1.90g	T/BU
Ida	46	5/26/2009	1,799	8/11/2010	3,703	2008 Chena R	2010 Chena R	2N MX	Ft. Richardson	17.50g	1.90g	T/BU
		7/29/2009	3,735			2009 Chena R		2N MX	Ft. Richardson	0.90g		T/BU
Kepler/Bradley	58	5/26/2009	3,262	8/12/2010	3,000	2008 Chena R	2010 Chena R	2N MX	Ft. Richardson	17.50g	1.40g	T
		7/29/2009	3,018			2009 Chena R		2N MX	Ft. Richardson	0.90g		T
		8/21/20009	3,101			2009 Chena R		2N MX	Ft. Richardson	2.20g		T
Knik	50	8/11/2009	5,196	6/9/2010	2,775	2009 Chena R	2009 Chena R	2N MX	Ft. Richardson	1.20g	23.90g	T
Lorraine	132	9/14/2009	7,462	6/9/2010	5,100	2009 Chena R	2009 Chena R	2N MX	Ft. Richardson	3.50g	23.90g	T
Meirs	17	5/26/2009	1,687	8/12/2010	4,000	2008 Chena R	2010 Chena R	2N MX	Ft. Richardson	17.50g	1.40g	T
		7/29/2009	4,012	9/21/2010	1,000	2009 Chena R	2010 Chena R	2N MX	Ft. Richardson	0.90g	3.20g	T
		8/21/2009	3,676			2009 Chena R		2N MX	Ft. Richardson	1.90g		T
Reed	20	8/11/2009	1,531	8/12/2010	1,000	2009 Chena R	2010 Chena R	3N AF / 2N MX	Ft. Richardson	1.90g	1.40g	T/BU
Total 9 Lakes	761		70,686		33,578							

2009	Diploid	Triploid	Total	2010	Diploid	Triploid	Total
Fingerling	46,604	17,334	63,938	Fingerling	25,703	0	25,703
Catchables	6,748	0	6,748	Catchables	7,875	0	7,875
Total	53,352	17,334	70,686	Total	33,578	0	33,578

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Table 38.–Page 5 of 5.

LAKE STOCKED	SURFACE ACRES	DATE STOCKED (09)	NUMBER STOCKED (09)	DATE STOCKED (10)	NUMBER STOCKED (10)	BROODSTOCK (TREATMENT) 2009 [a]	BROODSTOCK (TREATMENT) 2010 [a]	2N/3N (2009/2010)	HATCHERY	STOCKING SIZE (2009)	STOCKING SIZE (2010)	STOCKING METHODb
Arctic char												
Benka	123	6/25/2009	1,441	Not Stocked	0	08 Aleknagik Lk.		3N AF	Ft. Richardson	67.30g		T
Carpenter	176	6/17/2009	466	5/28/2010	1,869	07 Aleknagik Lk.	08 Aleknagik Lk.	3N AF	Ft. Richardson	59.20g	56.70g	T
				9/16/2010	3,754		09 Aleknagik Lk.	2N MX	Ft. Richardson		14.30g	T
Echo	23	6/10/2009	675	6/2/2010	1,706	07 Aleknagik Lk.	08 Aleknagik Lk.	3N AF	Ft. Richardson	59.20g	56.70g	T
Finger	362	6/16/2009	2,193	Not Stocked	0	08 Aleknagik Lk.		3N AF	Ft. Richardson	59.20g		T
		6/26/2009	596			08 Aleknagik Lk.		3N AF	Ft. Richardson	67.30g		T
Irene	18	6/16/2009	2,025	Not Stocked	0	08 Aleknagik Lk.		3N AF	Ft. Richardson	59.20g		T/BU
Johnson	40	Not Stocked	0	5/25/2010	300		08 Aleknagik Lk.	3N AF	Ft. Richardson	0.00	56.70g	T/BU
Long (Mi. 86)	106	6/1/2009	2,674	6/2/2010	3,637	08 Aleknagik Lk.	08 Aleknagik Lk.	3N AF	Ft. Richardson	51.80g	56.70g	T
		6/26/2009	636	6/24/2010	38,902	07 Aleknagik Lk.	10 Aleknagik Lk.	3N AF	Ft. Richardson	67.30g	1.10g	T
Lynne	70	6/16/2009	397	5/28/2010	800	08 Aleknagik Lk.	08 Aleknagik Lk.	3N AF	Ft. Richardson	59.20g	56.70g	T
		6/26/2009	284			07 Aleknagik Lk.		3N AF	Ft. Richardson	67.30g		T
Marion	113	6/16/2009	1,493	Not Stocked	0	08 Aleknagik Lk.		3N AF	Ft. Richardson	59.20g		T
Matanuska	62	6/10/2009	1,530	Not Stocked	0	08 Aleknagik Lk.		3N AF	Ft. Richardson	59.20g		T
Memory	84	6/26/2009	3,532	5/28/2010	400	07 Aleknagik Lk.	08 Aleknagik Lk.	3N AF	Ft. Richardson	67.30g	56.70g	T
Prator	98	6/26/2009	1,509	5/28/2010	500	07 Aleknagik Lk.	08 Aleknagik Lk.	3N AF	Ft. Richardson	67.30g	56.70g	T
Rush	245	Not Stocked	0	Not Stocked	0			2N MX	Ft. Richardson	0.00		A
Seventeenmile	100	6/10/2009	1,246	Not Stocked	0	08 Aleknagik Lk.		3N AF	Ft. Richardson	59.20g		T
		6/26/2009	120			07 Aleknagik Lk.		3N AF	Ft. Richardson	67.30g		T
Total 14 Lakes (2009)	884											
Total 7 Lakes (2010)			14,410		51,868							

2009	Diploid	Triploid	Total
Fingerling	0	0	0
Catchables	0	14,410	14,410
Total		14,410	14,410

2010	Diploid	Triploid	Total
Fingerling	3,754	38,902	42,656
Catchables	0	9,212	9,212
Total	3,754	48,114	51,868

Grand Total 75 Lakes (09-10)	5,846	984,946	1,011,003

2009	Fingerling	Catchables	Total
Grand Totals	860,667	124,279	984,946

2010	Fingerling	Catchables	Total
Grand Totals	935,171	75,832	1,011,003

[a] Treatment: AF = triploid all-female.

[b] Stocking Method: T= tank truck; T/BU = carried in buckets to lake; T/4W = transported by 4-wheeler; A= airplane.

Table 39.–Fish Creek salmon harvests, by commercial set gillnet and personal use dip net, 1987-2010.

	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
1994	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					
2007							No fishery					
2008							No fishery					
2009							9,898 [d]	53	33	66	10	10,060
2010							23,705 [e]	3,576	290	1,721	12	29,303
Mean	23,443	2,913	1,351	247	3	27,955	10,533	1,154	196	507	8	11,820

Source: Personal Use 1987–1995 Mills 1988-1994, Howe et al. 1996; Commercial Harvest from 1996-2000 are estimates from returned permits.

[a] Harvest from statistical area 247-50.

[b] Not reported.

[c] Closed by EO on July 12 at 11pm (3 days of harvest).

[d] Opened by EO at 6:00am August 1 through 11:00pm August 11.

[e] Opened by EO at 6:00am July 24 through 11:00pm July 31.

Table 40.–Smelt personal use harvest from Knik Arm and Westside Susitna management units, 1985-2009.

	Knik Arm Management Unit				Westside Susitna Management Unit						
Year	Marine Fish Creek	Other Marine	Fresh Water	Subtotal	Alexander Creek	Deshka River	Yentna River	Lake Creek	Susitna River	Subtotal	Total
1985	0	560	0	560	0	0		0	1,680	1,680	2,240
1986	0	3,351	0	3,351	0	7,300		0	0	7,300	10,651
1987	0	0	0	0	0	0		0	9,265	9,265	9,265
1988	0	0	0	0	1,547	0		1,083	6,219	8,849	8,849
1989	0	0	0	0	0	0	0	785	1,539	2,324	2,324
1990	0	0	0	0	707	842	3,368	674	0	5,591	5,591
1991	0	0	0	0	3,774	245	0	0	2,113	6,132	6,132
1992	0	0	0	0	379	0	1,082	0	14,062	15,523	15,523
1993	0	0	0	0	0	2,236	0	0	4,360	6,596	6,596
1994	0	2,292	0	2,292	0	458	3,438	235	5,352	9,483	11,775
1995	0	0	0	0	0	0	1,382	0	3,167	4,549	4,549
1996	0	0	0	0	364	0	364	0	1,455	2,183	2,183
1997	0	0	0	0	0	0	2,703	0	5,812	8,515	8,515
1998	0	0	0	0	0	0	2,050	0	3,745	5,795	5,795
1999	2,708	0	0	2,708	571	6,499	3,038	0	16,923	27,031	29,739
2000	0	2,725	3,406	6,131	7	1,363	2,725	0	1,397	5,492	11,623
2001	0	675	899	1,574	0	0	3,935	0	4,772	8,707	10,281
2002	0	0	0	0	0	2,228	1,061	0	9	3,298	3,298
2003	0	1,214	364	1,578	911	0	0	0	4,554	5,465	7,043
2004	0	0	11	11	0	2,550	2,252	0	7,760	12,562	12,573
2005	0	0	0	0	0	1,979	0	0	1,089	3,068	3,068
2006	0	0	71 [a]	71	0	0	0	0	0	0	71
2007	124	0	0	124	0	0	0	0	620	620	744
2008	0	0	0	0	0	1,095	0	0	737	1,832	1,832
1985-2008 Mean	118	451	198	767	344	1,116	1,370	116	4,026	6,744 #	7,511
1999-2008 Mean	283	461	475	1,220	149	1,571	1,301	0	3,786	6,808 #	8,027
2004-2008 Mean	25	0	16	41	0	1,125	450	0	2,041	3,616 #	3,658
2009	0	0	0	0	0	0	0	0	3,520	3,520	3,520

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

Note: Smelt grouped with "other fish" prior to 1985.

Table 41.–Beluga River Senior Personal Use Dipnet Fishery Summary, 2008-2009.

						Harvest				
Date	# Permits issued	# Permits returned	# Fished	Boat	Shore	Sockeye	Chum	Coho	Pink	Total
2008	20	20	5	2	3	31	0	35	0	66
2009	11	11	10	4	6	140	0	78	7	225
2010	14	9	5	3	2	47	5	1	0	53

Table 42.–Upper Yentna River personal use and subsistence fish wheel salmon harvest, 1996-2010.

		Number of permits		Salmon harvest (number of fish)					
Fishery	Year	Returned	Issued	Sockeye	Coho	Pink	Chum	Total	Harvest/ permit
Personal use									
	1996	14	NR	191	36	88	40	355	25
	1997	21	NR	492	61	21	8	582	28
Subsistence									
	1998	21	28	473	147	33	20	673	32
	1999	21	NR	455	43	15	11	524	25
	2000	20	NR	379	92	4	7	482	24
	2001	16	NR	514	47	9	4	574	36
	2002	25	NR	414	116	14	28	572	23
	2003	15	NR	433	76	2	13	524	35
	2004	22	NR	391	132	0	2	525	24
	2005	21	NR	177	42	24	25	268	13
	2006	23	26	388	178	15	27	608	26
	2007	22	22	367	66	17	18	468	21
	2008	16	16	310	57	23	7	397	25
	2009	16	17	253	14	0	6	273	17
	1996-2009 Mean	20	22	374	79	19	15	488	25
	2005-2009 Mean	20	20	299	71	16	17	403	20
	2010	26	26	675	52	41	18	786	30

Note: NR = not reported. "-" = value can't be computed due to limitations of the data.

Table 43.–Tyonek subsistence gillnet salmon harvest, 1981-2010.

	Number of permits		Salmon harvest (number of fish)						
Year	Returned	Issued	Chinook	Sockeye	Coho	Pink	Chum	Other	Total
1981	NA	70	2,002	269	64	15	32	NA	2,382
1982	NA	69	1,590	310	113	14	4	NA	2,031
1983	NA	75	2,665	187	59	0	6	NA	2,917
1984	NA	75	2,200	266	79	3	23	NA	2,571
1985	NA	76	1,472	164	91	0	10	NA	1,737
1986	NA	65	1,676	203	223	50	46	NA	2,198
1987	61	64	1,610	166	149	10	24	NA	1,959
1988	42	47	1,587	91	253	8	12	NA	1,951
1989	47	49	1,250	85	115	0	1	NA	1,451
1990	37	42	781	66	352	20	12	NA	1,231
1991	54	57	902	20	58	0	0	NA	980
1992	44	57	907	75	234	7	19	NA	1,242
1993	54	62	1,370	57	77	19	17	NA	1,540
1994	49	58	770	85	101	0	22	NA	978
1995	55	70	1,317	45	153	0	15	NA	1,530
1996	49	73	1,039	68	137	21	7	NA	1,272
1997	42	70	639	101	137	0	8	NA	885
1998	49	74	1,027	163	64	1	2	NA	1,257
1999	54	77	1,230	144	94	32	11	NA	1,511
2000	59	60	1,157	63	87	6	0	NA	1,313
2001	58	84	976	172	49	4	6	NA	1,207
2002	71	101	1,080	209	115	9	4	1	1,418
2003	74	87	1,183	111	44	7	10	NA	1,355
2004	75	97	1,345	93	130	0	0	2	1,570
2005	66	78	982	61	139	0	2	0	1,184
2006	55	82	943	20	14	0	1	0	978
2007	67	84	1,281	200	123	3	2	0	1,609
2008	77	94	1,178	121	194	13	9	0	1,515
2009	69	89	636	184	258	1	2	0	1,081
1981-2009 Mean	57	72	1,269	131	128	8	11	0	1,547
2000-2009 Mean	67	86	1,076	123	115	4	4	0	1,323
2005-2009 Mean	67	85	1,004	117	146	3	3	0	1,273
2010 [a]	66	99	812	140	107	0	2	0	1,061

Note: NR = not reported; NA = not applicable.

Source ADF&G, Division of Subsistence.

[a] Preliminary data.

Table 44.–Contribution of hatchery fish to the Fish Creek sockeye salmon escapement.

Return Year	Sample % Marked	Weir Count
2002	2%	90,482
2003	12%	91,952
2004	17%	22,157
2005	55%	14,215
2006	73%	32,562
2007	71%	27,948
2008	51%	19,339
2009	36%	83,480
2010	67%	126,836

Table 45.–Northern Cook Inlet Management Area recreational catch and harvest of rainbow trout by management unit, 1977-2009.

	Northern Cook Inlet Management Area													
	Knik Arm		Eastside Susitna		Westside Susitna		West Cook Inlet		Total		Southcentral Region		Statewide	
Year	Catch[a]	Harvest	Catch[a]	Harvest	Catch[a]	Harvest	Catch[a]	Harvest	Catch[a]	Harvest	Harvest	% NCIMA	Number	% NCIMA
1977		18,615		5,225		7,472		958		32,270	80,345	40.2	94,307	34.2
1978		23,139		5,930		12,295		723		42,087	107,243	39.2	120,231	35.0
1979		24,843		9,463		12,555		1,063		47,924	129,815	36.9	139,390	34.4
1980		29,368		6,715		12,785		560		49,428	126,686	39.0	153,476	32.2
1981		41,749		8,813		11,296		1,734		63,592	149,460	42.5	178,613	35.6
1982		30,549		7,536		11,465		398		49,948	142,579	35.0	173,242	28.8
1983		26,421		9,639		9,253		871		46,184	141,705	32.6	168,677	27.4
1984		26,418		7,656		8,079		748		42,901	128,649	33.3	170,117	25.2
1985		46,431		7,872		8,114		902		63,319	142,316	44.5	181,991	34.8
1986		27,690		8,061		6,668		223		42,642	114,873	37.1	152,855	27.9
1987		24,663		6,647		8,020		579		39,909	101,397	39.4	138,698	28.8
1988		58,609		7,622		8,058		673		74,962	155,960	48.1	241,831	31.0
1989		44,518		4,972		4,928		544		54,962	127,444	43.1	209,961	26.2
1990	98,720	30,699	21,806	5,008	33,510	3,960	3,115	472	157,151	40,139	122,987	32.6	191,809	20.9
1991	88,645	39,636	26,329	7,854	46,870	4,526	1,756	497	163,600	52,513	127,492	41.2	205,642	25.5
1992	85,331	27,995	19,915	3,948	23,621	2,028	1,448	190	130,315	34,161	97,730	35.0	139,973	24.4
1993	69,635	21,565	24,240	3,713	29,911	2,481	1,788	191	125,574	27,950	82,312	34.0	136,681	20.4
1994	70,255	22,446	23,619	3,658	25,157	2,526	871	225	119,902	28,855	76,384	37.8	112,261	25.7
1995	56,108	14,878	15,363	3,138	23,432	1,757	1,222	111	96,125	19,884	74,972	26.5	112,681	17.6
1996	80,757	21,780	24,808	2,510	33,603	1,924	1,696	439	140,864	26,653	84,573	31.5	136,482	19.5
1997	85,278	25,695	34,742	2,324	30,217	1,452	2,371	618	152,608	30,089	67,261	44.7	100,372	30.0
1998	66,837	17,693	26,241	968	17,370	1,081	1,576	189	112,024	19,931	56,728	35.1	103,744	19.2
1999	84,691	24,527	39,753	1,755	37,864	1,866	2,617	277	164,925	28,425	77,707	36.6	132,481	21.5
2000	114,013	28,745	42,603	1,521	29,398	1,226	2,793	211	188,807	31,703	89,171	35.6	144,873	21.9
2001	70,821	21,061	32,904	1,112	27,697	759	3,341	270	134,763	23,202	57,629	40.3	81,279	28.5
2002	93,520	28,325	80,190	1,751	29,745	1,209	3,082	236	206,537	31,521	73,542	42.9	117,063	26.9
2003	68,212	17,617	59,440	2,581	40,327	1,425	1,698	264	169,677	21,887	53,155	41.2	84,531	25.9
2004	70,897	17,738	46,130	1,924	42,969	1,629	1,258	177	161,254	21,468	56,082	38.3	85,136	25.2
2005	59,870	14,367	36,188	793	46,575	339	791	196	143,424	15,695	39,790	39.4	60,826	25.8
2006	48,064	13,524	38,862	1,590	44,018	1,027	1,538	170	132,482	16,311	33,119	49.2	53,086	30.7
2007	40,742	10,613	64,077	840	32,036	619	2,124	216	138,979	12,288	30,361	40.5	50,231	24.5
2008	67,585	15,537	36,798	1,521	18,063	744	1,276	106	123,722	17,908	36,334	49.3	49,159	36.4
1977-2008 mean	74,736	26,170	36,527	4,521	32,231	4,799	1,914	470	145,407	35,960	93,306	38.5	131,928	27.3
2004-2008 mean	57,432	14,356	44,411	1,334	36,732	872	1,397	173	139,972	16,734	39,137	43.3	59,688	28.5
2009	39,983	7,981	36,707	756	27,455	865	1,322	10	105,467	9,547	36,334	26.3	49,159	19.4

Table 46.–Westside Susitna River drainage rainbow trout sport harvest by fishery, 1977-2009.

