



Chickaloon Village

Traditional Council

(Nay'dini'aa Na')

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BOARDS

February 2, 2011

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Traditional Chief

Doug Wade,
Chairman/Elder

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Jess Lanman,
Elder Member

Burt Shaginoff,
Elder Member

Larry Wade,
Elder Member

Jennifer Harrison,
Executive Director

Attn: BOF Comments
Boards Support Section
Alaska Department of Fish and Game
P.O. Box 115526
Juneau, AK 99811-5526

Re: Proposal 281 – 5 AAC 61.122. Special provisions and localized additions and exceptions to the seasons, bag, possession, and size limits, and methods and means for Unit 6 of the Susitna River Drainage Area. Allow king salmon fishing in the Matanska River as follows:
Open Matanuska River drainages to king salmon fishing.

Dear Board of Fish,

Chickaloon Village Traditional Council would like to voice our opposition to Proposal 281 – Opening Matanuska River drainages to king salmon fishing.

There are two main tributaries to the Matanuska River that provide habitat for wild king salmon spawning – Moose Creek and Wolverine Creek. Chickaloon Village has worked with USFWS, NOAA, and other groups to restore Moose Creek fish passage, fish habitat and Chinook salmon populations. Fish passage was cut off at mile 3.1 of Moose Creek due to coal mining and railroad extraction practices. In 2005-2007 Chickaloon Village was successful in restoring fish passage on Moose Creek. We have been enumerating returning adult Chinook salmon in Moose Creek annually since 2004. ADF&G conducts aerial counts of adult Chinook salmon on Moose Creek when conditions are permissible. The returning numbers of Chinook salmon to this creek is not large. Last year we only counted 231 adults during a two-day foot survey that covered over 7 miles of stream. Our average return over the past 5 years is around 400 Chinook salmon.

During the summers of 2008 and 2009, Chickaloon Village conducted a spawning distribution study with USFWS using ADF&G fish-wheels on the Matanuska River to capture and place radio tags on returning salmon (Chinook, chum, sockeye and coho salmon) to track their migration upstream and to map spawning habitats. We discovered that the only other substantial population of Chinook salmon in the Matanuska River (north of the Old Glenn Highway Bridge) uses Wolverine Creek, directly across the valley from the mouth of Moose Creek. We did not conduct a foot survey on Wolverine Creek for Chinook salmon, but it was noted by the field crew that returning adult Chinook salmon on Wolverine Creek seemed fewer in number compared with Moose Creek.

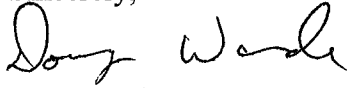
Seeing that few kings return to the Matanuska River drainage, Chickaloon Village

feels that there is no concern about over-escapement of Chinook salmon as the Matanuska Valley Advisory Committee suggests. Since there is not a continual enumeration of returning adult salmon to the Matanuska River there is no effective way to manage the fishery. We are willing and eager to revisit this issue in the future if and when larger numbers of Chinook salmon return to the Matanuska River drainages and if an effective way of enumerating returning adult salmon is implemented. Until that time, it would be un-wise to open up the area to Chinook salmon fishing with so few fish to maintain the species.

We would also like to commend the Mat-Su Borough Mayor's Blue Ribbon Sportsmen's Committee and their efforts to create sustainable escapement for returning salmon to upper Cook Inlet. Their handout "Upper Cook Inlet 2011 – Fishery Issues and Recommendations" is a good reference tool for the BOF and brings to the forefront the issues that upper Cook Inlet is facing in regards to missed escapement goals and poor fisheries management. We support most of the suggestions they have to offer.

Thank you for your time and effort on these many important fish issues.

Sincerely,



Doug Wade
Chairman

An underwater photograph of a stream. In the foreground, a salmon is swimming towards the viewer, its mouth slightly open. Behind it, another salmon is visible, also swimming towards the viewer. The water is clear and greenish, with sunlight filtering through, creating bright spots and reflections. The bottom of the stream is covered with smooth, rounded stones of various colors, including brown, tan, and grey.

Upper Cook Inlet 2011

Fishery Issues & Recommendations

MATANUSKA-SUSITNA BOROUGH
MAYOR'S BLUE RIBBON SPORTSMEN'S COMMITTEE
350 EAST DAHLIA AVENUE
PALMER AK 99645

**MATANUSKA-SUSITNA BOROUGH
MAYOR'S BLUE RIBBON SPORTSMEN'S COMMITTEE**

Bruce Knowles, Chairman

Jim Colver, Vice-Chairman

Larry Engel

Andy Couch

Howard Delo

Brian Winnestaffer

Frankie Barker, Staff (Ph: 746-7439)

<u>Num</u>	MSBSC Proposals
126	Drift Gillnet Fishery Management Plan
143	Northern District King Salmon Management Plan – Sport priority
159	Umbrella Plan – Species priorities
200	Coho Bag Limit – Susitna
202	Coho Bag Limit – Knik
203	Coho Bag Limit – Anchorage Bowl
204	Coho Bag Limit – Kenai drainage
22	Coho Bag Limit – West Cook Inlet
23	Coho Bag Limit – Kenai Peninsula

MAT-SU BOROUGH SPORTSMEN'S COMMITTEE

The sustainability, utilization, and enjoyment of fish and wildlife resources are essential to the character, lifestyle, and economy of the Borough's residents. In February 2007, the Borough established a Blue Ribbon Sportsmen's Task Force Committee to represent its interests in the preservation and allocation of available fish, game, and habitat for sportsmen's purposes. The Mat-Su Borough Sportsmen's Committee (MSBSC) consists of dedicated volunteers appointed from the public to advise the Borough Assembly and the State of Alaska Boards of Fish and Game regarding practices and policies that affect the people of the region.

Efforts by the Committee have been heavily focused on salmon concerns including:

- ❑ Conservation of diverse and productive natural habitats of fish and wildlife in balance with the needs of the people that live, work and recreate throughout the region.
- ❑ Scientifically sound and sustainable fisheries and wildlife management.
- ❑ A fair and equitable balance in the allocation of fish and wildlife resources, values and opportunities for sportsmen.

Habitat: Concern over increasing impacts from human use and development in the Basin led the Borough to help establish the Matanuska-Susitna Basin Salmon Habitat Partnership to foster collaborative, non-regulatory efforts by local, state, federal, native and conservation entities to protect and improve fish habitat. Financial and technical assistance provided by the Borough and partners have supported numerous activities including educational programs, fish passage improvements, lakeshore restoration, wetlands protection and recreational access. The partnership has also developed a series of very successful symposiums as a forum to share information about fisheries and habitat research and has been the recipient of several national awards from the U. S. Department of the Interior for fish passage and outreach projects.

Resource Management: The MSBSC has actively supported the development and implementation of effective fishery management plans and strategies. We have sought to foster an effective working relationship with the Alaska Department of Fish and Game (ADFG); providing regular input on research and management policies and strategies; facilitating exchange of views, ideas and knowledge with Mat Su residents; and participated in the Board of Fisheries (BOF) regulatory process. The MSBSC has also worked through the Governor's and Legislature's budgeting processes to secure critical funding for scientific research and monitoring and has directed Borough support for independent scientific peer review to ensure that the best available science is utilized on key resource issues.

Fishery allocation: The Borough has come to recognize that the health of our fishery resources requires effective representation in political processes that govern management of this common property resource. Salmon originating from Borough rivers, lakes and streams are intercepted in large numbers by fisheries in other areas of Cook Inlet. Allocation decisions in other areas can severely reduce the numbers of salmon supporting sustainability of local fish populations and fisheries. Sportsmen's Committee members are involved with the BOF and local Legislators to seek a more balanced allocation of the fish that originate from Northern Cook Inlet.

SUMMARY

The MSBSC has submitted a series of proposals regarding management of salmon originating in the Northern District drainages of Upper Cook Inlet (UCI). Additional discussions of conservation concerns and recommendations for fishery management, identified in these proposals may be found in subsequent sections of this report. Key proposals and recommendations include:

Species Management Priorities

- Restore language in the UCI Salmon Management Plan (Umbrella Plan) that addresses primary use and provides direction to Department managers to minimize incidental commercial harvest of non-targeted species:
 - ✓ Early and late-run king and coho salmon shall be managed primarily for sport and guided sport fishermen.
 - ✓ All late-run Kenai, Kasilof and Northern District sockeye, chum, and pink salmon shall be managed primarily for commercial uses based on abundance.
 - ✓ Commercial fisheries shall be managed to minimize the harvest of king and coho salmon and to provide personal use, sport and guided sport fishermen with a reasonable opportunity to harvest sockeye salmon resources.

Northern District King Salmon

- We support the recommendation by ADFG to classify six Northern Cook Inlet (NCI) king runs as stocks of concern and further advocate the implementation of precautionary harvest strategies for those additional stocks that appear to be approaching Stock of Concern status.
- Revise the Northern District King Salmon Management Plan to clarify that NCI king stocks are to be managed primarily for sport and guided sport uses in order to provide a reasonable opportunity to harvest these salmon over the entire run, as measured by the frequency of in-river restrictions.
- Revise the Northern District King Salmon Management Plan to return regulations for the Northern District commercial set net fishery to those in place prior to 2002, eliminating the earlier season start date, additional fishing periods and longer periods (6 hrs to 12 hrs) in response to lower king salmon productivity and Stock of Concern level escapement issues for 6 of 17 monitored streams with king salmon sustainable escapement goals throughout NCI.
- Close Chuitna, Theodore and Lewis Rivers to king salmon fishing. All are currently open to catch and release king salmon fishing and have been since the mid 1990's even though minimum escapements are rarely achieved. In addition, establish one mile radius stream mouth sanctuary areas around each of these streams and Little Susitna River (consistent with sanctuaries around most important salmon producing streams in the Central District) where all net fishing would be prohibited.
- Maintain the sport king salmon fishing closure at Alexander Creek.
- Manage the eastside Susitna River fisheries as a Unit (Regulatory Unit 2). Restricting daily fishing hours to 6 a.m. -- 11 p.m. from May 15 -- July 13, and closing the season one 3 day weekend earlier throughout all of Susitna River Management Unit 2 are supported as the

most viable sport fishing responses to Stock of Concern problems identified by ADF&G on Willow, and Goose Creeks. The MSBSC also supports elimination of proxy king salmon fishing throughout Unit 2 and Little Susitna River.

- Provide precautionary management of highly used and economically important Little Susitna River sport king salmon fishery.
 - ✓ Shorten Little Susitna River sport king salmon season one week, creating one mile sanctuary area around the river mouth where all net fishing would be prohibited (consistent with Central District commercial regulations around important salmon producing streams).
 - ✓ Support relocating the Little Susitna River Weir back to a lower river location where it can once again be used for timely in-season assessment and management of king and coho salmon.

Coho Sport Fishery Opportunity

- Return to the historical sport fish harvest opportunity of a three coho salmon per day throughout the season and throughout UCI.

Susitna Sockeye Stock of Concern

- Consider elevating the Stock-of-Concern designation for Susitna sockeye from a yield concern to a management concern.
- Establish a new OEG based on the new Yentna Didson sonar using numbers consistent with the long-standing Bendix-based goals.
- Eliminate the current linkage of the Susitna sockeye OEG to the Kenai sockeye run size.
- Establish a conservation corridor in the Central District drift net fishery, involving mandatory restrictions during mid-July, to ensure that Susitna sockeye escapements are protected.

Conservation Corridor

- Put more Northern District sockeye and coho into their respective drainages and into the sport fishery.
 - ✓ Establish an effective fish passage corridor for Northern District salmon stocks in 21.353 Central District Drift Gillnet Fishery Management Plan.
 - ✓ End the UCI commercial season Aug. 5 to allow coho to enter UCI drainages.
 - ✓ Discourage expansion of the commercial fishery targeting chum and pink salmon at the expense of coho.

Personal Use Fishery

- Adopt no new regulations that reduce opportunity, participation or harvest in the Kenai and Kasilof dip net fisheries.
- Expand the Kasilof personnel use gillnet fishery.
- Reduce the escapement trigger for opening the Fish Creek personal use fishery from 70,000 to 50,000.

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INTRODUCTION

The fishery management system in Upper Cook Inlet (UCI) is out of step with the economic and cultural realities of today. Management of UCI salmon continues to be driven by commercial fisheries despite much greater economic value and participation in sport and personal use fisheries (Box 1).

- Less than 20% of the UCI salmon harvest is allocated to over 150,000 sport anglers and 20,000 personal use fishery households. Over 80% of the salmon harvest in Cook Inlet is taken by fewer than 1,300 limited entry commercial permit holders.
- Over half of the statewide sport fishing effort and the majority of the personal use fishery occurs in UCI Boroughs. UCI commercial fisheries produce less than 5% of the statewide total salmon harvest.
- Sport fisherman spent over \$100 million in the Matanuska-Susitna Borough and \$700 million in UCI during 2007. In contrast, ex-vessel value of salmon in the commercial fishery currently averages \$16 million per year with a first wholesale value of \$77 million in 2007.

The Mat-Su Borough Sportsmen's Committee (MSBSC) believes that the sustainability of Northern District salmon runs has been placed at risk by overexploitation in mixed stock commercial fisheries targeting larger more robust Cook Inlet salmon runs and that there is a severe lack of critical information needed to address management concerns.

- UCI commercial fisheries are currently operated to maximize harvest from the dominant Kenai and Kasilof River sockeye salmon stocks to the detriment of many smaller and less productive salmon stocks of Northern District origin.
- Escapement goals are either non-existent (Northern pink and chum salmon) or grossly inadequate (Northern sockeye and coho).
- Fishery management has consistently failed to achieve long-established minimum escapement goals for stocks including Susitna/Yentna and Fish Creek sockeye.
- Rather than restricting commercial fisheries to meet long-established Susitna/Yentna sockeye escapement goals, the goals have been reduced or redefined.
- Timeliness and transparency of incorporation of new research data into management practice has been questionable.

This report addresses key fishery management concerns and proposals of the MSBSC related to:

- Species management priorities of commercial and sport fisheries.
- Northern District king salmon status and management.
- Coho sport fishery opportunity.
- Susitna sockeye escapements.
- Central District interception of northern sockeye and coho.
- Personal use fishery opportunities.

Box 1. Salmon Fishery Economic Values

Sport Fisheries

- ✓ Recent studies have highlighted the great economic as well as social value of sport fisheries in the UCI region. While the value of commercial fisheries has always been widely known, the economic significance of sport fishing has only recently begun to be recognized.
- ✓ In 2007, sport fisherman purchased 190,600 resident and 284,000 nonresident licenses and spent nearly \$1.4 billion statewide to participate in fishing (Southwick Associates et al. 2008).
- ✓ Half of all sport fishing in Alaska occurs in Cook Inlet where anglers spent an estimated \$733 million in 2007 which supported 8,056 jobs and generated \$55 million in local and state taxes (Southwick Associates et al. 2008).
- ✓ Anglers fished almost 300,000 days in the Matanuska-Susitna Borough during 2007, spent \$118 million, and generated between \$31 and \$64 million dollars of personal income in the local economy (Colt & Schwoerer 2009).
- ✓ Many more fishing days and jobs are supported by Borough residents traveling to participate in sport and personal use fisheries in other parts of the UCI region.

Personal Use Fisheries

- ✓ The majority of statewide personal use fishing for salmon occurs in Cook Inlet, primarily in the Kenai and Kasilof rivers.
- ✓ Approximately 20,000 free personal use permits are issued annually to Southcentral Alaska resident households for use in Cook Inlet and the Copper River (Dunker & Lafferty 2007).
- ✓ Thousands of Matanuska-Susitna Borough residents participate in Kenai, Kasilof and Copper River personal use fisheries due to the lack of comparable local opportunities.

Commercial Fisheries

- ✓ Cook Inlet commercial fisheries equate to approximately 3-5% of the total of all salmon harvested and sold statewide.
- ✓ Most of the Cook Inlet commercial fishery occurs in the Central District off of the Kenai Peninsula.
- ✓ While current commercial harvests of about 3.5 million salmon per year are near the long term average, recent average ex-vessel value of \$16 million is much less than peak values over \$100 million seen in some years during the 1980s and early 1990s (Shields 2010).
- ✓ First wholesale value of Cook Inlet commercial salmon harvest was \$77 million in 2007 (Knapp 2009).

SPECIES MANAGEMENT PRIORITIES

Issue

Species priorities for commercial and sport fisheries have been established in UCI by policy and regulation since 1977. Chinook and coho salmon were identified as primarily targets of sport fisheries. Sockeye, chum and pink salmon were identified as primarily targets of commercial fisheries. Fishery managers were directed to “minimize” the impact of commercial species harvest on Chinook and coho runs. Corresponding language was included in the UCI Salmon Management Plan (“Umbrella Plan”) from 1977 through 1999.

With the continuing growth in complexity of fisheries and management requirements in UCI, the 1999 BOF made comprehensive revisions to the management plans. At that time, many of the specific elements of the original Umbrella Plan, including species priorities and minimization directions, were moved into the step-down management plans.

Species and stock direction is currently provided in some management plans for some species and stocks. For instance, the Kenai late-run sockeye plan directs that this stock shall be managed primarily for commercial uses and that commercial fisheries shall minimize the harvest of Northern District coho, late-run Kenai kings, and Kenai River coho [5 AAC 21.360 (a)]. Similarly, the Northern District Management Plan identifies commercial priorities for chum, pink, and sockeye, and the sport priority for Northern District coho [5 AAC 21.358 (a)].

Current management plans do not identify fishery priorities for a number of coho and Chinook stocks that are not addressed by specific management plans. Management plan reorganization and revision over the years has gradually lost the explicit guidance contained in the historical Umbrella Plan for species priorities in UCI sport, personal use, and commercial fisheries. For instance, the 1999 BOF inadvertently failed to place a primary use provision into the Northern District King Salmon Management Plan when it dropped the primary use provision from the Umbrella Plan.

The lack of clear species priorities has been compounded by other changes to the Umbrella Plan by the 2008 BOF which prioritized established escapement goals as the primary management objective and affirmed the commissioner’s use of emergency order authority to meet escapement goals at the expense of other management plan provisions. Recent fishery management practice has been to manage primarily for well-established lower and upper escapement goals for commercially valuable Kenai and Kasilof late-run sockeye. Because no explicit objectives are defined for minimizing the impact of commercial species harvest on Chinook and coho runs, this long-standing management provision has been effectively ignored at the expense of the biological integrity of affected stocks and lost opportunity for thousands of Alaskan fishers.

MSBSC Proposal [159]

Proposal 159, submitted by MSBSC and Kenai River Sportfishing Association, seeks to restore critical language in the UCI Salmon Management Plan (Umbrella Plan) that addresses species priorities and management direction. These changes are needed to affirm long-standing policies and provide clear and comprehensive guidance that includes Chinook and coho stocks that are not specifically identified in step-down plans.

Specific revisions direct that (i) early and late-run king and coho salmon be managed primarily for sport and guided sport fishermen and (ii) all late-run Kenai, Kasilof and Northern District sockeye, chum, and pink salmon be managed primarily for commercial uses based on abundance except commercial fisheries will be managed to minimize the harvest of king and coho salmon and to provide personal use, sport, and guided sport fishermen with a reasonable opportunity to harvest the sockeye salmon resources. (See *annotated plan language that follows*).

ADFG Comments: *The Department is neutral on what they deemed to be an allocative proposal but at the same time projected that there would be no immediate effect on fisheries management or harvest because there is already guidance language in each of the management plans. It is exactly this kind of confusion and contradiction that this proposal seeks to address.*

Other Proposals

#133 [Susitna Valley AC] seeks to reestablish the language in 5 AAC 21.363 that allocates king and coho salmon primarily to sport fishery. Language of this type in the Umbrella Plan would help guide the management of fisheries and optimize economic, social and recreational benefits. *[MSBSC Supports]*

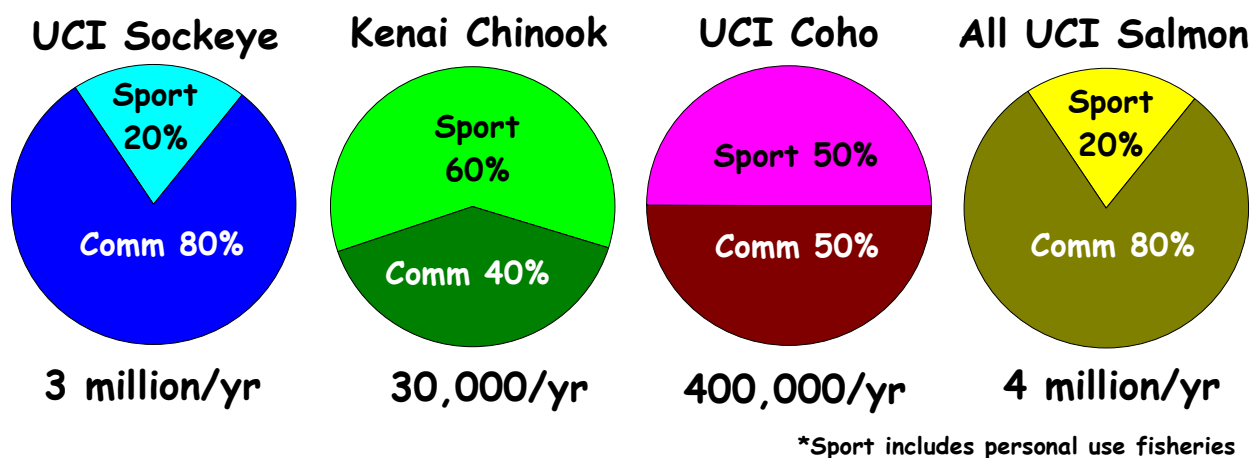


Figure 1. Recent 1999-2004 harvest shares of Upper Cook Inlet salmon among commercial, sport, and personal use fisheries as a result of current management plans.

Upper Cook Inlet Salmon Management Plan [5 AAC 21.363]

(a) The department should receive long-term direction in management of upper Cook Inlet salmon stocks and salmon species. Divisions within the department must receive long-term direction in order to accomplish their missions and plan management, research, administrative, and other programs. Upper Cook Inlet stakeholders should be informed of the long-term management objectives of the Board of Fisheries (board). Therefore, the board establishes the following provisions for the management and conservation of upper Cook Inlet salmon stocks:

(1) consistent with the statutory priority for subsistence, the harvest of upper Cook Inlet salmon for customary and traditional subsistence uses will be provided for specific species in appropriate areas, seasons, and periods to satisfy subsistence needs; other beneficial uses, to the extent they are consistent with the public interest and overall benefit of the people of Alaska, will be allowed in order to maximize the benefits of these resources;

(2) to provide for the management and allocation of the upper Cook Inlet salmon resources, the harvest of the upper Cook Inlet salmon will be **[GUIDED BY THIS PLAN AND]** governed by specific and comprehensive management plans adopted by the board for salmon stocks and species, on a Cook Inlet basin wide basis, for different areas, and drainages and for different types of fisheries;

(3) in adopting the specific management plans described in (2) of this subsection the board will consider:

(A) the need for sustainable fisheries for all salmon stocks and salmon species throughout the Cook Inlet basin;

(B) the protection of the fisheries habitat both in the fresh water and the marine environment throughout the Cook Inlet basin; ~~and~~

(C) the various needs and demands of the user groups of the salmon resources of upper Cook Inlet; **[AND**

(D) WILL MANAGE:

(i) ALL EARLY AND LATE-RUN KING SALMON AND ALL COHO SALMON PRIMARILY FOR SPORT AND GUIDED SPORT FISHERMEN;

(ii) LATE-RUN KENAI, KASILOF, AND NORTHERN DISTRICT SOCKEYE, ALL CHUM SALMON, AND ALL PINK SALMON PRIMARILY FOR COMMERCIAL USES BASED

This plan, commonly referred to as the "Umbrella Plan" provides overarching guidance to UCI salmon management.

Maximization of beneficial uses with consideration for subsistence. (Benefits are not defined solely in terms of maximum yield.)

Comprehensive treatment of UCI fisheries MSBSC proposals for revision are highlighted in ~~strikeout language~~.

Sustainability habitat, and user need considerations

MSBSC recommends additions to provide overarching clarification of species management priorities which may or may not have been captured in specific step-down plans.

ON ABUNDANCE EXCEPT COMMERCIAL FISHERIES WILL BE MANAGED TO MINIMIZE THE HARVEST OF KING AND COHO SALMON AND TO PROVIDE PERSONAL USE, SPORT, AND GUIDED SPORT FISHERMEN WITH A REASONABLE OPPORTUNITY TO HARVEST THE SOCKEYE SALMON RESOURCES:

(4) GUIDED BY THE GENERAL ALLOCATIVE DIRECTION PROVIDED IN (A) THROUGH (D) OF THIS SUBSECTION ~~in~~ ~~these management plans~~, the board may, as appropriate, address the following considerations:

(A) the need to [MORE SPECIFICALLY] allocate the harvestable surplus among commercial, sport, guided sport and personal use fisheries; and

(B) the need to allocate the harvestable surplus within user groups;

(5) in the absence of a specific management plan, it is the intent of the board that salmon be harvested in the fisheries that have historically harvested them, according to the methods, means, times, and locations of those fisheries;

(6) consistent with 5 AAC 39.220(b) , it is the intent of the board that, in the absence of a specific management plan, where there are known conservation problems, the burden of conservation shall, to the extent practicable, be shared among all user groups in close proportion to their respective harvest on the stock of concern.

(b) Repealed 6/13/99.

(c) In this section "upper Cook Inlet salmon stocks" means those salmon that move through the Northern and Central Districts as defined in 5 AAC 21.200(a) and (b) and spawn in waters draining into those districts.

(d) Repealed 6/11/2005.

(e) Notwithstanding any other provision of this chapter, it is the intent of the board that, while in most circumstances the department will adhere to the management plans in this chapter, no provision within a specific management plan is intended to limit the commissioner's use of emergency order authority under AS 16.05.060 to achieve established escapement goals for the management plans as the primary management objective. For the purpose of this subsection, "escapement goals" includes inriver goal, biological escapement goal, sustainable escapement goal, and optimal escapement goal as defined in 5 AAC 39.222.

Allocation among and within user groups

Recognizes the importance of historical fisheries unless otherwise directed.

Equal sharing of conservation burden involves actions that will limit or reduce effect of all fisheries.

This section was revised by the 2008 BOF to explicitly elevate the escapement goal priorities over other step-down plan provisions (such as fishery windows). This would include both minimum and maximum goals. Step-down plans also provide some guidance for specific priorities where goals might conflict.

NORTHERN DISTRICT KING SALMON

Background

- ❑ The Northern Cook Inlet (NCI) king salmon stock collectively is the largest within the entire Cook Inlet drainage. The Susitna run is the 4th largest in Alaska, following the Yukon, Kuskokwim, and Nushagak rivers. The NCI king salmon stock is actually an aggregation of numerous discrete subpopulations - some large, some small, some road accessible, and some not.
- ❑ Returns of NCI kings have declined significantly over the last decade. The trend in return numbers from 2004 through 2008 is steadily downward. Productivity of most stocks has continued to spiral downward even when escapement goals were attained.
- ❑ Chronic escapement failures have persisted since the mid 2000's. Minimum escapement goals were not reached in seven out of 15 systems surveyed in 2007 and 2008. In 2009, nine of the 16 systems surveyed failed to make minimum escapement. In 2010, 13 of the 15 systems surveyed failed to make minimum escapement.
- ❑ Minimum escapement targets have not been achieved for four or more consecutive years for many king salmon runs including Chuitna River, Lewis River, Theodore Creek, and Alexander Creek.
- ❑ The management strategy for NCI kings attempts to optimize fishing opportunities while assuring the attainment of escapement goals. However, escapement shortfalls have occurred despite significant harvest restrictions or closures of important sport fisheries throughout the Northern District.
- ❑ History suggests that NCI king salmon can sustain a harvest of 40,000 to 70,000 fish. Harvests for all users have not exceeded 55,000 since the late 1980's and declined to an annual average of about 30,000 around 2005.

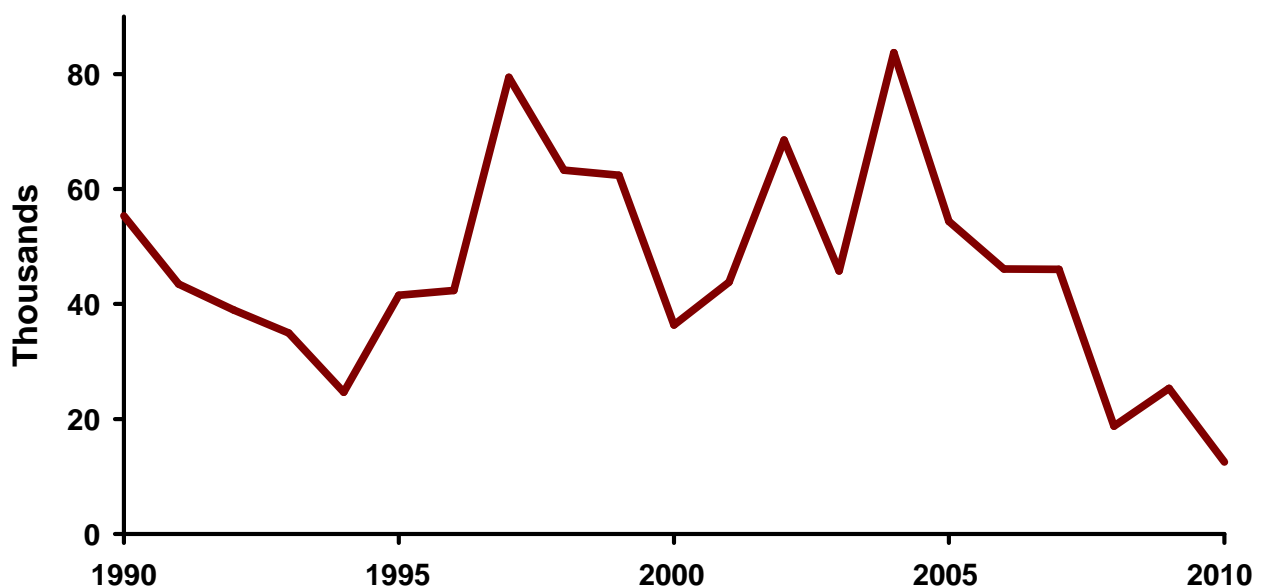


Figure 2. Escapement index for Northern Cook Inlet King salmon (total of index counts from Susitna, Knik Arm and West Cook Inlet streams).