Year	Alexander Creek	Deshka River	Rabideux Creek	Yentna River	Peters Creek	Lake Creek	Fish Creek [a]	Judd Lake	Other Streams [b]	Other Lakes [b]	Total
1977	1,251	1,556				1,853		68	1,677	1,067	7,472
1978	2,640	3,634				2,721		0	1,528	1,772	12,295
1979	1,182	3,182				4,527		100	2,709	855	12,555
1980	1,945	4,305				2,144		86	2,101	2,204	12,785
1981	2,290	3,631				2,874			872	1,629	11,296
1982	2,505	3,804				3,134			597	1,425	11,465
1983	608	2,434				2,287		0	2,917	1,007	9,253
1984	785	2,120			611	3,080		0	1,084	399	8,079
1985	1,318	3,104				1,439			1,387	866	8,114
1986	1,553	3,038				961	45	0	614	457	6,668
1987	978	3,006				1,902	398	0	1,357	379	8,020
1988	1,419	4,075			73	1,146	109	18	672	546	8,058
1989	486	1,676	0	38	162	676	428	105	576	781	4,928
1990	640	707	17	0	303	808	135		810	540	3,960
1991	917	1,275	0	140	295	498	358	0	810	233	4,526
1992	198	459	24	127	214	214	79		349	364	2,028
1993	128	452		36	49	184	172		1,163	297	2,481
1994	207	415		123	146	714	93		613	215	2,526
1995	86	183		140	46	565	360		588	89	2,057
1996	95	321		146	227	616	51		468		1,924
1997	0	264		0	80	436	56		616		1,452
1998	0	218		0		285	124		454		1,081
1999	0	561		59	70	640	168		368		1,866
2000	0	205		151	71	567	85		147	0	1,226
2001	0	270		156	56	183	33		20	41	759
2002	13	417		0	29	445	119		186	0	1,209
2003	0	368		154	48	561	77		217	0	1,425
2004	0	938		0	23	587	27		54	0	1,629
2005	0	60		52	11	209	0		7	0	339
2006	0	523		96	39	159	198	0	0	12	1,027
2007	0	185	29	52	117	236	0	0	0	0	619
2008	0	419	0	134	10	153	13	0	0	15	744
2004-2008 Mean	0	425		67	40	269	48		12	5	872
2009	0	562	0	86	122	27	0	0	43	25	865

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

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

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

Table 47.–Westside Susitna River drainage rainbow trout sport catch by fishery, 1990-2009.

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
1990	3,065	6,197	34	135	1,532	8,757	707	10,761	2,474	1,431	35,093
1991	2,301	5,303	16	295	1,182	12,969	1,415	18,489	2,863	2,037	46,870
1992	1,124	3,396	142	214	633	5,399	768	7,892	2,123	1,930	23,621
1993	992	5,772		101	331	9,232	647	8,824	3,329	683	29,911
1994	1,075	3,345		201	646	10,387	740	6,646	1,536	763	25,339
1995	472	2,288		1,638	644	5,546	596	6,286	3,499	2,463	23,432
1996	195	4,166		507	709	7,655	572	16,488	3,311		33,603
1997	1,034	2,355		232	331	9,378	1,379	12,535	2,973		30,217
1998	490	1,594		846		6,668	641	4,336	2,795		17,370
1999	643	5,323		446	152	15,310	2,144	11,072	2,774		37,864
2000	759	6,146		1,774	1,435	12,156	833	5,209	1,086		29,398
2001	1335	8,300		1,879	375	7,739	1335	7,027	727	75	28,792
2002	728	4,464		518	1,954	11,622	679	6,283	3,497	0	29,745
2003	313	5,868		768	510	22,460	176	9,721	511	0	40,327
2004	220	5,868		1,514	381	22,130	2411	9,000	150	1295	42,969
2005	64	3,161		2,521	838	21,197	260	17,060	1,433	41	46,575
2006	402	9,635		1,752	195	28,013	395	2,883	707	36	44,018
2007	106	3,905	58	3,728	663	11,405	173	11,846	152	0	32,036
2008	0	2,070	0	1,974	268	10,267	624	2,249	580	31	18,063
2004-2008 Mean	158	4,928		2,298	469	18,602	773	8,608	604	281	36,732
2009	34	3,093	0	2,723	812	10,217	479	6,331	3,766	0	27,455

Source: Catch estimates from Statewide Harvest Surveys (Mills 1979-1980, 1981 a-b, 1982-1994; Howe et al. 1995, 1996, 2001 a-d; Walker et al. 2003; Jennings et al. 2004; 2006 a-b; 2007, 2009 a-b, 2010 a-b, *In prep*).

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

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

Table 48.–Knik Arm drainage rainbow trout sport fish harvest by fishery, 1977-2009.

Year	Little Susitna	Knik River [a]	Wasilla Creek	Cotton-wood Ck	Big Lake [b]	Wasilla Lake	Finger Lake	Kepler L. Complex	Big Lake	Lucille Lake	Kalmbach Lake	Carpenter Lake	Knik Lake	Memory Lake	Seymour Lake	Bonnie Lakes	Nancy L. Complex	Other Streams [c]	Other Lakes	Total
1977	843		252				0	1,822	3,906	0							2,642	9,150		18,615
1978	886		45				0	5,180	4,845	0							1,853	10,330		23,139
1979	1,391		500	1,736		2,782	0	3,372	2,882	0							2,909	9,271		24,843
1980	852		121	1,085		2,084	0	5,906	5,398	0							2,540	11,382		29,368
1981	2,692	0	38	824		2,261	0	8,200	9,810	0							4,723	13,201		41,749
1982	1,551	0	63	786		2,243	0	7,325	9,369	0							2,840	6,372		30,549
1983	1,290	0	84	556		1,804	0	3,986	4,102	0							4,846	1,490	8,263	26,421
1984	860	549	312	748		848	0	9,128	4,938	0				382			1,771	1,247	5,635	26,418
1985	1,294	780	260	590	347	1,231	3,381	14,011	6,953	35							2,514	1,197	13,838	46,431
1986	1,407	235	11	145	391	1,653	3,172	7,249	5,105	168					726	736	2,200	815	3,677	27,690
1987	447	58	126	301	204	680	2,476	7,758	2,476	3,379							2,728	427	3,603	24,663
1988	1,273	382	582	782	309	891	5,421	16,462	4,220	8,495						910	5,439	964	12,479	58,609
1989	599	0	91	163	1,063	972	2,788	18,233	5,402	972	1,625		872	590	445	945	3,696	117	5,945	44,518
1990	673	0	131	410	361	443	2,544	10,223	3,282	246						738	2,182	1,131	8,335	30,699
1991	781	0	28	628	209	1,953	2,539	8,496	4,883	600			600	1,046		363	2,818	545	14,147	39,636
1992	720	0	24	404	791	483	1,860	6,839	2,090	309	610	1,116	887	364	459	1,045	2,945	8	7,041	27,995
1993	186	0	30	475	228	630	2,037	2,930	2,073	424				890	734	399	2,116	248	8,165	21,565
1994	300	0	135	425	393	735	2,666	3,551	2,260	156				323	570	1,184	1,300	56	8,392	22,446
1995	326	0	37	413	150	390	1,887	2,648	1,371	249	543	393		395		365	785	119	4,797	14,878
1996	121	0	40	248	74	1,735	2,316	5,092	2,260		221			53			753	189	8,678	21,780
1997	348	0	29	215	321	475	3,720	8,407	2,083	335				406		520	963	72	7,806	25,695
1998	59	0	0	390	412	483	1,804	3,167	1,358	214			984				321	42	8,459	17,693
1999	253	0	0	93	2,114	762	3,301	5,391	1,501				713			572	611	81	9,135	24,527
2000	252	0		218	355	1,037	3,511	7,469	1,475	116			1,569			223	1,900	84	10,536	28,745
2001	253	0		613	182	305	1,534	4,197	905	1,107	92	42	634	604	117	81	1,349	25	9,021	21,061
2002	154	0	0	290	236	329	5,608	3,498	1,521	989	359	29	907	408	17	223	916	535	12,306	28,325
2003	140	0	0	32	11	511	1,326	3,625	884	1,194	98	230	786	247	224	107	1,601	0	6,601	17,617
2004	93	82	0	290	23	264	1,527	4,423	626	842	175	79	226	234	517	26	525	21	7,765	17,738
2005	51	22	88	44	0	535	1,358	3,657	752	391	155	44	66	395	144	22	771	120	5,752	14,367
2006	166	0	0	115	15	115	1,566	2,419	1,005	996	60	24	521	132	147	231	1,032	19	4,961	13,524
2007	197	0	0	802	11	131	573	1,903	332	79	236	29	117	0	69	94	1,078	53	4,909	10,613
2008	147	0	19	199	53	628	2,156	3,696	785	64	49	319	394	107	143	71	174	18	6,515	15,537
2004-2008 Mean	131	21	21	290	20	335	1,436	3,220	700	474	135	99	265	174	204	89	716	46	5,980	14,356
2009	79	0	52	9	30	89	893	2,497	299	148	61	100	216	502	54	88	274	0	2,590	7,981

Source: Catch estimates from Statewide Harvest Surveys (Mills 1979-1980, 1981 a-b, 1982-1994; Howe et al. 1995, 1996, 2001 a-d; Walker et al. 2003; Jennings et al. 2004; 2006 a-b; 2007, 2009 a-b, 2010 a-b, *In prep*).

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

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

Table 49.–Knik Arm drainage rainbow trout sport catch by fishery, 1990-2009.

Year	Little Susitna	Knik River [a]	Wasilla Creek	Cotton-wood Ck	Big Lake [b]	Wasilla Lake	Finger Lake	Kepler L. Complex	Big Lake	Lucille Lake	Kalmbach Lake	Carpenter Lake	Knik Lake	Memory Lake	Seymour Lake	Bonnie Lakes	Nancy L. Complex	Other Streams	Other Lakes	Total
1990	1,953	0	607	2,183	2,100	1,707	5,645	35,085	8,123	1,034						2,133	7,466	5,448	25,236	98,720
1991	1,507	0	28	795	614	2,916	4,576	18,986	10,588	670			2,246	1,576		893	6,348	2,371	34,531	88,645
1992	2,319	0	40	1,987	2,375	1,544	6,087	24,887	5,296	602	3,103	1,868	1,504	1,314	712	3,309	7,765	64	20,555	85,331
1993	1,308	0	195	3,987	1,445	1,497	7,272	16,151	4,845	651				1,523	1,224	2,356	5,130	367	21,684	69,635
1994	1,198	0	312	911	2,295	2,142	6,168	16,534	5,502	302				1,230	1,413	2,657	4,372	282	24,932	70,255
1995	1,783	0	92	1,015	412	1,001	5,792	16,634	3,565	514	1,067	824		863		1,331	2,344	209	18,662	56,108
1996	323	0	40	1,153	171	4,384	6,494	24,201	8,023		252			727			1,966	409	32,614	80,757
1997	1,029	0	53	992	476	938	9,218	27,065	6,357	610				968		1,253	3,098	359	32,862	85,278
1998	319	0	94	1,878	1,276	1,405	6,789	16,175	5,298	1,385		3,324	3,324				1,173	151	27,570	66,837
1999	1,658	0	49	1,903	2,243	2,287	5,602	20,169	6,569				1,746			1,658	3,538	421	36,848	84,691
2000	1,567			957	1,081	2,144	9,327	27,859	7,212	1,161			4,163			1,834	7,273	443	48,992	114,013
2001	1,794	0	58	3,016	548	1,499	4,313	16,349	4,546	3,616	215	1,040	1,447	2,098	175	328	3,874	351	25,554	70,821
2002	1,319	0	0	1,628	2,114	896	9,753	17,330	4,601	6,193	755	87	2,037	1,804	268	586	4,361	934	38,854	93,520
2003	1,568	0	130	1,727	206	2,230	5,217	16,575	5,614	4,842	455	1,685	1,698	343	1989	311	3,767	86	19,769	68,212
2004	1,368	1,414	0	726	1,239	1,720	5,030	19,991	3,253	2,330	1554	79	862	1,531	587	119	4,184	106	24,804	70,897
2005	772	259	221	628	33	1,468	4,833	13,823	5,937	1,727	464	376	0	1,828	199	508	1,994	485	24,315	59,870
2006	1,583	944	0	1,500	159	224	5,221	12,348	2,975	2,896	360	271	576	827	202	709	2,828	62	14,379	48,064
2007	995	0	94	3,612	213	657	1,851	9,737	3,039	695	870	190	204	278	748	709	2,371	154	14,325	40,742
2008	792	0	187	885	53	2,319	6,631	16,838	5,381	755	637	810	2,002	145	933	1,123	8,530	935	18,629	67,585
2004-2008 Mean	1,102	523	100	1,470	339	1,278	4,713	14,547	4,117	1,681	777	345	729	922	534	634	3,981	348	19,290	57,432
2009	644	34	496	255	245	774	4,867	14,712	2,963	777	249	118	277	1,687	274	407	1,711	52	9,441	39,983

Source: Catch estimates from Statewide Harvest Surveys (Mills 1979-1980, 1981 a-b, 1982-1994; Howe et al. 1995, 1996, 2001 a-d; Walker et al. 2003; Jennings et al. 2004; 2006 a-b; 2007, 2009 a-b, 2010 a-b, *In prep*).

[a] Knik River and tributaries including Jim Creek.

[b] Big Lake drainage streams.

Table 50.–Eastside Susitna River drainage rainbow trout sport harvest by fishery, 1977-2009.

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]	Other Lakes	Total
1977	1,055	224			368		727			450	2,401		5,225
1978	913	334			470		1,193			1,501	1,519		5,930
1979	1,500	345		282	573		1,536		382	1,373	3,472		9,463
1980	1,168	353		154	385		854		193	950	2,658		6,715
1981	1,475	374		326	201		1,111		249	1,226	3,851		8,813
1982	891	335		189	325		2,243		545	608	2,400		7,536
1983	1,689	514	357	231	409		1,332		178	1,836	1,656	1,437	9,639
1984	1,359	1,047	449	175	349	125	1,197		374	910	598	1,073	7,656
1985	2,046	746		139	191		1,248		416	832	1,266	988	7,872
1986	545	218	436	0	218	145	399	73	581	1,234	1,126	3,086	8,061
1987	1,141	1,213	471	308	507	272	417	36	72	869	471	870	6,647
1988	1,128	400	255	73	236	291	1,492	73	55	1,110	636	1,873	7,622
1989	906	277	675	37	240	240	407	37	259	822	443	629	4,972
1990	1,008	286	352	101	286	353	487		168	1,109	320	538	5,008
1991	2,044	430	261	384	569	354	615	231	0	1,076	999	891	7,854
1992	712	293	87	47	55	79	467	16	79	665	404	1,044	3,948
1993	934	264	49	148	338	127	271	0	59	242	670	611	3,713
1994	1,161	337	114	53	254	173	241	0	8	262	467	588	3,658
1995	351	250	0	56	79	28	285	0	0	287	442	1,360	3,138
1996	551	113	63	21	73	68	443	0	95	284	354	445	2,510
1997	0	182	137	24	208	179	0	0	24	226	636	708	2,324
1998	0	113	42	0	157	42	0	17	144	179	173	101	968
1999	0	77	82	0	94	152	0	24	0	207	489	630	1,755
2000	91	48	61	12	189	36	0	0	7	197	265	615	1,521
2001	119	42	22	42	131	77	0	0	8	92	315	264	1,112
2002	209	54	37	0	248	58	0	0	0	90	150	905	1,751
2003	61	65	194	31	163	54	0	0	0	299	305	1409	2,581
2004	144	23	0	0	58	70	0	47	0	157	259	1166	1,924
2005	32	64	11	0	51	22	0	0	0	61	101	451	793
2006	103	94	73	22	52	34	0	12	0	125	43	1032	1,590
2007	10	71	0	0	157	0	0	0	0	186	216	200	840
2008	60	210	61	0	79	138	0	0	178	511	31	253	1,521
2004-2008 Mean	70	92	29	4	79	53	0	12	36	208	130	620	1,334
2009	62	96	0	0	0	18	0	0	13	34	167	366	756

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

[a] Talkeetna River and tributaries including Clear Creek.