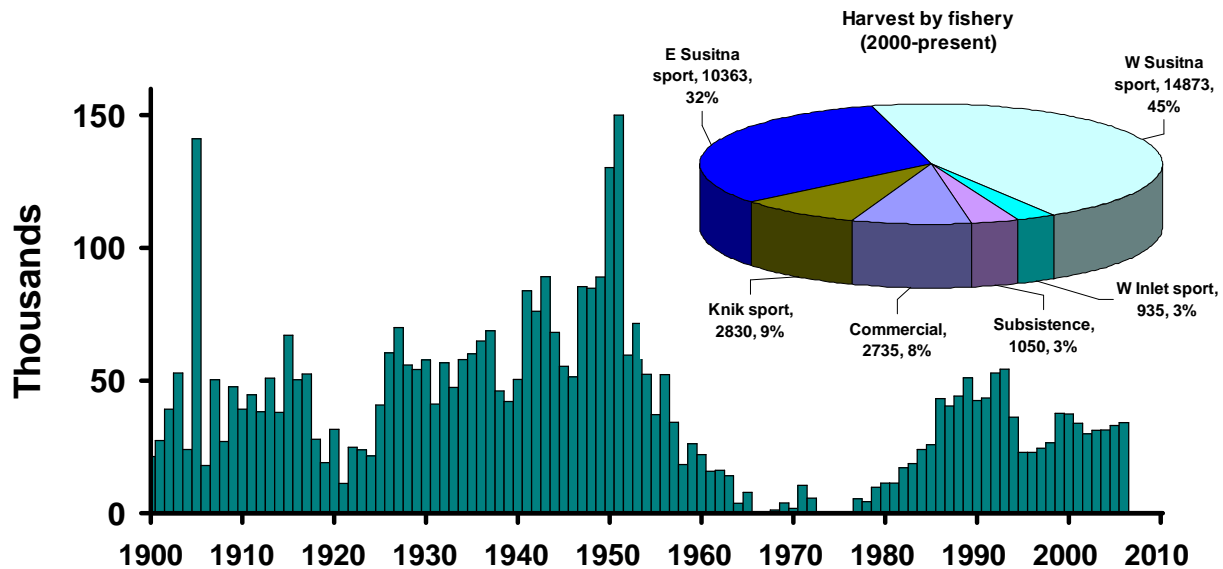


Figure 3. Historical and current sport fishery harvest of Northern District king salmon (Ivey et al. 2009).

Management History

- ❑ NCI kings, along with other salmon moving through UCI prior to July 1, were originally designated in 1977 to be managed primarily for recreational uses, in compliance with subsistence priorities, in the Upper Cook Inlet Salmon Management Plan (5 AAC 21.363).
- ❑ The 1986 BOF adopted a Northern District King Salmon Management Plan that provided the commercial fishery with modest (capped) access to what at that time was an expanding king salmon resource, with runs estimated between 150,000 to 200,000 annually.
- ❑ In 1999 the BOF dropped the king salmon recreational use priority from the umbrella plan but inadvertently failed to place a primary use provision into the Northern District King Salmon Management Plan.
- ❑ There has been a trend toward expanding the Northern District king salmon commercial fishery since 2002.
- ❑ In 2002, the BOF expanded harvest of king salmon by moving the opening of the Northern District Commercial Setnet (NDCS) fishery from June 1 to the first Monday on/after May 25.
- ❑ In 2005, the BOF extended fishing periods for the NDCS from 6 hours to 12 hours duration, based on the perceived strong Deshka River runs.
- ❑ In 2008, the BOF further expanded harvest of king salmon by adding fishing periods to the NDCS season. Openings were extended from three per season to four or five per season, dependent upon how the yearly calendar falls.
- ❑ Many sport king fisheries throughout NCI were restricted or closed early in both 2009 and 2010 in an attempt to make minimum escapement goals in the various systems.
- ❑ Lewis River, Theodore Creek, and Alexander Creek have been closed to king retention since the last UCI BOF meeting.
- ❑ In October 2010, ADFG recommended to the BOF that six NCI stocks be classified and managed as a Stock of Concern as required by the Policy for the Management of Sustainable Salmon Fisheries.

Issues

Declining King Abundance: King salmon runs have declined in recent years throughout much of Alaska, driven apparently by a period of unfavorable ocean conditions. Effects have been compounded by habitat changes and/or pike introduction in some systems such as Alexander Creek. Environmental effects of winter floods in 2006 are also likely to have contributed to the recent pattern and, like variable ocean conditions are considered to be temporary. Effects of other factors such as pike will be longer term.

Stocks of Concern: Recent declines have been particularly significant in many of the smaller, less-productive, and more vulnerable, king salmon stocks in western Cook Inlet (Chuitna, Theodore, Lewis) and eastside Susitna (Willow and Goose) streams. These streams, along with Alexander Creek, have been recommended for Stock of Concern designations. These recommendations follow the Policy for the Management of Sustainable Salmon Fisheries (PSF) and directs the Department to provide the Board, at regular meetings, with reports on the status of salmon stocks to identify any salmon stocks that present a concern related to yield, management, or conservation. For example, a 'yield concern' means a concern arising from a chronic inability, despite the use of specific management measures to maintain expected yields, or harvestable surpluses, above a stock's escapement needs. The policy defines chronic inability as "the continuing or *anticipated inability* (emphasis added) to meet escapement thresholds over a four or five year period, which is approximately the generation time for most salmon species' (5 AAC 39.222 (f)(5))."

Only those stocks which met the criteria of failing to achieve minimum escapement for four consecutive years have been nominated by the Department. However, Northern District king returns over the next one to three years are expected to be weak resulting in an "anticipated inability" to attain prescribed goals (wording found in the PSF). Thus, nearly all NCI king salmon stocks will be eligible for designation as a Stock of Concern or could become so soon.

Management Plan Coverage of Small Streams: The majority of the tributaries in the Susitna River drainage do not have any type of management plan. These include: Willow, Little Willow, Greys, Kashwitna, Caswell, Goose, Rabideux, Sunshine, Trapper, Birch, Montana, Clear, Sheep and Lake creeks, and the Talachulitna and Chulitna rivers. Only a limited number of streams in the Susitna River drainage have king salmon index counts. Only the Deshka River has an in-season weir count and BEG. It remains unclear whether management provisions for the indexed streams provide adequate protection for the small streams throughout the drainage.

Sport Fishery: Sport fisheries affecting these king populations have been largely closed or restricted. Benefits of sport closures were not sufficient to avoid falling below escapement goals because fishing rates were generally not great enough to offset the downturn in natural stock productivity and commercial fishery effects. Continuing sport fishery limitations will be appropriate for these stocks in the interim until ocean survival improves in order to avoid critical low population sizes that might damage long term stock health. A variety of sport fishery management options might be considered in order to continue to provide some fishery opportunity while also ensuring that conservation needs are met.

Commercial Fishery: Recent expansion of the Northern District commercial fishery for kings is of particular concern given the declining trend in numbers and widespread sport fishery restrictions. While the commercial fishery does not harvest large numbers of fish relative to the sport fishery, total harvest and particularly exploitation rates have increased during the recent period of declining returns. For instance, the 2008 harvest in the Northern District of 4,000 fish is about 1,600 higher than the recent 10-year average harvest of 2,400 fish. This change was attributed to changes made by the BOF in 2005 that lengthened the fishing periods from six hours to 12 hours (ADFG Special Publication 09-07, page 15 under king salmon).

The commercial fishery impacts king salmon stocks that are recommended for the Stock of Concern designation. It is not possible to manage the Northern District commercial fishery by stock. During the April 28, 2009 BOF emergency teleconference meeting, a board member specifically asked ADFG staff if they could manage the NDCS fishery by specific stock, for instance, allowing harvest on Deshka kings while protecting Alexander Creek fish. The answer was no, they could not. Thus, the entire fishery affecting the Susitna drainage would need to be reduced in order to protect individual stocks affected by that fishery.

In western Cook Inlet, commercial set net fisheries continue to harvest Theodore, Chuitna and Lewis kings while fishing in the channels that lead into these rivers. Commercial fishing at the mouth of these rivers has been extremely effective because they have been able to fish the main channels at the mouth of the rivers, which allows them to fish both on the out-going and incoming tides. To protect the three rivers from losing their king salmon completely, expanded sanctuary areas would prevent fishing in the channels leading into the rivers.

Targeted commercial fishery harvest of Northern District kings remains contrary to the long-established sport fish priority for king salmon that was first adopted in 1977. Recent expansion of the commercial harvest is particularly troubling given the widespread sport fishery restrictions to protect king escapement.

There also appears to be significant confusion regarding current management authority for restricting the NDCS fishery in response to low abundance. When the 2008 BOF expanded commercial harvest of Chinook by adding fishing periods, it was done with the understanding that ADFG could close the commercial fishery by emergency order if any conservation problems should arise. However, when conservation problems subsequently arose, the ADFG commercial manager claimed he was restricted from taking any conservation action outside those identified in the Northern District King Salmon Management Plan. Failure to take management actions to meet escapement goals would be inconsistent with revision to the UCI Salmon Management Plan adopted by the 2008 BOF that no provision within a specific management plan is intended to limit the commissioner's use of emergency order authority to achieve established escapement goals as the primary management objective. Restrictions to the NDCS fishery did occur in both 2009 and 2010, but only because the Northern District King Salmon Management Plan mandated the restrictions based on restrictions that the Sport Fish Division made to the king salmon recreational fisheries in the Northern District drainage.

MSBSC Recommendations & Proposal [143]

MSBSC proposals and recommendations include but are not limited to the following:

1. *We support the recommendation by ADFG to classify six Northern Cook Inlet (NCI) king salmon runs as Stocks of Concern and further advocate the implementation of precautionary harvest strategies for those additional stocks that appear to be approaching stock of concern status.*
2. *Revise the Northern District King Salmon Management Plan to clarify that NCI king stocks are to be managed primarily for sport and guided sport uses in order to provide a reasonable opportunity to harvest these salmon over the entire run, as measured by the frequency of in-river restrictions (as per Proposal 143).*
3. *Revise the Northern District King Salmon Management Plan to return regulations for the Northern District commercial set net fishery to those in place prior to 2002, eliminating the earlier season start date, additional fishing periods and longer periods (6 hrs to 12 hrs) in response to lower king salmon productivity and Stock of Concern level escapement issues for 6 of 17 monitored streams with king salmon SEGs throughout NCI.*
4. *Close Chuitna, Theodore and Lewis Rivers to sport king salmon fishing. All are currently open to catch and release king salmon fishing and have been since the mid 1990's even though minimum escapements are rarely achieved. In addition, establish one mile radius stream mouth sanctuary areas around each of these streams and Little Susitna River (consistent with sanctuaries around most important salmon producing streams in the Central District) where all net fishing would be prohibited.*
5. *Maintain the sport king salmon fishing closure at Alexander Creek.*
6. *Manage the eastside Susitna River tributary streams as a Unit (Regulatory Unit 2). Restricting daily fishing hours to 6 a.m. -- 11 p.m. from May 15 -- July 13, and closing the season one 3 day weekend earlier throughout all of Susitna River Management Unit 2 are supported as the most viable sport fishing responses to Stock of Concern problems identified by ADF&G on Willow, and Goose Creeks. The MSBSC also supports elimination of proxy king salmon fishing throughout Unit 2 and Little Susitna River.*
7. *Provide precautionary management of highly used and economically important Little Susitna River sport king salmon fishery.*
 - ✓ *Shorten sport king salmon season one week, creating one mile sanctuary area around the river mouth where all net fishing would be prohibited (consistent with Central District commercial regulations around important salmon producing streams).*
 - ✓ *Support relocating the Little Susitna River Weir back to a lower river location where it can once again be used for timely in-season assessment, management, and possibly as an abundance indicator for other important NCIMA king salmon and coho salmon producing streams.*

ADFG Comments: *The Department is neutral on the allocative aspects of proposal 143. The Department advises that the effect of elements of this proposal concerning commercial fishing restrictions and closures would be dependent on management actions taken in the sport fishery. However, the Theodore and Lewis rivers are already catch-and-release. The Department notes that the Board would be permanently closing the area from the Theodore River to Susitna River to commercial fishing while sport fishing remained open, but closed to retention of King salmon in either the Chuitna or Deshka rivers. The MSBSC asserts that this closure of a directed commercial fishery for king salmon is appropriate where this species is managed for a recreational fishery priority.*

Although Willow and Goose Creeks are the only eastside fisheries recommended for Stock of Concern status it is evident that other stocks are on the “brink” of becoming similarly classified. The development of a precautionary harvest strategy for all of Fishery Management Unit 2 appears prudent. These stocks are modest in abundance; all are road accessible and have limited areas open to fishing. Each stream is open only three days per week during the time when king salmon are most abundant, with very restrictive methods and means of harvest. Each supports mixed stock harvests near the confluence with the Susitna River and most, if not all, were severely impacted by the 100-year flood that occurred in 2006. Closure of one or more Unit 2 streams can be expected to shift fishing pressure to adjacent waters that remain open.

When practical, we prefer reducing harvest in eastside Susitna tributaries by method and means restrictions, rather than time and area closures which reduce opportunity. It is challenging to identify meaningful methods and means alternatives because fisheries are presently highly regulated (artificial lures only, must stop fishing after harvesting a king salmon, one king salmon daily bag limit, a king salmon 20” or longer cannot be removed from the water if intended for release, etc). However, elimination of king salmon proxy fishing, requirements for single hook artificial lures, etc. should be considered and evaluated.

We suggest considering changes in the seasonal limit only if other suggested changes prove insufficient. Reducing Unit 2's five king salmon seasonal limit could reduce the amount of time summer visitors spend in the Borough. Little harvest reduction might result if other anglers simply harvested fish that limit-restricted anglers passed up. Catch and release mortality would likely increase since reduced limit anglers would likely be more selective of which fish they chose to keep. Finally, a reduced limit in a selected area would likely shift pressure to adjacent waters where the 5 king salmon seasonal limit remained (but where conservation concerns exist as well).

The committee recognizes, however, that when presented with the condition of very low stock abundance, time and area closures of eastside Susitna king fisheries are both appropriate and necessary. Effective time and area options (Unit 2) include: allow king salmon fishing only from 6 am-11 pm) and/or eliminate the last (3rd) weekend (Sat-Mon) of king salmon fishing. Open the last weekend, if appropriate, by Emergency Order (EO) as was a common practice in the past.

Since the entire East Fork Chulitna River (located in Unit 6) is already restricted to single hook artificial lures only from September 1 -- July 13, king salmon run timing is later for East Fork

Chulitna fish, and it already likely has a lower king salmon harvest rate, we suggest reducing fishing hours to 6 a.m. through 11 p.m. from May 15 -- July 13, but request king salmon season dates remain intact.

Recognizing Little Susitna River as one of the highest participated in and economically important sport fisheries in the NCIMA, and the fact that it has experienced in-season king salmon closures during 2009 and 2010, and failed to attain its king salmon escapement goal minimum in 2010, we recommend: a) ending the Little Susitna River sport king salmon season by regulation one week earlier starting July 7 rather than July 14; and b) creating a one mile radius sanctuary area around the Little Susitna River Mouth (off limits to commercial fishing and consistent with stream mouth sanctuary size for most important salmon producing streams in Upper Cook Inlet's Central District).

We unanimously support ADFG moving the Little Susitna River Salmon Counting Weir back to a downstream location where it can once again be used as a more timely in-season management tool, beneficial to attaining both Little Susitna River king salmon and silver salmon escapements, and as an abundance indicator for other NCIMA streams that have experienced king salmon or coho salmon escapement problems. Finally, using Little Susitna Weir in this manner would provide an in-season measurement of when Knik Arm and other NCIMA salmon runs, once again, may be strong enough to provide greater fishing opportunities and increased economic benefits.

Other Proposals

#102 seeks to put in place set net gear regulations. MSBSC recommends maintaining subsistence gillnet mesh size at 6 inches but reducing net depth to 30 meshes, as per changes made to the Yukon River king salmon fishery by the BOF at the January, 2010 meeting in Fairbanks. MSBSC also supports moving commercial vessels off the river mouths by five miles. *[MSBSC Supports Concept]*

#121 seeks to increase closed waters around the mouths of the Theodore, Lewis and Chuitna rivers. Proposal 143 also addresses this issue. *[MSBSC Supports]*

#142 seeks to delay opening of the NDCS fishery until after June 4 and reduce the number of fishery openers from four or five to three. *[MSBSC Supports]*

#144 seeks the creation of a management plan that would take into consideration the king salmon fisheries in many of the tributary streams of the Susitna drainage. A Susitna River Small Stream and River Management Plan would manage salt and fresh water fisheries. The plan would be used to manage king salmon fisheries based on previous year's escapement/returns. If three or more indexes are missed, commercial fishing effort would be reduced during the first three weeks of the season and sports fishing efforts on the streams would be reduced. If escapement were missed the second year, additional closures or restrictions would be required, and the same for the third, fourth and fifth years with protective measures taken each year. *[MSBSC Supports Concept]*

#145 seeks to require the department to conduct stock assessment of early-run king salmon in the marine waters of southern Cook Inlet (Deep Creek) before the Northern District king salmon set net fishery could be restricted. The BOF can recommend genetic sampling requested but the sampling program needs to remain unlinked to any fishery restrictions at this time. *[MSBSC Opposes]*

Northern District King Salmon Management Plan [5 AAC 21.366]

<p>a) <u>The purposes of this management plan are to ensure an adequate escapement of king salmon into the Northern District drainages and to provide management guidelines to the department. The department shall manage the Northern District king salmon stocks primarily for sport and guided sport uses in order to provide sport and guided sport fishermen with a reasonable opportunity to harvest these salmon over the entire run, as measured by the frequency on inriver restrictions.</u> The department shall manage the Northern District for the commercial harvest of king salmon as follows:</p> <p>(1) except as specified in (8) of this section, the season will open for commercial fishing periods with the first fishing period beginning on the first Monday on or after <u>May 25 June 4</u>, except when <u>May 25 June 4</u> falls within a closed period, in which case the season opens the next following open period and continues through June 24, unless closed earlier by emergency order;</p> <p>(2) fishing periods are <u>from 7:00 a.m. to 7:00 p.m. 6 hours</u> on Mondays;</p> <p>(3) the harvest may not exceed 12,500 king salmon;</p> <p>(4) set gillnets may not exceed 35 fathoms in length and six inches in mesh size;</p> <p>(5) no CFEC permit holder may operate more than one set gillnet at a time;</p> <p>(6) no set gillnet may be set or operated within 1,200 feet of another set gillnet;</p> <p>(7) no CFEC permit holder may set a gillnet seaward of a set gillnet operated by another CFEC permit holder;</p> <p>(8) from <u>May 25 June 4</u> through June 24, the area from an ADFG regulatory marker located one mile south of the Theodore River to the Susitna River is open to fishing the second regular Monday period only;</p> <p>(9) if the Theodore, Lewis, or Ivan River is closed to sport fishing <u>or to the retention of king salmon (catch and release only)</u>, the commissioner shall close, by emergency order, the area from an ADFG regulatory marker located one mile south of the Theodore River to the Susitna River to commercial king salmon fishing for the remainder of the fishing periods provided for under</p>	<p><i>This plan provides for a set net fishery in May and June to access early-run kings bound for the Susitna system.</i></p> <p><i>MSBSC proposal 143 is highlighted in yellow.</i></p> <p><i>One month season</i></p> <p><i>Additional revisions supported by the MSBSC are highlighted in green.</i></p> <p><i>Currently 12 hrs per week</i></p> <p><i>Harvest cap</i></p> <p><i>Mesh restriction</i></p> <p><i>One net limit</i></p> <p><i>Widely spaced</i></p> <p><i>Area closure</i></p> <p><i>West side sport closure linkage</i></p>
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<p>this section;</p> <p>(10) <u>If the Deshka River king salmon fishery is restricted to artificial lures only, the commissioner shall reduce commercial king salmon fishing periods to 6 hours, from 7:00 a.m. to 1:00 p.m.</u></p> <p>(10) (11) <u>if the Deshka River is closed to sport fishing or to the retention of king salmon (catch and release only),</u> the commissioner shall close, by emergency order, the commercial king salmon fishery throughout the Northern District for the remainder of the fishing periods provided for under this section; and</p> <p>(11) (12) <u>if the Chuitna River is closed to sport fishing or to the retention of king salmon (catch and release only),</u> the commissioner shall close, by emergency order, the area from an ADFG regulatory marker located one mile south of the Chuitna River to the Susitna River to commercial king salmon fishing for the remainder of the directed king salmon fishery.</p> <p>(b) The commissioner may depart from the provisions of the management plan under this section as provided in 5 AAC 21.363(e).</p>	<p><i>Deshka sport closure linkage</i></p> <p><i>Chuitna sport closure linkage</i></p> <p><i>Commissioner's management authority</i></p>
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COHO SPORT FISHERY OPPORTUNITY

Background

- ❑ Coho salmon return to hundreds of streams in NCI with major runs into the Susitna, Little Susitna, and Knik rivers.
- ❑ Coho migrate through the Central District in large numbers during July and August, and are harvested in Northern District streams by sport anglers from early-July through September.
- ❑ ADF&G's statewide annual sport fish harvest surveys indicate anglers catch coho salmon in significant numbers from approximately 60 streams scattered around Upper Cook Inlet. Roughly 80% of streams producing significant sport coho salmon harvests are located in the northern Cook Inlet Management Area (NCIMA) or drain into the Northern Commercial Fishing District of Upper Cook Inlet.
- ❑ This species accounts for a large share of the 300,000 angler days of effort typically expended by recreational anglers fishing in Northern Inlet streams.
- ❑ Coho status is assessed with a variety of indicators including foot surveys, weir counts, smolt trapping, mark-recapture, and fishery catch per unit effort.
- ❑ Coho numbers declined during the late 1990s to a point where significant commercial and sport fishery restrictions were adopted including a specific Coho Salmon Conservation Plan.
- ❑ SEGs have been established and maintained for two NCIMA coho populations (Little Susitna River, Jim Creek), and escapements are monitored on up to 11 NCI area streams. Coho numbers rebounded since Plan adoption in 2000.
- ❑ Coho harvest from all sources in UCI currently averages about 350,000 per year. The commercial fishery typically accounts for half or more of the total, particularly in large sockeye run years (Figure 4).
- ❑ The sport coho harvest is distributed among streams throughout the Inlet while commercial drift net fishery in the Central District accounts for two-thirds of the commercial coho harvest (Figure 5).

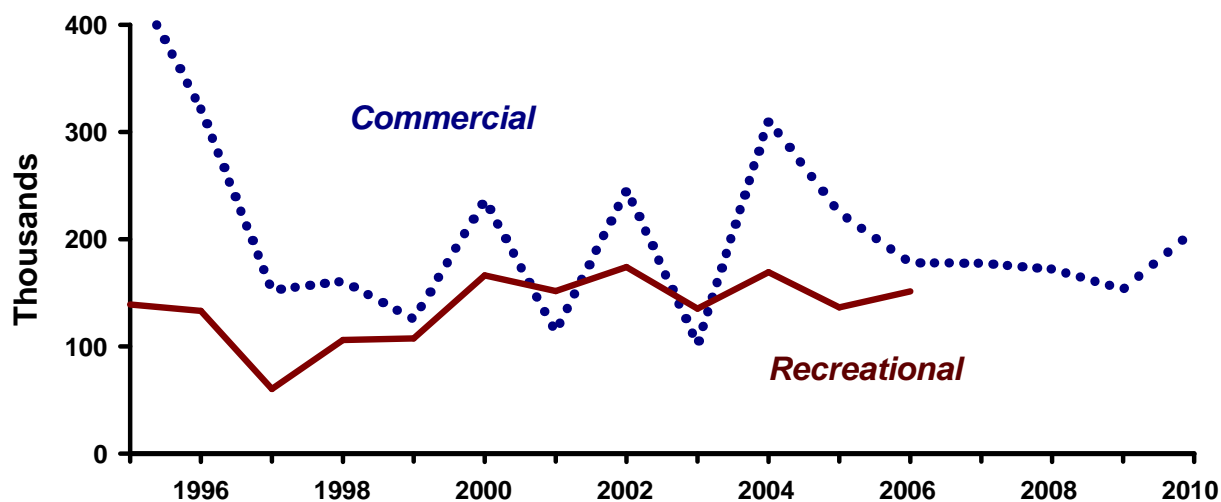


Figure 4. Annual commercial and sport harvest of coho salmon in the UCI.

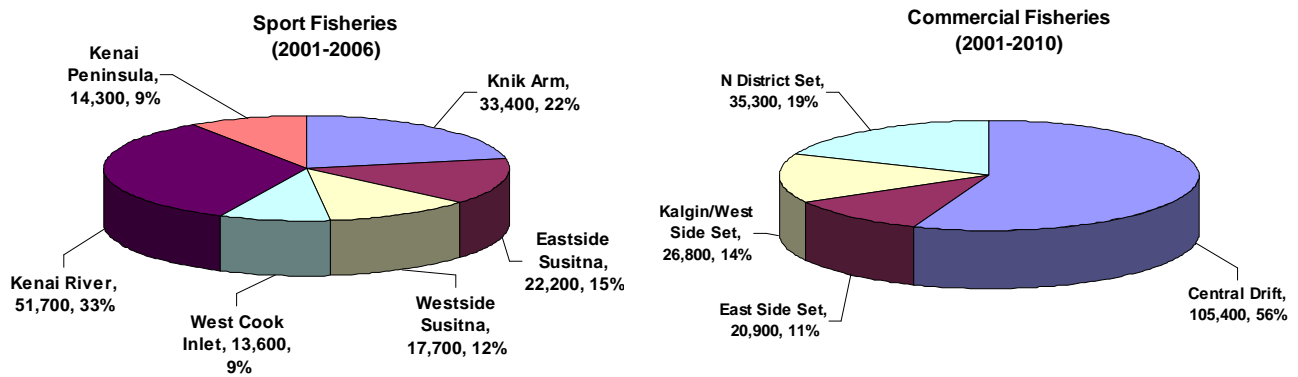


Figure 5. Recent distribution of UCI coho harvest among sport and commercial fisheries.

Management History

- Harvest of Northern District coho in UCI commercial fisheries is determined by provisions in a number of regulations including the Central District Drift Gillnet Fishery Management Plan [5 AAC 21.353], Kenai Late-run Sockeye Management Plan [5 AAC 21.360], and Northern District Salmon Management Plan [5 AAC 21.358].
- The Kenai sockeye and Northern District plans direct that commercial fisheries minimize the harvest of Northern District coho but no such provision is included in the drift gillnet plan.
- In response to declining coho abundance in the 1990's, a series of restrictions to the Central District commercial, personal use, and recreational fisheries were taken by the BOF from 1997 to 2000 to reduce fishery harvest rates and share the conservation burden among fisheries (Clark et al. 2000).
- On the sport fish side the bag and possession limit was reduced from three to two fish, plus time and area restrictions were put in place for both guided and non-guided anglers.
- On the commercial fish side the drift fleet was held out of some of the more productive areas in the middle of Cook Inlet in an attempt to pass coho and sockeye salmon on through to more terminal fisheries and the rivers. The Central District set net season was scheduled to end earlier. The Northern District set net gear was reduced in early August. No in-season management occurs based on coho run strength.
- As coho numbers rebounded after 2000, commercial limitations for coho were gradually eliminated by the 2005 and 2008 Boards. In particular, drift net fishery opportunities were liberalized with increased early season flexibility, fewer corridor restrictions in July, and the season was extended through August 15.
- From 2000 through 2008, escapements consistently exceeded long-term averages and the three minimum escapement goals. However, after a 2008 BOF change extending Central District commercial fishing through August 15, and ADF&G's redefinition of the Yentna River Sockeye Salmon SEG in 2009, coho salmon escapement goals were not attained in the Little Susitna River in 2009 and 2010, or Jim Creek in 2010. In addition, although there is currently no SEG for Deshka River coho salmon, escapements through Deshka River Weir fell off sharply after early August in 2010.
- Sport opportunities for coho in the Northern District have not been significantly expanded and were, in fact, effectively reduced by increased drift net fishery interception.

Issues

Inspection of the regulatory history since 1999 indicates that commercial fishery operations have been liberalized to the point where few, if any, conservation restrictions for coho salmon are in place. Sport fisheries are currently managed in a conservative manner allowing a bag and possession limit of only two fish in most instances in UCI. The condition where sport fisheries are restricted yet commercial exploitation ebbs and flows relative to the abundance of sockeye salmon is clearly inconsistent with the established recreational fishery priority.

Commercial harvest shares of coho that typically approach or exceed those of the sport fishery are inconsistent with the long-standing recreational fishery priority for this species and with management plan direction to minimize commercial harvest of coho to provide sport and guided sport anglers a reasonable opportunity to harvest these salmon resources over the entire run. High coho harvests in the Central District drift net fishery during July effectively crop off the leading edge of the coho run destined for northern inlet streams. Numbers of coho available to recreational fisheries are significantly reduced. The beginning of significant coho recreational fisheries in the Northern District is delayed by weeks during mid-summer when angler interest and effort is at its highest. In years of high or late sockeye returns, extension of commercial fisheries into August further depresses and delays salmon fishery opportunities. In years of low king returns like those of late, salmon fishery opportunities in Northern District streams become extremely limited when coho are also not available. These reduced opportunities are reflected in increased use and crowding in Kenai Peninsula recreational and personal use fisheries during July.

MSBSC Proposals [20, 23, 200, 202, 203, 204]

To address the disparity in commercial fishing harvest in the face of a restricted sport fishery and to equitably share the burden of conservation, MSBSC has submitted proposals to the Board to change the bag limit back to the historical norm of three fish. Increasing the bag and possession limit from two to three fish would not jeopardize the sustained yield for the resource, would provide increased opportunity for harvest and would likely result in additional economic value for the fishery. Six proposals address general provisions of sport fishing regulations in specific areas.

Proposal	Area	ADFG Comments
#22	West Cook Inlet	<i>Neutral on allocative aspects but believe that a bag increase would be biologically sustainable</i>
#23	Kenai Peninsula	<i>Opposed due to the wide range of differences in coho production among area streams</i>
#200	Susitna River Drainage	<i>Opposed due to lack of management data for high-use streams</i>
#202	Knik Arm Drainage	<i>Opposed out of concern for unsustainable harvest in accessible streams during low return years</i>
#203	Anchorage Bowl	<i>Opposed out of concern for unsustainable harvest in accessible streams during low return years</i>
#204	Kenai River	<i>Opposed due to uncertainty related to the volatile nature of annual coho run strength.</i>

Other Proposals

#140 seeks to modify the Northern District Salmon Management Plan in terms of putting in a ratio index between sockeye and coho for commercial fishery emergency openers. Commercial fisheries in UCI should not be targeted upon coho salmon. *[MSBSC Supports Further Discussion]*

#201 seeks to restore the traditional daily bag and possession limit for coho salmon in the Talkeetna River Drainage by increasing the limit to three fish. *[MSBSC Supports]*

#269 seeks to extend use of bait for an additional week in Unit 5 of the Susitna River. Unit 5 is the Talkeetna River Drainage. The restriction on the use of bait was put in place as part of a comprehensive management plan for rainbow trout. The present restriction is for both the conservation of rainbow trout and for the maintenance of a diversity of sport fishing opportunity. *[MSBSC Opposes]*

#273 seeks to change the location on the Little Susitna River within which an angler is prohibited from continuing to fish for coho salmon after retaining a bag limit for the day. The current regulation references a weir located at mile 32.5 on the Little Susitna River. The weir is no longer in place. Adoption of this proposal would result in a reduction in the area open to fishing for coho salmon. MSBSC supports changes in regulations on the Little Susitna River as part of a package with bag limit and sanctuary regulations. *[MSBSC Supports]*

#276 seeks to establish a youth-only fishery for coho salmon on Fish Creek. *[MSBSC Supports Concept]*

#296 this is an ADFG proposal that seeks to standardize the opening date for fishing for coho salmon across all areas of Campbell Creek in Anchorage. MSBSC supports clearly worded regulations and full utilization of hatchery fish. *[MSBSC Supports]*

General Provisions for Seasons, bag, Possession, and Size limits, and Methods and Means

<p>(C) from July 1 through August 31 [NOVEMBER 30], the daily bag and possession limit for coho salmon 16 inches or greater is two [THREE] fish;</p> <p>(D) from September 1 through November 30, the daily bag and possession limit for coho salmon 16 inches or greater is three fish;</p>	<p><i>Example of the proposed bag limit revision language</i></p>
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SUSITNA SOCKEYE STATUS & GOALS

Stock-of-Concern Designation

Susitna sockeye are the third largest of the four major sockeye runs in UCI. Recent returns have averaged about 300,000 Susitna sockeye per year or about 6% of the annual average UCI total of about five million sockeye. Susitna sockeye are comprised of a genetically diverse and unique complex of populations that spawn in lakes, rivers and sloughs throughout the system (Habicht et al. 2007).