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

Table 51.–Eastside Susitna River drainage rainbow trout sport catch by fishery, 1990-2009.

Year	Willow Creek	Little Willow	Kashwitna River	Caswell Creek	Sheep Creek	Goose Creek	Montana Creek	Birch Creek	Sunshine Creek	Talkeetna River [a]	Other Streams	Other Lakes	Total
1990	3,914	689	1,630	689	840	1,378	1,277		622	4,788	3,913	2,066	21,806
1991	3,965	1,230	692	446	1,076	2,183	2,136	307	154	5,072	6,347	2,721	26,329
1992	3,206	1,124	293	142	633	617	2,501	40	103	5,581	2,754	2,921	19,915
1993	3,934	829	995	217	967	2,054	2,034	49	407	5,685	4,441	2,628	24,240
1994	4,673	2,024	319	172	757	1,566	1,807	56	56	4,687	2,838	4,664	23,619
1995	2,340	730	178	127	506	280	1,245	47	150	3,510	3,078	3,172	15,363
1996	4,766	1,077	654	21	2,077	384	2,828	0	179	6,790	3,049	2,983	24,808
1997	5,198	1,415	2,177	60	2,008	2,139	3,473	179	60	7,040	5,355	5,638	34,742
1998	4,487	1,259	1,593	93	4,885	333	4,138	135	186	4,560	2,492	2,080	26,241
1999	11,965	2,484	1,016	72	1,415	960	5,337	140	465	7,402	5,188	3,309	39,753
2000	8,836	1,920	2,107	145	2,173	3,175	7,236	569	132	6,669	3,740	5,901	42,603
2001	11,510	1,414	882	184	763	1,103	5,678	123	17	5,937	2,844	2,449	32,904
2002	22,650	2,821	1,402	105	9,308	4,063	19,170	45	66	11,312	5,164	4,084	80,190
2003	13,750	3,576	2,315	344	5,289	1,691	12,393	54	97	7,875	5,191	6,865	59,440
2004	10,920	2,293	698	58	1,869	1,835	10,171	540	351	6,384	6,961	4,050	46,130
2005	10,863	2,878	961	11	2,218	685	6,151	133	183	6,772	1,759	3,574	36,188
2006	10,032	1,744	993	46	2,716	1,121	7,610	60	24	7,653	4,997	1,866	38,862
2007	20,905	2,800	163	191	4,244	506	16,740	0	12	8,766	9,005	745	64,077
2008	8,235	2,597	1,068	78	1,769	746	8,014	909	632	7,889	3,649	1,212	36,798
2004-2008 Mean	12,191	2,462	777	77	2,563	979	9,737	328	240	7,493	5,274	2,289	44,411
2009	14,700	1,707	558	269	1,137	237	6,474	26	30	6,482	4,156	1,713	37,489

Source: Catch estimates from Statewide Harvest Surveys (Mills 1979-1980, 1981 a-b, 1982-1994; Howe et al. 1995, 1996, 2001 a-d; Walker et al. 2003; Jennings et al. 2004; 2006 a-b; 2007, 2009 a-b, 2010 a-b, *In prep*).

[a] Talkeetna River and tributaries including Clear Creek.

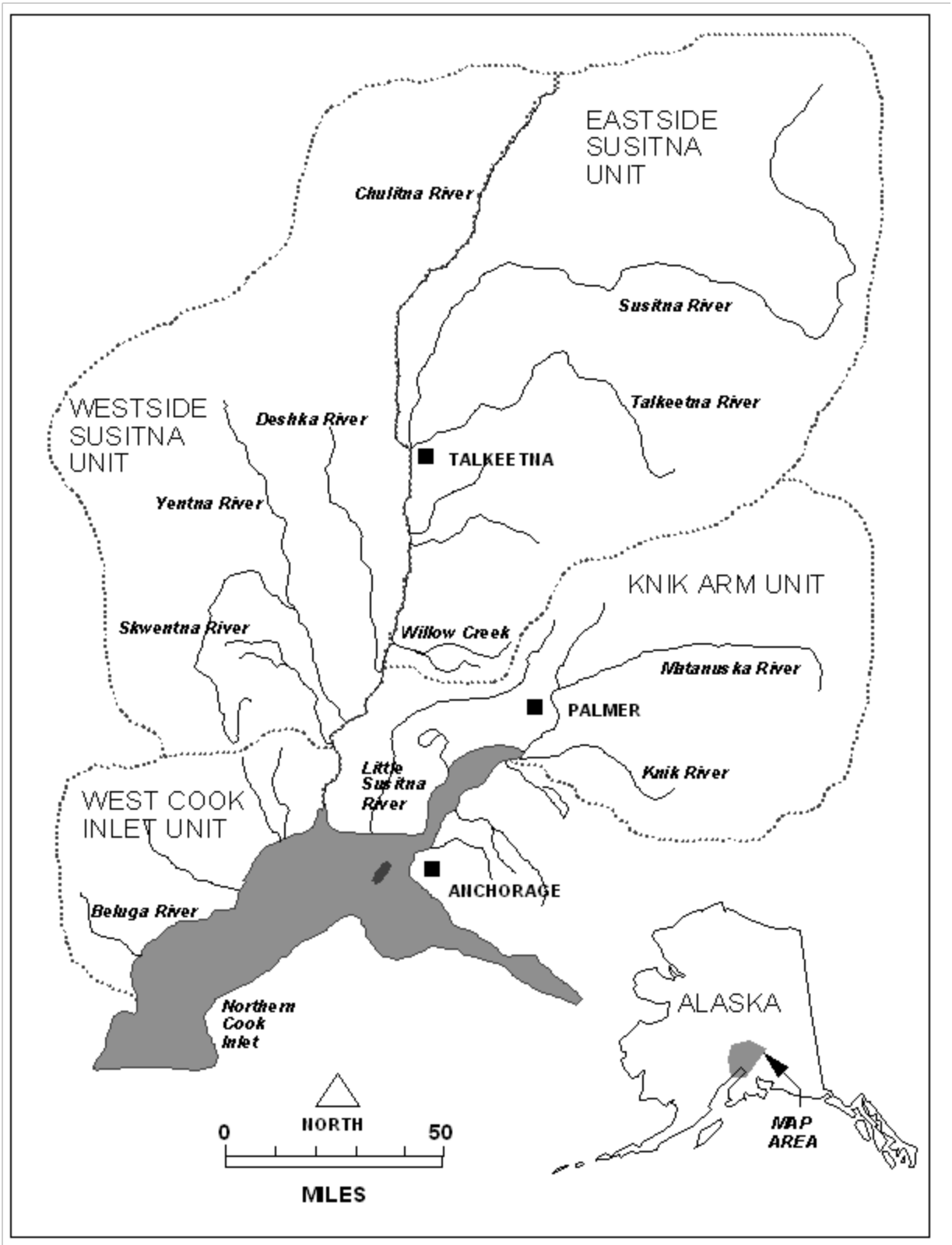


Figure 1.–Northern Cook Inlet (NCI) sport fish management area.

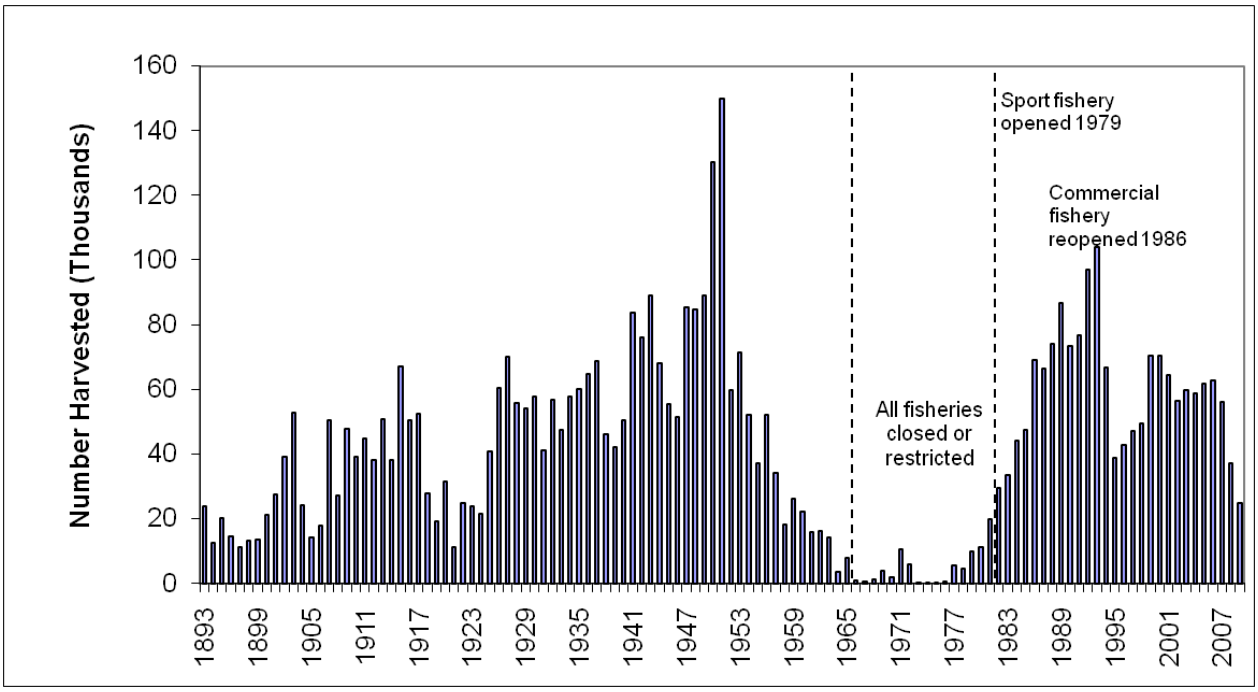


Figure 2.–Estimated harvests by all user groups of Chinook salmon of Northern Cook Inlet origin, 1893-2008.

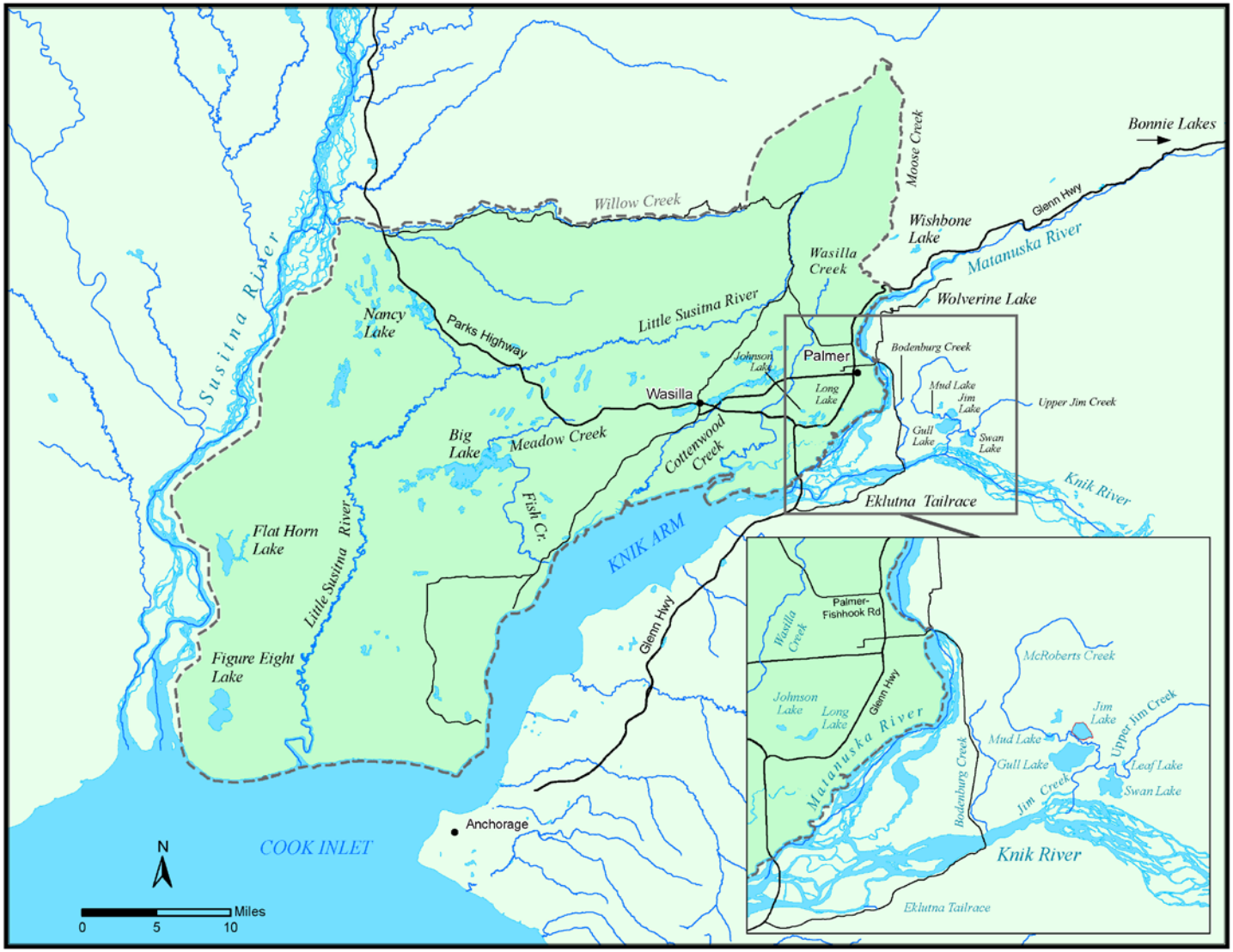


Figure 3.–Knik Arm Freshwaters.

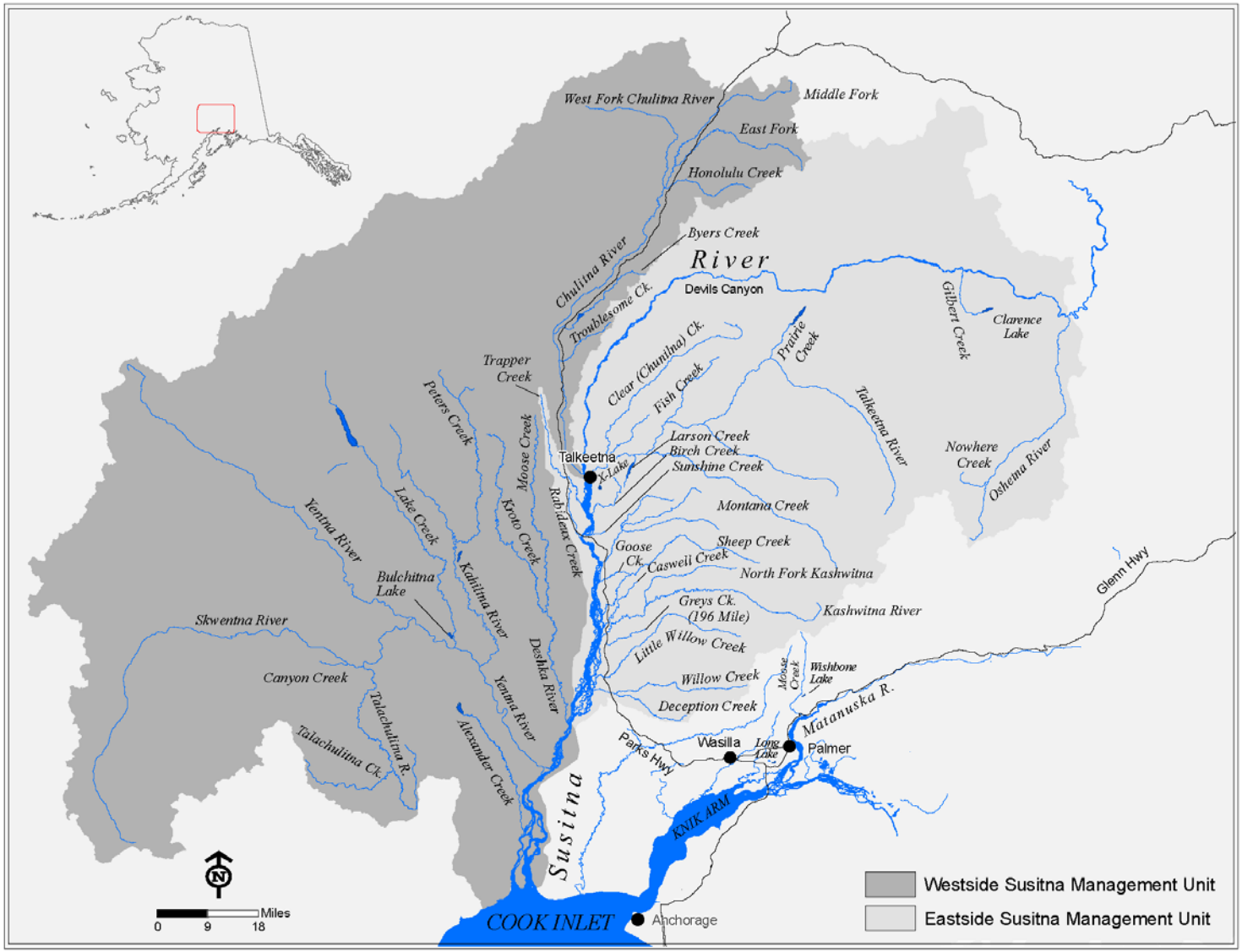


Figure 4.–Susitna River drainages.

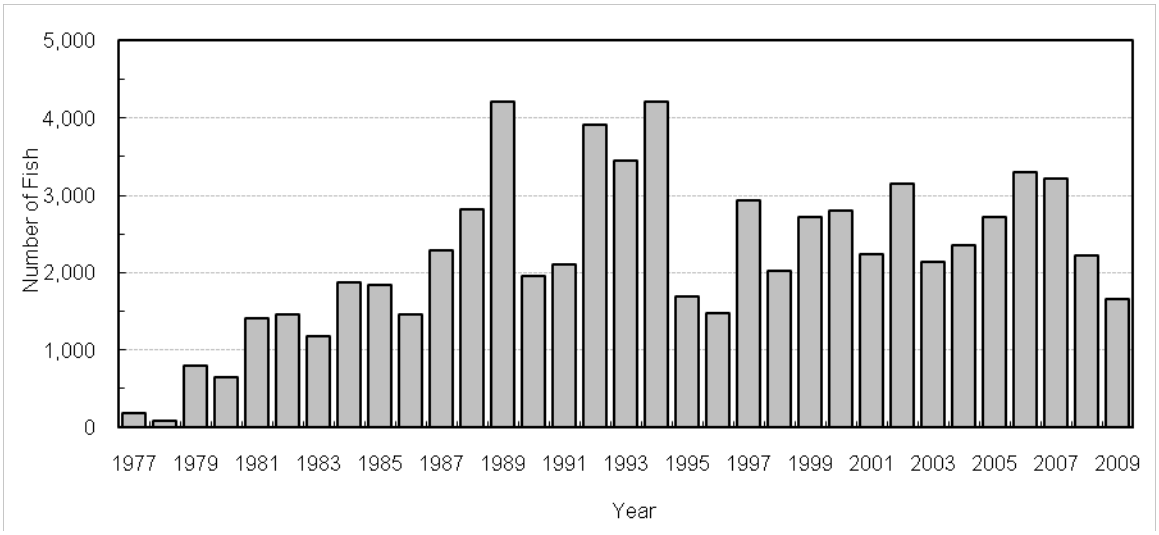


Figure 5.–Little Susitna River Chinook annual harvest, 1977-2009.

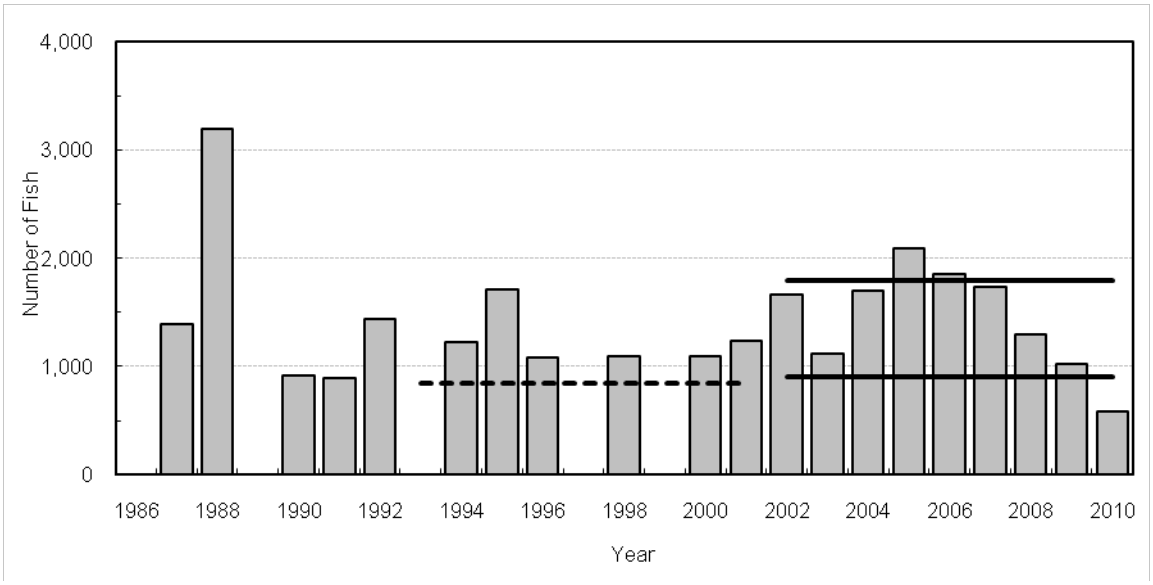


Figure 6.–Little Susitna River Chinook escapement, 1986–2010.

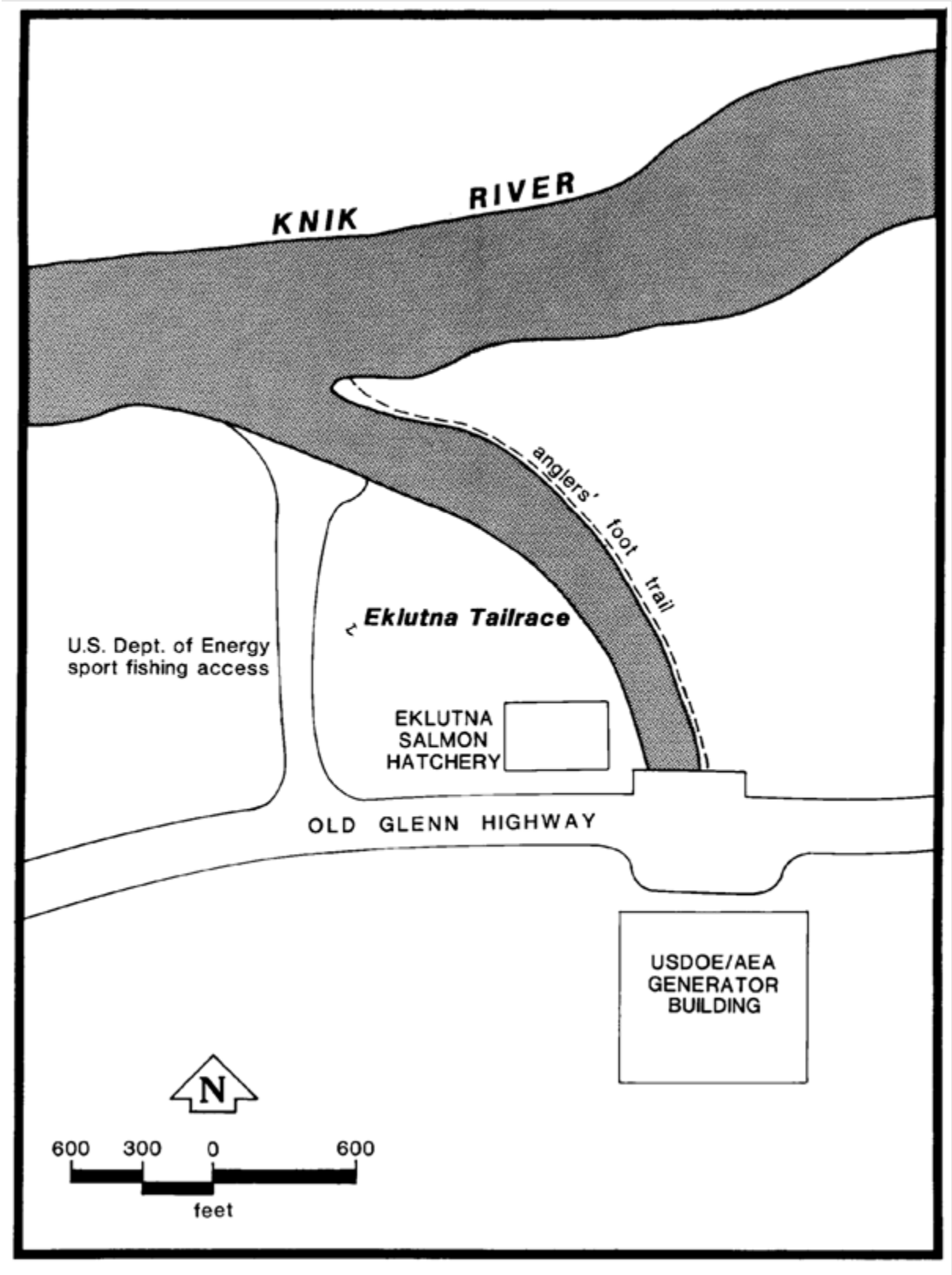


Figure 7.–Eklutna Power Plant tailrace.

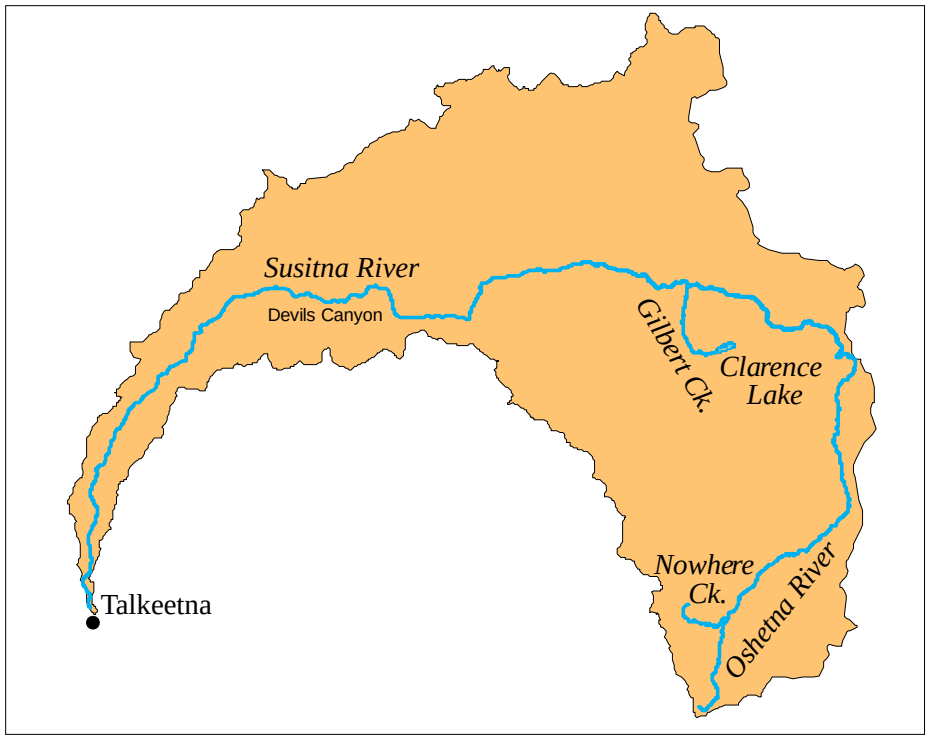


Figure 8.–Upper Susitna River area (Talkeetna to Devils Canyon).

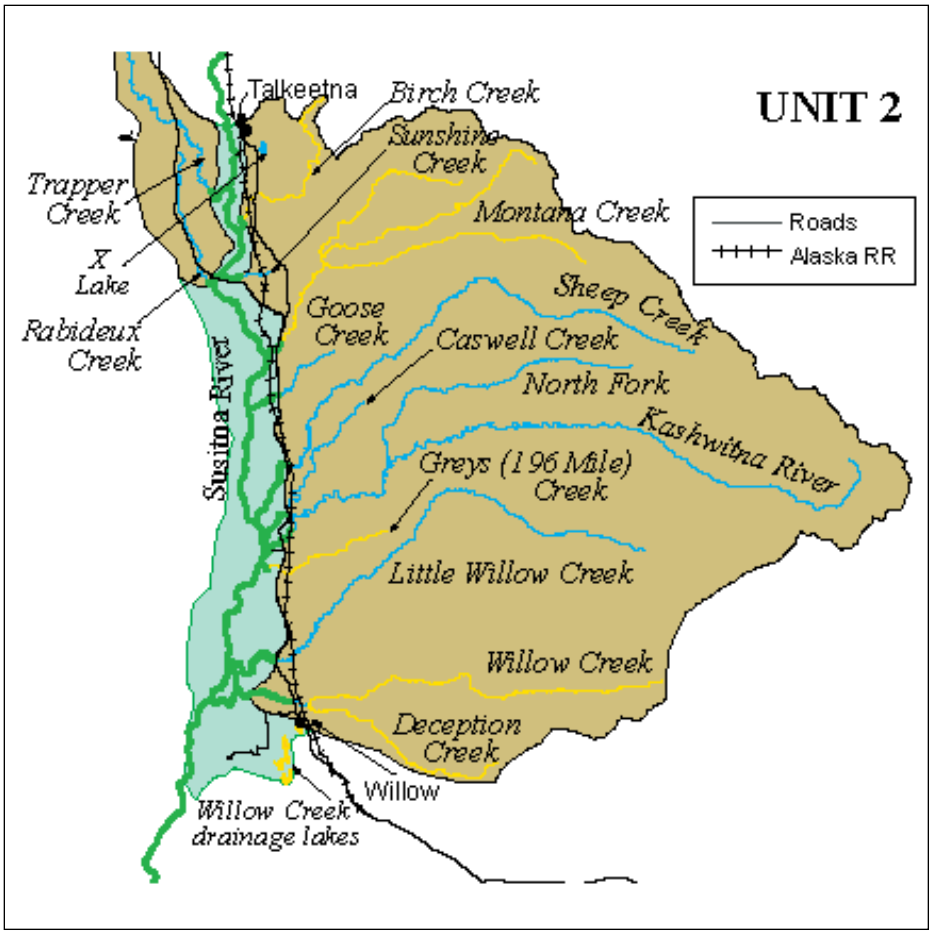


Figure 9.–Susitna River drainage from confluence with the Deshka River upstream to its confluence with the Talkeetna River.