Susitna River sockeye were declared a stock of yield concern in 2008 by the BOF without a supporting recommendation from ADFG. A yield concern is a chronic inability, despite the use of specific management measures to maintain expected yields, or harvestable surpluses, above a stock's escapement needs. The designation was made based on data showing:

- 1) Substantial declines in commercial harvest of Susitna sockeye throughout UCI,
- 2) Substantial declines in Northern District set net harvest of sockeye, and
- 3) Chronic failure to meet sockeye escapement goals at the Yentna sonar.

An action plan was developed by the Department and adopted by the 2008 Board. This plan described current management plans which included elements that might be utilized to limit commercial interception of Susitna sockeye and current research projects on this stock. The action plan did not mandate specific fishery actions or reductions.

The Department has recommended to the 2011 BOF that Susitna sockeye salmon maintain their classification as a stock of yield concern.

Downward Harvest Trend

Commercial harvest of Susitna sockeye in UCI and all sockeye in the NDCS fishery has been trending downward for decades while harvest of Kenai and Kasilof sockeye have increased or fluctuated around the long term average. Since 2001, harvest of Susitna sockeye in combined UCI commercial fisheries was just 38% of the previous 20-year average (Figure 6). The declining harvest closely mirrors a declining trend in estimated run size. The NDCS harvest since 2001 is just 24% of the previous 20-year average. These harvests have not rebounded to anywhere near historical levels since the 2008 Board meeting.

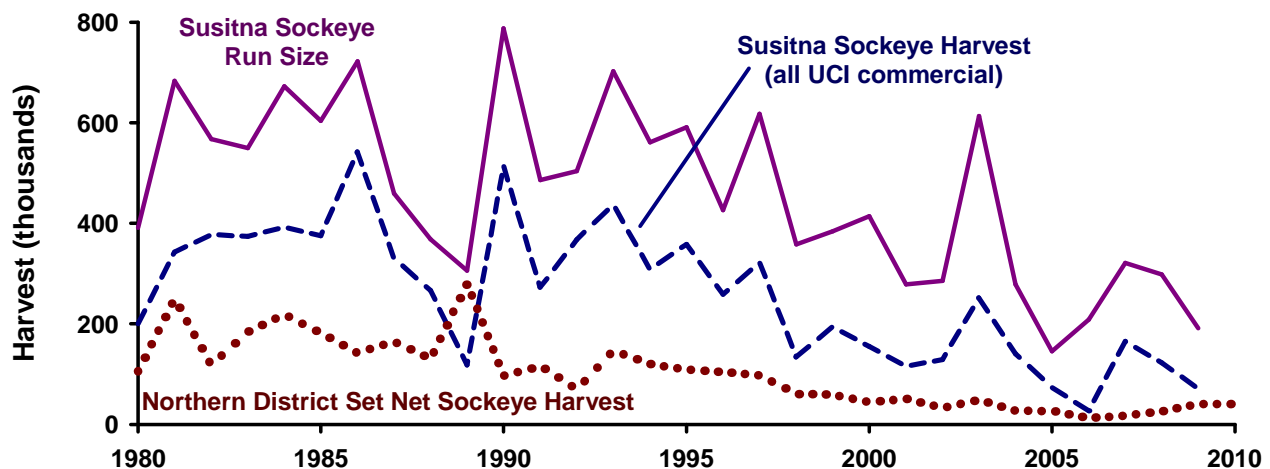


Figure 6. Historical Susitna sockeye run size and commercial harvest of Susitna.

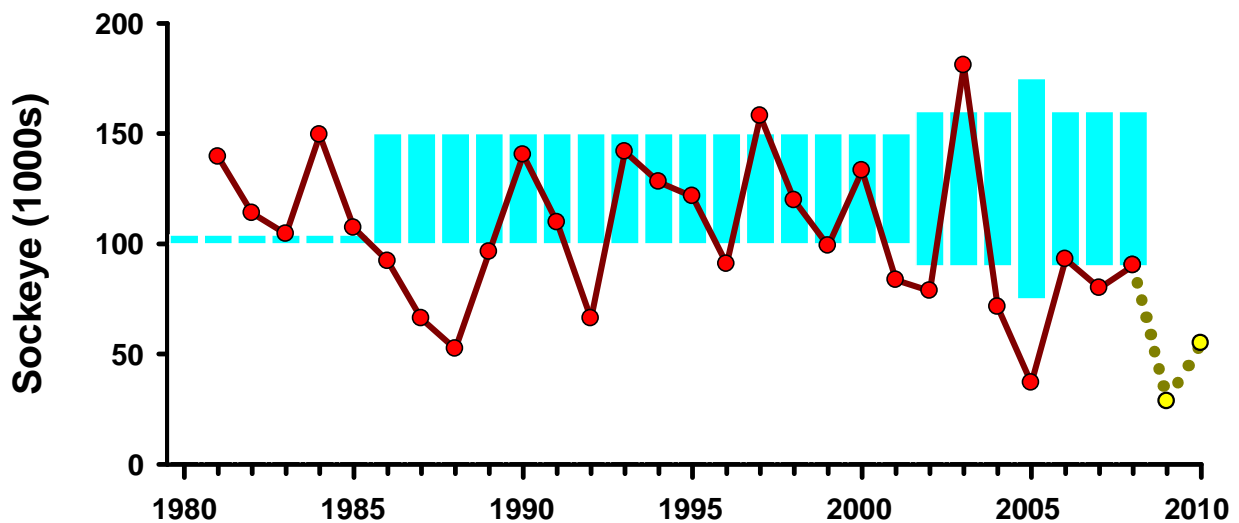


Figure 7. Yentna sockeye Bendix sonar counts and goals (2009 and 2010 points are the Bendix-equivalent Didson counts).

Failing Escapements

Chronic failure to meet minimum Yentna sonar goals since 1999 was a key factor in the 2008 Board’s decision for a stock-of-concern designation. The minimum Yentna River sonar escapement goal had not been achieved in five of seven years preceding 2008 (Figure 7). Subsequent to that decision, the minimum goal was barely achieved in 2008 and the 2009 count was a record low.

Susitna sockeye run size was monitored from 1981 to 2009 using Bendix sonar on the Yentna River. The original escapement goals for Susitna sockeye were established in 1979 at 200,000 based on the notion that the drainage should produce 800,000 sockeye assuming a return-per-spawner of 4. Tagging studies in 1981-1985 estimated that the production was about evenly split between the Yentna and Susitna portions of the drainage. This calculation was the basis for a sonar escapement target or goal range of 100,000 to 150,000 in place for the Yentna River from 1982 through 2001.

In 2002, a SEG of 90,000 to 160,000 was established for Yentna sockeye based on an analysis of historical Bendix sonar count data. In 2005, the BOF adopted an escapement goal (OEG) of 75,000 to 180,000 whenever the Kenai River sockeye run was predicted to exceed four million fish in order to allow for sufficient harvest of Kenai sockeye to avoid exceeding optimum escapement goals in that system.

In 2009 the Yentna River sonar escapement goal was eliminated by ADFG and replaced with three Susitna River drainage weir counts (Judd and Chelatna Lakes in the Yentna drainage and Larsen Lake in the Susitna main stem). These are three of 24 sockeye-producing lakes in the Susitna-Yentna system (Fair et al. 2009). The historical Yentna sonar goal was determined to be inappropriate due to uncertainties associated with the Bendix sonar. The Bendix system was found to be significantly undercounting sockeye relative to weir counts, Didson sonar, and mark-recapture estimates and was also confounded by pink runs in even-return years. Although the sonar goal itself was eliminated, a Didson unit continues to estimate escapement into the Yentna River.

Minimum escapement goals for all systems have not been achieved in each of the two years that the new post- season weir goals have been in place. The Chelatna and Judd goals were missed in 2009 and 2010, respectively. The collective weir count for Larson, Judd, and Chelatna Lakes in 2009 and 2010 was just 70% and 50%, respectively, of the 2006-2008 average.

Both sonar counts and mark-recapture data indicate a continuing downward trend in Susitna sockeye numbers from 2006 to 2009. The 2009 Bendix and Didson counts were the lowest on record. The 2010 sonar count was also very poor.

The combined annual weir count for Chelatna, Judd, Larsen and Shell Lakes illustrates an even more serious decline in Susitna sockeye abundance. Shell Lake escapements are monitored at a weir but an escapement goal was not identified for this system because of concerns that beaver dams may have limited migrating salmon in some years (Fair et al. 2009). However, the importance of Shell Lake should not be overlooked. In 2006 Shell Lake produced more sockeye than Chelatna and Judd Lakes combined. While poor weir counts may not be indicative of run strength in the year of return, they will result of substantial reductions in future returns. The collective weir count for Larson, Judd, and Chelatna Lakes of 76,469 in 2010 represents a substantial decline from the number of sockeye salmon counted from 2006 through 2008. This combined weir count has dropped each and every year during this time span.

Data indicates that the ratio of sockeye abundance has changed between the Yentna and Susitna Rivers. Earlier estimates (1981-1985) indicated that the Yentna River and Susitna main stem produced nearly identical numbers of sockeye annually whereas current estimates show that the Susitna main stem now only produces about a quarter of the total production. If true, the long term Yentna abundance indices could mask an even greater decline in sockeye numbers throughout the entire Susitna/Yentna system due to a loss of production from the Susitna side.

Table 1. Recent Susitna sockeye escapement estimates and escapement goals (Shields 2011).

Year	Susitna	Yentna sonar		Weir counts					
	Abundance ^c	Bendix	Didson	Chelatna	Judd	Larsen	CJL total	Shell	CJLS total
2006	418,200	92,000	166,700	18,433 ^b	40,633	57,411	116,477	69,720	186,197
2007	327,700	79,900 ^b	125,100	41,290	58,134	47,736	147,160	26,784	173,944
2008	359,800	90,100	131,800	73,469	54,304	35,040	162,813	2,624	165,437
2009	275,455	28,400 ^{ab}	45,500	17,865 ^b	35,040	41,929	102,947	4,961	107,908
2010	204,200	54,800 ^{ab}	88,322	37,784	18,361 ^b	20,324	76,469	2,222	78,691
Goals		90,000 160,000	--	20,000 65,000	25,000 55,000	15,000 50,000	--	--	--

^a Bendix-equivalent was calculated with average 2006-2009 conversion factor of 0.62*Didson.

^b Counts less than escapement goals are highlighted in yellow.

^c Estimated from mark-recapture studies in 2006-2008, and in 2009 and 2010 from 2006-2008 weir to mark-recapture ratios (after Shields 2010).

Issues

Since Susitna sockeye were designated as a stock of yield concern in 2008:

- 1) Commercial fishery managers have consistently failed to implement substantive, precautionary actions to reduce harvest of this stock,
- 2) Fishery yields have not substantially improved,
- 3) Multiple indicators show a continuing decline in run size and escapement,
- 4) Historical escapement goals that were not being met were replaced with less-constraining standards, and
- 5) Neither the historical or new escapement goals were consistently met.

Fishery Management Response. The required Action Plan developed by ADFG (and endorsed by the BOF) for Susitna sockeye salmon failed to significantly address measures (regulations) to protect, restore or promote the long-term health and sustainability of Susitna River sockeye salmon. The “Action Plan” was little more than a research proposal. Existing management plans affecting Susitna sockeye salmon and their conservation remained unchanged despite the stock of concern classification. While existing management plans identified measures and authorities that could be exercised by managers to reduce Susitna sockeye harvest, the options were not effectively utilized after 2008.

Even casual observations suggest that there is at least a crude relationship (index) between the UCI sockeye harvests and the Yentna sonar counts (large harvests produce low counts and small harvests large counts). For example, the minimum escapement threshold into the Yentna River was only achieved 3 times during the 10 largest sockeye harvest years in UCI. In sharp contrast during the 10 lowest harvest years the minimum goal was only missed 3 times (highest and lowest years only during period the sonar operated). Somehow the sonar with all its problems tends to detect high and low abundance which runs inversely proportional to UCI commercial sockeye salmon harvests.

Commercial fishery managers effectively exercised the management discretion identified in the Susitna sockeye Action Plan to reduce harvest of Susitna sockeye in 2008. In 2008, regular openers of the drift net fishery were restricted beginning July 10 in order to meet the minimum Susitna escapement goal. The fishery was limited to the corridor on July 10, area 1 and the corridor on July 14, and areas 1 and 2 plus the corridor on July 17 and 21. Fishing was district-wide on July 24 after Susitna fish had passed. The Yentna sockeye escapement goal (90,000) was met (90,180) for just the second time in the last five years. The goal would not have been met without the Central District drift restrictions in four regular periods beginning July 10.

After escapement goals were revised in 2009, discretionary corridor restrictions were not ordered in 2009 or 2010. Both the 2009 and 2010 fisheries resulted in very low Bendix and Didson sonar counts in the Yentna and weir counts in multiple lakes (Table 1).

Escapement Goal Revisions. Since the Susitna sockeye salmon were identified as a stock of concern, the sonar-based sustainable escapement goal was eliminated and replaced in 2009 with three weir based (SEG) escapement goals. An ability to adjust the mixed stock commercial harvest in-season based on Susitna River escapement abundance was lost with this decision. Also eliminated were a BOF developed OEG and a mandate that achievement of the lower end of the Yentna River escapement goal has a priority over exceeding the upper end of the Kenai River sockeye salmon escapement goal (5AAC 21.358).

The timing of this change was not in compliance with the intent of 5AAC 39.223 Policy for Statewide Salmon Escapement Goals. This policy states that one of its purposes is “to establish a process that facilitates public review of allocative issues associated with escapement goals.” The policy further states “The board recognizes the departments responsibility to (b)(6) review an existing or propose a new BEG, SEG and SET, on a schedule that conforms to the extent practicable, to the board’s regular cycle of consideration of area regulatory proposals.”

The biological basis for the change in escapement goals is also questionable. Concern for the fishery implications of the change led the MSBSC to seek an independent scientific review of the available information. The complete review may be found in Appendix A. Key findings are highlighted below:

- 1) While the Bendix sonar undercounts sockeye passage, it appears to provide a reasonable index of sockeye salmon escapement to the Yentna River under certain conditions including odd years when pink salmon are in low abundance.
- 2) The Chelatna and Judd weirs do not appear to be a good index of sockeye escapement to the Yentna River. Historic data for these populations were also of questionable suitability for developing an SEG.
- 3) The Bendix sonar does not appear to be a good index of sockeye salmon escapement to the entire Susitna drainage. Larson Lake weir counts may be suitable for this purpose because this population comprises a large proportion of the Susitna side return.
- 4) Where the Bendix is subject to some level of sampling uncertainty, weir counts suffer from their own limitations which make them no more certain than the Bendix. These include:
 - Accuracy of the historic data which is confounded by different counting methods and effects of enhancement;
 - Basis on a very limited and potentially unrepresentative data set;
 - Lack of representation of the smaller, less-productive components of the very diverse Susitna sockeye run by the large, productive sockeye lakes with weirs;
 - A question of whether the shift in counting methods has masked a recent declining trend in sockeye escapement.
- 5) Assumptions and problems with the interpretation and application of weir-based escapement goals were not identified, qualified or evaluated in the recent sonar evaluation report prepared by Fair et al. (2009).

Box 2. Additional discussion of changes in Susitna sockeye escapement goals.

Since establishment of the Susitna sockeye salmon as a stock of concern, the sonar-based sustainable escapement goal was eliminated and replaced in 2009 with three weir based (SEG) escapement goals. ADFG found (Fair et al. (2009) that the Yentna River Bendix sonar estimates for 2006-2008 were significantly less than DIDSON estimates, weir counts and mark-recapture estimates. ADFG further reported that the Bendix estimate is a poor index of abundance, particularly on even numbered years when pink salmon numbers are high.

Measuring escapement into the vast Susitna River drainage at three lakes that produce about 40% of the systems production raises certain questions. Are the SEG's based on sound data? (Extrapolated weir counts because of weir failures, aerial or tower enumeration substituted for weir counts, limited data points, hatchery fish present, etc.). Are the three weir counts reflective of the abundance for the entire drainage? Do the SEG'S adequately protect subpopulations? For example about 35% of drainage's production comes from rivers, streams or sloughs. Are flowing waters as productive for sockeye as large lakes? Given the great diversity of sockeye habitats throughout the drainage is it likely that the Susitna River's productivity compares to that of Kenai Peninsula sockeye, which rear primarily in relatively stable large lake environments? If there is a difference, exploitation rates should also differ to insure healthy sustainability.

Concern for the accuracy of the Bendix sonar was fostered because they could not find a significant sonar relationship with Northern District (east side only) harvest deliveries and Larson Lake weir counts. However, trying to link Northern District eastside harvests to sonar counts is a poor choice for numerous reasons: 1. Kenai Peninsula sockeye are always present in the ND harvest and on many years are more abundant on the east side than are Susitna sockeye; 2. Many, many severe restrictions and closures have impacted the harvest over the years; during some years the fishery has been closed throughout the peak of the sockeye run and 3. Participation by set netters has fluctuated thru the years.

Concerns were also based on the lack of a significant sonar relationship with Larson Lake weir counts. However, since the Yentna sonar does not enumerate Larson Lake sockeye it is not surprising there is no relationship between the two. Individual weir counts in Yentna River drainage also don't always correspond to Larson Lake counts.

Much has been said about the performance of the Bendix sonar during years of high pink salmon abundance (even-years) because of fish wheel species apportionment problems (the small bank-oriented pink salmon are over-represented in the fish wheel catches whereas larger chum, coho and sockeye are under-represented. However, average sockeye sonar counts at the Yentna do not differ very much between even and odd years. Why? Even year and odd year sonar count averages between 1982 and 2008 are 101,247 and 106,494, respectively. Minimum escapement was not reached 6 times in both even and odd years.

Three years (2006-2008) of comparisons between Bendix and DIDSON have provided a consistent expansion factor for converting Bendix estimates (Fair 2009). Although DIDSON is an improved indicator of abundance it under estimates sockeye salmon abundance according to weir and mark-recapture estimates. The conversion of historical Bendix counts into DIDSON equivalent estimates reveals the following:

- Period 1982-2004. DIDSON counts ranged from 101,854 to 344,244 and averaged 213,529 sockeye salmon.
- Period 2005-2010. DIDSON counts ranged from 45,484 to 166,697 and averaged 104,783 sockeye salmon. The three lowest DIDSON counts on record have been measured during the past six years.

Proposals

With the retirement of the Yentna Bendix sonar, the sockeye OEG in the Northern District Salmon Management Plan is no longer valid. ADFG has entered a placeholder proposal that would amend the plan by addressing changes in counting methods for sockeye salmon migrating into the Susitna River drainage. While the Department has identified new SEGs, only the Board can establish an OEG.

The MSBSC has not submitted a specific proposal for escapement goal revisions but offers the following recommendations for actions needed to address the continuing depletion of Susitna sockeye and the lack of substantive fishery measures to protect this stock:

1. Consider changing the stock-of-concern designation for Susitna sockeye from a yield concern to a management concern.

This consideration is warranted by continuing declines in escapements of Susitna/Yentna sockeye since the yield concern designation in 2008. While harvests have marginally increased with increasing fishing since the designation, numbers have continued to decline from 2008 levels that were already much less than historical values. Weir, sonar, mark-recapture, and run size estimates all show this continuing decline.

A management concern is defined based on a “chronic inability, despite use of specific management measures, to maintain escapements for salmon stock within the bounds of the SEG, BEG, OEG, or other specified management objectives for the fishery.” Susitna/Yentna sockeye very clearly meet the criteria for a management concern. Whether measured relative to the old Bendix-based goals or the newer weir-based standards, escapement goals have not been met for seven of the last ten years.

2. Establish a new OEG based on the new Yentna Didson sonar using numbers consistent with the long-standing Bendix-based goals.

The new weir-based goals do not provide a consistent standard for measuring escapements with the old Bendix system. In fact, the new goals appear to set a lower standard for escapement than the previous goals. The new goals are also based on the largest and strongest sockeye populations in the basin and may not be representative of the smaller, weaker populations that may account for the historical decline in sockeye numbers.

A new Didson sonar is operated on the Yentna mainstem and provides a suitable alternative for indexing sockeye escapement into the system. Operation of the Bendix and Didson systems side-by-side from 2006-2008 provides a conversion factor that may be used to estimate a Didson-equivalent of the Bendix-based escapement goals, in the same fashion that corrections are being applied on the Kenai and Kasilof rivers. The Yentna conversions were remarkably consistent over the three years, ranging from 1.46 to 1.81, and averaging 1.61. Applying this conversion to the old Bendix-based goal of 90,000 to 160,000 would result in a Didson-equivalent goal of 145,000 to 260,000.

We recommend adopting a new Yentna OEG of 145,000 to 260,000 sockeye to be measured at the Didson sonar. This will ensure that: A) changes to weir-based SEGs for selected populations does not effectively reduce the escapement goals for Susitna/Yentna sockeye from historical levels, and B) in-season data on sockeye escapements is available for fishery management purposes.

3. Eliminate the current linkage of the Susitna sockeye OEG to the Kenai sockeye run size.

The linkage of the Susitna/Yentna OEG with the Kenai sockeye run size is no longer appropriate given the continuing decline in run size, harvest, and escapement of Susitna/Yentna sockeye. Establishment of the OEG appears to be a clear declaration by a previous BOF that it is okay to “overharvest” (within certain bounds) Susitna sockeye (and associated northern stock and species) in order to maximize the harvest of large Kenai sockeye runs. However, a precautionary approach to management of Susitna/Yentna sockeye would avoid potentially excessive harvest rates in years of high Kenai sockeye abundance.

4. Establish a conservation corridor in the Central District drift net fishery, involving mandatory restrictions during mid-July, to ensure that Susitna sockeye escapements are protected.

The very serious-steady decline of Susitna River sockeye salmon as measured by harvest, sonar and weir demands the development of a regulatory-based recovery plan. The lack of consistent implementation of discretionary fishery restrictions since 2008 highlights the need for mandatory requirements in management plans to control the harvest of Susitna/Yentna sockeye to sustainable levels. Regulatory management plans that feature the concept of conservation corridors would be an effective alternative to Susitna sockeye conservation. Conservation corridor proposals are treated in more detail in the following chapter.

ADFG Comments: *Department comments on issues related to these recommendations are associated with other proposals addressing similar concerns. With respect to Susitna/Yentna sockeye escapement goals identified in proposal 136, the Department recommended no action on the grounds that SEGs and BEGs are the responsibility of the Department. They note, however, that the Board may establish or modify an OEG which considers biological and allocative factors and may differ from the BEG or SEG. With respect to use of the Yentna sonar as the basis for an OEG as represented in proposal 137, the Department recommends no action because the Board has “no administrative, budgeting, or fiscal powers” that would allow the board to direct the kind of sonar the Department deploys for fish counting. The Department also notes that it would be inappropriate to use a counting system that is known to be inaccurate.*

In response, the MSBSC notes that in-river goals for Kenai River late-run sockeye and Kasilof River sockeye are defined in their respective management plans based on sonar counts. Implicit in their definition is the type of Sonar being utilized. In fact, the Department has identified the need to address in the OEG and in-river goals for Kenai sockeye based on the change in SEG associated with the switch from Bendix to Didson sonars.

Other Proposals

#134 [ADFG] & **#135** [Upper Cook Inlet Drift Association] seek to amend subsection (b) by addressing changes in counting methods for sockeye salmon migrating into the Susitna River drainage. The new escapement goals for Yentna and Susitna sockeye utilize weir counts on three lakes, and cannot be used for in-season management decisions. *[MSBSC supports using these proposals to open discussion]*

#136 would establish an OEG of 40,000-50,000 sockeye salmon for the Susitna River. This will be added to the top end of the three SEGs at the three weirs in order to provide additional protection for the Susitna River drainage sockeye salmon. *[MSBSC Supports Concept]*

#137 would establish an OEG for sockeye salmon bound for the Yentna/Susitna River of 90,000 - 160,000 fish during returns of less than 4,000,000 sockeye salmon to the Kenai River as measured by Bendix-equivalent Didson numbers using the Yentna River sonar. This proposal also seeks revision of the current OEG during returns of 4 million or greater Kenai sockeye River (75,000-180,000) as measured by Bendix-equivalent Didson numbers using the Yentna River sonar. *[MSBSC Supports Concept]*

#139 seeks to increase commercial fishing time in the Northern District by establishing a terminal fishery in the Fish Creek area. This commercial fishery would target sockeye salmon bound back to Big Lake. Establishment of this fishery would reduce opportunity in the personal use fishery in Fish Creek and would result in the incidental harvest of coho salmon bound back to many small streams in the Knik Arm area. *[MSBSC Opposes]*

Northern District Salmon Management Plan [5 AAC 21.358]

<p>a) The purposes of this management plan are to minimize the harvest of coho salmon bound for the Northern District of upper Cook Inlet and to provide the department direction for management of salmon stocks. The department shall manage the chum, pink, and sockeye salmon stocks primarily for commercial uses to provide commercial fisherman with an economic yield from the harvest of these salmon resources based on abundance. The department shall also manage the chum, pink, and sockeye salmon stocks to minimize the harvest of Northern District coho salmon, to provide sport and guided sport fisherman a reasonable opportunity to harvest these salmon resources over the entire run, as measured by the frequency of inriver restrictions, or as specified in this section and other regulations.</p>	<p><i>Species priorities for northern district salmon in sport and commercial fisheries.</i></p>
<p>(b) <u>The department shall manage commercial salmon fisheries in the Northern and Central Districts of Upper Cook Inlet to achieve an OEG of 145,000 to 260,000 as measured at the Yentna Didson sonar.</u></p>	<p><u>The MSBSC recommends adopting an OEG that is the Didson sonar-equivalent of the old Bendix SEG.</u></p>
<p>(c) The department shall manage the Northern District commercial salmon fisheries based on the abundance of <u>Susitna and</u> Yentna River sockeye salmon, the <u>Susitna and</u> Yentna River escapement goals, or other salmon abundance indices as the department deems appropriate. Achievement of the lower end of the <u>Susitna and</u> Yentna River escapement goals shall take priority over not exceeding the upper end of the Kenai River inriver run goal. <u>When the sockeye salmon returns to the Kenai River are four million fish or greater, there is an optimal escapement goal of 75,000 to 180,000 sockeye salmon in the Yentna River.</u></p>	<p><u>Revisions to accommodate changes in escapement goals identified by the Department.</u></p>
<p>(e)(d) From July 20 through August 6, if the department's assessment of abundance indicates that restrictions are necessary to achieve the escapement goal, the commissioner may, by emergency order, close the commercial set gillnet fishery in the Northern District and immediately reopen a season during which the number of set gillnets that may be used is limited to the following options selected at the discretion of the commissioner:</p>	<p><u>The MSBSC recommends removing the allowance for lower Susitna sockeye escapements at high Kenai sockeye run sizes.</u></p> <p><i>Limited fishery option in the Northern District in years of low sockeye abundance</i></p>

<p>(1) three set gillnets that are not more than 105 fathoms in aggregate length;</p> <p>(2) two set gillnets that are not more than 70 fathoms in aggregate length;</p> <p>(3) one set gillnet that is not more than 35 fathoms in length.</p> <p>(d)(e) In addition to the provisions specified in (b) and (c) of this section, the department shall manage the Northern District commercial salmon fisheries to minimize the incidental take of coho salmon stocks bound for the Northern District in the following manner:</p> <p>(1) additional fishing periods, other than the weekly fishing periods described in 5 AAC 21.320(a) (1), may not be provided when coho salmon are expected to be the most abundant species harvested during that period; additional fishing periods may not be provided based on the abundance of Northern District coho salmon;</p> <p>(2) after August 15, the department shall limit the harvest of coho salmon in the Northern District by limiting commercial fishing time to the weekly fishing periods described in 5 AAC 21.320(a) (1).</p> <p>(e)(f) Personal use fishing with a set gillnet is prohibited in the Northern District.</p> <p>(f)(g) The department shall, to the extent practicable, conduct habitat assessments on a schedule that conforms to the board's triennial meeting cycle. If the assessments demonstrate a net loss of riparian habitat caused by noncommercial fishermen, the department is requested to report those findings to the board and submit proposals to the board for appropriate modification of this management plan.</p> <p>(g)(h) The commissioner may depart from the provisions of the management plan under this section as provided in 5 AAC 21.363(e) .</p>	<p><i>Coho management provisions</i></p> <p><i>Personal use fishery limitations</i></p> <p><i>Habitat provisions</i></p>
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CONSERVATION CORRIDOR FOR SOCKEYE & COHO

Background

- ❑ Large numbers of sockeye and coho destined for northern inlet streams are harvested in Central District. These fisheries significantly reduce fish available to northern district fisheries and to escapements.
- ❑ Exploitation rates of Susitna sockeye estimated from annual run size and harvest estimates reported by ADFG averaged about 40% since 1998 and 60% in the 20 years prior. Annual exploitation rates in 2008-2010 were similar to the period prior to designation as a stock of yield concern.
- ❑ Harvest of Susitna sockeye is closely related to fishery intensity based on Kenai and Kasilof sockeye run strengths. For instance, the low Susitna sockeye exploitation rate of 13% in 2006 resulted from extensive commercial fishery restrictions in July to meet Kenai escapement goals in a year of record late Kenai sockeye run timing.
- ❑ Exploitation rates of Susitna sockeye salmon were lower than Kasilof and Kenai sockeye stocks which typically average 70-80% which is one of the highest rates observed for Alaska sockeye stocks (Clark et al. 2007).
- ❑ Data from recent genetic studies indicate that commercial fishery exploitation rates vary among different components of the Susitna sockeye run.¹ For instance, the Judd/Chelatna/Larson group identified by Barclay et al. (2010) was consistently exploited at a 5-10% greater rate than the Susitna/Yentna group. It would not be surprising for different run components to be harvested at different rates but it is unclear whether the observed pattern is due to chance or differences in vulnerability to harvest due to run timing, size, or some other factor.