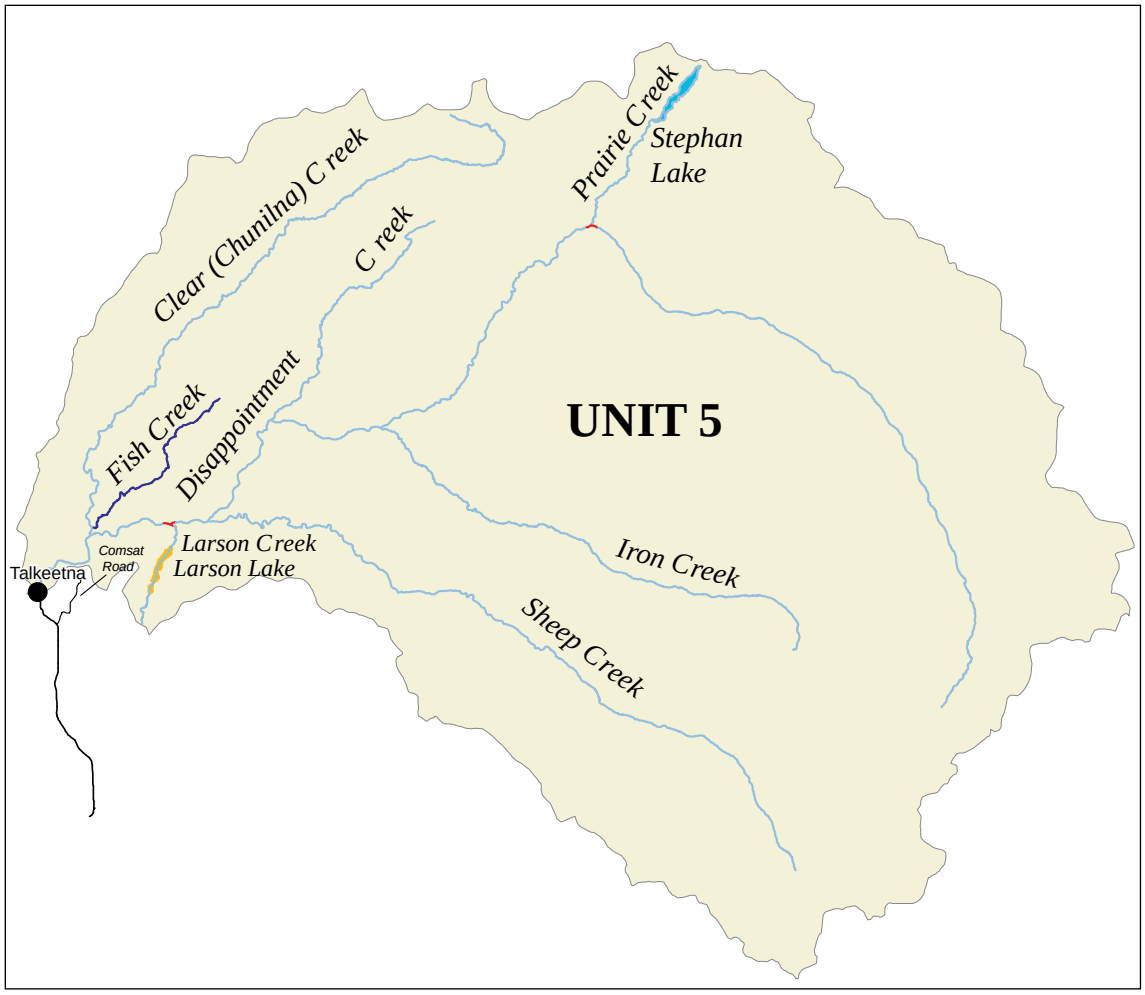


Figure 10.–Flowing waters, lakes and ponds of the Talkeetna River drainage.

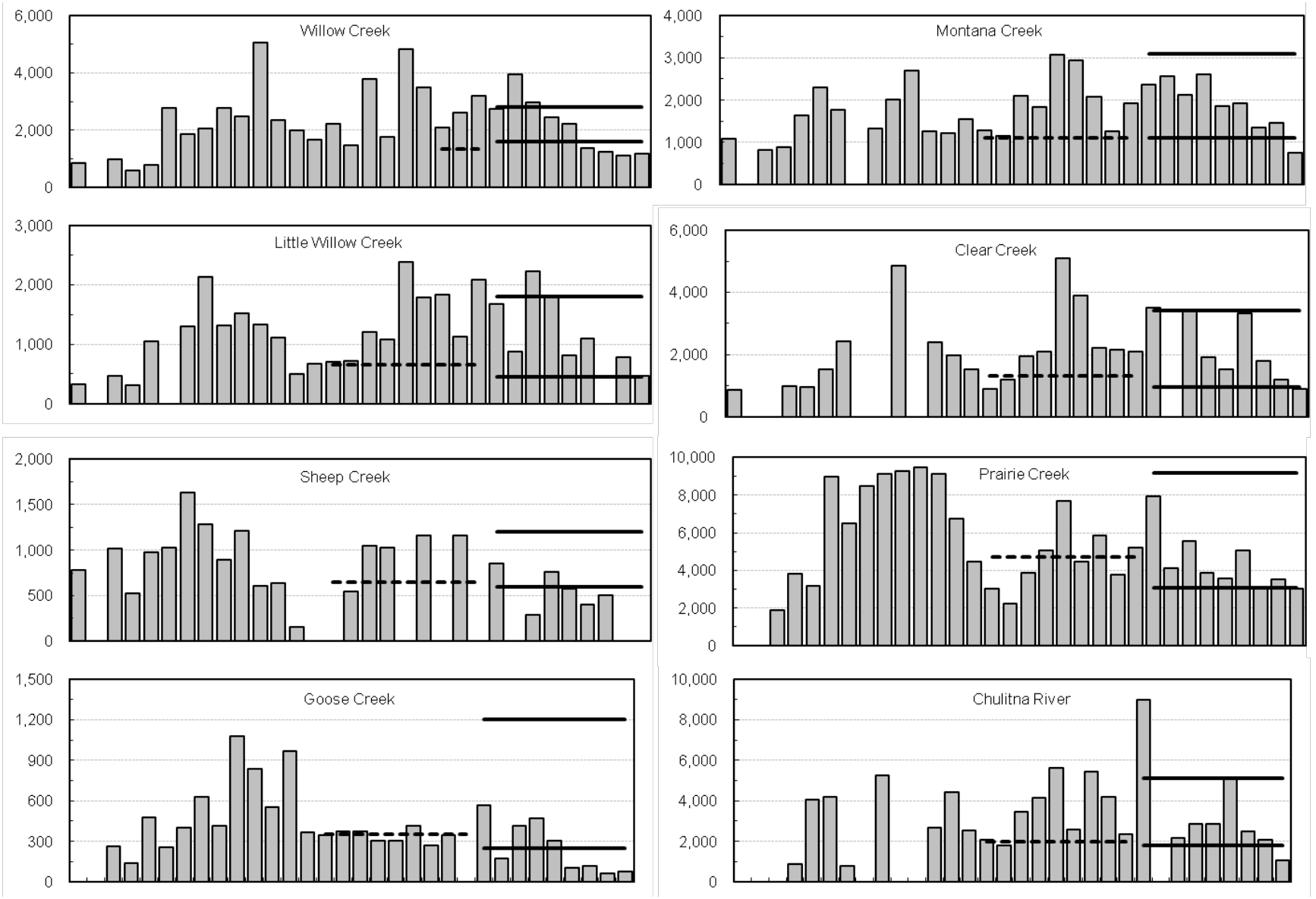


Figure 11.–Chinook salmon escapements at Eastside Susitna River tributaries and Chulitna River, 1979-2010. y-axis = Chinook salmon escapement (in number of fish). Dashed line = biological escapement goal. Solid lines = sustainable escapement goal range.

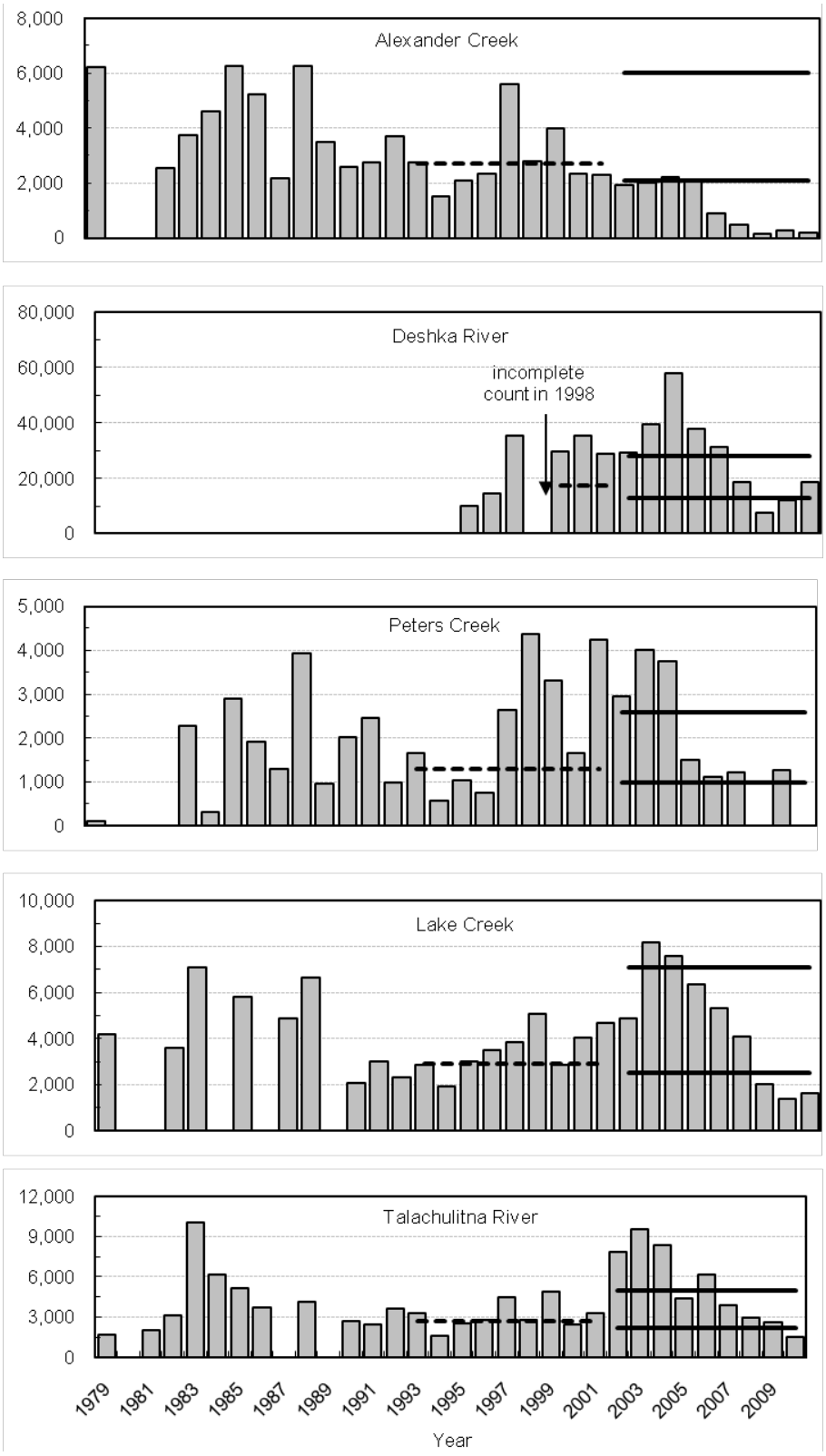


Figure 12.–Chinook salmon escapements at Westside Susitna River tributaries, 1979-2010. y-axis = Chinook salmon escapement (in number of fish). Dashed line = biological escapement goal. Solid line = sustainable escapement goal.

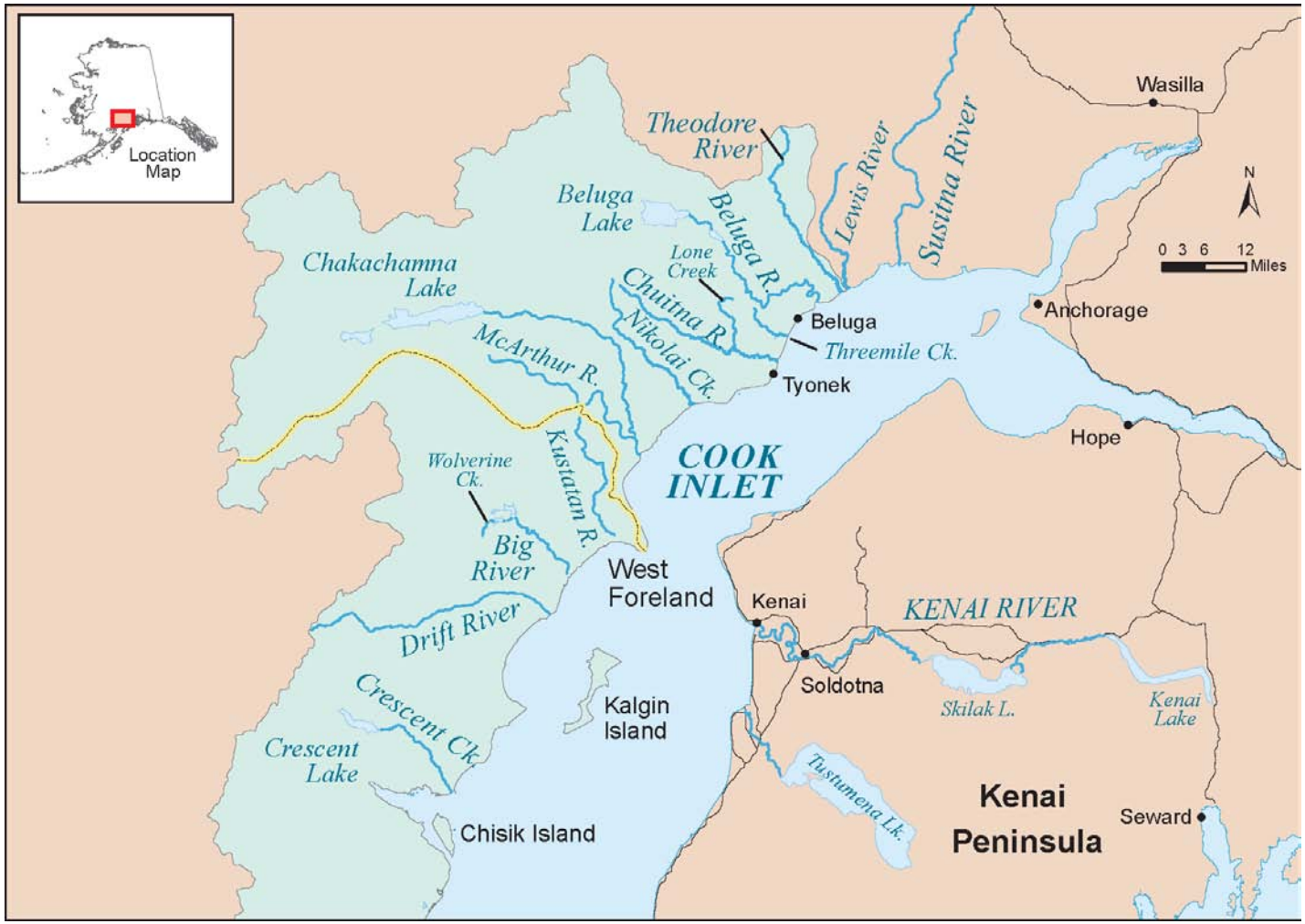


Figure 13.–West Cook Inlet Management Unit (WCIMU).

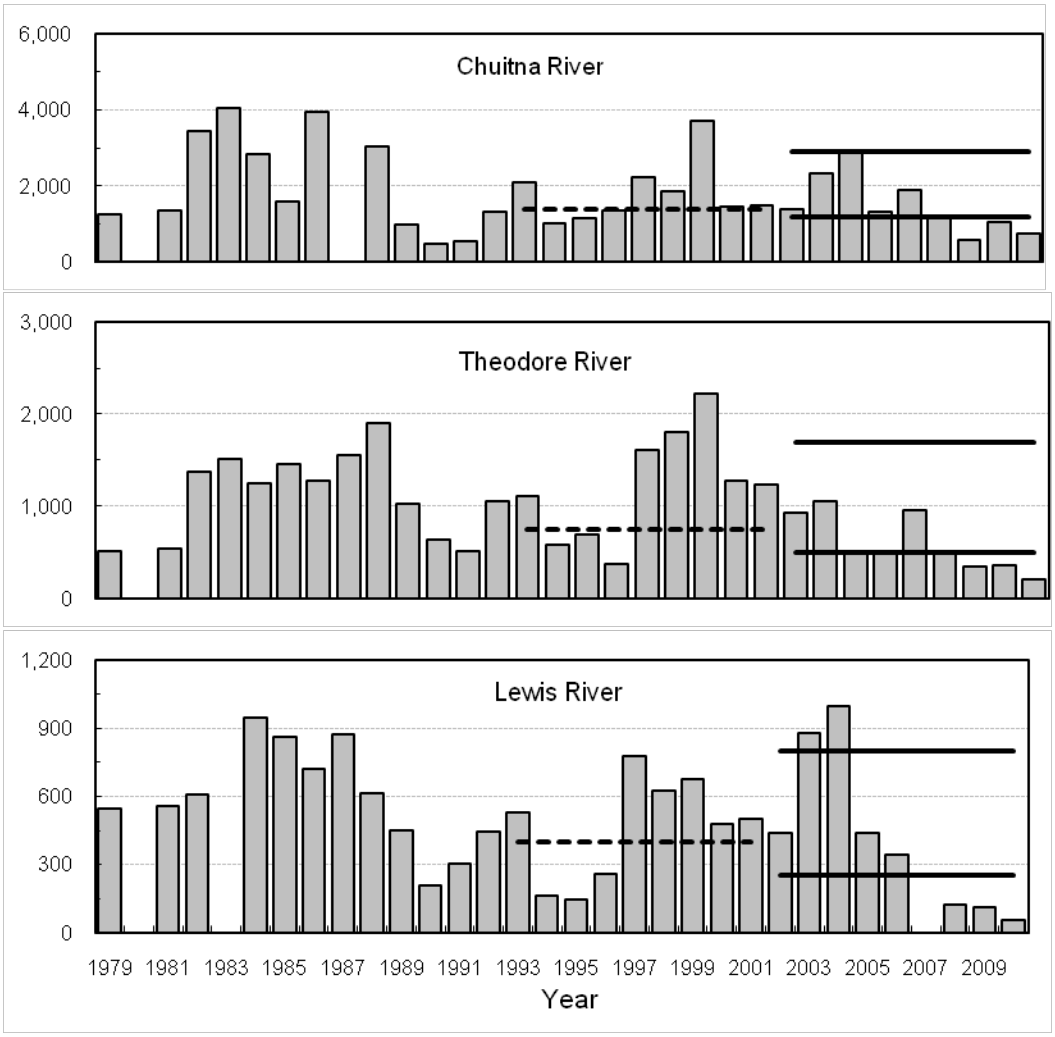
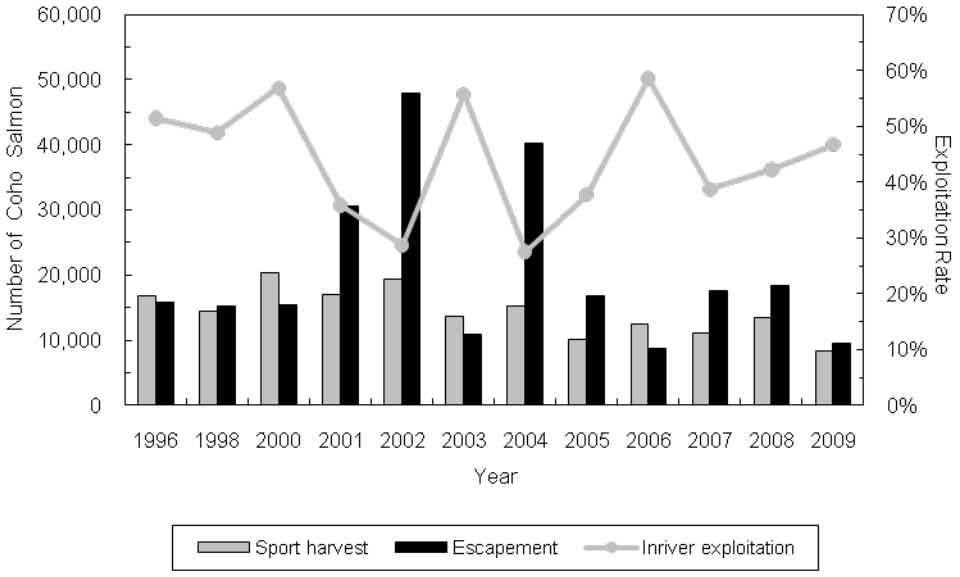
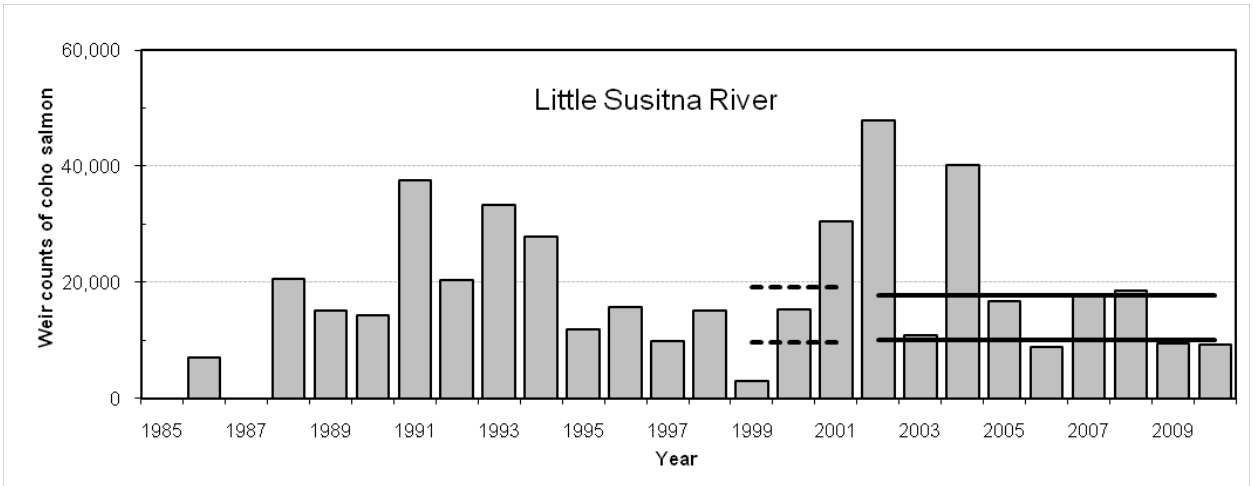


Figure 14.–Chinook salmon escapements at major West Cook Inlet freshwater drainages, 1979-2010. y-axis = Chinook salmon escapement (in number of fish). Dashed line = biological escapement goal. Solid line = sustainable escapement goal.



Note: 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.



Note: No weir in 1985 and 1987; incomplete counts at Little Susitna River weir in 1986, 2005 and 2006 due to flooding and weir submersion.

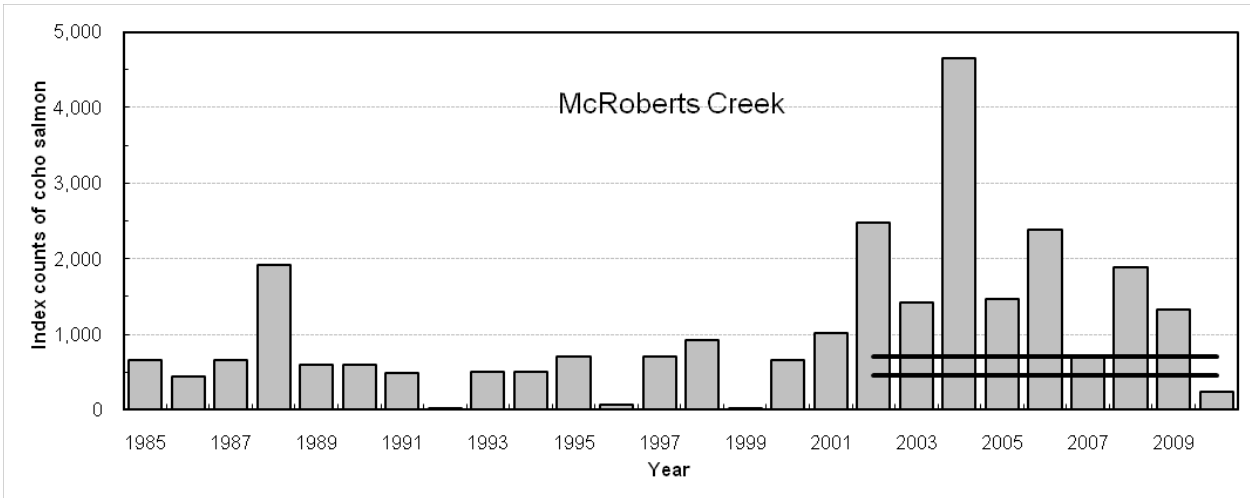


Figure 16.– Little Susitna River weir and McRoberts Creek index counts of coho salmon, 1985-2010. Dashed line = biological escapement goal. Solid lines = sustainable escapement goal range.

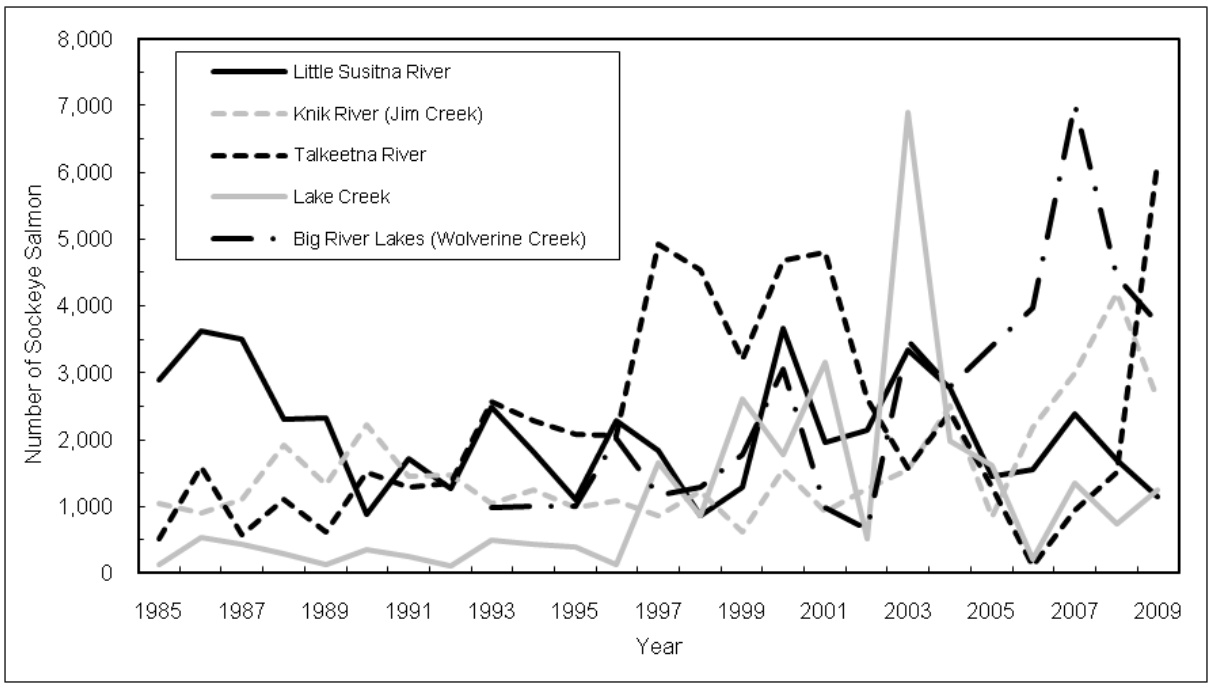
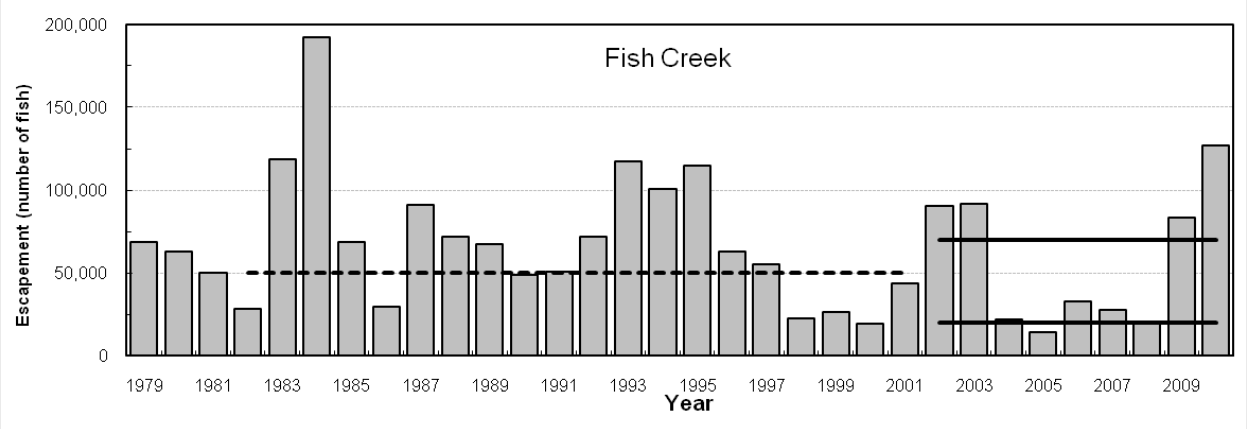
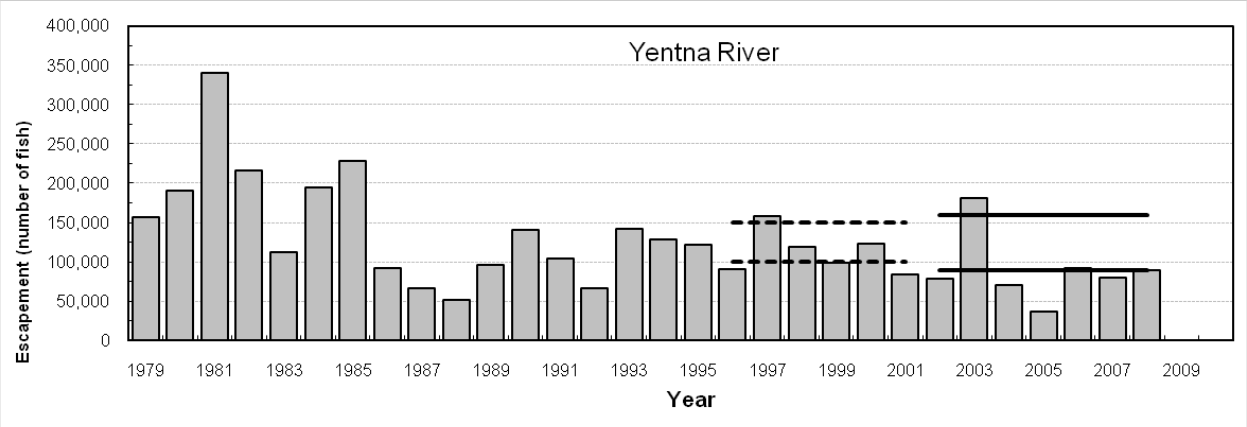


Figure 17.–Estimated harvest of Sockeye salmon from major fisheries within the NCIMA, 1985-2009.





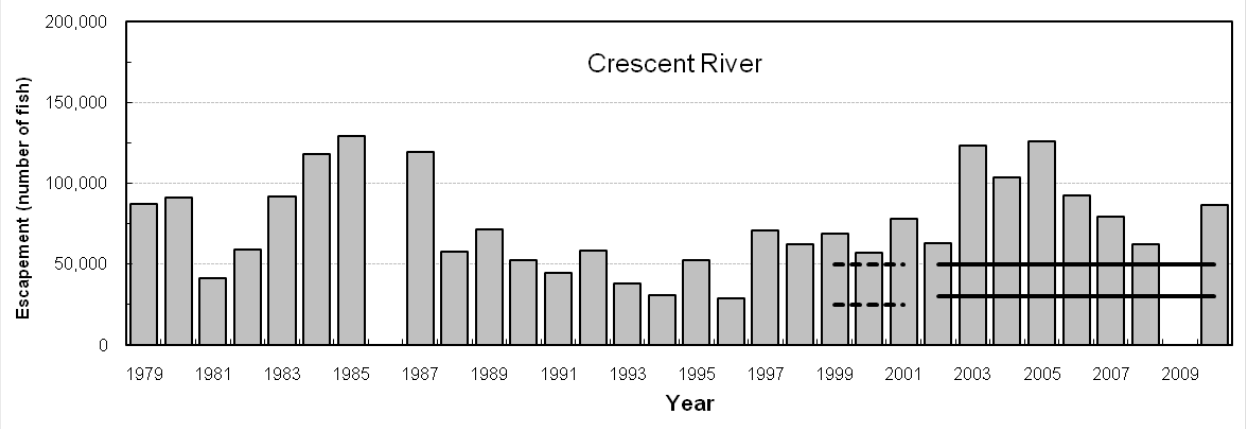


Figure 18.–Estimated sockeye salmon escapements from major fisheries in Northern Cook Inlet Management Area, 1979-2010. Dashed line(s) = old escapement goal or range. Solid lines = sustainable escapement goal range.

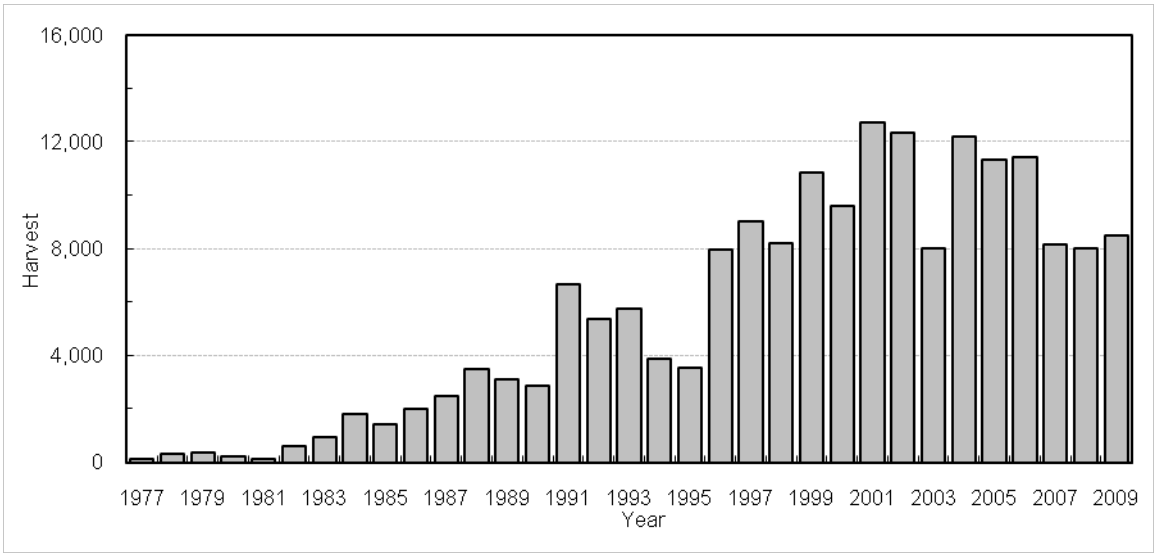


Figure 19.–Total northern pike harvest in the NCIMA, 1977-2009.