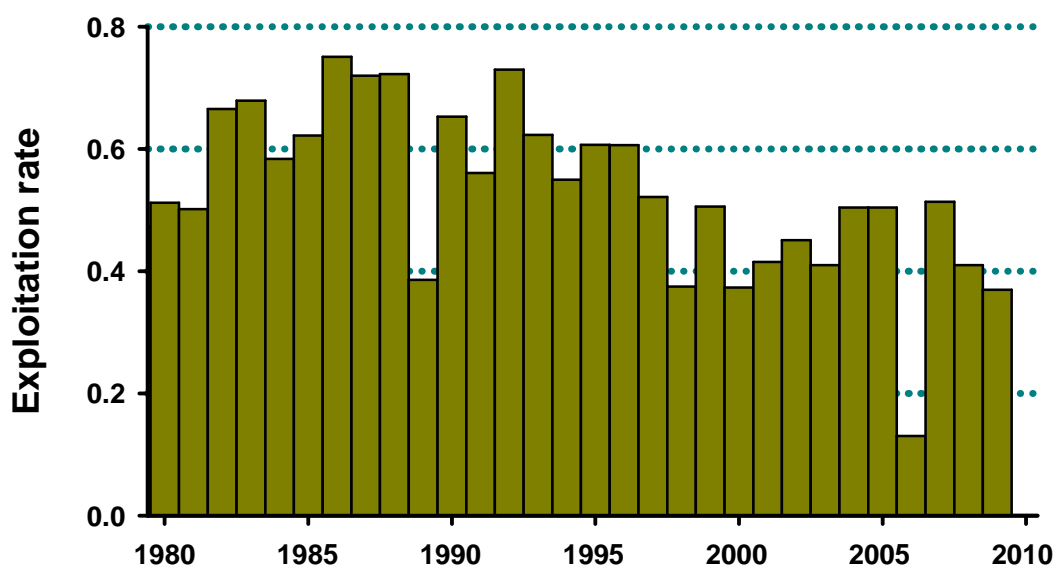


Figure 8. Exploitation rates of Susitna sockeye in UCI commercial fisheries estimated from annual run size and harvest estimates reported by ADFG.

¹ See Appendix 2 for more information on results of recent genetic studies completed by the Department.

Susitna Sockeye Run Timing

- The timing of sockeye, coho, pink and chum salmon migrating through the Central District to spawning areas within the Northern District is nearly identical to one another and also similar to that of Kenai and Kasilof River sockeye.
- The migration of Susitna sockeye into UCI typically peaks during the second or third week of July but this stock was relatively abundant throughout July and peak timing varies from year to year (Barclay et al. 2010).
- Susitna sockeye timing into UCI typically peaks later than Kasilof sockeye and earlier than Kenai sockeye but there was considerable overlap among stocks (see Appendix II for examples from 2006-2008).

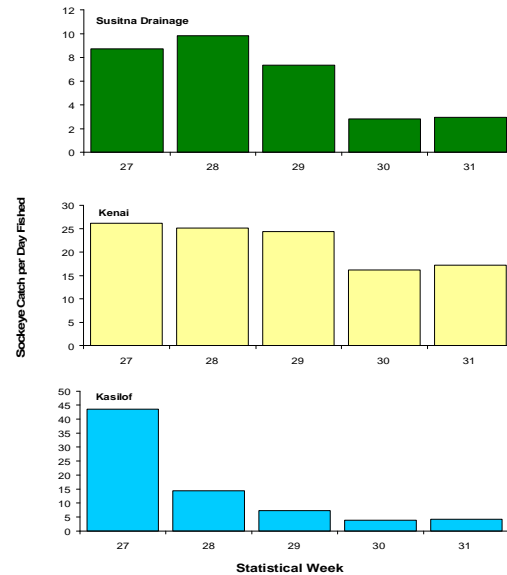


Figure 9. Example run timing of Susitna, Kenai, and Kasilof sockeye into UCI in July 2008 based on genetic data for the offshore test fishery (see Appendix II).

Stock Composition by Fishery

- Stock identification programs of the past (scale analyses) and present (genetic assessment) have consistently shown that Susitna River sockeye are primarily harvested in the Central District of UCI.
- Stock ID studies (scale and genetic) have repeatedly shown the Central District drift fishery to be the primary harvester of Susitna sockeye. While Yentna/Susitna sockeye aren't a large fraction of the commercial harvest but the Central District fishery still appears to harvest the majority of the Yentna/Susitna return in some years.
- These stock ID programs also show that the percentage of Susitna sockeye in the drift harvest has declined steadily since the 1980's concurrent with the decline in abundance of Susitna sockeye. Cross et al. (1981-1988) reported that Susitna sockeye comprised an average of 25% of the drift gillnet harvest for the Years 1979 thru 1985. Seeb et al. (2000) found that Susitna sockeye made up an average of 16% of the drift harvest in 1995 thru 1997. Barclay et al. (2010) reported just 8% of the drift harvest to be Susitna sockeye for the years 2005 thru 2008.
- Recent genetic studies also indicate that significant numbers of Yentna/Susitna sockeye are caught in the eastside set net fishery in some years (Barclay et al. 2010). Similar results were previously reported from scale pattern analysis. This fishery has contributed 14-26% of the total commercial harvest of NCI sockeye in 2006-2008. In 2007, an estimated 79,900 Yentna sockeye were harvested in the Kasilof and Kenai set net area fishery. Catches of NCI sockeye also increase progressively north of the Kasilof River.
- Restricting fishing south of Kalgin Island has been found to provide little or no protection to Susitna sockeye due to the broadly-overlapping run timing of Kenai, Kasilof, and Susitna sockeye during July. Sockeye harvests as high as a half million fish per period have been recorded from south of Kalgin Island during the first half of July.

- Very few Susitna bound sockeye are harvested west of Kalgin Island by either drift or set net fisheries. During the years 2005-2010, for example, no (zero) sockeye were reported harvested by the drift fishery in stat. area 245-70. Genetic sampling of the Westside and Kalgin Island set net fisheries revealed just 1% to 4% of the harvest for 2006-2008 consisted of Susitna sockeye (890 to 2,921 sockeye annually) and some of the Kalgin Island harvest was from nets fishing on the east side of the island.
- Both scale and genetic ID programs have shown that substantial numbers of sockeye of Kenai Peninsula origin are commonly harvested in the Northern District set net fishery. Susitna sockeye comprised only 18-26% of the harvest in northern district set net fisheries where the catch was surprisingly dominated by Kenai and Kasilof sockeye in some years (Barclay et al. 2010).

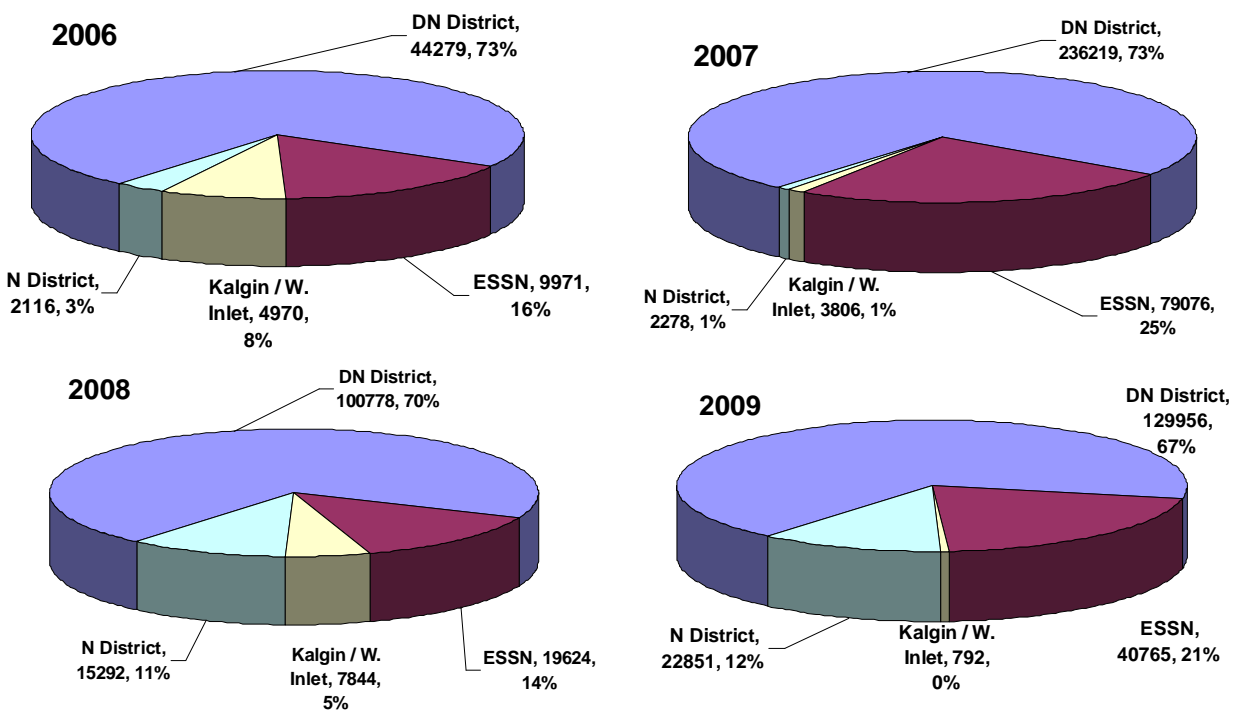


Figure 10. Distribution of harvest of Susitna, Yentna, Fish Creek, and Knik Arm among UCI commercial fisheries in 2006-2009(based on data from Barclay et al. 2010a, 2010b).

Drift Net Fishery Management

- ❑ The Central District drift net fishery currently operates with regular 12-hour openers on Mondays and Thursdays from late June through early August. Fisheries are sometimes limited to a three-mile wide Kenai and Kasilof “corridor” along the east side of Cook Inlet to target Kenai and Kasilof sockeye. Area restrictions are also sometimes used in July in an attempt to reduce harvest of Susitna sockeye.
- ❑ The use of the 3-mile corridor occurred almost annually (by E.O.) from the mid 1980’s thru the 1990’s.
- ❑ In 1999, the BOF adopted a series of regulations intended to reduce drift net harvest of Northern District sockeye and coho. The BOF placed the corridor into regulation for the period July 10-15. Additional mandatory corridor restrictions were also required by regulation in and around July 25. The Board also adopted an earlier August closure date.
- ❑ The 2002 Board maintained restrictions to protect northern sockeye and coho but provided increased flexibility for scheduling two regular drift net closures in July.
- ❑ A pink salmon management plan was adopted in 2002 to provide August additional drift net fishery opportunity that was eliminated by previous restrictions to protect coho.
- ❑ In 2005, the BOF replaced the 3-mi corridor requirement with a regulation that allowed management to either place the drift fleet in the 3-mi. corridor or to allow drift fishing south of Kalgin Island during one period between July 10-15.
- ❑ An end-of-the-year trigger was also adopted in 2005 for drift net fishery closure based on declining harvest of sockeye (although management practices were subsequently altered to avoid this trigger).
- ❑ In 2008, the BOF extended the drift net fishery end date back to August 15, effectively eliminating restrictions to protect coho adopted in 1999.
- ❑ In 2008 immediately following the stock of concern designation, one regular drift opener was restricted to reduce exploitation of Susitna sockeye (Table 2). Three others were limited to more southerly areas under the presumption that many Susitna sockeye had already passed northward.
- ❑ In 2009 and 2010 after the Yentna sonar sockeye goal was eliminated, no regular drift periods were restricted to the corridor.

Table 2. Recent Central District drift net fishery restrictions in July to protect Susitna sockeye.

Year	Kenai sockeye	Corridor only	Area 1 plus corridor	Areas 1 & 2 plus corridor
2008	2.1 million	Jul 10	Jul 14	Jul 17, Jul 21
2009	2.5 million	--	Jul 9, Jul 13	Jul 16, Jul 20
2010	3.4 million	--	Jul 12, Jul 15, Jul 19	Jul 29

Area 1 is south of Kalgin Island.

Area 2 is east and northeast of Kalgin Island.

Issues

Salmon species and stocks other than Kenai Peninsula sockeye receive passive/incidental management at best. It is well recognized that stocks of differing abundance or productivity commonly require different management strategies to remain healthy and sustainable. Commercial exploitation aimed at Kenai Peninsula sockeye often has a greater influence on the returns to NCI drainages than the actual run size of the incidental stock or species. The quality of sport fishing in Northern District waters is, therefore strongly influenced by the magnitude of sockeye returns to the Kenai Peninsula.

Management of the mixed stock Central District commercial fishery has long recognized that Susitna sockeye and associated NCI stocks and species cannot consistently support exploitation rates that are appropriate for the more robust Kenai Peninsula sockeye. The following ADFG staff statement reflects a general management strategy that takes this mixed harvest issue under consideration:

Based on past experience and the forecast of expected run-strength of individual stocks, the basic management strategy employed for the 1996 season followed the theme developed over the preceding decade. In general, it has been found that the sockeye return to the Susitna River would not be capable of maintaining a standard two –period – per week schedule throughout the fishing season and still meet the escapement objective set for the Yentna River (principle sockeye-producing tributary of the Susitna). Some reduction of fishing time, particularly in the mixed-stock drift harvest, would be required to adequately protect this stock. In contrast, Kasilof and Kenai River sockeye have demonstrated the ability to withstand a full fishing schedule. Reducing the Central District mixed-stock harvest would leave substantial surpluses of these fish to be harvested in a more discrete manner, namely in the Central District east side set net fishery and by the drift fleet confined to a 3-mile corridor along the east side. Experience had also shown that the greatest benefit in reducing the drift harvest of Susitna-bound sockeye could be gained from focusing on the period from July 10-15 when northbound fish are at their greatest abundance. Harvesting the resulting surpluses of Kenai and Kasilof River sockeye along the east side has led to higher harvests of Kenai River Chinook and coho salmon. (Regional Information Report No. 2A99-06. A report to the BOF in 1999.)

The above referenced quote or similar statements appear frequently in UCI annual management reports in the late 1990's.

MSBSC Proposal [126]

In light of the failure of fishery managers to exercise their management discretion and implement effective conservation measures for the Susitna sockeye stock-of-concern, we ask the BOF to intercede by adopting explicit priorities and measures into management plans to protect these fish. Proposal 126 submitted by MSBSC and the Kenai River Sportfishing Association seeks to ensure escapement of salmon into the Northern District while also minimizing incidental catch of coho salmon in the drift gillnet fishery. This proposal:

- ❑ Clarifies the purposes of this plan to ensure Northern District escapement and minimize coho harvest in this fishery.
- ❑ Regulates Central District fisheries in order to limit interception of Northern District salmon and Kenai coho.
- ❑ Decouples the drift net fishery from the Eastside Set Net (ESSN) fishery to allow for expanded drift opportunity to target Kenai and Kasilof sockeye in the Kenai and Kasilof corridor.
- ❑ Provide for an orderly August closure in order to minimize interception of coho.

Language is proposed to clarify the purpose of this plan and the species priorities for this fishery. Some step-down plans include specific language but the drift net plan does not. Many of the current and proposed plan elements are designed to ensure Northern District sockeye escapement and to minimize coho harvest but this purpose is not explicitly identified, making it particularly difficult to determine whether plan provisions are appropriate or adequate.

This proposal seeks to limit one of the two regular periods during the second week of July to the Kenai/Kasilof corridor. This week is generally the peak passage period for northern-bound Susitna sockeye which are a stock of concern. The proposal also seeks to eliminate the use of Area 2 after July 16. This area in the central inlet off of the Kenai can harvest significant numbers on Susitna sockeye on the back end of the run. Restricting the drift fishery southward late in the season protects Susitna sockeye that have already passed northward. These restrictions will reduce harvest of Susitna sockeye. Without precautionary time and area restrictions, there is no way to assure that minimum escapement goals will be consistently met. Harvest of Susitna sockeye cannot be effectively managed based on feedback from in-season sonar counts because these fish are not counted until days after the fishery.

This proposal also seeks to decouple drift net opening in the corridor from openings of the ESSN fishery. Current practice is to open the corridor only when the beaches are also open. This has been a discretionary practice based on perceptions of fairness. However, corridor restrictions of regular periods identified above will pass more Kenai and Kasilof sockeye toward the beaches. Allowing additional fishing time in the corridor even when the ESSN fishery is closed will: 1) offset reductions in drift net harvest shares, 2) control risks of exceeding Kenai and Kasilof escapement goals, and 3) avoid excessive king harvest in additional set net openers that might be allowed to mop up the additional Kenai and Kasilof sockeye.

Finally, this proposal seeks to provide an earlier season ending date in order to provide for coho escapement. Fishery openings after the first week of August have previously been supported with arguments for a need to fish on late-timed sockeye returns or to harvest pinks. However, these openers are essentially a mixed species fishery with disproportionate coho impacts relative to the value of late season sockeye.

ADFG Comments: *The Department is officially neutral on the allocative aspects of proposal #126 and notes that effects will include an increase in the number of salmon migrating to all streams and rivers, and increased fishing time and king harvest in the ESSN fishery.*

Other Proposals

#122 This is a Board-generated proposal that seeks to correct an error in codified language. It will not result in a significant increase in fish passing northward because fishing effort and harvest in the affected area is very small. *[MSBSC Supports]*

#123 seeks to reduce fishing time for the drift gillnet fleet in an effort to pass additional salmon into the Northern District. Proposal 126 is our preferred choice for addressing this issue. *[MSBSC Supports Concept]*

#124 would create a conservation corridor consisting of time and area in an effort to pass northern bound salmon through the drift gillnet fishery. Proposal 126 seeks much the same approach. *[MSBSC Supports Concept]*

#127 seeks to restrict the drift gillnet fishery after August 9 in the Western Subdistrict of UCI. This proposal, if adopted, would reduce the commercial harvest of coho salmon. Mr. Coray has submitted two additional proposals which address the conduct of the sport fishery in West Cook Inlet (20, 21). *[MSBSC Supports]*

#140 would define minimize as relates to commercial harvest of coho salmon of Northern District origin in the Central District Drift Gillnet Fishery as no more than a projected 25% of the total harvest of sockeye and coho salmon in a commercial opening. MSBSC supports this proposal in concept because the proposal seeks to define the term “minimizes”. *[MSBSC Supports Concept]*

#141 seeks to reestablish restrictions that were in place for the drift gillnet fishery prior to the 2005 meeting of the BOF. The restrictions that the author is referring to were specific time and area closures within the Central District designed specifically to reduce interception of sockeye and coho salmon bound for the streams of the Northern District. See proposal 126. *[MSBSC Supports Concept]*

Central District Drift Gillnet Fishery Management Plan [5 AAC 21.353]

<p>(a) <u>THE PURPOSES OF THIS MANAGEMENT PLAN ARE TO ENSURE ADEQUATE ESCAPEMENTS OF SALMON INTO NORTHERN DISTRICT DRAINAGES AND TO PROVIDE MANAGEMENT GUIDELINES TO THE DEPARTMENT. THE DEPARTMENT IS FURTHER DIRECTED TO MANAGE THE COMMERCIAL DRIFT GILL NET FISHERY TO MINIMIZE THE HARVEST OF NORTHERN DISTRICT AND KENAI RIVER COHO SALMON IN ORDER TO PROVIDE SPORT AND GUIDED SPORT FISHERMEN A REASONABLE OPPORTUNITY TO HARVEST THESE SALMON STOCKS OVER THE ENTIRE RUN, AS MEASURED BY THE FREQUENCY OF IN RIVER RESTRICTIONS.</u></p> <p>(b) The department shall manage the Central District commercial drift gillnet fishery as follows:</p> <p>(1) weekly fishing periods are as described in 5 AAC 21.320(b) ;</p> <p>(2) the fishing season will open the third Monday in June or June 19, whichever is later, and</p> <p>(A) from July 9 through July 15,</p> <p>(i) fishing during <u>[ONE OF]</u> the two regular fishing periods is restricted to the Kenai and Kasilof Sections <u>and Drift Gillnet Area 1;</u></p> <p>(ii) <u>at run strengths greater than 2,000,000 sockeye salmon to the Kenai River,</u> the commissioner may, by emergency order, open <u>one</u> additional <u>12-hour</u> fishing period<u>[S]</u> in the Kenai and Kasilof Sections of the Upper Subdistrict and <u>Drift Gillnet Area 1</u> <u>[ADDITIONAL PERIODS MAY BE AUTHORIZED INDEPENDENT OF THE UPPER SUBDISTRICT SET GILLNET FISHERY];</u></p> <p>(B) from July 16 through July 31,</p> <p>(i) at run strengths of less than 2,000,000 sockeye salmon to the Kenai River, fishing during two regular 12-hour fishing periods will be restricted to the Kenai and Kasilof Sections of the Upper Subdistrict <u>[and Drift Gillnet Area 1];</u></p> <p>(ii) at run strengths of 2,000,000 to 4,000,000 sockeye salmon to the Kenai River, fishing during <u>two</u> <u>[ONE]</u> regular 12-hour fishing periods <u>[PER WEEK]</u> will be restricted to <u>[EITHER OR BOTH OF]</u> the Kenai and Kasilof Sections of the Upper Subdistrict <u>and</u> <u>[OR]</u> Drift Gillnet Areas <u>1 and 2;</u></p> <p>(iii) <u>[AT RUN STRENGTHS OF LESS THAN 4,000,000 SOCKEYE SALMON TO THE KENAI RIVER, THE COMMISSIONER MAY, BY EMERGENCY ORDER, OPEN ADDITIONAL FISHING PERIODS IN THE KENAI AND KASILOF SECTIONS OF THE UPPER SUBDISTRICT AND ADDITIONAL PERIODS MAY BE AUTHORIZED INDEPENDENT OF THE UPPER SUBDISTRICT SET GILL</u></p>	<p><i>Proposals for revision are highlighted in strikeout language.</i></p> <p><i>(Proposed language to clarify objective to protect Northern District and minimize coho.)</i></p> <p><i>Mon. & Thu. @ 12 hrs each Timed for 1st influx of late-run sockeye (Kasilof) 2nd week of July is peak passage period for Susitna sockeye Kenai & Kasilof = "corridor" Area 1 is South of Kalgin Island Additional fishing time is provided at average or larger Kenai runs to share harvest and control escapement.</i></p> <p><i>(Proposed area reduction) (Decoupling language for early July) Kenai sockeye run strength can be effectively gauged around this time Area restrictions to protect northern fish (Proposed area reduction) Additional fishing time is allowed at average Kenai runs (Proposed time & area reduction)</i></p> <p><i>Area 2 = East of Kalgin Island</i></p> <p><i>(Decoupling language for late July)</i></p>
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NET FISHERY:

(iv) at run strengths greater than 4,000,000 sockeye salmon to the Kenai River, there will be no mandatory restrictions during regular fishing periods;

(C) [THE UPPER SUBDISTRICT WILL CLOSE ON OR BEFORE AUGUST 7, EXCEPT THAT] from August 16 [AUGUST 8] until closed by emergency order, Drift Gillnet Areas 3 and 4 are open for fishing during regular fishing periods;

(D) from August 11 through August 15 [AUGUST 1 THROUGH AUGUST 7], there are no mandatory area restrictions to regular periods, except that if the Upper Subdistrict set gillnet fishery is closed under 5 AAC 21.310(b) (2)(C)(iii), regular fishing periods will be restricted to Drift Gillnet Areas 3 and 4.

(bc) For the purposes of this section,

(1) "Drift Gillnet Area 1" means those waters of the Central District south of Kalgin Island at 60° 20.43' N. lat.;

(2) "Drift Gillnet Area 2" means 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.;

(3) "Drift Gillnet Area 3" means 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 Gillnet Area 4" means 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.

(ed) The commissioner may depart from the provisions of the management plan under this section as provided in 5 AAC 21.363(e) [EXCEPT THAT DEPARTURE FROM THE PROVISIONS OF THIS MANAGEMENT PLAN JUSTIFIED BY KENAI RIVER LATE-RUN SOCKEYE SALMON MAY ONLY OCCUR IF THE DEPARTMENT PROJECTS THAT, WITHIN 48 HOURS, THE IN-RIVER ABUNDANCE OF LATE-RUN SOCKEYE SALMON AS ENUMERATED PAST THE SONAR COUNTER LOCATED AT RIVER-MILE 19, WILL EXCEED THE INRIVER GOAL AND AT THAT TIME, THE COMMISSIONER MAY DEPART FROM PROVISION ONLY TO ALLOW ADDITIONAL FISHING BY THE DRIFT GILLNET FISHERY TO OCCUR IN THE CORRIDOR ADJACENT TO THE UPPER SUBDISTRICT.]

Time & area restrictions for northern fish are removed at large Kenai sockeye runs (effectively prioritizes Kenai max. goal over Susitna min. goals) Extended fishing in limited western inlet areas (Proposed earlier ending date)

Corridor restrictions no longer needed because Susitna sockeye have passed (although coho are increasing abundant at this time)

Drift areas 1, 2, 3 & 4 defined

(Proposed direction for appropriate actions in the event of large Kenai escapements)

PERSONAL USE FISHERY OPPORTUNITY

Background

- ❑ The majority of statewide personal use (PU) fishing for salmon occurs in Cook Inlet, primarily in the Kenai and Kasilof rivers.
- ❑ Personal use fisheries have grown steadily since 1996 with 468,000 sockeye harvested in 37,500 angler days in 29,600 permits during 2009. From 2007- 2009 an average of 25,462 Upper Cook Inlet personal use salmon permits were issued (Dunker 2010).
- ❑ Sockeye escapements into Fish Creek in the Matanuska-Susitna Borough were sufficient to open this fishery in 2009 and 2010. The last previous opening was in 2001.
- ❑ Alaskans fill their freezers on the Kenai Peninsula. The majority of the PU fishers harvest sockeye salmon from the Kenai and Kasilof River sockeye runs. Many thousands of Matanuska - Susitna Borough and Anchorage residents participate in Kenai, Kasilof and Copper River personal use fisheries due to the lack of comparable local opportunities.
- ❑ From 2007-09, 85% of the Kenai River Dip netters, 81% of Kasilof River Dip netters and 78% of the Kasilof River Gillnet personal use fishers were from other than the Kenai Peninsula, primarily Anchorage and Mat-Su (Dunker 2010).

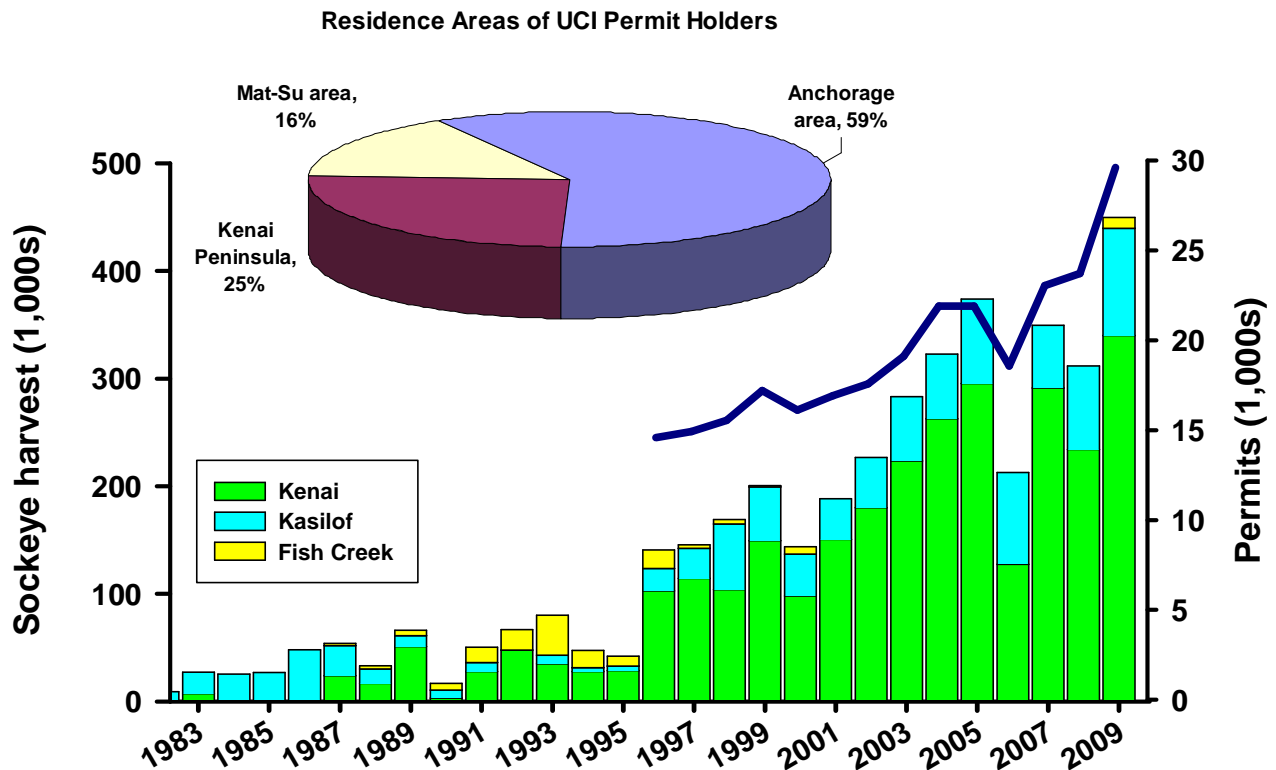


Figure 11. Personal use fishery harvest of sockeye, 1983-2009.

Economic Impact

- ❑ Personal use fishing has become an extremely valuable economic activity. Together with sport fishing, they create more economic activity than the entire Upper Cook Inlet commercial salmon fishery.
- ❑ Participants residing in the Matanuska-Susitna Valley and residents from outside Southcentral Alaska harvested more salmon per permit, on average, than residents from either Anchorage or the Kenai Peninsula.
- ❑ From 2007-2009 there were an average of 31,624 household fishing days, with average household sizes of 2-4 people for a majority of the permittees (Dunker 2010). Using the UCIPU permit holder household size data contained in table 8 of the 2010 Dunker PU report, a total number of participants is estimated to be 75,138 Alaskans (based on 25,462, the 2007-2009 average number of PU permits issued).
- ❑ The 2007 study of Economic Impacts and Contributions of Sportfishing in Alaska prepared for ADFG by Southwick Associates cites a daily expenditure by Alaskan residents of \$91.73 per day per person for unguided freshwater fishing.
- ❑ The direct economic impact of UCIPU fishing can be determined to be \$ 6,892,442 ($\$91.73 \times 75,138 = \$ 6,892,442$). This is direct impact, without applying a multiplier for the indirect impact, which boosts the economic activity substantially and the number of jobs supported and local sales taxes collected.

History

- ❑ The BOF adopted a regulatory definition of personal use fishing in 1982. Personal use regulations were also created in 1982 at the request of the BOF. The statutory definition of personal use was enacted in 1986.
- ❑ Prior to 1996, gillnet and dip net fisheries at both the Kenai and Kasilof rivers were opened only when a specified sonar estimate was achieved. Opportunities were extremely limited due to very high harvests by commercial fisheries.
- ❑ Until the mid-nineties, subsistence/PU gillnet fishing occurred on most beaches along the east, west and north shores of Cook Inlet. In 1996 a decision by BOF reduced the available beaches along Cook Inlet for the personal use (PU) gillnet fishery to a two mile area encompassing north and south of the mouth of the Kasilof River.
- ❑ Beginning in 1996, the BOF established a dip net season of Jul 10 to Aug 5 (later amended to Jul 31), eliminating the sonar trigger for opening to compensate for the gill net subsistence closure. This effectively shifted a majority of the PU fishery to the lower Kasilof and Kenai Rivers.
- ❑ From 1996 through 2001, the Kasilof personal use gillnet fishery opened on June 16 and closed by emergency order when approximately 10 to 20 thousand fish had been harvested. Beginning in 2002, the personal use gillnet season changed to June 15-24, and the 27-day dip net fishing season (Jul 10 through Aug 5) was changed to a 44-day season (Jun 25 through Aug 7).
- ❑ In 2002, the management plan was modified to manage the Kenai dip net fishery more conservatively until in-season abundance information became available. Season dates were unchanged but hours were reduced.

- In 2008, the Board adopted requirements for use of four-stroke or DFI two-stroke motors for boats in the personal use fishery in the lower four miles of the Kenai River downstream from the Warren Ames Bridge in order to control hydrocarbon pollution and provide consistency with newly-adopted DNR regulations upstream.

Issues

The personal use fishery at the mouths of the Kenai and Kasilof rivers is among the most successful of all non-commercial fisheries in UCI. The fisheries are a popular and valuable family experience for many Southcentral Alaskan families, even becoming more important during the recent economic downturn. Camping on the beach and catching fish is the highlight of many families' summer. Personal use fisheries for Kenai and Kasilof sockeye provided by current plans are consistent with the public demand for these opportunities. Significant allocation of sockeye harvest to the sport and personal use fisheries is supported by the Board's allocation criteria.

Two primary issues concerning current personal use fisheries are:

- delivery of fish in sufficient numbers to provide reasonable fishery opportunity and
- crowding due to concentration of current fisheries into limited areas.

Fish delivery is regulated primarily by the pattern of commercial fishery openers in the East Side Set net Fishery off of the mouths of the Kenai and Kasilof Rivers. This fishery is managed with a series of regular periods and emergency orders. Openers are scheduled based on fish abundance to control fish reaching the rivers in order to achieve but not exceed in-river sonar and escapement goals. Personal use fisheries require significant numbers of fish to be available for the relatively inefficient dipnet gear to be effective. However, the fishing power of the set net fishery is tremendous – the fleet can effectively harvest over 90% of the run moving through the fishing area on any given day. The unpredictable nature of commercial fishery openings also keeps the in-river fisheries off balance by producing a stop and start pattern in fish returns. This is extremely disruptive of scheduled travel plans or trips and is particularly troublesome for people traveling from other areas. It also exacerbates crowding issues where people must fish in the limited intervals where significant numbers of fish are available.

BOF decisions subsequent to 1996 have concentrated PU fishers at the river mouths causing habitat degradation impacts and becoming an annoyance to local residents. Bluff and dune erosion at the mouth of the Kenai River became a problem and was resolved with creative and cooperative management by the City of Kenai, the Alaska Department of Natural Resources (ADNR) and ADFG.

Recently in 2010 Kasilof area residents and various other groups tackled the same issue at the mouth of the Kasilof. A permit to install a fence to protect the beach grass dunes and wetlands was approved, yet allowing access to the river on a traditional dirt roadway. In addition the ADNR recently created the Kasilof Special Use Area Plan (KSUAP) to manage land use and fishery issues such as when ropes can be set out for gill netting and camping restrictions, including a proposed fee to cover maintenance and enforcement.

One critical issue is the lack of adequate space and time to allow all of the Alaskans who wish to participate in the Kasilof River Gillnet PU fishery in June to do so, resulting in a derby style fishery. ".....The Kasilof gillnet fishery remains the least popular, based on participation, fishery (Decker 2010)." This is because there is only a 1 mile stretch of beach on either side of the

mouth to execute the fishery and the north side is mainly mudflats and is not very fishable by shore gillnet.

Issues surrounding this overcrowded, yet important, fishery have been addressed by enforcement via the Kasilof Special Use Area Plan, rather than by spreading out the users. Alaskans who had their opportunity and the quality of experience to harvest PU fish reduced are bearing the burden. An article in the Anchorage Daily News on September 29, 1996 detailed the action and the public outcry at the reduction in the PU gillnet fishery. The last paragraph of the story reads, "Several board members wanted to revisit that decision and were interested in expanding the gillnet season and expanding the area open to nets. ADFG biologist Paul Ruesch said the fishery could still be managed if the two-mile beach area at the mouth of the Kasilof was doubled or tripled."

MSBSC Recommendations

MSBSC has submitted no proposals for revision of this plan but strongly supports the personal use fisheries of both the Kenai and Kasilof rivers. We recognize that people management issues need to be addressed any time large numbers of individuals and families gather anywhere. Below we offer some simple solutions to current issues regarding the personal use fisheries.

1. *Adopt no new regulations that reduce opportunity, participation or harvest in the Kenai and Kasilof dip net fisheries.*

Commercial fishery windows should be maintained or enhanced so sport and personal use fishers can be certain to have access to the resource. Use of the terminal fishery in the Kasilof Special Harvest Area should be avoided.

2. *Expand use of the personnel use gillnet fishery on the Kasilof.*

Spread out the users and reduce crowding with additional set gillnet fishing time on the same beaches in July. Open an additional Kasilof Gillnet PU period, July 10-26, 6 am to 11 pm. This period provides access during the peak of the sockeye run which normally occurs during the week of July 13 thru 20. Additional harvest in this fishery can help control sockeye escapements, particularly when escapement goals are threatened in years of large returns. This concept was well received by all attendees at the KRSUA ADNR public meeting in Wasilla on Dec. 2, 2010.

3. *Reduce the escapement trigger for opening the Fish Creek personal use fishery from 70,000 to 50,000.*

This fishery currently opens by EO only when the upper end of the escapement goal is projected to be exceeded. This practice resulted in escapement well above the goal in both 2009 and 2010. The 2010 escapement of 126,823 was unacceptably high. It unnecessarily prevented harvest of sockeye that could have been taken with no effect on future production.

ADFG Comments: *The Department is neutral on the suite of proposals under consideration by the Board that affect the allocation of fish between the personal use and other fisheries. The Department opposes opening a Fish Creek personal use fishery by date without regard for run size due to the erratic nature of the run and the fishing power of the fishery – however, the MSBSC proposal's recommendation to revise the trigger remedies that concern.*

Other Proposals

#195 seeks changes in management of Fish Creek personal use. *[MSBSC Supports Concept]*

#196 seeks changes in the management of Beluga River personal use. MSBSC supports the proposed areas but not the times due to concern over king salmon impacts during that period. *[MSBSC Supports Concept]*

#197 seeks to establish a personal use fishery for salmon on the Eklutna River from August 1 through September 15. The proposal leaves open the issues of methods and means, permit requirements, species allowed and bag limits. MSBSC opposes establishment of a personal use fishery in this location. If stock status of salmon present in the suggested area warrant, MSBSC would support increased bag and possession limits for sport fishing. *[MSBSC Opposes]*

#198 *[Upper Cook Inlet Drift Association]* seeks to establish a personal use fishery for pink salmon on the Deshka River from August 1 through September 15. The proposal leaves open the issues of methods and means, permit requirements and bag limits. MSBSC opposes establishment of a personal use fishery in this location. If stock status of pink salmon present in the Deshka River is strong enough to warrant additional harvest then MSBSC would support modification of sport fishing regulations to add appropriate harvest opportunity. *[MSBSC Opposes]*

#199 *[Upper Cook Inlet Drift Association]* seeks to establish a personal use fishery for chum salmon on the Talkeetna River from August 1 through September 15. The proposal leaves open the issues of methods, means, permit requirement and bag limits. MSBSC opposes this proposal but would agree with the concept that more harvest opportunity for public is needed in areas of northern Cook Inlet. If the harvestable surplus of chum salmon is available MSBSC would support a discrete bag and possession limit for chum salmon established under sport fishing regulations in Northern Cook Inlet. MSBSC suggests a daily bag and possession limit of three chum salmon. *[MSBSC Opposes]*

Upper Cook Inlet Personal Use Salmon Fishery Management Plan [5 AAC 77.540]

<p>(a) Salmon may be taken for personal use under this section only under a personal use permit issued under 5 AAC 77.015 and 5 AAC 77.525; in addition to the requirements under 5 AAC 77.015, a person</p> <p>(1) shall, before a permit may be issued, show the person's resident sport fish license, or proof, satisfactory to the department, that the person is exempt from licensing under AS 16.05.400 ; the person's sport fish license number shall be recorded on the permit;</p> <p>(2) shall record all fish harvested on the permit, in ink, immediately upon harvesting the fish; for the purpose of this paragraph, "immediately" means before concealing the salmon from plain view or transporting the salmon from the fishing site;</p> <p>(3) shall return the permit to the department by the date specified on the permit.</p> <p>(b) Salmon may be taken with a set gillnet in the Central District as follows:</p> <p>(1) from June 15 through June 24 and July 10 through July 26;</p> <p>(2) fishing periods will be daily from 6:00 a.m. to 11:00 p.m.;</p> <p>(3) repealed 6/22/2002;</p> <p>(4) salmon may be taken only from ADFG regulatory markers located at the mouth of the Kasilof River to ADFG commercial fishing regulatory markers located approximately one mile from the mouth on either side of the Kasilof River; fishing is prohibited beyond one mile from the mean high tide mark and is also prohibited within the flowing waters or over the stream bed or channel of the Kasilof River at any stage of the tide;</p> <p>(5) salmon may be taken only by set gillnets as follows:</p> <p>(A) a set gillnet may not exceed 10 fathoms in length, six inches in mesh size, and 45 meshes in depth;</p> <p>(B) no part of a set gillnet may be operated within 100 feet of another set gillnet;</p> <p>(C) a person may not operate more than one set gillnet; the permit holder shall attend the set gillnet at all times when it is being used to take fish;</p> <p>(D) only one set gillnet may be operated per household;</p> <p>(6) the annual limit is as specified in 5 AAC 77.525.</p> <p>(c) Salmon may be taken by dip net in the Kenai and Kasilof Rivers as follows:</p> <p>(1) in the Kenai River, as follows:</p> <p>(A) from July 10 through July 31, seven days per week, from 6:00 a.m. to 11:00 p.m.; the commissioner may extend, by emergency order, the personal use fishery to 24-hours per day if the department determines that the abundance of the Kenai River late-run sockeye salmon is greater than two million fish;</p> <p>(B) the annual limit is as specified in 5 AAC 77.525, except that only one king salmon may be retained per household;</p> <p>(C) from a boat, in the area from an ADFG regulatory marker located near the Kenai city dock upstream to the downstream side of the Warren Ames Bridge, except that salmon may not be taken from a boat powered by a two stroke motor other than a motor manufactured as a direct fuel injection motor;</p>	<p><i>Alaska residents only</i></p> <p><i>Harvest recording</i></p> <p><i>Harvest reporting</i></p> <p><i><u>Kasilof gillnet personal use fishery</u></i> <i>June Kasilof opener consistent with the earlier run timing of this stock</i> <i>MSBSC recommendation is highlighted in green.</i> <i>Limited to beaches adjacent to river mouth</i></p> <p><i>Annual limits are 25 for the head of the household and 10 for each dependent.</i></p> <p><i><u>Kenai dip net fishery</u></i> <i>Ending date was originally established in 1996 to limit the harvest of coho.</i></p> <p><i>Motor type restrictions to reduce hydrocarbon pollution (adopted 2008)</i></p>
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<p>(D) from shore, in the area from ADFG regulatory markers located on the Cook Inlet beaches outside the terminus of the river upstream to the downstream side of the Warren Ames Bridge, except dipnetting is closed on the north shore from an ADFG regulatory marker located below the end of Main Street, upstream to an ADFG regulatory marker located near the Kenai City Dock;</p> <p>(2) in the Kasilof River, as follows:</p> <p>(A) from June 25 through August 7, 24-hours per day;</p> <p>(B) the annual limit is as specified in 5 AAC 77.525, except that king salmon may not be retained and any king salmon caught must be released immediately and returned to the water unharmed;</p> <p>(C) from ADFG regulatory markers located on the Cook Inlet beaches outside the terminus of the river upstream for a distance of one mile.</p> <p>(d) Salmon may be taken by dip net in Fish Creek only as follows:</p> <p>(1) the commissioner will open, by emergency order, the personal use dip net fishery in Fish Creek from July 10 through July 31, if the department projects that the escapement of sockeye salmon into Fish Creek will be above the upper end of the escapement goal of 70,000 fish;</p> <p>(2) the annual limit is a specified in 5 AAC 77.525, except that no king salmon may be retained and any king salmon caught must be returned to the water unharmed;</p> <p>(3) from a boat or shore, in those waters upstream from ADFG regulatory markers located on both sides of the terminus of Fish Creek, to ADFG regulatory markers located approximately one-quarter mile upstream from Knik-Goose Bay Road.</p> <p>(e) Repealed 6/22/2002.</p> <p>(f) A person may retain flounder incidentally caught when fishing for salmon in the Cook Inlet Area under this section. A person may retain up to 10 flounder under this subsection per year and must record those flounder retained by the person on that person's permit specified in (a) of this section.</p> <p>(g) In the Beluga River, salmon may be taken by dip net only as follows:</p> <p>(1) salmon, other than king salmon, may be taken only by a person 60 years of age or older; a person authorized to take salmon under this subsection may not authorize a proxy to take or attempt to take salmon on behalf of that person under 5 AAC 77.016 and AS 16.05.405 ;</p> <p>(2) from July 20 through August 31, the fishery is open 24 hours per day from the Beluga River Bridge downstream to an ADFG regulatory marker located approximately one mile below the bridge;</p> <p>(3) the annual limit is as specified in 5 AAC 77.525; king salmon may not be retained; any king salmon caught must be released immediately and returned to the water unharmed;</p> <p>(4) the commissioner will close, by emergency order, the fishery when 500 salmon, other than king salmon, have been harvested;</p> <p>(5) a permit holder for this fishery shall report weekly to the department as specified in the permit.</p>	<p><i>Kasilof dipnet fishery</i> <i>Fishery switches from gillnet to dip net as gear effectiveness improves with fish numbers approaching peak</i></p> <p><i>Fish Creek dipnet fishery</i> <i>Opens only when upper goal <u>projected</u> to be exceeded.</i></p> <p><i>No king retention in Kasilof personal use</i></p> <p><i>Flounder are common bycatch</i></p> <p><i>Beluga dipnet fishery (adopted 2008)</i> <i>Age restrictions, no proxies</i></p> <p><i>This is a small-scale, localized, low impact fishery established for opportunity</i></p> <p><i>No king retention</i></p> <p><i>Harvest in 2008 and 2009 was 66 and 225, respectively. (60% sockeye, 39% coho, 1% pink)</i></p>
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APPENDIX I – SUSITNA ESCAPEMENT GOAL ANALYSIS



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MEMORANDUM

TO: Bruce Knowles, Chairman, Mayor's Blue Ribbon Sportsmen's Committee
FROM: Randy Ericksen and Ray Beamesderfer
DATE: 4/20/2010
SUBJECT: Updated review of the ADFG Susitna Escapement Goal Analysis

Summary

We conducted a review of the recent change in Susitna sockeye escapement goals which replaced the SEG based on the Bendix Sonar in the Yentna River with weir counts in three lakes. This change had significant implications to fishery management and allocation throughout UCI.

The available data support the conclusion that the Bendix sonar undercounts sockeye escapement in the Yentna River. The Bendix sonar does not appear to be a good index of sockeye salmon escapement to the entire Susitna drainage, but does appear to provide a reasonable index of sockeye salmon escapement to the Yentna River under certain conditions including odd years when pink salmon are in low abundance. Larson Lake weir counts may provide a reasonable index of sockeye salmon escapement to the Susitna side of the drainage because this population comprises a large proportion of the Susitna side return. The Chelatna and Judd weirs do not appear to be a good index of sockeye salmon escapement to the Yentna River. The Chelatna and Judd SEGs were also based on historic data of questionable suitability for this application.

Our review highlighted significant concerns with the interpretation and application of both sonar and weir counts. Where the Bendix appears to provide an approximate index of all components of sockeye escapement to the Yentna system under some conditions, confounding effects of stock apportionment might result in significant measurement errors in some years and fish numbers on the Susitna side are not indexed. However, weir counts suffer from their own limitations which make them no more certain than the Bendix. These include: 1) the accuracy of the historic data which is confounded by different counting methods and effects of enhancement; 2) the very limited and potentially unrepresentative data set; 3) lack of representation of the smaller, less-productive components of the very diverse Susitna sockeye run by the large, productive sockeye lakes with weirs; and 4) questions of whether the shift in counting methods has masked a recent declining trend in sockeye escapement. These assumptions and problems with the interpretation and application of the weir-based escapement goals were not identified, qualified or evaluated in the recent sonar evaluation report prepared by Fair et al. (2009).

It is also noteworthy that the current escapement indices do not provide data that can effectively be applied to in-season management of fisheries in the UCI. Harvest levels cannot be regulated based on run strength to ensure that escapement goals will be met in low run years without precautionary restrictions in central and northern district fisheries.

Introduction

This memo summarizes our review of ADFG's decision to replace the previous Sustainable Escapement Goal (SEG) of 90,000 to 160,000 sockeye salmon for the Yentna River based on the Bendix sonar, with two weir counts on the Yentna River, and another on the mainstem Susitna River (Figure 18). The justification for ADFG's decision was presented in Fair et al. (2009). This memo presents: 1) a summary of the change in escapement goals, 2) a description of the effects on subsequent fishery implementation, and 3) a review of the scientific basis for the change including a description and analysis of the underlying assumptions.

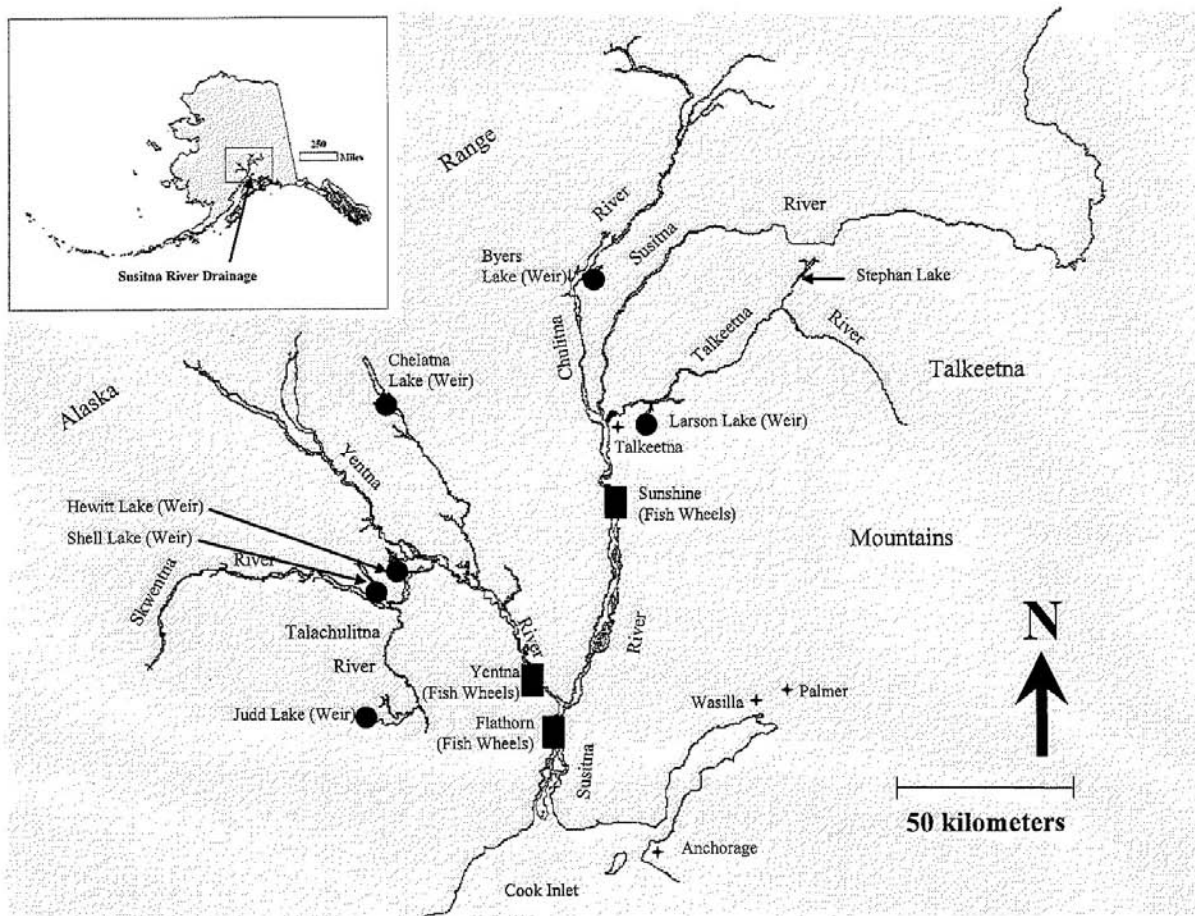


Figure 12. The Susitna River drainage with locations of major tributaries, lakes, and ADFG/CIAA sockeye salmon sampling sites. Figure taken from Yanusz et al. 2007.

How and why were the escapement goals changed?

The existing escapement goal was determined to be inappropriate due to escapement uncertainties associated with the Bendix sonar. The Bendix was significantly undercounting sockeye relative to weir counts, DIDSON sonar, and mark-recapture estimates. The Bendix counts also appeared to be confounded by pink runs every other year. The Yentna Bendix SEG was subsequently replaced with SEGs for three large lakes based on weir counts. The historical Yentna sonar counts that drove much of the northern district sockeye concern were no longer the basis for management.

How did this affect fishery implementation?

The purposes of Northern District Salmon Management Plan (5AAC 21.358) are to minimize the harvest of coho salmon bound for the Northern District of UCI and to provide the department direction for management of salmon stocks. Northern District chum, pink, and sockeye salmon stocks are primarily managed for commercial uses. The plan directs ADFG to manage the Northern District commercial salmon fisheries based on the abundance of Yentna River sockeye salmon, the Yentna River escapement goal, or other salmon abundance indices as the department deems appropriate. Achievement of the lower end of the Yentna River escapement goal takes priority over not exceeding the upper end of the Kenai River inriver run goal.

At the 2008 meeting, the BOF designated the Yentna sockeye as a stock of yield concern based on declines in northern district harvests. The Board adopted an action plan that was drafted by ADFG. The action plan essentially restated current management plan elements that could be utilized to limit commercial interception of Susitna sockeye but included no additional restrictions. ADFG represented that they already had the authority to impose July drift net fishery restrictions where necessary to meet escapement goals. The action plan also inventoried current and proposed research efforts. The Board elected not to adopt any restriction to limit harvest of Susitna sockeye. The Board also declined to pass a proposal advanced by Webster and Campbell for revisions intended to reduce catch of northern fish by the drift fishery from July 9-15. However, the Board provided clear direction that meeting the Susitna escapement goal was a management priority.

ADFG effectively exercised their management discretion in the 2008 fishery. In 2008, regular openers of the drift net fishery were restricted beginning July 10 in order to meet the minimum Susitna escapement goal. The fishery was limited to the corridor on July 10, area 1 and the corridor on July 14, and areas 1 and 2 plus the corridor on July 17 and 21. Fishing was district-wide on July 24 after Susitna fish had passed. The Yentna sockeye escapement goal (90,000) was met (90,180) for just the 2nd time in the last five years. The goal would not have been met without the central district drift restrictions in four regular periods beginning July 10. (Also there were a lot of early coho made it into the northern district and Kenai Rivers in 2008 coincident with the drift restrictions.)

In January 2009, ADFG published a review of the Susitna sockeye escapement goal (Fair et al. 2009) based on an analysis of new research data including mark-recapture studies, weir data on selected sockeye systems, and new sonar data. The previous Yentna River SEG of 90,000 to 160,000 sockeye salmon was based on the Bendix sonar counter. This was replaced with two SEGs based on weir counts: 20,000 to 65,000 at Chelatna Lake; and 25,000 to 55,000 at Judd Lake. Additionally, an SEG of 15,000 to 50,000 sockeye at the Larson Lake weir represented the Susitna River mainstem. Based on these new goals, the need for July fishery restrictions was eliminated. Additional July closures of the drift fishery like those implemented in 2008 were not implemented in 2009. The net result of the change is that escapements fell far short of the previous Yentna Bendix escapement goal. The new weir based goals had mixed results. The numbers of sockeye counted through Judd Lake (43,153) and Larson Lake (41,929) were within the SEG range. However, the number counted into Chelatna Lake (17,865) was just shy of the lower end to the SEG (20,000).

Table 3. Historical Yentna River sockeye salmon escapement data, 1973-2009.

Year	M-R estimate	Sonar estimates			Weir Counts ^c		
		Bendix ^a	Didson	Fishwheel ^b	Chelatna	Judd	Combined
1973						26,428 ^d	
1974	54,978 ^e			3,746 ^e			
1980						43,350 ^d	
1981		139,401		7,020			
1982		113,847		4,410			
1983		104,414		4,650			
1984		149,375		6,830			
1985		107,124		6,743			
1986		92,076		1,222			
1987		66,054		3,611			
1988		52,330		3,436			
1989		96,269		5,872		12,792 ^f	
1990		140,290		5,068			
1991		109,632		6,136			
1992		66,074		4,583	35,300		
1993		141,694		9,494	20,235		
1994		128,032		9,594	28,303		
1995		121,220		3,583	20,124		
1996		90,660		3,426	35,747		
1997		157,822		7,709	84,899		
1998		119,623		26,479	51,798	34,416	86,214
1999		99,029		4,794			
2000		133,094		3,515			
2001		83,532		3,694			
2002		78,591		3,280			
2003		180,813		8,426			
2004		71,281		3,106			
2005		36,921		3,170			
2006	311,197 ^g	92,896	166,697 ^c	10,926	18,433	40,633	59,066
2007	239,849 ^c	79,901 ^c	125,146 ^c	3,552	41,290	58,134	99,424
2008	288,988 ^c	90,146 ^c	131,772 ^c	3,522	73,469	54,304	127,773
2009		28,428 ^h	44,098 ^h	7,962	17,865 ⁱ	43,153 ⁱ	61,018

^a Source: Westerman and Willette 2007.

^b Source: Mark Willette, ADFG, personal communication.

^c Source: Fair et al. 2009.

^d Expanded aerial count.

^e Source: Fox (1998).

^f Tower count (Todd et al. 2001).

^g Source: Yanusz et al. 2007 (based on radio tags similar to 2007 and 2008).

^h Source: ADFG letter (Hilsinger and Swanton) dated 2/10/2010.

ⁱ Source: CIAA website http://www.ciaa.net.org/content_sub.asp?SUB_ID=14&CAT_ID=6 accessed 3/2010.

Table 4. Historical Susitna River (upstream of the Yentna confluence) sockeye salmon escapement data, 1973-2009.

Year	M-R estimate	Susitna Sonar ^a	Larson weir ^b
1978		94,400	
1979		156,980	
1980		190,866	
1981	133,489 ^c	340,232	
1982	151,500 ^c	189,772	
1983	71,500 ^c	112,314	
1984	130,071 ^c		35,254
1985	120,800 ^d		37,874
1986			32,322
1987			16,753
1997			40,282
1998			63,514
1999			18,943
2000			11,987
2005			9,751
2006	107,000 ^b		57,411
2007	87,883 ^b		47,736
2008	70,772 ^b		35,040
2009			41,929 ^e

^a Source: Westerman and Willette 2007.

^b Source: Fair et al. 2009.

^c Source: Fox (1998).

^d Source: Thompson et al. 1986.

^e Source: CIAA website http://www.ciaa.net.org/content_sub.asp?SUB_ID=14&CAT_ID=6 accessed 3/2010.

Does the available data support discarding the Bendix counts as an index of sockeye escapement to the Susitna Drainage?

It is clear from the data that the Bendix sonar was significantly underestimating Yentna sockeye escapement. What is less clear is whether the Bendix was a valid index of escapement under some conditions. For instance, if the Bendix estimates consistently represented a fixed proportion of the escapement over time, then the Bendix represents a relative index of escapement.

Fair et al. (2009) concluded that the Bendix was not a good index of escapement in even-numbered years due to high pink salmon abundance. They compared Yentna Bendix sonar estimates to Larson weir counts and the Northern District (ND) commercial catch per delivery (eastside only) to “examine the efficacy of the Bendix sockeye salmon estimates as an index of Susitna sockeye abundance” (Fair et al. 2009). ADFG concluded that Bendix and DIDSON estimates were significantly correlated with Larson weir counts and ND commercial catches in odd years, but not in even years when pink salmon abundance was high. They did not explain why they restricted the ND commercial catch to the east-side only, or discuss the assumptions used in their analysis. The implicit assumptions were that the Larson weir counts and/or

commercial catches were unbiased indicators of sockeye escapement to the Susitna drainage. We discuss the validity of these assumptions below.

Available data suggests that Larson Lake weir may be a good indicator of escapements to the Susitna side of the drainage but not to the entire Susitna drainage. Larson Lake is located off the Susitna River mainstem and these fish do not pass the Yentna Bendix site. A radio-telemetry study conducted in 2006 estimated that 63% of the sockeye in the upper Susitna (Sunshine Station above the Yentna confluence) migrated into Larson Lake. However, only 17% of the sockeye migrating into the lower Susitna River (Flathorn located below the Yentna confluence) migrated into Larson Lake (Yanusz et al. 2007). Larson weir counts were correlated with the recent three years of mark-recapture estimates of Susitna escapement ($R^2 = 0.99$, $P = 0.07$) but not with combined Yentna and Susitna estimates ($R^2 = 0.33$, $P = 0.61$). Similarly, Larson Lake counts were not correlated with five years of comparable combined Chelatna and Judd weir counts in the Yentna drainage ($R^2 = 0.24$, $P = 0.40$). The Larson weir accounted for 20% to 50% of the combined weir counts at Chelatna, Judd, and Larson lakes over those years. This limited analysis suggests that the proportion of sockeye returning to Larson Lake is not a good index of escapement to the entire Susitna drainage.

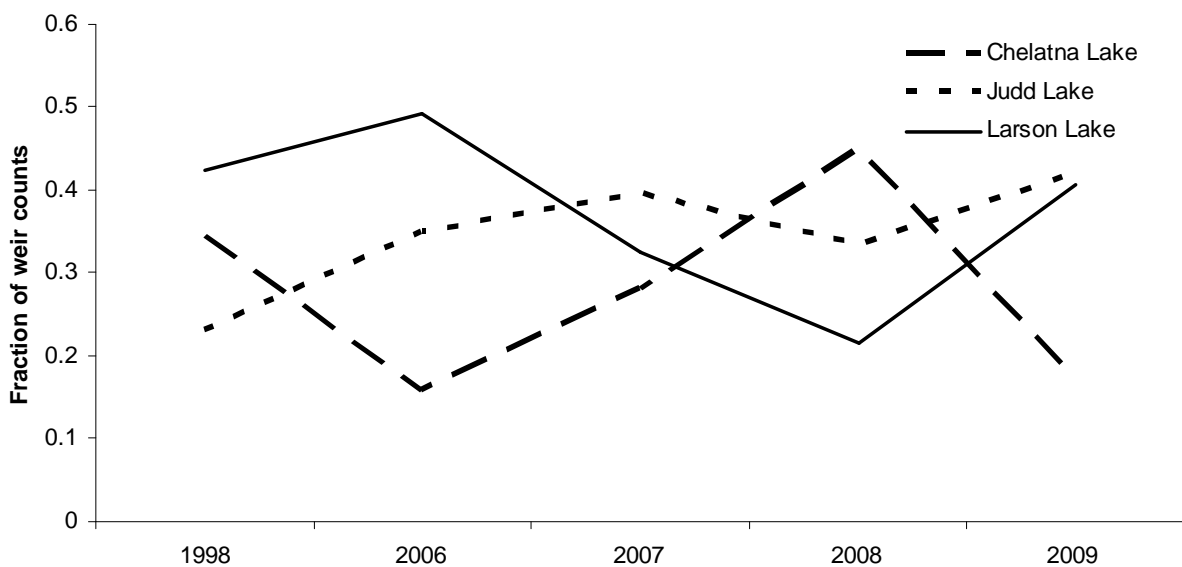


Figure 13. Fraction of sockeye salmon combined annual weir counts through Chelatna, Judd, and Larson Lakes for years when all three were operated.