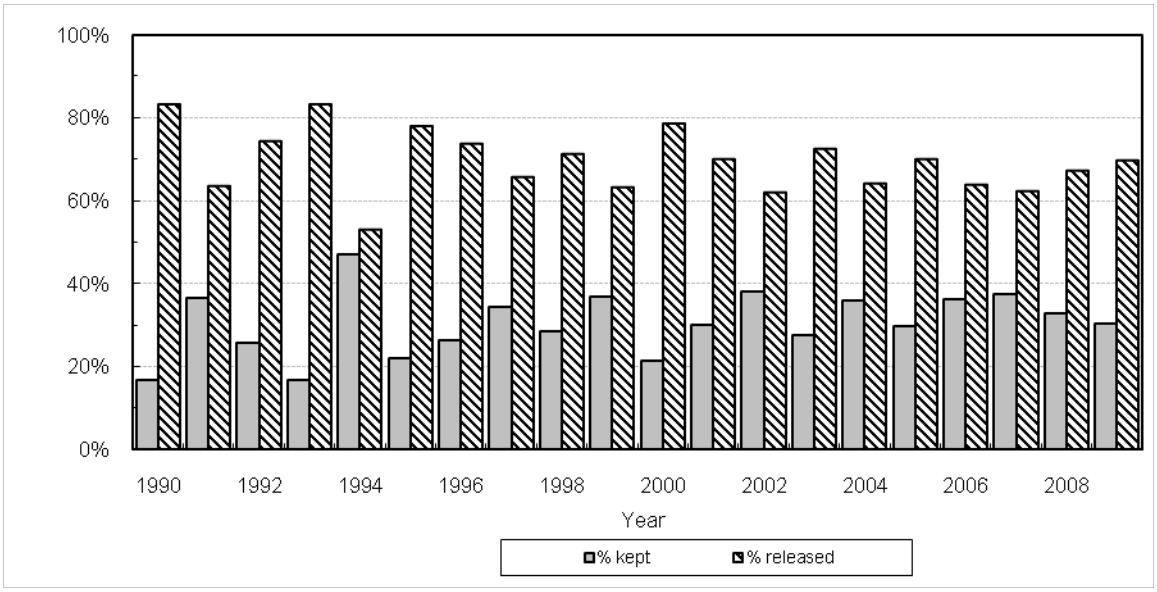


Figure 20.–Percent northern pike kept and released in the NCIMA, 1990-2009.

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 total length, harvest quota system. Achievement of the quota may have resulted in early season closure. A one fish per day two 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 longer in total 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 four 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 four consecutive "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 two consecutive weeks starting the fourth Saturday in June.

Bag and possession limits were one Chinook salmon 20 inches or over in total length in 1979. The following year bag and possession limits changed to two Chinook salmon 20 inches or over in total length but only one Chinook salmon could be over 28 inches in length. In 1981 the bag limit was reduced to one Chinook salmon 20 inches or more in length and in possession. This limit remained in effect through 1985. A five fish (20 inches or more in total 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 two Chinook salmon, 16 inches or more in total length daily and four in possession and remained so through 1992. Only one fish daily and two 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 one Chinook salmon, 16 inches or more in total length, and two in possession. The seasonal limit was five Chinook salmon 16 inches or more in total 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 five 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 total 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 total length to one daily and one 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 total 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 one mile upstream of the Beluga/Anchorage high voltage power lines; and 3) Lewis River Drainage: upstream of a department marker located approximately one 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 one daily and two 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 Chinook salmon fishing, including catch-and-release for Chinook 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 through 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

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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.

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.

1. 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.

1. 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.

2. 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.

3. 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.

1. 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.

1. 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.

2. 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.

3. 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.

4. 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.

1. Two EOs 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.

1. 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.

2. 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.

3. In 2008 a BOF meeting held in February resulted in the following king salmon regulation changes:

    1. Alexander Creek was closed to king salmon fishing.
    2. The area open to king salmon fishing at the Eklutna Tailrace was expanded. In addition to the Tailrace and waters within a ½-mile radius of the mouth, anglers would be allowed to fish downstream to an ADF&G marker located approximately 2 miles downstream of the Tailrace mouth.

In June, 2008, two EOs were issued to decrease the number of Chinook salmon harvested on the Deshka River. The first EO, issued on June 12 disallowed the use of bait beginning 6:00 a.m., June 14. The second EO, issued on June 19, closed the fishery for the remainder of the season. The last two regularly scheduled commercial periods on June 23 and 26 were closed as a result of closure of the Deshka River sport fishery.

In 2009, no new regulations were issued.

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In June, as in 2008, two EOs were issued decreasing the harvest of Chinook salmon in the Deshka River. The first, issued April 20, disallowed the use of bait and decreased retention by only allowing Chinook to be retained on Saturdays, Sundays and Mondays from May 15 through July 13. Any Chinook salmon caught Tuesday through Friday could not be removed from the water and was to be released immediately. The second, issued on June 11, closed the fishery for the remainder of the season. On May 20 the BOF enacted an emergency regulation to reduce the fishing times in the Northern District setnet fishery from twelve to six hours by allowing commercial salmon fishing to occur only between 7:00 a.m. and 1:00 p.m. On June 11 the Northern District was closed to the harvest of Chinook salmon for the remainder of the fishing periods scheduled for 2009 due to the closure of the Deshka Chinook salmon sport fishery.

With concern about the low number of king salmon returning to the area, another EO took effect July 3 closing Parks Highway streams of the Susitna River drainage for the final three-day weekend and the Little Susitna River to the taking of Chinook salmon from Friday, July 3 through the remainder of the season.

An EO issued on July 1 clarified that Areas in Unit 2 closed to king salmon fishing throughout the year (upstream of Parks Highway bridges, department markers, etc) were not affected by the June 11 EO and that anglers could continue to fish for trout and other species in those streams.

In 2010, no new regulations were issued.

Due to failure to meet escapement goals from 2007-2009, an EO was issued on May 4 that closed the king salmon sport fishery, including catch-and-release, in the Theodore, Lewis and Chuitna rivers at 6:00 a.m. on May 15 for the remainder of the season. The areas affected included all marine waters within a one-half mile radius of the mouths of these rivers. As a result, the Northern District set net fishery was closed per the *Northern District Chinook Salmon Management Plan* from an ADF&G regulatory marker located one mile south of the Chuitna River to the Susitna River for the entire directed king salmon fishery.

On June 9 an EO prohibited the use of bait in the lower portion of the Deshka River effective 6:00 a.m., June 12. This EO was rescinded on June 19 when it was projected the escapement goal would indeed be met. A step down restriction followed in the Northern District set net fishery with the third (June 14) of four regularly scheduled periods being restricted from 12 to 6 hours.

1. On June 24 an EO reduced the annual limit for king salmon in the Yentna River Drainage from five fish to one fish beginning June 26. Any Chinook salmon recorded before June 26 on the harvest portion of an Alaska sport fishing license or harvest record card would not count towards the one Chinook salmon that could be harvested after June 25.

2. On June 30 an EO was issued that closed the Chinook salmon sport fishery on Parks Highway streams of the Susitna River drainage for the remaining two weekends and the Little Susitna River effective 11:00 p.m. on July 2 and continuing through the remainder of the season. Waters normally open to Chinook salmon fishing in Unit 2 was also closed to all sport fishing.

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3. The Little Susitna River downstream from the Parks Highway Bridge and waters normally closed to Chinook salmon fishing throughout the year in Unit 2 remained open to fishing for trout and other species.

4. A separate EO also issued on June 30 reduced the annual king salmon limit on the Talkeetna and Chulitna River drainages from five fish to one fish effective at 11:00 p.m. July 2. Chinook salmon recorded before July 3 on the harvest portion of an Alaska sport fishing license or harvest record card would not count towards the one Chinook salmon that could be harvested after July 2.

Appendix A2.–Deshka River Chinook salmon regulatory changes, 1977-2010.

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 25 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
2008	January 1 – July 13	mouth to Chijuk Creek, 6 am-11 pm; Fishery closed June19 by EO.	bait not allowed June 14-July13 by EO.	1/day over 20” & 1 possession	5 over 20”	King stamp. Harvest record back of license
2009	January 1 – July 13	Mouth to Chijuk Creek, 6am-11pm Retention Sat, Sun Mon only May 13 by EO. Fishery closed June 11 by EO.	bait not allowed after April 20 by EO.	1/day over 20” & 1 possession	5 over 20”	King stamp. Harvest record back of license
2010	January 1 – July 13	Mouth to Chijuk Creek, 6 am-11 pm	Bait not allowed after June 12-June 19 by EO	1/day over 20” & 1 possession	5 over 20”	King stamp. Harvest record back of license

Source: Ivey *In prep*..

Appendix A3.–Coho salmon regulatory history for NCIMA waters, 1991-2010.

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 through 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.

2.

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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 two. 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 salmon from Fish and Cottonwood creeks a person may not fish that same day in Fish and Cottonwood 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.

1. **2003**
2. No new regulations adopted for 2003 and no EOs issued.
3. **2004**
4. No new regulations adopted for 2004 and no EOs issued.
5.

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1. **2005**

2. 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.

1. 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.

1. No emergency orders were issued affecting coho salmon fisheries in 2005.
2. **2006**
3. No new regulations adopted in 2006.
4. Emergency orders:

1. E.O. No. 2-SS-2-41-06 increased the daily bag limit of coho salmon to three 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.

1. **2007**
2. No new regulations adopted in 2007.
3. 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 Tailrace 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.

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2008

No new sport fish regulations adopted in 2008. The central drift fishery was liberalized from regular fishing periods (Monday and Thursday) being restricted to areas 3 and 4 after August 11 to no mandatory restrictions to regular fishing periods between August 11 and 15.

Emergency orders:

1. **E.O No. 2-SS-2-26-08 Increased the** bag limit for coho salmon to three (3) per day in that portion of the Knik Arm open to salmon fishing, excluding Jim Creek beginning August 16.

2009

No new regulations adopted in 2008.

Emergency orders:

1. EO No. 2-SS-2-27-09 Increased the bag limit for coho salmon to three (3) per day in that portion of the Knik Arm open to salmon fishing except the Little Susitna river beginning August 19.
2. This same EO also added Mondays to the weekend fisheries of Cottonwood, Wasilla and Fish creeks beginning August 19.

2010

No new regulations adopted in 2010

Emergency Orders:

1. 2-SS-2-42-10 increased the bag limit for coho salmon to three (3) per day in that portion of the Knik Arm open to salmon fishing except Jim Creek and the Little Susitna river beginning August 7.
2. 2-RS-2-38-10 opened the Fish Creek Personal Use Dip Net fishery for salmon other that king salmon only between the hours of 6:00 a.m. and 11:00 p.m. starting at 6:00 a.m. July 24 and ending 11:00 p.m. July 31.

Appendix A4.–Northern Pike regulatory history for NCIMA waters, 1989-2009.

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

1. 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.
2. The 10 fish bag and possession limits on northern pike in the Susitna-West Cook Inlet Area were repealed.

1998

1. 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.
2. Action resulted in allowing the use of bow and arrow for taking northern pike in NCI waters.
3. 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.

1. **2009**

    1. The board met out-of-cycle in April 2009: the slot limit regulation on Alexander Lake was replaced with a size limit regulation. Under the new regulation, all pike less than 27 inches may be harvested without a bag or possession limit, while only 1 pike larger than 27 inches may be retained per day and in possession.

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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Appendix B1.–Page 2 of 4.

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	

APPENDIX C. SUMMARY OF ALEXANDER CREEK DRAINAGE NORTHERN PIKE STUDIES

History of northern pike proliferation within the drainage and impacts to anadromous and resident fish species.

It is believed that northern pike were introduced to Alexander Lake (Figure C-1) in the late 1960s, although there was no harvest record of them prior to 1985 (Mills 1986). Anecdotal accounts from Alexander Creek area residents suggest that dispersal of northern pike from the lake to the lower river occurred slowly over 10-20 years. Anglers first caught them in the lower river in the mid-1990s. Today, northern pike are widespread throughout the system. Most of the drainage is shallow and densely vegetated, making it ideal northern pike habitat (Morrow 1980 and Mecklenburg et al. 2002).

Fisheries of Alexander Creek historically generated an average of 13,700 angler-days of effort annually for the 20-year period from 1980-1999. The Chinook salmon fishery contributed greater than 90% of the expended effort, and an average of 2,880 Chinook were harvested annually (Ivey et al. 2008). The peak of the sport fishery occurred in 1991 with a reported 26,235 days of effort and 6,548 Chinook salmon harvested (Whitmore and Sweet 1998). Approximately six lodges operated during this time period in which Chinook salmon were primarily targeted.

Since the late 1990s, northern pike have reduced the population size of multiple fish species in the Alexander Creek drainage. Aerial indices of escapement have shown a downward trend in Chinook salmon spawners over the past decade with a dramatic drop in the past five years. The Sustainable Escapement Goal for Chinook salmon is 2,100-6,000 fish. Escapement counts were 885, 440, 185, 275, and 177 fish respectively for 2006-2010. The Chinook sport fishery was closed in 2008. Aerial surveys have also shown a change in the distribution of Chinook spawners. Since 1992, Chinook spawners have disappeared from the tributaries upstream of Alexander Lake and since about 1998, from the upper mainstem of Alexander Creek between Sucker Creek and Alexander Lake. In the past five years, few lower mainstem Chinook have been observed. Presently, spawning is mostly isolated to Sucker Creek and the Wolverine Creek branch of Sucker Creek (Figure C-1). Harvest of coho salmon has been below the historical average of 1,683 since 2004, ranging from 757 fish in 2005 to only 10 fish reported in 2008 (Ivey et al. 2008). The once popular and abundant rainbow trout and grayling fisheries were also closed to harvest in 1996 (Whitmore and Sweet 1998). Despite these fisheries becoming catch-and-release, catch rates have declined over the past 20 years for both species.

Review of studies conducted within the drainage.

Northern pike have been studied in the Alexander drainage since 1994. Alexander Lake was included in a 1994-1995 study by Rutz (1996) in which seasonal movements, age and sex statistics, and food habits were assessed in 14 lakes and 2 tributaries of the Susitna River drainage. Dietary trends were assessed by two major habitat types where salmonids were present. Pike residing in type 1 habitat, characterized as fast clearwater streams and deep lakes with little aquatic vegetation, ingested a significantly higher proportion of salmonids (73%) and fewer invertebrates (11%) than pike of type 2 habitat in which waters are slow moving, shallow, with abundant vegetative mats where pike were well established. Stomachs from type 2 habitat revealed 96% invertebrates and 3% salmonids (Rutz 1996). Minnow trapping confirmed lower relative abundance of salmonids in type 2 habitat. Results indicated pike preferred salmonids over other prey species and were likely responsible for a lower relative abundance of salmonids in type 2 habitat. Alexander Lake was grouped among those lakes containing type 2 habitat. Relative stock densities were determined from length information taken from Alexander Lake pike during this study. Northern pike were sampled from Alexander Lake during 1994, 1995 and 1996 during the spawning season and a total of 579, 1,427 and 1,453 northern pike were captured respectively. The abundance of northern pike 300 mm fork length (FL) and longer was calculated with a Jolly Seber capture-recapture model. Estimates of abundance were only estimated for the 1995 spawning year class.

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Abundance for 1995 was estimated to be 12,959 (standard error = 2,216); approximately 36 fish/hectare (Memo *unpublished*[10]). In 2008, the affects of the slot limit management strategy, which had been in place on Alexander Lake since 1998 (10 years), was evaluated. Methodology of this study mirrored that of the 1994-1996 sampling efforts (Rutz 1996). A total of 1,321 pike greater than 300 mm FL were captured in 2008. RSDs were calculated and compared to the mid 1990s study (Table C-1) and length frequencies were generated (Figure C-2 and Figure C-3). The slot limit may have maintained the historical size structure as there was no significant difference between length frequencies between the mid 1990s and the 2008 studies. To address concerns over the observed reduction in Chinook salmon production, studies were conducted in 2009 and 2010 to assess the feasibility of a northern pike suppression program on Alexander Creek. Feasibility studies conducted in May of 2009 and May of 2010 collectively targeted 32 side channel sloughs along the 40 river miles of Alexander Creek mainstem. In 2009, 12 sloughs occurring on the lower 20 miles of creek were targeted and in 2010, 20 sloughs of the upper 20 miles of creek (Figure C-1). An average of 20 variable mesh gillnets were fished continuously and checked once every 24 hours. About 11 sloughs were targeted at any particular time. Depending on the slough size and habitat present, from one to three nets were set per slough. Nets were pulled from a slough when either an 85% reduction had been made for a particular slough or the slough dried up or became completely landlocked from the mainstem. In 2009, 85% reduction was based on initial catch and in 2010, on peak catch for a particular slough. During the 2009 study, 2,597 gillnet hours (Table C-2) were expended to net 1,147 pike; during 2010, it took 3,817 gillnet hours to net 885 (Figure C-4 and Figure C-5). Lengths were taken from all captured fish, while stomach contents, maturity, and sex were determined from dissected fish. The mean length for all pike netted was 508 mm FL in 2009 and 481 mm FL in 2010 (Table C-3). Dissected stomachs revealed >50% macroinvertebrates (Table C-4) and a relatively lower proportion stomachs containing salmonids (7.3%) in the upper section in 2010 than on the lower section (25.7%) netted in 2009 (Figure C-6). Combined results demonstrated that northern pike in most side-channel sloughs could be reduced by 85% within about one week of continuous gillnetting (Table C-5).