Recent data suggests that ADFG's measure of ND commercial sockeye catch (catch per delivery) is not a good index of escapement to the Susitna drainage, or even of relative abundance of Susitna fish in the Northern District. Genetic sampling of this fishery between 2006 and 2008 indicated that in some years the majority of the catch is comprised of Kenai and Kasilof fish. In order for the sockeye catch per delivery to be a valid index of Susitna run strength, the proportion of Susitna fish in the ND catch would have to be relatively constant from year to year. Between 2006 and 2008, the estimated proportion of Susitna fish caught in the ND set net

fishery varied between 14% and 26%. This data indicates that the ND catch is not a good index of Susitna sockeye salmon abundance.

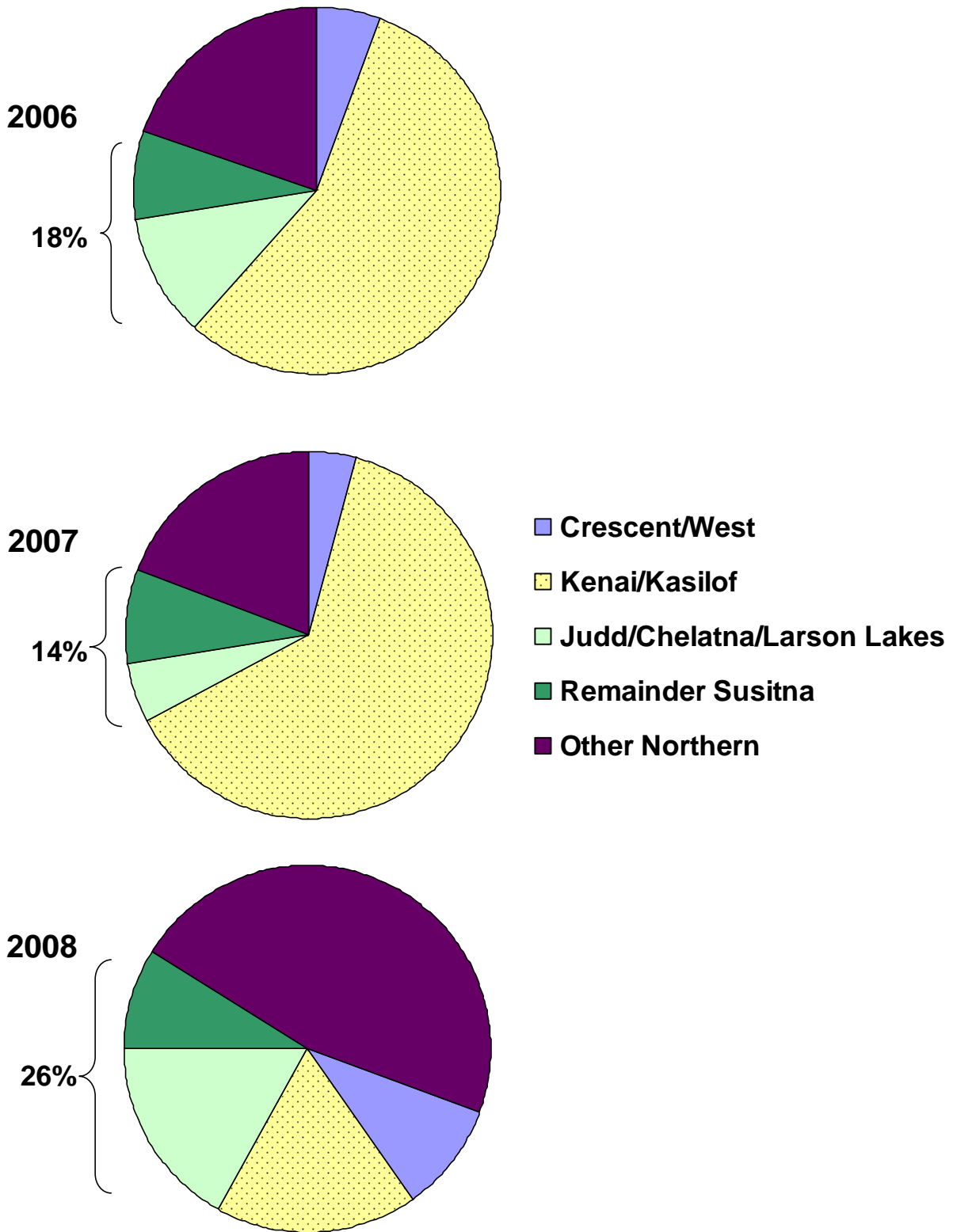


Figure 14. Estimated stock composition of sockeye salmon caught in the Northern District commercial set-net fishery, 2006-2008. Data taken from Barclay et al. 2010.

There is evidence to support the use of the Bendix sonar as an index of sockeye escapement to the Yentna River but probably not the entire Susitna drainage. The Bendix estimates were correlated with the recent three years of mark-recapture estimates of Susitna escapement ($R^2 = 0.99$, $P = 0.07$) but not with combined Yentna and Susitna estimates ($R^2 = 0.78$, $P = 0.31$). Fall abundance of juvenile sockeye salmon in Chelatna and Judd Lakes (King and Walker 1997, Kyle et al. 1994, Mark Willette, ADFG, personal communication) was highly correlated with Bendix estimates the previous year. However, hatchery fry were planted in Chelatna Lake during three of the years (Fox 1998) and this likely influenced this relationship.

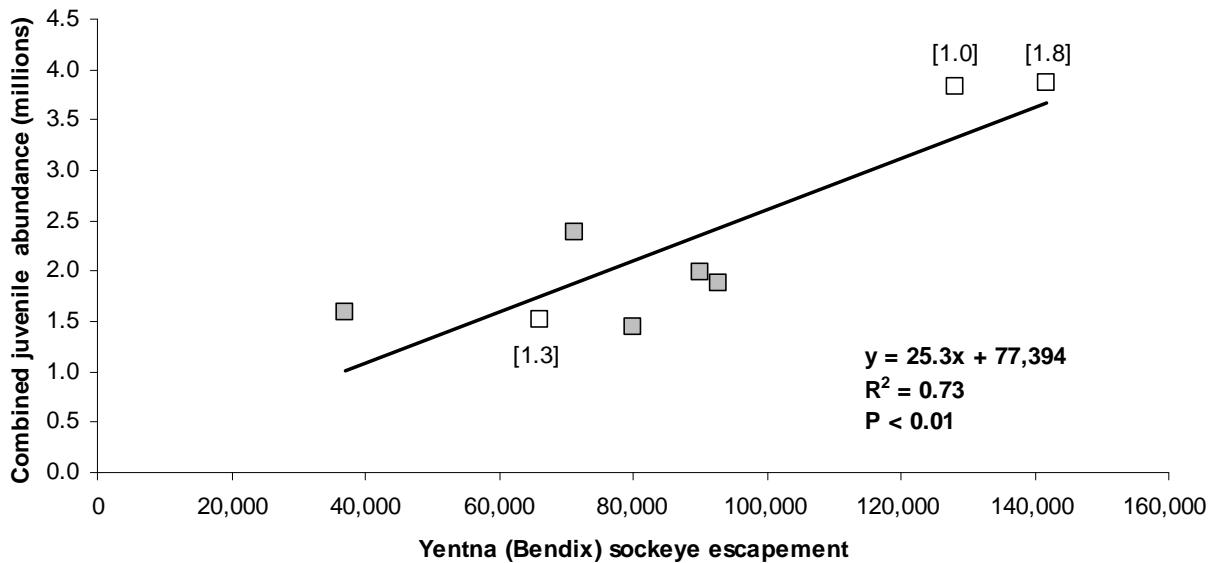


Figure 15. Relationship between fall juvenile sockeye abundance in Chelatna and Judd Lakes and Bendix sockeye estimates the previous year. Open squares indicate years when hatchery fry were planted into Chelatna Lake. Numbers in brackets indicate the number (millions) of fry planted that year.

Odd-year Bendix sonar counts suggest that escapements have been largely below the SEG in recent years. The reason for the apparent decline is unknown. There is anecdotal information that expanding pike invasions and beaver activity may have been impacting sockeye populations. Recent suggestions by ADFG based on 2009 data that the Bendix sonar estimates are not an index of actual escapement (2/10/2010 letter from ADFG to Bruce Knowles of the Mat-Su Borough Blue Ribbon Sportsmen’s Committee) appear to contradict the findings of Fair et al. (2009) that odd-year Bendix sonar appears to index sockeye escapements.

Are the new weir SEGs appropriate?

There is no clear evidence that the three weir counts are representative of sockeye escapement to the Susitna River drainage. The accuracy of weir counts can be affected by environmental conditions (high water) that compromise the weir and allow fish to pass undetected. Further,

gaps in the weir structure can allow salmon to pass undetected (McGregor and Bergander 1993, Shaul 1994, Kelley and Josephson 1997, Bachman and Sogge 2006).

There is some evidence to suggest that the Larson Lake weir may be a good indicator of sockeye escapement to the Susitna side of the drainage. This site appears to be less susceptible to flooding than the other weirs. The lake accounts for a large fraction of the fish spawning in the Susitna River upstream of the Yentna River (Yanusz et al. 2007). As mentioned earlier, the recent three years of mark-recapture estimates for the Susitna River are correlated with the Larson Lake weir counts. However, the relationship falls apart if the two other years of comparable estimates (1984 and 1985) are added to the analysis ($R^2 = 0.003$, $P = 0.92$). There is considerable uncertainty regarding earlier mark-recapture estimates (Cannon 1986) and it is unclear whether the 1984 and 1985 mark-recapture estimates are comparable to the 2006-2008 estimates.

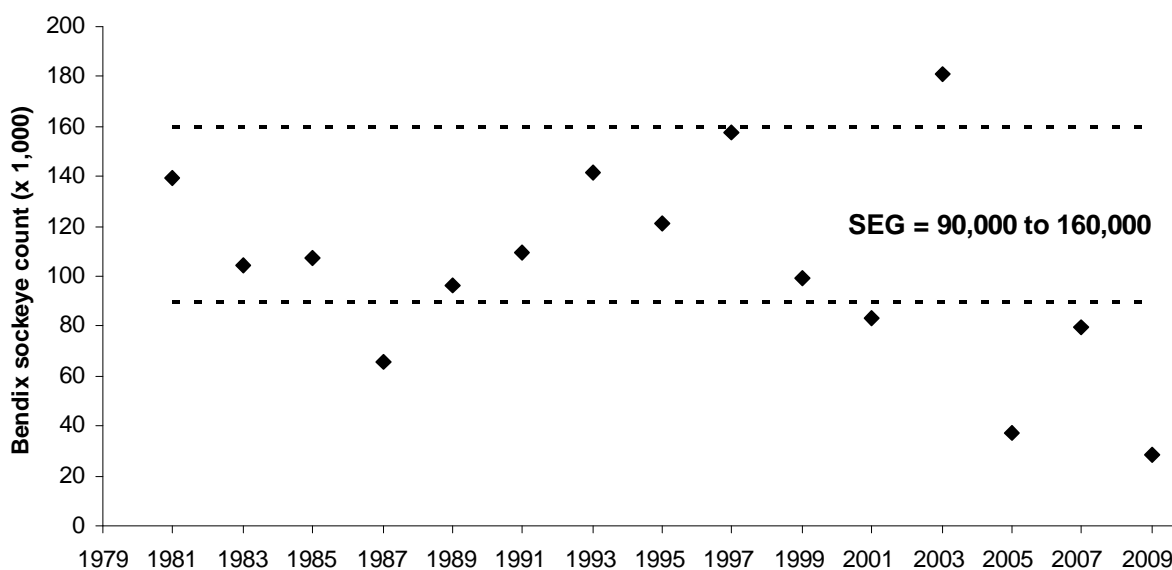


Figure 16. Odd-year Bendix sonar sockeye counts compared to the previous SEG for the Yentna River, 1981 – 2009.

There is considerable uncertainty regarding the escapement counts into Judd and Chelatna Lakes used in ADFG’s analysis. Historical estimates (7) for Judd Lake included one expanded tower count and two expanded aerial counts. The aerial counts were expanded using data from the Alagnak River in Bristol Bay. The lowest observed count for Judd Lake (12,792 in 1989) was actually a tower count (Todd et al. 2001). Tower counts are typically conducted periodically throughout the day and expanded for uncounted periods, thus are considered less precise than weir counts. It is unknown whether the tower count is comparable to the weir counts. Removal of this data point reduces the contrast in escapements from 4.5 to 2.3. The Judd Lake weir counts were not significantly correlated with the recent three years of mark-recapture estimates of Yentna escapement ($R^2 = 0.75$, $P = 0.34$). Four of the ten Chelatna weir counts were expanded to account for high water periods when the weir was inoperable. More importantly, seven of the ten years used in the analysis were influenced by hatchery supplementation at Chelatna Lake. An average of 1.1 million hatchery fry was released into Chelatna Lake annually between 1989 and 1995 (Fox 1998). The contribution of hatchery fish to

the escapement was estimated for three years: 2,330 in 1993, 2,500 in 1994, and 5,100 in 1997 (Todd 1998). The hatchery contribution in the other years is unknown. ADFG did not acknowledge this hatchery supplementation in their report or attempt to exclude hatchery origin fish from the weir counts in their analysis. The implications of using this data to establish an escapement goal for a wild population should be acknowledged and evaluated. Further, Chelatna weir counts were not significantly correlated with the recent three years of mark-recapture estimates of Yentna escapement ($R^2 = 0.04$, $P = 0.87$). Thus, the utility of these SEGs to manage Yentna sockeye is questionable.

Do the new SEGs provide adequate protection to all subpopulations in the drainage?

Sockeye salmon in Susitna River drainage utilize a diverse range of habitats. The 2006 telemetry study estimated that 42% of the sockeye in the lower Susitna entered Larson (17%), Chelatna (15%), or Judd (10%) lakes (Yanusz et al. 2007). Escapement into these lakes appears to vary annually independently of one another. The same study estimated that 23% of the population spawned in other lakes, while the remaining 35% spawned in rivers and streams in the drainage. The question is whether the managing escapements into the three lakes will protect the remaining 58% of the population. Each subpopulation has almost certainly developed their own life history strategies such as preferred rearing habitats, migration and spawning timing, etc. It is unknown whether the new SEGs will adequately protect these subpopulations.

Genetic data collected from the UCI commercial sockeye catch suggests that sockeye returning to Judd, Chelatna, and Larson Lakes (JCL) may not represent abundance to the rest of the Susitna Drainage (SusYen). The estimated catch of JCL and SusYen sockeye were not significantly different in 2005 and 2007 (Figure 17). However, significantly more SusYen than JCL sockeye were caught in 2006. In contrast, more JCL sockeye were caught in 2008 .

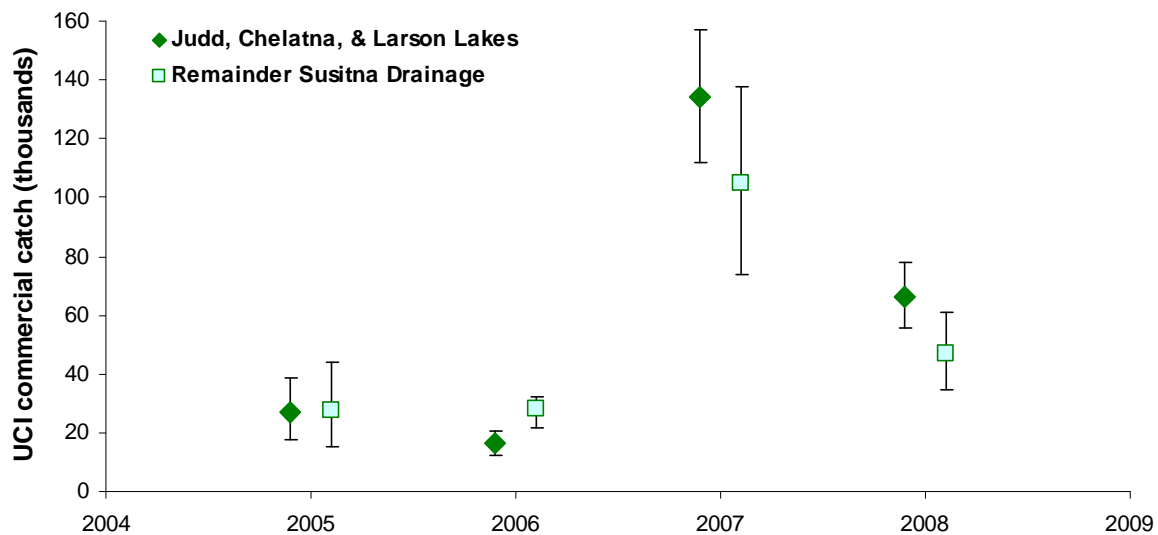


Figure 17. Estimated total commercial catch of sockeye salmon in UCI from Judd, Chelatna, and Larson Lakes (combined), and from the remainder of the Susitna Drainage, 2005 to 2008. Data taken from Barclay et al. (2010). Error bars represent 90% credibility intervals.

How do the new SEGs compare to the Yentna (Bendix) SEG?

It is difficult to evaluate how the new SEGs relate to the previous SEG. The Bendix estimates were not correlated with the Chelatna ($R^2 = 0.12$, $P = 0.31$), Judd ($R^2 = 0.05$, $P = 0.71$), or Larson ($R^2 = 0.04$, $P = 0.54$) weir counts. We chose to test the hypothesis that the new SEGs were based on the same distribution of escapements as the Bendix counts. The Bendix counts were grouped by year according to whether they were above (High) or below (Low) the average. The weir counts were then classified based on whether the year was above or below the Bendix average. The results were compared using a 2x2 contingency analysis (Chi-square test). We could not reject the hypothesis that the distributions were the same for the Chelatna and Larson counts suggesting that the SEGs were based on similar data. There were too few years of data for Judd Lake but 5 of the 6 years were classified as “low” suggesting the SEG would be set low compared to the Bendix SEG.

Table 5. Results of chi-square analysis to test the hypothesis that the new SEGs encompassed a similar range of escapements as the previous SEG based on the Bendix sonar.

	Bendix	Chelatna	Judd	Larson
High	14	5	1	5
Low	15	6	5	8
	$\chi^2 =$	0.03	*	0.35
	P =	0.87	*	0.55

* Insufficient data to conduct the test.

Conclusions

- The Bendix sonar undercounts sockeye escapement in the Yentna River.
- The Bendix sonar does not appear to be a good index of sockeye salmon escapement to the entire Susitna drainage.
- The Bendix sonar may provide a reasonable index of sockeye salmon escapement to the Yentna River under certain conditions.
- The weir counts do not appear to be a good index of sockeye salmon escapement to the entire Susitna drainage.
- Larson Lake weir counts may provide a reasonable index of sockeye salmon escapement to the Susitna side of the drainage.
- The Chelatna and Judd weirs do not appear to be a good index of sockeye salmon escapement to the Yentna River.
- The Chelatna and Judd SEGs were based on uncertain data and have questionable value.

APPENDIX II - RUN TIMING & EXPLOITATION OF SUSITNA SOCKEYE



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MEMORANDUM

TO: Bruce Knowles, Chairman, Mayor's Blue Ribbon Sportsmen's Committee
FROM: Randy Ericksen & Ray Beamesderfer
DATE: 6/24/2010
SUBJECT: Run Timing & Exploitation of Susitna Sockeye in UCI Commercial Fisheries

Summary

This memo uses 2006-2008 genetic, harvest, and run size information reported by ADFG to evaluate the migration timing of Susitna, Kenai, and Kasilof stocks through UCI; the incidence of Susitna sockeye in commercial fisheries by time and area; and annual fishery exploitation rates of Susitna sockeye in Central District commercial fisheries. This analysis indicated:

- The migration of Susitna sockeye into UCI typically peaked during the second or third week of July but this stock was relatively abundant throughout July and peak timing varied from year to year.
- Susitna sockeye timing into UCI typically peaked later than Kasilof sockeye and earlier than Kenai sockeye but there was considerable overlap among stocks.
- Susitna sockeye were most commonly harvested by the Central District gill net fishery (2-12% of the total harvest in that fishery) although their occurrence in east side set net fisheries was significant in some years (0-4% of that fishery total).
- Susitna sockeye consistently represented 1% or less of the West Side set net harvest in the years sampled.
- Susitna sockeye comprised only 18-26% of the harvest in northern district set net fisheries where the catch was surprisingly dominated by Kenai and Kasilof sockeye in some years.
- Exploitation rates of Susitna sockeye salmon were typically lower than Kasilof and Kenai sockeye stocks but exploitation rates as high as 40-50% were observed for Susitna sockeye in at least one year (2007).
- The Central District drift gill net fishery had the highest Susitna sockeye exploitation rate of all the UCI commercial fisheries.

This information provides a basis for evaluating commercial fishery management alternatives to protect Susitna sockeye escapement. Proactive time and area commercial fishery restrictions will ensure that Susitna sockeye escapement goals are consistently met where in-season escapement data is not available in time to effectively regulate the harvest of Susitna sockeye.

Introduction

Continuing concerns over Susitna sockeye escapement levels and interception in Central District commercial fisheries have focused on questions of when northern-bound stocks are most susceptible to fisheries and how big an impact the central district fishery has on these stocks. Recent genetic sampling of sockeye salmon in UCI (Barclay et al. 2010) has greatly improved the ability to estimate stock composition of mixed stock fishery harvests in the District. This information provides a basis for establishing time and area restrictions to reduce the harvest of sockeye salmon returning to the Susitna drainage (including the Yentna River) while allowing continued harvest on the more abundant Kenai and Kasilof stocks. We used recent genetic, harvest, and run size information reported by ADFG to evaluate the migration timing of Susitna, Kenai, and Kasilof stocks through UCI; the contribution of Susitna sockeye to commercial fisheries by year, gear, location, and week; and annual fishery exploitation rates of Susitna sockeye in Central District commercial fisheries.

Methods

We summarized the run timing of Susitna, Kenai, and Kasilof sockeye at the offshore test fishery (OTF) and in the UCI commercial fisheries using results of mixed stock analysis (MSA) sampling (Barclay et al. 2010) and corresponding OTF CPUE (Shields and Willette 2008-2009a-b) and harvest data (Shields 2006-2009). For the purposes of this analysis, we pooled the Judd/Chelatna/Larson Lakes (JCL) stock and Susitna/Yentna rivers (SusYen) stock defined in Barclay et al. (2010) into one Susitna drainage stock. To allow comparisons from year to year, we estimated the OTF and commercial harvests by statistical week as used by ADFG. Because genetic samples were often pooled across weeks to obtain sufficient sample sizes, we had to apply the MSA proportions to daily landings to apportion the stock composition into statistical weeks. Further, because effort varied from day to day, we standardized the catch by the number of deliveries for the fishery each week.

We estimated the total annual exploitation rate for Susitna, Kenai, and Kasilof sockeye stocks in the combined UCI commercial fisheries. Annual stock specific harvests of JCL, SusYen, Kenai, and Kasilof sockeye were taken directly from Barclay et al. (2010). Kenai and Kasilof escapements derived from sonar counts were taken from Shields (2009). JCL escapements derived from weir counts were taken from Fair et al. (2009). Finally, the SusYen escapements were calculated by adding the Yentna and Susitna mark-recapture (telemetry) point estimates as reported in Yanusz et al. (2007) and Fair et al. (2009) and subtracting the JCL escapements. The annual exploitation rate for each stock was estimated as:

$$\hat{F} = \hat{H} / \hat{R} \quad (1)$$

where \hat{H} was the total UCI harvest of the stock and \hat{R} was the total run (total harvest plus escapement) of the stock for the year.

Finally, we estimated the exploitation rate of Susitna sockeye salmon in the Central District drift, East Side set, West Side/Kalgin Island set, and Northern District set gill net fisheries by substituting the combined JCL and SusYen harvest for the fishery for \hat{H} in equation 1. The variance was approximated using:

$$\text{var}[\hat{F}] \approx \frac{\text{var}[\hat{H}]\hat{E}^2}{\hat{R}^4} + \frac{\text{var}[\hat{E}]\hat{H}^2}{\hat{R}^4}$$

where $\text{var}[\hat{H}]$ was the variance of the harvest of Susitna sockeye (JCL and SusYen) as reported in Barclay et al. 2010, \hat{E} was the estimated escapement of Susitna sockeye (Susitna and Yentna) and its variance, $\text{var}[\hat{E}]$, as reported in Yanusz et al. 2007 and Fair et al. 2009.

Stock Timing

The migration timing of Susitna sockeye into UCI varied from year to year but generally peaked during the second or third week of July. Although the peak of Susitna fish caught in the OTF was similar (Figure 18), the pattern of migration was different between the three years sampled (no genetic samples were collected from the OTF in 2005). In 2006, the migration was relatively evenly distributed between weeks 28 and 31. During 2007, the OTF catch was more dome shaped in 2007 with most of the fish migrating in during the third week of July (week 29). In contrast, the timing of Susitna fish in the OTF was about a week earlier in 2008 (Figure 18). The timing of Susitna sockeye catch in the Central District (District) commercial drift gillnet fishery was less clear but generally peaked during the second or third week of July (Figure 19).

The timing of Susitna sockeye into UCI was generally intermediate between the Kenai and Kasilof stocks. Kasilof sockeye typically peaked during the first week of July (statistical week 27) in the OTF (Appendix A). Similarly Kasilof catches peaked in the Central District gillnet fishery in late June to mid-July (Appendix B). In 2007, Kasilof fish were notably later in both the OTF (Appendix Figure A- 2) and the gillnet fishery (**Appendix Figure B- 4**). The timing of Kenai fish was generally later but more variable than Susitna and Kasilof sockeye.

Relative composition of Susitna fish in fishery catches

Susitna sockeye constituted a greater proportion of the catch in the Central District drift gillnet fishery than in the Central set net fisheries (Table 6). However, the proportion of Susitna fish caught varied widely by year, time period, and fishery. MSA sampling of the corridor and terminal drift gillnet fisheries was only provided in 2006. Although sampling in these fisheries was conducted during a closure of the District fishery, the magnitude of the Susitna catch appeared to be less in the corridor and terminal fisheries (**Appendix Figure B- 4**). Susitna sockeye represented 1% or less of the catch in the West Side set net fishery in all years sampled. The Kalgin Island set net fishery tended to catch a higher proportion of Susitna fish than the West Side fishery. In 2006, Susitna fish were estimated to comprise 8% of the total catch in the Kalgin Island fishery. The Kenai and Kasilof set net fisheries generally caught few Susitna fish but at times intercepted higher numbers. For instance, 9% of the catch in the Kenai set net fishery was estimated to be Susitna fish during a July 23-28 opening in 2007.

The proportion of Susitna sockeye salmon in the Northern District set net fishery catch was consistently higher than other UCI fisheries (Table 6). This is not surprising because the Northern District is located further up the inlet than the Kenai and Kasilof rivers. However, in some years the majority of sockeye caught in the Northern District are Kenai and Kasilof fish. The estimated proportion of Kenai and Kasilof fish in the Northern District catch ranged from 18% in 2008 to 63% in 2007.

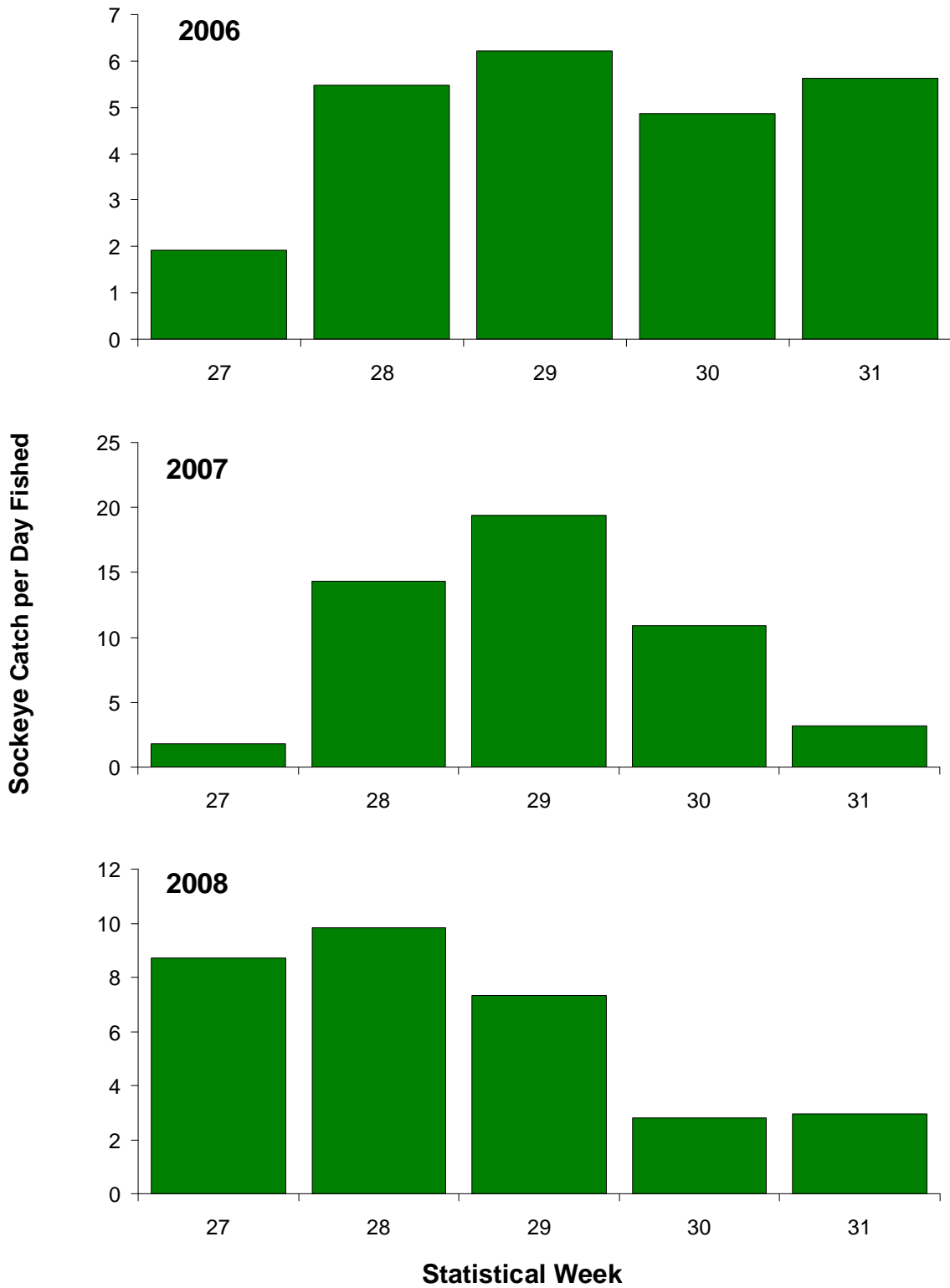


Figure 18. Estimated catch of Susitna Drainage sockeye per day in the offshore test fishery by statistical week, 2006-2008. Data taken from Barclay et al. (2010).