Long-term suppression planning.

Beginning in May of 2011, a large-scale gillnetting operation will begin in side-channel sloughs of Alexander Creek. Northern pike will be targeted with 75 gillnets while congregated for spawning in side channel sloughs from approximately 7 May (ice-out) to 7 June which is approximately 15 days past cessation of spawning and when the majority of sloughs become nonnavigable due to dropping water levels. Three field camps will be set up along the mainstem of Alexander Creek. One will be located in the lower river between the mouth of Alexander Creek and Sucker Creek, and two will be located between Sucker Creek and Alexander Lake because the density of sloughs is higher in the upper portion of the river. Two technicians will be assigned to each field camp and will be responsible for gillnetting their corresponding section of creek. In each section of creek, approximately 12 side channel sloughs will be targeted for a total of 36 sloughs in all. Sloughs furthest downstream in each river section will be fished first until either all sloughs are set or the available gillnets are deployed. Netting will cease for a particular slough once a day's (24-hour period) catch is equal to or less than 15% of the peak day's catch. Based on the results of the 2009/2010 feasibility studies, it is expected that this target reduction will be met within eight days of gillnetting at most of the sloughs. Sloughs remaining hydrologically-connected with the mainstem and where increased catches are observed due to post -spawn movement, will be further targeted until either an 85% reduction in northern pike catch is achieved or the end of the netting period is reached. It is expected that catch rates of northern pike will rebound between years of netting which is why it is anticipated that annual netting will be necessary. However, after five years of intensive removal of northern pike spawners, it is expected that initial catch rates will begin to decrease in each of the side channel sloughs.

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[10] Results of 1995 mark-recapture and sampling efforts on Alexander Lake. *Memorandum*. Alaska Department of Fish and Game, Sport Fish Division, Palmer, 3 pp.

A study on the effectiveness of gillnetting to remove invasive northern pike from lakes on the Kenai Peninsula demonstrated that catch rates of northern pike could be substantially reduced within two years of continuous northern pike suppression (Massengill 2010). Bioenergentics modeling of other large-scale invasive fish control programs, such as the systematic removal of lake trout *Salvelinus namaycush* to conserve cutthroat trout *O. clarki* stocks in Yellowstone Lake, demonstrate that these suppression projects can dramatically reduce the predation pressure on native fishes and bolster their recovery (Ruzycki et al. 2003.)

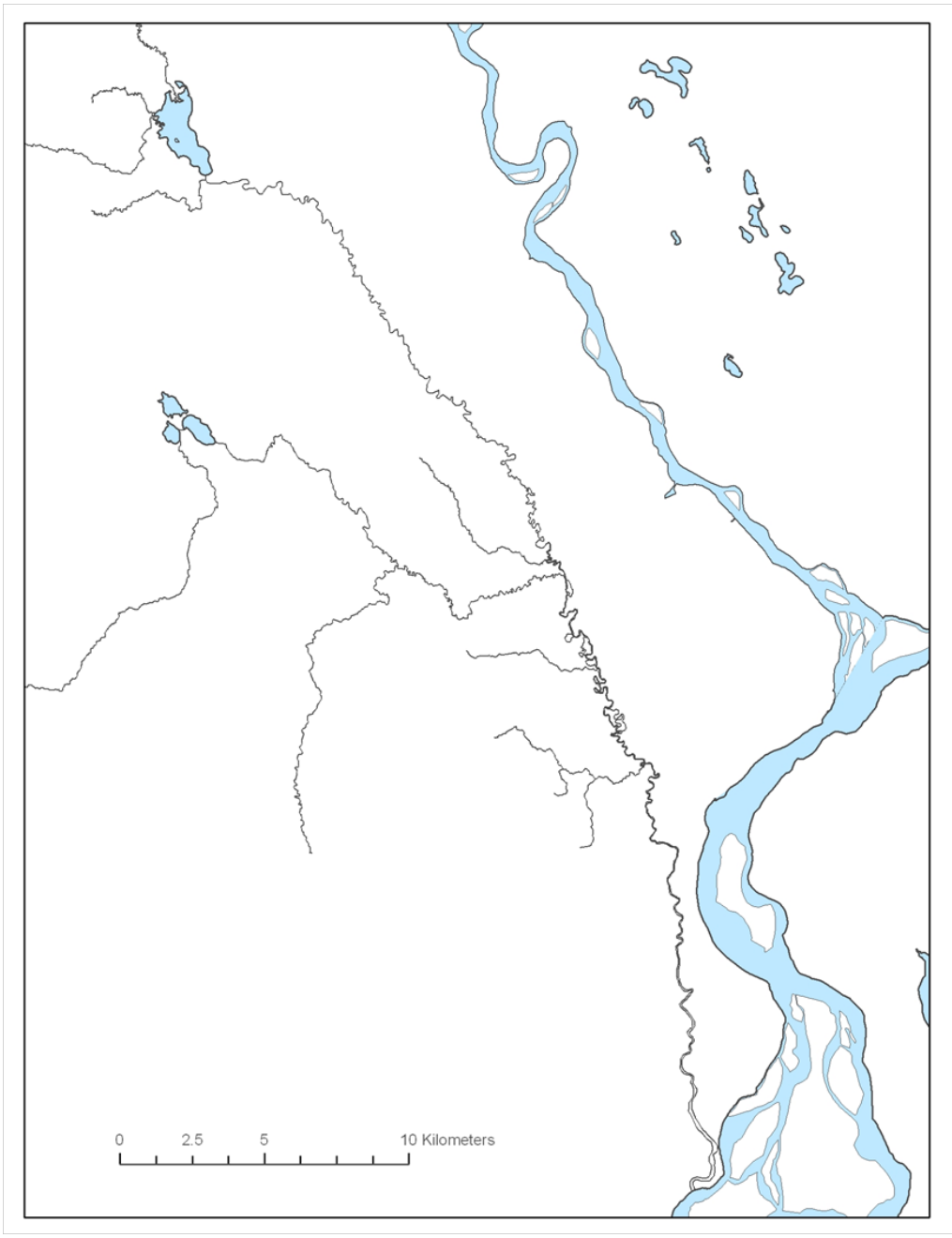

Figure C1.–Alexander Creek drainage.

Table C-1.–Relative stock densities of northern pike captured in Alexander Lake in 1995, 1996, and 2008.

	Hoop net		**H&L**		**Both**	
Length (mm FL)	#	RSD	#	RSD	#	RSD
>300						
1995	698		553		1251	
1996	1442		158		1600	
2008	1170		135		1305	
>560						
1995	250	36	171	31	421	34
1996	376	26	73	46	449	28
2008	263	22	23	17	286	22
>760						
1995	27	4	8	1	35	3
1996	21	1	1	1	22	1
2008	64	5	2	1	66	5

Table C2.–Catch effort and length composition by side channel slough of northern pike gillnetted on Alexander Creek, 2009-2010.

2009	Catch					Sampled			
			CPUE (pike/net-hour)				Length (mm FL)		
Slough	Total catch	Effort (net-hours)	Min	Max	Ave	Total Sampled	Min	Max	Ave
1	173	352.48	0.04	0.28	0.17	173	808	808	518.4
2	123	352.13	0.04	0.85	0.35	123	797	797	515.5
3	41	184.73	0.00	0.21	0.11	41	776	776	549.7
4	40	279.82	0.00	0.34	0.14	40	370	681	529.9
5	115	280.37	0.03	0.22	0.14	115	235	1005	511.1
6	102	169.25	0.04	0.32	0.12	102	226	713	419.8
7	24	73.50	0.02	0.33	0.16	24	150	725	469.5
8	23	169.50	0.00	0.32	0.13	23	269	675	512.9
9	349	336.17	0.13	0.47	0.30	349	205	877	518.4
10	4	92.00	0.00	0.06	0.02	4	295	325	310.5
11	80	141.25	0.05	0.31	0.19	80	260	770	509.6
12	73	165.50	0.06	0.60	0.22	73	222	755	519.9
Totals	1,147	2,596.70				1,147			
Means			0.04	0.36	0.17		384	742	490

2010	Catch					Sampled			
			CPUE (pike/net-hour)				Length (mm FL)		
Slough	Total catch	Effort (net-hours)	Min	Max	Ave	Total Sampled	Min	Max	Ave
13	101	157.17	0.07	0.67	0.28	101	118	750	492.4
14	93	359.00	0.03	0.20	0.09	93	135	710	428.7
15	18	214.58	0.00	0.17	0.07	18	307	697	485.2
16	55	166.67	0.04	0.39	0.16	55	267	693	491.8
17	31	237.58	0.00	0.25	0.13	31	262	743	455.2
18	80	372.58	0.08	0.47	0.22	80	254	823	513.8
19	42	95.25	0.04	0.28	0.15	42	289	648	494.5
20	78	310.25	0.04	0.38	0.15	78	282	817	514.2
21	16	95.75	0.02	0.13	0.08	16	333	695	520.8
23	27	145.08	0.02	0.21	0.09	27	351	718	503.7
24	8	117.08	0.04	0.09	0.07	8	325	653	498.6
25	17	213.17	0.00	0.13	0.08	19	346	638	516.9
26	34	213.00	0.04	0.23	0.16	34	320	645	479.6
27	79	263.08	0.03	0.25	0.10	79	250	676	486.5
28	34	263.00	0.00	0.42	0.13	34	330	716	495.4
29	85	213.33	0.07	0.31	0.17	86	130	711	430.4
30	39	190.83	0.03	0.15	0.07	39	141	927	444.5
31	24	94.83	0.08	0.25	0.14	32	274	720	526.6
32	14	95.00	0.08	0.31	0.15	13	300	635	463.0
Totals	875	3,817.25				885			
Means			0.04	0.28	0.13		264	717	486

Table C3.–Sex and length composition of northern pike gillnetted in side channel sloughs of Alexander Creek in 2009 and 2010.

2009	Female	Male	Unknown	All
%	45.3	53.4	1.3	33.5
Mean length (mm)	534	480	229	508
Min length (mm)	215	150	205	150
Max length (mm)	1,005	713	281	1,005
N	174	205	5	1,147

2010	Female	Male	Unknown	All
%	25.4	60.8	13.8	44.3
Mean length (mm)	564	462	291	481
Min length (mm)	302	230	118	118
Max length (mm)	725	728	571	927
N	99	237	54	880

Note: sex determined by examination of gonads of dissected pike.

Table C4.–Proportion of non-empty stomachs containing major food items found in northern pike sampled on Alexander Creek, 2006 and 2009–2010.

					Proportion nonempty stomachs containing:					
Location	Year	Dates sampled	Stomachs	Proportion non-empty stomachs	Salmonid [a]	Other fish [b]	Leech	Lamprey	Other macro-invertebrates [c]	Total macro-invertebrates [d]
A	2009	5/14-5/28	384	82.3%	25.3%	63.0%	11.1%	39.9%	17.1%	54.1%
B	2006	5/10-5/12	53	71.7%	16.0%	34.2%	26.3%	50.0%	31.6%	76.3%
B	2010	5/11-5/26	390	84.4%	7.3%	28.0%	28.9%	23.4%	31.0%	67.2%

Location A= Alexander Creek side channel sloughs from it mouth to Sucker Creek (lower 20 miles).
Location B= Alexander Creek side channel sloughs from Sucker Creek to Alexander Lake (upper 20 miles).

[a] Chinook, coho, sockeye, pink, and chum salmon and rainbow trout; includes unidentifiable salmonids.

[b] Arctic Grayling, whitefish, northern pike, sculpin, burbot, stickleback, other fish.

[c] Snails, scuds, beetles, and cadis, dragon and damsel flys.

[d] Leech, lamprey, and other macroinvertebrates categories.

Table C5.–Evaluation of side channel sloughs targeted with gillnets in 2009-2010 to assess feasibility of northern pike suppression on Alexander Creek.

2009 feasibility netting mouth upstream to about river mile 20 (Sucker Creek).
Analysis of objective criteria: reduce abundance by 85% of initial catch in each slough over 3-wk period. Note that project lasted 15 days.

slough	First day	Last day	# days trapped	# nets	Initial catch	Last catch	%reduction	> 85% Reduction	Date if became landlocked	Reason for pulling	Comments	Recommended # of nets
1	5/14	5/28	14	3	16	3	81	no		end of project	add 1 net; good slough	4
2	5/14	5/28	14	1	9	2	78	no		end of project	continue with 1 net	1
3	5/14	5/21	7	2	7	0	100	yes	5/21	85% reduct	hit early; mouth closes off early	2
4	5/14	5/25	11	1	8	0	100	yes		85% reduct	hit early with; add 2 nets	3
5	5/14	5/25	11	3	15	2	87	yes		85% reduct	good slough; keep at 3 nets	3
6	5/15	5/21	6	5	38	5	87	yes	5/21	85% reduct	hit very early; mouth closes off early	5
7	5/15	5/17	2	2	16	1	94	yes	5/17	85% reduct	skip unless high water; dewaters fast	2
8	5/15	5/21	6	1	8	1	88	yes	5/21	85% reduct	keep at 1 net	1
9	5/15	5/17	2	2	21	12	43	no		N/A	N/A	N/A
9	5/18	5/28	13	4	39	13	67	no		end of project	best slough; add 2 net for 6 total	6
10	5/22	5/25	3	2	1	0	100	yes		85% reduct	narrow slough; low catch; 1 net	1
11	5/22	5/27	5	3	21	4	81	no	5/27	landlocked	good slough; access limitations; net early	4
12	5/22	5/28	6	2	28	3	89	yes		85% reduct	good slough; keep at 2 nets	2

# sloughs reduced by at least 85% of initial catch:	8
Average # days to reach reduction of 85%:	6.5
# sloughs to landlock:	5

-continued-

Table C5.–Page 2 of 2.

2010 feasibility netting from about river mile 20 (Sucker Creek) upstream to Alexander Lake.
Analysis of objective criteria: reduce abundance by 85% of the peak catch in each target slough over 3-wk period. Note that project lasted 16 days.

slough	First day	Last day	# days trapped	# nets	Initial catch	Peak catch	Least catch	%reduction	> 85% Reduction	Date if became landlocked	Reason for pulling	Comments	
13	5/10	5/17	7	3	23	28	5	82	no	5/17	landlocked	Access limitations; hit early: add 1 net	4
14	5/11	5/26	15	3	14	14	2	86	yes		85% reduct	end of project; good slough; 3 nets good	3
15	5/11	5/20	9	1	4	4	1	75	no	5/20	low catch	low catch, access limitations	1 or 0
16	5/11	5/18	7	2	18	18	2	89	yes		85% reduct	good slough; 2 nets good	2
17	5/11	5/21	10	1	5	6	2	67	no		end of project	expect low catch; 1 net good	1
18	5/11	5/26	15	1	11	11	2	82	no		end of project	good slough; 1 net good	1
19	5/11	5/15	4	3	20	20	3	85	yes		85% reduct	good slough; 3 nets good	3
20	5/11	5/24	13	2	18	18	1	94	yes		85% reduct	good slough; 2 nets good	2
21	5/11	5/15	4	2	6	7	1	86	yes	5/15	85% reduct	low catch;access limitations	2
22	5/11	5/12	1	1	0	0	0	#DIV/0!	#DIV/0!		low catch	few pike; skip this slough	0
23	5/11	5/17	6	2	2	10	1	90	yes	5/17	85% reduct	Access limitations; 2 nets good	2
24	5/17	5/22	5	1	2	2	1	50	no		low catch	consider not setting this slough	1 or 0
25	5/17	5/26	9	1	2	3	1	67	no		low catch	consider not setting this slough	1 or 0
26	5/17	5/26	9	1	5	5	1	80	no		end of project	set early; add 1 net	2
27	5/15	5/26	11	3	16	16	2	88	yes		85% reduct	3 nets good	3
28	5/15	5/26	11	1	9	9	1	89	yes		85% reduct	add 2 nets	3
29	5/17	5/26	9	2	14	16	5	69	no		end of project	add 1 net	3
30	5/18	5/26	8	3	10	10	2	80	no		end of project	hit early; dries up quick; add 1 net	4
31	5/22	5/26	4	2	11	11	2	82	no		end of project	hit early; dries up quick; add 1 net	3
32	5/22	5/26	4	1	7	7	2	71	no		end of project	low catch; 1 net OK	1

# sloughs reduced by at least 85% of peak catch:	8
Average # days to reach reduction of 85%:	8.9
# sloughs to landlock:	4