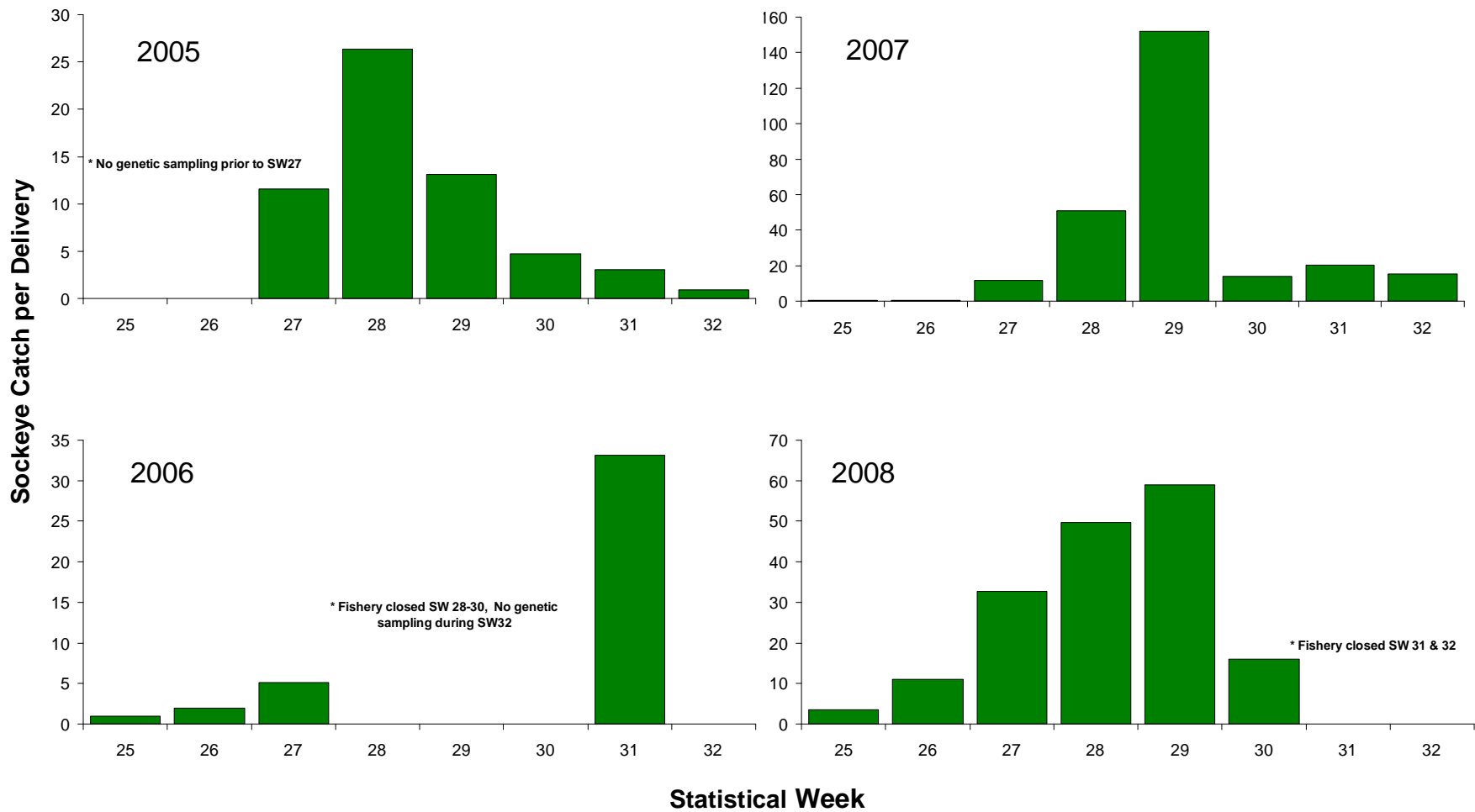


Figure 19. Estimated catch of Susitna Drainage sockeye per delivery in commercial District drift gill net fishery by statistical week, 2005-2008. Commercial catch data taken from Shields 2006-2009b, stock composition data taken from Barclay et al. 2010.

Table 6. Proportion of Susitna fish harvested in UCI sockeye salmon fisheries, by time period^a and year, 2005-2008. Data summarized from Barclay et al. 2010.

Sample Dates	Drift Gillnet			Set Gillnet				
	District	Corridor	Terminal	Kasilof	Kenai	Kalgin I.	West	Northern
2005								
6/27-7/9	0.10			0.01				
7/11-7/15	0.03			0.01	0.00			
7/16-7/20	0.01			0.00	0.03			
7/21-8/10	0.01			0.00-0.01	0.00			
Season	0.02			0.01				
2006								
6/02-9/11						0.08		
6/19-7/10	0.01-0.04			0.01			0.00	
7/10-7/29		0.01-0.04	0.00	0.00	0.00-0.01		0.01	
7/30-8/9	0.09-0.14			0.00	0.00			
Season	0.10	0.03		0.00		0.04		0.18
2007								
6/18-8/18						0.02-0.05	0.01	
6/21-7/5	0.01-0.07			0.00				
7/9-7/14	0.11			0.01	0.02			
7/16-7/21	0.12-0.13			0.04	0.02			
7/23-7/28	0.06			0.01	0.09			
7/30-8/9	0.10			0.04	0.02			
Season	0.11			0.04		0.03		0.14
2008								
6/2-8/18						0.00-0.02	0.01	
6/19-7/5	0.10			0.02				
7/7-7/12	0.09			0.03				
7/13-7/19	0.13			0.04	0.04			
7/21-7/27	0.06			0.01	0.00			
Season	0.12			0.01		0.01		0.26

^a Sample periods were pooled for comparison purposes, blank cells indicate no genetic sampling reported, shaded cells indicate harvests were pooled for two fisheries over the season as reported in Barclay et al. 2010.

Annual Exploitation Rates

Exploitation rates varied by stock and year but were surprisingly consistent relative to each other (Figure 20). Kasilof sockeye were harvested at the highest rate (67-78%) compared to other stocks followed by Kenai sockeye (30-68%). JCL and SusYen exploitation rates were similar to each other but SusYen rates were the lowest (9-37%) of all the stocks.

The Central District drift gill net fishery had the highest annual exploitation rate on Susitna sockeye salmon of all commercial fisheries in UCI during 2006-2008 (Figure 21). The

exploitation rate in this fishery ranged from 8% in 2006 when the District drift fishery was closed for three weeks in July, to 32% in 2007. The exploitation rate of Susitna sockeye in the east side set net fisheries ranged from 1% in 2006 to 9% in 2007. Susitna exploitation rates in the west side and Northern District set net fisheries were 1% or less during those years (Figure 21).

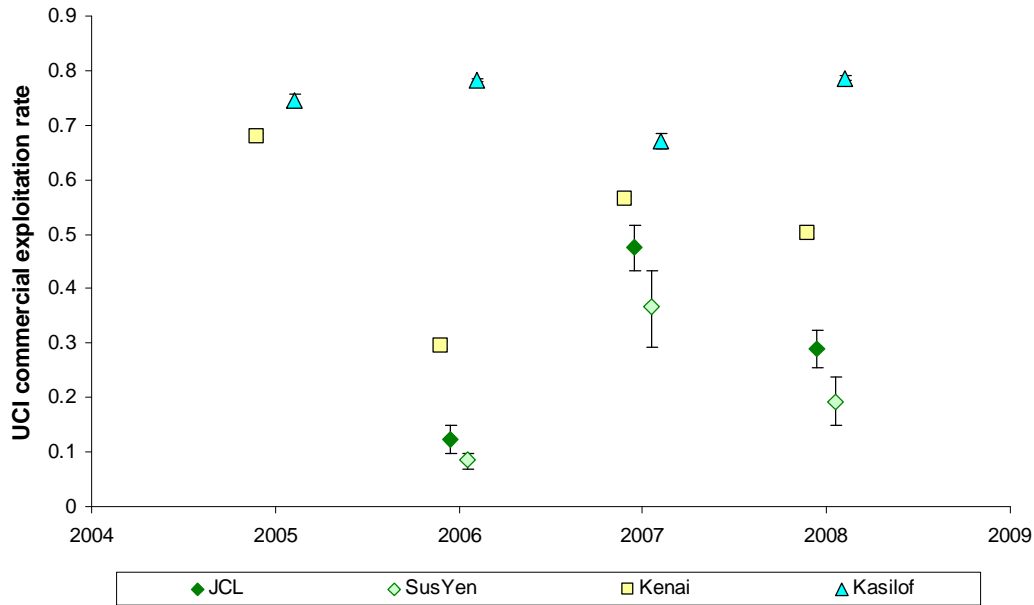


Figure 20. Estimated exploitation rate of Judd/Chelatna/Larson Lakes (JCL), Susitna/Yentna (SusYen), Kenai, and Kasilof sockeye salmon stocks in UCI commercial fisheries, 2005-2008. See text for methodologies used. Error bars represent 90% credibility intervals of the harvest and do not reflect uncertainty about the escapement estimates.

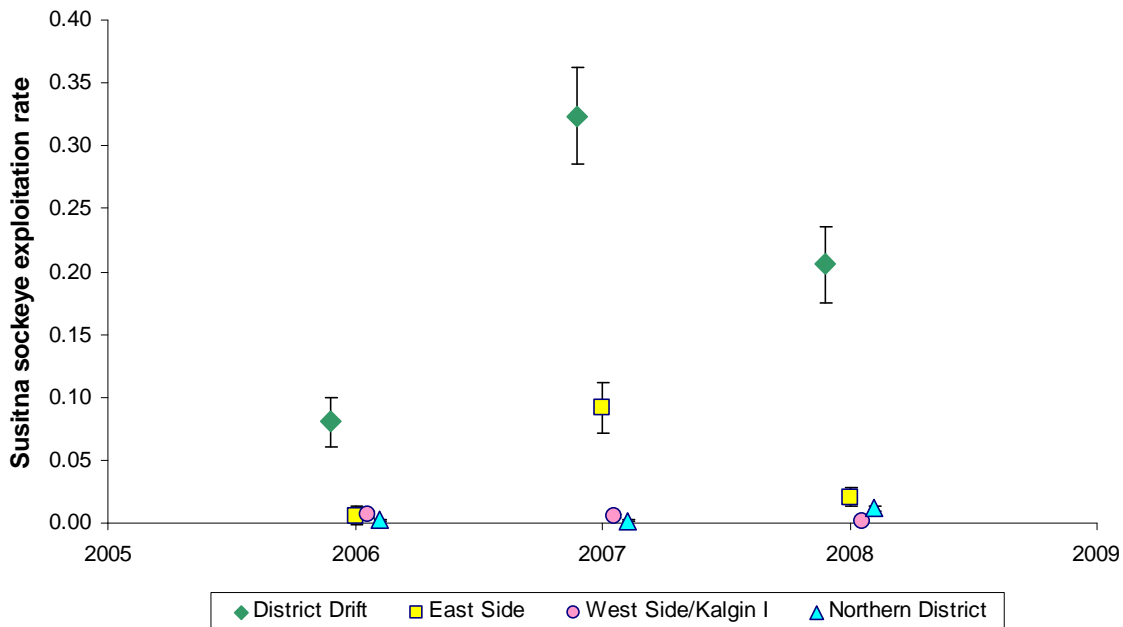


Figure 21. Estimated exploitation rate of Susitna sockeye salmon, by commercial fishery in UCI, 2006-2008. See text for methodologies used. Error bars represent 90% confidence intervals.

Discussion

The information presented in this memo provides a basis for evaluating commercial fishery management alternatives to protect Susitna sockeye escapement. Where in-season escapement data is not available in time to effectively regulate the harvest of Susitna sockeye, proactive time and area commercial fishery restrictions will ensure that Susitna sockeye escapement goals are consistently met.

Genetic sampling results highlight the mixed stock nature of commercial fisheries for sockeye throughout the inlet. Fish from all stocks intermingle to some degree in all portions of the inlet through much of the season. Fisheries in any specific area inevitably take a mixture of stocks although the proportions vary from week to week and year to year. Even the northern district commercial fishery harvest is comprised of large proportions of Kenai and Kasilof sockeye.²

Results confirm that drift fishery restrictions during the second and third weeks of July will generally be most effective in passing Susitna sockeye northward. Susitna sockeye numbers entering the Central District typically peak during this period based on genetic sampling of the catch in the offshore test fishery. The greatest contribution of Susitna sockeye to the commercial drift fishery catch also occurs in this period.

Results also indicate that the harvest of Susitna sockeye in the east side set net fishery can be significant under some conditions. For instance, during late July in 2007, Susitna sockeye comprised 9% of the harvest in the Kenai area set net fishery. Setnet harvest of Susitna fish will have implications for fishery strategies designed to protect northern stocks. It is not valid to assume that all sockeye harvested in the east side set net fishery are Kenai or Kasilof fish. Increased setnet harvest to clean up Kenai and Kasilof sockeye passed to the beaches by any drift net restrictions to move Susitna fish northward will inevitably harvest some of those same fish and reduce the benefits of the drift restrictions.

Although Susitna sockeye typically comprise only a small fraction of the commercial harvest at any given time and area, exploitation of this stock in Central District commercial fisheries can be significant. Susitna numbers are simply dwarfed by the large size of the Kenai and Kasilof runs. Exploitation rates of Susitna sockeye are typically much less than those of the abundant Kenai and Kasilof stocks that are the focus of this fishery. Exploitation rates vary depending on run timing and fishery configuration. In some years such as 2007, commercial exploitation rates of Susitna fish approached or exceeded 40%.

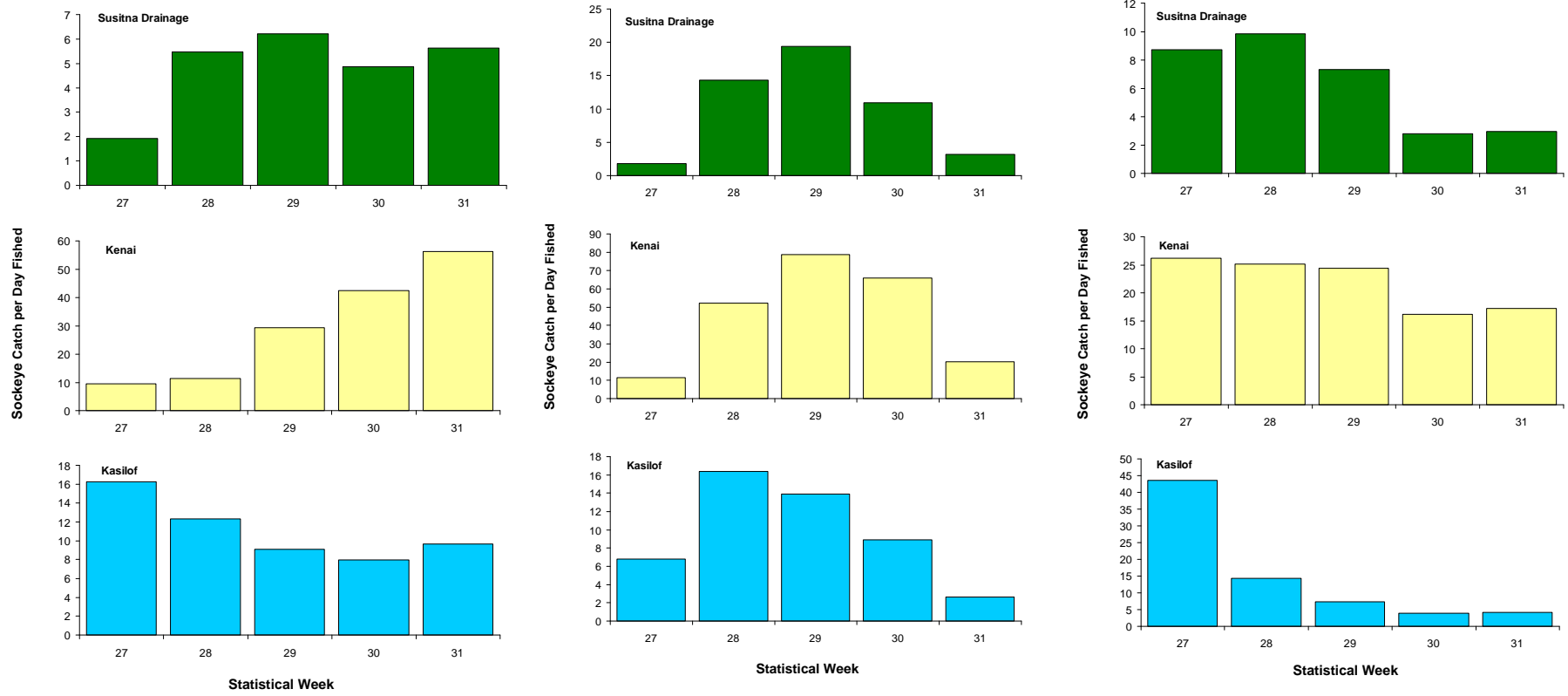
A clear correlation between Central District Fishing effort and exploitation rates of Susitna sockeye demonstrates the significance of the impact of this fishery on escapement and the value of fishery restrictions to protect escapement. Exploitation rates closely correspond to annual differences in fishing effort during early July. During 2006, very low exploitation rates on Susitna sockeye (~10%) coincided with closures of the district wide drift fishery between July 7

² We note that the high incidence of Kenai and Kasilof sockeye in the northern district commercial fishery harvest suggests that catch per unit effort in that fishery is not an appropriate indicator of Susitna sockeye run strength. This was one of the analyses used by ADFG to conclude that the Yentna sonar was not an effective index of sockeye escapement.

and July 31 due to low Yentna and Kenai sockeye counts. In 2007, high Susitna sockeye exploitation rates (~40%) occurred when a series of southerly restrictions of the drift fleet during regular openers beginning on July 16 failed to avoid large catches of northern-bound fish. In 2008, exploitation rates were reduced to ~20% by a combination of corridor and southerly restrictions from July 10 through July 21. During these three years, the Yentna sonar goal was achieved under lower Central District exploitation rates for northern sockeye in both 2006 and 2008 but was not met at high exploitation rates in 2007.

These results highlight the very high value of genetic stock sampling in accurate estimation of the stock composition of the commercial harvest. Accurate stock apportionment is essential for run reconstructions which are the basis for productivity estimates and stock-recruitment analyses that determine escapement goals and sustainable harvest levels. Because harvest rates of these sockeye stocks can be very high, even small errors in stock apportionment can greatly bias the basic fish population data used in fishery management.

A. Stock composition in the offshore test fishery 2006-2008

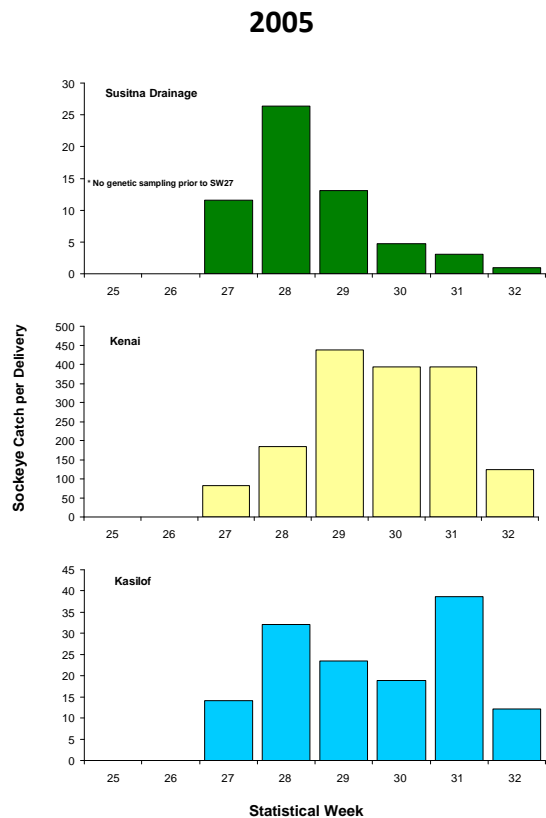


Appendix Figure A- 1. Estimated catch of Susitna, Kenai, and Kasilof sockeye per day in the 2006 offshore test fishery by statistical week. OTF CPUE data taken from Shields and Willette 2008, stock composition data taken from Barclay et al. 2010.

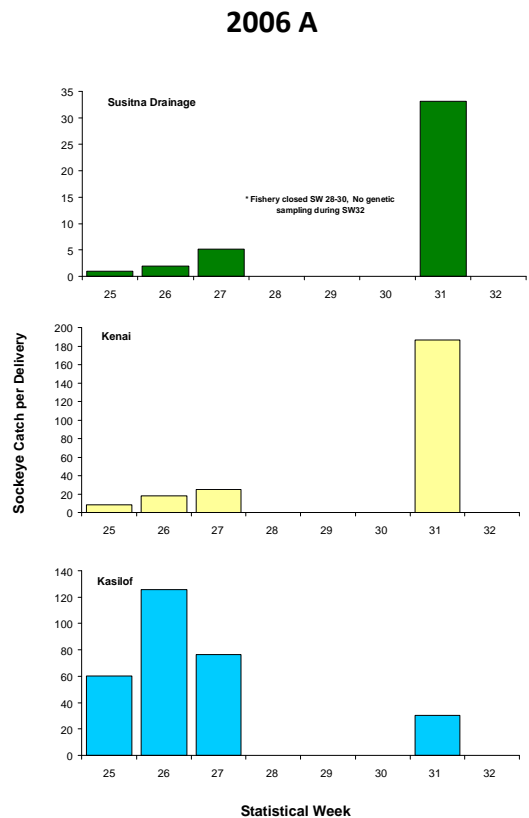
Appendix Figure A- 2. Estimated catch of Susitna, Kenai, and Kasilof sockeye per day in the 2007 offshore test fishery by statistical week. OTF CPUE data taken from Shields and Willette 2009a, stock composition data taken from Barclay et al. 2010.

Appendix Figure A- 3. Estimated catch of Susitna, Kenai, and Kasilof sockeye per day in the 2008 offshore test fishery by statistical week. OTF CPUE data taken from Shields and Willette 2009b, stock composition data taken from Barclay et al. 2010.

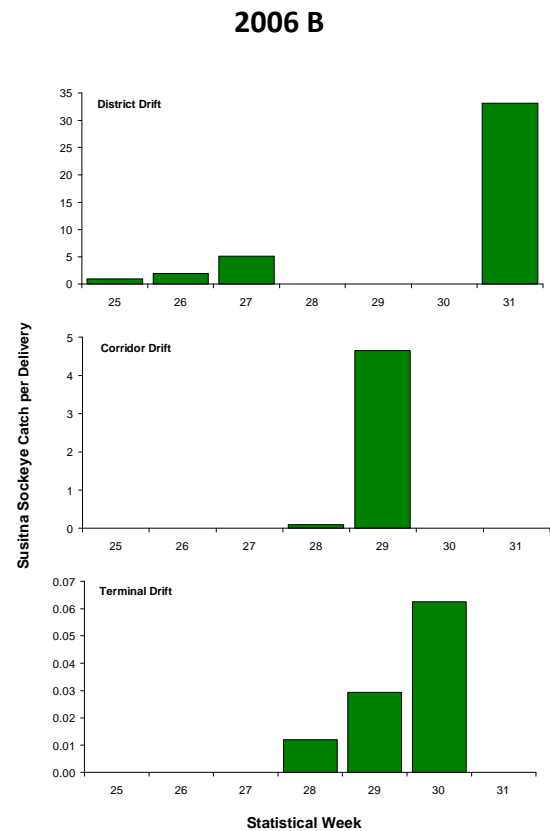
B. Stock composition in the District drift gillnet fishery



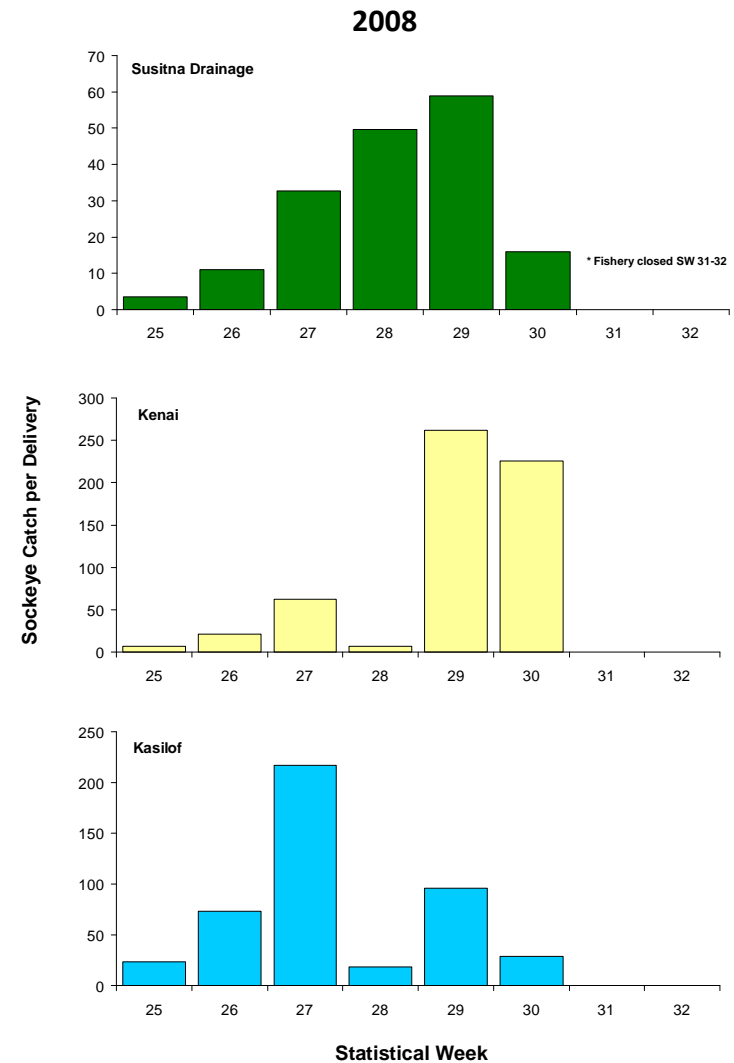
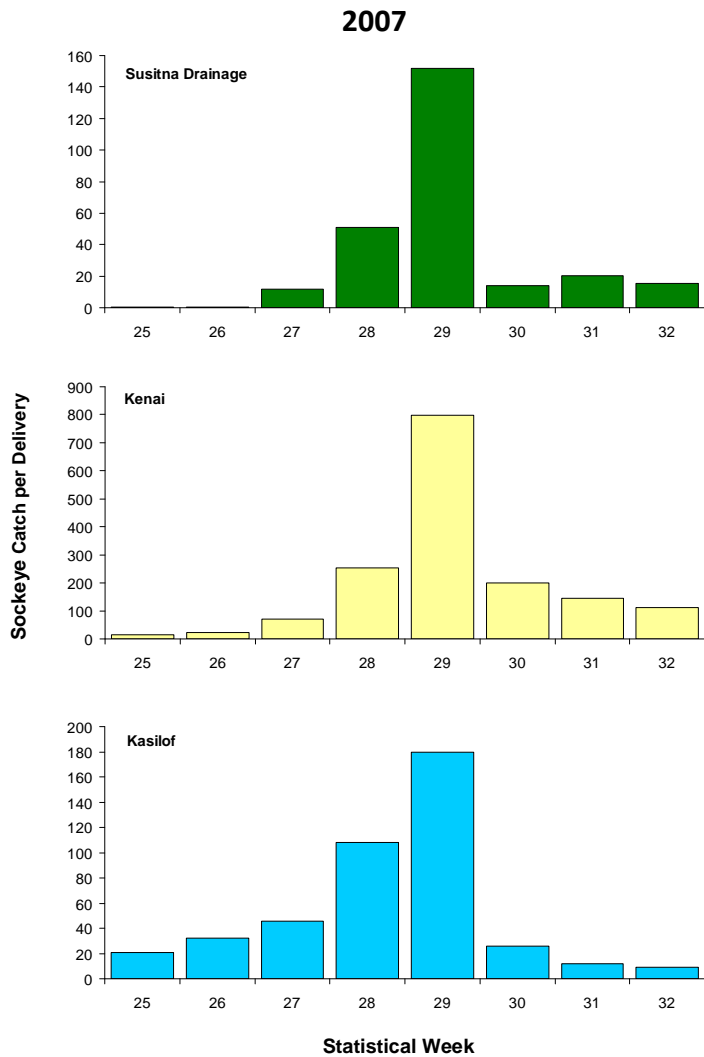
Appendix Figure B- 1. Estimated catch of Susitna, Kenai, and Kasilof sockeye per delivery in the 2005 UCI District commercial drift gillnet fishery (excluding corridor and terminal harvests) by statistical week. Commercial catch data taken from Shields 2006, stock composition data taken from Barclay et al. 2010.



Appendix Figure B- 2. Estimated catch of Susitna, Kenai, and Kasilof sockeye per delivery in the 2006 UCI District commercial drift gillnet fishery (excluding corridor and terminal harvests) by statistical week. Commercial catch data taken from Shields 2007a, stock composition data taken from Barclay et al. 2010.



Appendix Figure B- 3. Estimated catch of Susitna sockeye per delivery in the 2006 UCI District, corridor, and terminal commercial drift gillnet fisheries by statistical week. Note different scales on the y-axis. Commercial catch data taken from Shields 2007a, stock composition data taken from Barclay et al. 2010.



Appendix Figure B- 4. Estimated catch of Susitna, Kenai, and Kasilof sockeye per delivery in the 2007 UCI District commercial drift gillnet fishery (excluding corridor and terminal harvests) by statistical week. Commercial catch data taken from Shields 2007b, stock composition data taken from Barclay et al. 2010.

Appendix Figure B- 5. Estimated catch of Susitna, Kenai, and Kasilof sockeye per delivery in the 2008 UCI District commercial drift gillnet fishery (excluding corridor and terminal harvests) by statistical week. Commercial catch data taken from Shields 2009, stock composition data taken from Barclay et al. 2010.

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- 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. ADFG, Fishery Data Series No. 07-83, 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. ADFG, Fishery Data Series No. 07-83, Anchorage.



*Edited by: Ray Beamesderfer
Cramer Fish Sciences
600 NW Fariss Road
Gresham OR 97030
www.fishsciences.net*

FAX**RECEIVED
FEB 03 2011
BOARDS**

Alaska Board of Fisheries

907-465-6094

From: Alex Morrison; 624 Winter Haven Street; Anchorage, AK 99504

Board Members

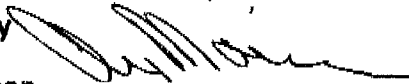
I am writing to express my opinion on the proposals regarding dip netting that are on the agenda for the upcoming Board of Fisheries meeting.

I am a long time Alaskan resident and have participated in dip netting on the Kenai for many years. Each year I look forward to the time when I can participate in this uniquely Alaskan adventure and fill my freezer for the year. From the shoreline in past years and now from a boat since my legs do not do so well this is truly one of the things that make Alaska different. As an active participant I know that this fishery can be very productive but I also know that it can change quickly on a day to day basis. Currently the regulations are flexible enough to allow for successful trips planned around available time. The proposals before the board, if approved, will make it much more difficult to effectively take part in the fishery. One could form the opinion that the majority of the proposals are attacks from anti dip netters and or commercial interest and are just aimed at killing the practice. I hope that the board will continue to view personal use dip netting as a valid and sustainable part of the overall Cook Inlet Salmon fishery plan and leave the current regulations unchanged. If changes are needed then they should be based on factual evidence gathered by qualified law enforcement and fishery biologist personnel and not be implemented based on emotional requests from individuals. If the overall fishery is declining and suffering from over fishing then adjustments in rules for all would be understandable. However, with a healthy and sustainable resource, such as the Sockeye fishery seems to be, it makes no sense to entertain and support a focused attack on one group, the dip netters.

I am requesting that the Board of Fisheries leave the dip netting regulations that are currently in place unchanged. Your consideration of my comments is appreciated.

Respectfully

Alex Morrison



Thursday, February 03, 2011

Attn: Board of Fisheries:

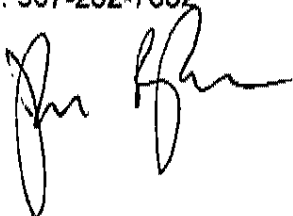
I absolutely oppose the following proposals:

- 1-allow non residents to participate in dipnetting
- 2-A July 17th opener for dipping, rather than July 10th
- 3-open dipnetting only after escape goals are met, which is about halfway through the run
- 4-establish a harvest cap of 150,000 for the Kenai river. (Last years take was almost 300,000)
- 5-establish a guideline harvest of 10% for dipnetters and sport fishermen.(Comfishers would get the other 90% of all fish)
- 6-reduce the bag limit to 15 fish per family
- 7-Reduce household limit to 10 fish
- 8-Prohibit any retention of King Salmon during dipnetting.
- 9-Prohibit dipnetting from a boat in the Kenai.

These fish do not belong to the commercial fisherman nor do they belong to any non-residents. This fishery is meant to be subsistence, for the people of Alaska ONLY. Leave the dipnetting as it is. Our ALASKAN families depend on it!

Sincerely,

John (LJ) Reynolds
P.O. Box 3546
Palmer Alaska 99645
Phone: 907-232-7682



Attn: Shannon
UCI BOF
Public Comments

ADF & G ALASKA BOARD OF FISHERIES UPPER COOK INLET FINFISH

Board Members, please consider and act upon expanding the Kasilof Gillnet personel use period from July 10-26th as well as keeping the June openings. The usage with one period in June is set upon by a large number of permit holders, in a small area, & time period causing congestion & some strife for environment and participants. Expansion would alleviate these problems.

Sincerely Romie and Patricia Deschamps

Romie Deschamps

Patricia Deschamps

02/03/2011



ADF & G ALASKA BOARD OF FISHERIES UPPER COOK INLET FINFISH

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personel use period from July 10-26th as well as keeping the June openings The
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small area, & time period causing congestion & some strife for environment and
participants. Expansion would alleviate these problems.

Garland Hale



Thursday, February 03, 2011

Attn: Board of Fisheries:

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Sincerely,



Dylan and Devin Vergason
13301 Messinia St.
Anchorage AK 99516

907-465-6094

Thursday, February 03, 2011

Attn: Board of Fisheries:

I absolutely oppose the following proposals:

- 1-allow non residents to participate in dipnetting
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These fish do not belong to the commercial fisherman nor do they belong to any non-residents. This fishery is meant to be subsistence, for the people of Alaska ONLY. Leave the dipnetting as it is. Our ALASKAN families depend on it!

Sincerely,

Nick Karnos
13721 Jarvi Dr.
Anchorage, AK 99515
907-348-8300

Attn. BOF Comments
Boards Support Section
ADF&G
P.O. Box 115526
Juneau, AK 99811-5526

Greetings Broad Members:

I am not able to attend the upcoming board of fisheries meetings, so I have enclosed my beliefs concerning various proposals that you will be addressing at the hearings. You are familiar with the massive mismanagement of the home mortgage industry in our nation, and how the negative ramifications have damaged our economy. I believe the “checks and balances” we placed upon the mortgage and fisheries industries have failed to protect us.

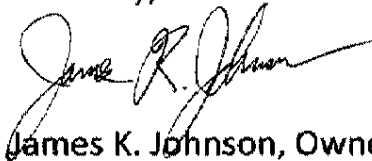
You are aware that most of the proposals are supported or opposed by special interest users of our Alaskan fisheries. I have viewed the “fish wars” for over 30 years while operating my sport fishing business in Alaska. I have studied the Cook Inlet salmon fisheries’ history. Overharvest of Cook Inlet salmon was allowed during the 1950’s and early 1960’s . When the fishery collapsed, a fishing moratorium and Limited Entry system was implemented, to allow a rebuilding of the depleted salmon stocks. Cook Inlet salmon runs were able to rebound in the late 1970’s. However, overharvest was allowed once again on king and coho salmon, when fishery managers attempted to maximize the sockeye and pollack catches by the commercial fisheries.

Today we find the king and coho salmon runs are in grave danger in certain streams flowing into Cook Inlet. The really bad news about this fisheries mismanagement is that the legal controlling authorities are not really aware of the destruction of some of our salmon stocks—or really do not care. We have most of the salmon fishery user groups basically “in the dark” about the problem and its solution.

You will find commercial fishing interests proposing all kinds of ways to acquire more salmon in their nets. I can understand their interest in making as much

profit as possible off of the fishery. I must be blunt: the vast majority of fisheries in this world that have been largely destroyed, have been the result of overharvest by commercial fisheries. Hopefully, you can use wisdom and knowledge when deliberating on the fishery proposals that will be coming before you. Thank you for your time and attention to the management of these wonderful renewable fishery resources.

Sincerely,



James K. Johnson, Owner
Alaska's Kenai Jim's Lodge & Guide Service
Box 3675
Soldotna, AK
99669
907-262-1324

SUPPORT PROPOSAL 102:

Far too many gillnets have been allowed to operate in the Cook Inlet's Central District for too many hours since the 1980's. The high incidental catches of king and coho salmon have decimated the present salmon returns for many streams in Cook Inlet.

OPPOSE PROPOSALS 105, 106, 108, 110, 111, 112, & 117:

These proposals are attempting to allow more harvest for the commercial fishery; increasing commercial harvest would be reasonable if we had excess returns of salmon. However, our fish managers have not sounded the alarm about the overharvest of our king and coho salmon stocks.

SUPPORT 116:

If you wish to reduce the incidental harvest of king salmon in the Central District by the gillnet fishery then this proposal only makes sense. But again, the commercial fishermen will oppose this because they have not been told the truth about the poor escapement of king and coho salmon into the Kenai and Kasilof rivers.

SUPPORT PROPOSALS 121 & 127:

These proposals make sense, because allowing gillnets to be fished so close to river mouths on the Westside is allowing overharvest of salmon.

OPPOSE PROPOSALS 123 & 124:

The Kenai and Kasilof river king and coho stocks need higher escapement levels to allow a return to our past healthy salmon runs.

OPPOSE PROPOSALS 129 & 130 & 132:

My observations concerning the gillnet fishery wanting pink salmon: they usually want to use the pink salmon as an excuse so they can target coho salmon. We use to have healthy coho returns in August into the Kenai and Kasilof rivers, but excessive EO's targeting the pink and sockeye salmon have decimated our present runs of coho salmon.

OPPOSE PROPOSALS 146, 153, & 154:

ADF&G'S king salmon sonar has been a disaster for protecting our king salmon stocks on the Kenai river. The sonar unit has allowed excessive gillnet fishing due to the fact it could not distinguish between sockeye and king salmon air bladders. Our fishery biologists report false healthy king salmon escapement numbers; the commercial fishery uses the data to request more fishing periods.

SUPPORT PROPOSALS 147, 159,163, & 168:

These proposals attempt to allow greater escapement for our endangered king and coho salmon runs into the Kenai and Kasilof rivers.

OPPOSE 156, 161, & 168:

These proposals are the result of fishery biologists' false data that has been released to the public. My solution for the ineptitude of ADF&G is to put many of the salmon escapement projects out for competitive bid.

SUPPORT PROPOSAL 189:

Dipnets should not be used to retain king salmon because of the low escapement numbers currently being experienced into the Kenai and Kasilof rivers.

OPPOSE PROPOSALS 193 & 194:

The Central District commercial fisheries hates the resident dipnet fishery, and will even use the Beluga whale to get the fishery banned! Commercial fishermen believe the inriver harvest by the dipnets hurt their ability to harvest maximum numbers of sockeye salmon; they believe the sockeye harvest basically belongs to them.

SUPPORT PROPOSALS 204 & 205:

Returning back to the 3 salmon per angler coho limit should be done. The reduction of the bag limit was done as a concession by the sport fishery, so EO's would not be used to overharvest the coho by the gillnet fishery (the gillnetters later removed their restrictions through the courts). It is the excessive harvest by the gillnets that has endangered our runs.

OPPOSE PROPOSAL 207:

Yes, this proposal has been proposed before by various user groups who want an advantage for their interests. The various user groups would not be seeking to harm other user groups if there were enough salmon. Uncontrolled greed is why there is not enough salmon.

SUPPORT 213:

Mondays were removed from guided anglers because of concessions made by the sport fishery to stop EO's by the gillnet fishery. The commercial fishermen went to court and removed their concessions. The commercial fishery produced the low coho returns by their overharvest.

SUPPORT PROPOSALS 228, 234 & 236:

The sport fishery has been overly restricted because of lack of control over the various commercial fisheries. Adopting these proposals is reasonable. The reason these sport fishing restrictions were placed was to "window dress" the need for conservation by some user group.

OPPOSE PROPOSAL 235:

A slot limit for the Late run of Kenai king salmon will not bring the run back. You must address the overharvest by the commercial fisheries, thereby insuring adequate spawning escapement numbers.

SUPPORT 239:

In the sport fishing world you can normally catch your limit and continue fishing by releasing any other fish. An ADF&G study determined an 8 % mortality factor on sport-caught king salmon that were released by anglers. Again, this kind of regulation was developed because of low salmon returns. Yet again, the sport fishery was made to pay for the overharvest by commercial fisheries. This regulation should be repealed; the Kenai river has more than enough regulations to protect our salmon.

OPPOSE PROPOSALS 242, & 246:

The commercial fishermen want to restrict sport fishing because they view it as a threat to their industry; they are correct, if the sport fishery can cause the commercial fishery to take responsibility for their overharvest of our salmon.

OPPOSE PROPOSAL 255:

This proposal attempts to improve bank fishing for king salmon fishermen on the Kasilof river by banning boat fishermen. Again, if there were more king salmon the sport fishermen would not be attacking one another. How about making sure the king salmon stocks are healthy by better monitoring of the commercial fisheries.

SUPPORT PROPOSAL 262:

I support allowing a fishing guide to be able to take two trips per day on the Kasilof river. The reason we have the present restriction to one trip a day is because of crowding on the Kasilof river. If we had more salmon and fishing water available we would not have so much sport fishing pressure in Alaska.

FAX

Thursday, February 03, 2011

Attn: Board of Fisheries:

I absolutely oppose the following proposals:

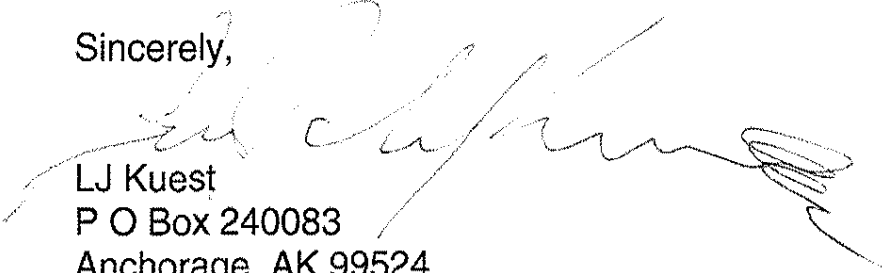
1. Allow non residents to participate in dipnetting
2. A July 17th opener for dipping, rather than July 10th
3. Open dipnetting only after escape goals are met, which is about halfway through the run
4. Establish a harvest cap of 150,000 for the Kenai River. (Last years take was almost 300,000)
5. Establish a guideline harvest of 10% for dipnetters and sport fishermen.
6. Reduce the bag limit to 15 fish per family
7. Reduce household limit to 10 fish
8. Prohibit any retention of King Salmon during dipnetting.
9. Prohibit dipnetting from a boat in the Kenai.

These fish must be shared between residents and commercial fisherman. These fish do not belong to any non-residents. This fishery is meant to be subsistence, for the people of Alaska ONLY.

Leave the dipnetting as it is.

Our ALASKAN families depend on it!

Sincerely,



LJ Kuest
P O Box 240083
Anchorage, AK 99524
907-245-8812

Public Comment #35

To: Alaska Board of Fish and Game
Re: dip net fishery on the Kenai Peninsula

I rely on fish taken in the dipnet fishery on the Kenai Peninsula.

As a former commercial fisherman (salmon in Bristol Bay, I realize the value of the Cook Inlet stocks, but realize also the pressure and need of the non commercial usage in this drainage. Cook Inlet would be better served by recreational and subsistence users.

Sandra L. Bush

907-345-3307

Thursday, February 03, 2011

Fax to: (907)465-6094

Attn: Board of Fisheries:

I absolutely oppose the following proposals !!!!!!!!!

1-Allow non residents to participate in dip-netting **-NO**

2-A July 17th opener for dipping, rather than July10th **-NO**

3-Open dip-netting only after escape goals are met, which is about halfway through the run **-NO**

4-Establish a harvest cap of 150,000 for the Kenai River. (Last years take was almost 300,000) **-NO**

5-Establish a guideline harvest of 10% for dip-netters and sport fishermen.(Commercial fishers would get the other 90% of all fish) **-NO are you insane????**

6-Reduce the bag limit to 15 fish per family. **-NO we are hungry enough... already**

7-Reduce household limit to 10 fish. **-NO see above**

8-Prohibit any retention of King Salmon during dip-netting. **-NO**

9-Prohibit dip-netting from a boat in the Kenai. **-NO**

These fish do not belong to the commercial fisherman nor do they belong to any non-residents. This fishery is meant to be subsistence, for the people of Alaska ONLY. Leave the dip-netting as it is.

Our ALASKAN family depends on it !!!!!!!!!

Sincerely,

Chuck and LaVon Lockner
P.O. Box 189
Sterling Alaska 99672
Phone: 907-262-7219

Leave the dip-netting as it is. !!!!!!!!!

3 Feb 11

To: Alaska Dept of Fish & Game

I believe that subsistence and sport fishing for salmon stocks should take precedence over commercial fishing in Cook Inlet, given the pressure of numbers of sport and subsistence fishermen. My family relies on the dipnet fishery for their winter supply of salmon.

Jon Bush
230-1517

Friday, February 04, 2011

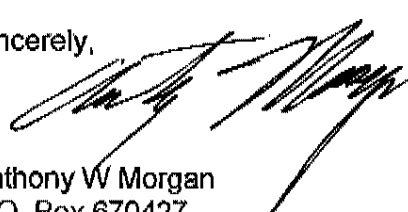
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Sincerely,



Anthony W Morgan
P.O. Box 670427
Chugiak Alaska 99567
Phone: 907-602-2213

907-465-6094

Friday, February 04, 2011

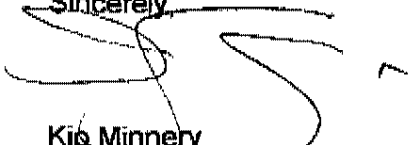
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Sincerely,



Kip Minnery
4101 Galactica Drive
Anchorage, AK 99517
Phone: 907-248-2255

Friday, February 04, 2011

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These fish do not belong to the commercial fisherman nor do they belong to any non-residents. This fishery is meant to be subsistence, for the people of Alaska ONLY. Leave the dipnetting as it is. Our ALASKAN families depend on it! Mine certainly does. If you prohibit dipnetting from a boat all of those people will be on the beach plus all the out of state people, you would have to fight the people to get close to the water to use your dipnet.

Sincerely,

Scott Cuthbert
5080 Southampton Dr.
Anchorage, Alaska 99503
Phone: 907-243-1090

Friday, February 04, 2011

Fax to: (907)465-6094

Attn: Board of Fisheries:

I absolutely oppose the following proposals !!!!!!!!!

174-Allow non residents to participate in dip-netting

175-A July 17th opener for dipping, rather than July10th

176-Open dip-netting only after escape goals are met, which is about halfway through the run

181-Establish a harvest cap of 150,000 for the Kenai River. (Last years take was almost 300,000)

183-Establish a guideline harvest of 10% for dip-netters and sport fishermen.(Commercial fishers would get the other 90% of all fish)

186-Reduce the bag limit to 15 fish per family

187-Reduce household limit to 10 fish.

189-Prohibit any retention of King Salmon during dip-netting

193 & 194-Prohibit dip-netting from a boat in the Kenai.

These fish do not belong to the commercial fisherman nor do they belong to any non-residents. This fishery is meant to be subsistence, for the people of Alaska ONLY. Leave the dip-netting as it is.

Sincerely,

John Reynolds
P.O. Box 3546
Palmer, Alaska
907-232-7682

Leave the dip-netting as it is. !!!!!!!!!

To : Alaska Board of Fisheries Meeting
Fax: 907-465-6094

From: Andy McLaughlin- Alaska State resident, Dependent Subsistence salmon User, and
Wildlife Manager and Fisheries Biologist.

PO Box 8043
Chenega Bay, AK 99574
907-573-5092

Date: 2/4/11

I am a degree holding wildlife and fisheries management biologist. I am a state resident. Here are my comments and concerns about the upcoming proposals to change the Upper Cook Inlet dipnetting regulations.

- 1- I do not think it is fair to allow non residents to dipnet our salmon as a subsistence resource. According to the state constitution the resource exists as belonging equally to each of the state residents. Please do not violate the state constitution.
- 2- I favor the July 10th dipnetting opener, it allows me to subsistence fish for salmon resources vital to acquiring food for my family. Starting it at a later date can prohibit me from getting off work in order to participate in the fishery.
- 3- Escapement goals are still met even though the dipnet fishery opens before they are. If the escapement goals occur half way through the run then the prime part of the fishery will be unfishable. 70,000 Alaskan residents depend on this fishery.
- 4- There is no justified reason to force a harvest cap of 150,000 fish for the Kenai river, especially during years of high marine survival and consequent high numbers of returning fish.
- 5- It is not fair to only allow 10% of the salmon to the subsistence dipnetters while allowing 90% to the commercial fishery. Tony Knowles decided this in the Katie John vs State of Alaska case.
- 6- A reduction in bag limit is not necessary on years when high escapement occurs.
- 7- Household limit of 10 fish is not warranted. My household requires around 50 fish total to have enough protein supply stored up for the winter. We use pressure canner, smoker and freezer to preserve our salmon and we require more than 10 fish for my family.
- 8- Incidental catch of king salmon by dipnet is insignificant to the king salmon escapement and does not produce significant effect on king salmon mortality.
- 9- Prohibiting dipnetting from a boat is not needed. A substantial amount of state residents rely on salmon that are dipnetted from boats and there is no warranted need to prohibit use of boats for dipnetting.



Ben Barclay
6745 Paula Pl.
Anchorage, AK 99507

Feb 3, 2011

To: State of Alaska, Board of Fisheries

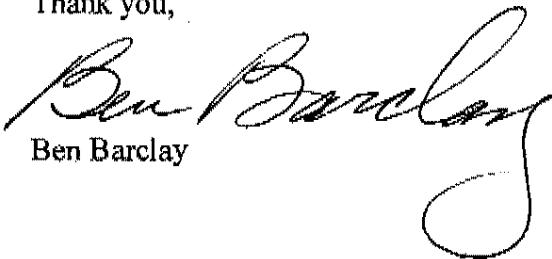
Re. Various Proposals regarding Dipnetting Personal Use Fisheries

Gentlemen;

I am aware of a number of proposals to modify the dipnet fishery primarily on the Kenai. I can see no reason to change the rules in any form at this time. Thousands of Alaskans benefit both recreationally and subsistence wise by this fishery. If there are issues with the escapement not reaching the goals established by biologists, the fishery is limited or shutdown early and that seems to work well. I also know there are issues with the King Salmon run that make keeping a King from your dipnet questionable. Some people are already releasing Kings voluntarily which is a good thing and it may be beneficial to change the rules to not allow Kings to be taken.

The sport fishing harvest is minor compared to the commercial harvest and should not be limited to benefit commercial interests.

Thank you,


Ben Barclay

State of Alaska
Alaska Department of Fish & Game
Attn: Board of Fisheries

January 26, 2011

To Whom It May Concern:

I am writing this letter as a concerned citizen of the State of Alaska. It is not my normal practice to write such letters or complain about possible changes to state policy. But it has been brought to my attention that several hazardous changes could take place this year to our resident Dipnetting Program. I have read the proposed changes and do not agree with them. As an avid sportsman I suggest you leave these rules "As Is!" Beside myself there are thousands of Alaskans who depend on filling their freezer with salmon each year to help reduce the cost of their annual grocery bill. Some I'm sure can afford to purchase other types of meat at the store to fill this need but many cannot. Please listen to the voice of your citizens when making these important and critical decisions this year.

Respectfully Submitted,
Jay Goold
1801 Jarvis Ave.
Anchorage, AK 99515
907-345-7202

Reference: Dip netting at the mouth of the Kenai River.

To whom it may concern:

This fishery is extremely important to our family. We depend on the approximately 20 reds we get per year to get us through the year on a healthy diet.

We would very much appreciate the public fishery be kept open in some fashion.

George Peck
Box 2244
Seward, Alaska

Harold Faust
PO Box 1404
Seward, Alaska
907-224-3938
February 4, 2011

State of Alaska
Alaska Department of Fish & Game
Attn: Board of Fisheries
Fax: 907-465-6094

To Whom It May Concern:

I respectfully request that my comments be considered during your discussions of possible changes to the personal use fishery regulations on the Kenai River, specifically:

Under Upper Cook Inlet Personal Use Salmon

172: Those who have documented prior participation in the personal use fishery could complete and return a questionnaire in which they demonstrate knowledge of the rules and regulations, and fish species identification. Some education is important, but requiring classes be established is not reasonable.

173: Possession of a sports fishing license is appropriate for personal use fishing.

174: Personal use for state residents is protected in the state constitution; there is no good reason to extend that use to non-residents.

175-179: A definite date for starting the personal use fishery is important for planning purposes; the fishery can be closed early if there are low escapement numbers.

180: The participation in the personal use fishery is quite large; concentrating that effort on fewer days seems like it would cause more problems than it was intended to solve.

181-185: Again, based on measured escapement numbers, the personal use fishery could be suspended or ended early if it appears necessary.

186-188: The present bag limits are very reasonable and should not be changed. Enforcement of bag limits should be enhanced.

189-190: Retention of one king salmon per season per permit is reasonable.

191: Prohibiting release of fish (except flounders) is reasonable.

192: Prohibiting possession of sport and personal use caught salmon would serve no useful purpose, and would be an enforcement problem.

193-194: The use of skiffs reduces the pressure on the beach fishery, provides large fees for the City of Kenai, and is a popular and useful way to harvest for personal use. There is no reasonable need to close it.

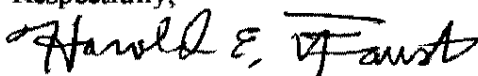
195-199: No comments.

My family and I get great value in recreation, economy, and healthy living through the personal use fishery on the Kenai River. It is a very important part of our Alaska lifestyle.

That value and lifestyle is shared by many, many Alaskans, as is evidenced by the issue of some 30,000 personal use permits each year. Any changes to the personal use fishery must be very carefully considered in light of this wide use, and can only be justified by true fisheries management practices. All Alaskans have been granted the rights to harvest our state's abundant fish and game resources. No single user group should expect to exclude others, when there is enough for all.

Thank you for this chance to comment during consideration of regulatory changes.

Respectfully,



Harold E. Faust

Friday, February 04, 2011

Fax to: (907)465-6094

Attn: Board of Fisheries:

I absolutely oppose the following proposals !!!!!!!!

174-Allow non residents to participate in dip-netting

175-A July 17th opener for dipping, rather than July 10th

176-Open dip-netting only after escape goals are met, which is about halfway through the run

181-Establish a harvest cap of 150,000 for the Kenai River. (Last years take was almost 300,000)

183-Establish a guideline harvest of 10% for dip-netters and sport fishermen.(Commercial fishers would get the other 90% of all fish)

186-Reduce the bag limit to 15 fish per family

187-Reduce household limit to 10 fish.

189-Prohibit any retention of King Salmon during dip-netting

193 & 194-Prohibit dip-netting from a boat in the Kenai.

These fish do not belong to the commercial fisherman nor do they belong to any non-residents. This fishery is meant to be subsistence, for the people of Alaska ONLY. Leave the dip-netting as it is.

Sincerely,

Scott Cuthbert
5080 Southampton Dr.
Anchorage, AK 99503
907-243-1090

Leave the dip-netting as it is. !!!!!!!!



KRPGA Proposal Comments

KRPGA does not support any additional commercial fishing through any methods or means. The sport fishermen have suffered many restrictions over the last several years. Windows Windows is one of the best ways to pass fish into the many different river systems.

Proposals we support in concept are 147,163,126, in general we support any proposal that get fish into the Northern District

In the personal use fishery we oppose any restrictions. The fish belong to the people and the Personal Use is a good way to get them into the homes of Alaska residents.

Upper Cook Inlet Coho Proposals

We support in concept increasing the bag limit for coho salmon to three.

Kenai River Proposals

206 we support this proposal

207 we oppose this proposal because the wounded warrior event has grown and is enjoyed by many men and women in our armed forces. This year will be our 5th annual Wounded Warrior event. Last year we were given this day in June to do a Healing Waters fishing event, but due to the river closure it was canceled. Both Kenai and Soldotna support the wounded warrior event.

208 we oppose

209 we oppose

210, 211 we put this proposal in because there is no pressure on the river and if a sport fisherman wants to go fishing he should have the opportunity.

212 we support this to be put in the manager's tool box to be used in years of abundance.

213 we support this; it is really a house keeping measure. This restriction was implemented in a coho conservation plan and last BOF meeting there were no proposals to relieve this restriction, even through increased opportunity was given to others users.

214 we support

215 we oppose as written

216 we oppose

224 we oppose as written.

225 we oppose as written.

226 we oppose as written

227 we oppose as written

228 we oppose

229 we oppose, extending the sanctuary as it will not enhance the Slikok Creek returns. The closure that is in place is sufficient. Last BOF we extended the time period of the closure. New culverts were put in place to help pass salmon into spawning areas.

230 we support this proposal.

232 we oppose

233 We support this proposal. The slot limit has put disproportionate fishing pressure on age class, concentrating harvest on large reproductive females, a significant component of the run just under the slot limit, in conjunction to the sustainable Salmon Policy.

235 we oppose

236 we oppose

237 we support

238 we are neutral, but could be used as a tool to be used in years of abundance.

239 we oppose as written

240 we oppose as written

241 we oppose

242 we oppose

243 we oppose

245, 246 we oppose due to lack of infrastructure and facilities and fishing opportunity. There is ample opportunity to fish from a drift boat on the upper Kenai River. This would be an additional financial burden on the sportfishing industry.

247 we oppose

248, 249 we support in concept.

250 we oppose as written and are neutral on the Eagle Rock area.

251 we oppose

252 we oppose

253 we oppose

We would like to thank you for your time and dedication to this process of managing our fishery.



IN REPLY REFER TO:

United States Department of the Interior

KENAI NATIONAL WILDLIFE REFUGE

P.O. Box 2139
Soldotna, Alaska 99669-2139
(907) 262-7021

RECEIVED

FEB 04 2011

BOARDS

11006ajl

January 31, 2011

Mr. Vince Webster
Chair, Alaska Board of Fisheries
Boards Support Section
P.O. Box 115526
Juneau, AK 99811-5526

Dear Chairman Webster:

This is to provide comments on Alaska Board of Fisheries Proposal 243, submitted by the Alaska Department of Fish and Game, which proposes a special provision that will require anglers to closely attend harvested fish in the Russian River Area.

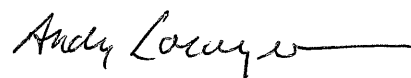
The U.S. Fish and Wildlife Service (Service) is working cooperatively with the U.S. Forest Service, the Alaska Department of Fish and Game, the Alaska Department of Natural Resources Division of Parks and Outdoor Recreation, Cook Inlet Region Incorporated, and the Kenaitze Indian Tribe through the Russian River Interagency Coordination Group. A focus of this group is developing cooperative approaches for managing human-bear interactions within the Kenai-Russian River Complex area to protect public and employee safety, while providing recreational opportunities and conserving fish and wildlife resources.

The Service strongly supports efforts to reduce the availability of harvested fish, food, refuse and other attractants to bears in this area as a means of reducing potential for negative human-bear interactions. In fact, existing federal regulations addressing this issue are in place for this area. Specifically, in 2010 the U.S. Forest Service issued Forest Order 10-04-030-10-02 Russian River and Angler Trail Area, and the Kenai National Wildlife Refuge issued a "Temporary Restriction Order" (both attached) requiring that recreational anglers keep lawfully retained fish within 12 feet, and food, beverages and garbage and the equipment used to transport or store these attractants within 3 feet (unless stored in vehicles, campers or bear-resistant containers). The language of the Service's Temporary Restriction Order was developed in part to ensure a consistent regulatory approach among the federal land management agencies since the Russian River forms a shared boundary between the Refuge and the Chugach National Forest. Both agencies included specific distances from attractants and included all attractants in their respective regulations. We believe this specificity benefits the public by providing clarity, and

that it increases enforceability of the regulation. We also believe that including all attractants increases the regulation's effectiveness. The Service intends to reissue a Temporary Restriction Order in 2011, and we will once again strive for consistency with the Forest Order.

Relative to Proposal 243, we respectfully request that the Alaska Board of Fisheries considers the issues of clarity for the public, enforceability, the desirability of reducing all potential bear attractants, and consistency. Thank you for this opportunity to comment.

Sincerely,



Andy Loranger
Refuge Manager
Kenai National Wildlife Refuge

Attachments

CHUGACH NATIONAL FOREST

Seward Ranger District
Seward, Alaska

Order No. 10-04-30-10-02

FOREST ORDER

Russian River and Angler Trail Area

Pursuant to 36 CFR 261.50(a), the following acts are prohibited on the Chugach National Forest in the Russian River area. These restrictions are in addition to those enumerated in Subpart A, 261 Title 36 Code of Federal Regulations and become effective when signed, and will remain in effect until rescinded or revoked.

Prohibited Acts:

36 CFR 261.58 – Occupancy and Use

Possessing or storing any food or refuse, as specified by the order [Title 36, 261.58 (cc)]

Leaving unattended wildlife attractants such as food, beverages, garbage, and equipment used to cook or store food (example: coolers/backpacks) unless it is acceptably stored in a vehicle, in a camping unit made of solid, non-pliable material, or retained and in no case more than 3 feet from the person. This includes National Forest System lands within or partially within Sections 33 thru 35, T5N, R4W; Sections 4 and 9, T4N, R4W, SM as shown on attached Exhibit A.

36 CFR 261.58 – Occupancy and Use

Possessing, storing, or transporting any bird, fish, or animal parts thereof, as specified by the order [Title 36, 261.58 (s)]

Leaving unattended any lawfully retained fish; unless it is closely attended which is no case more than 12 feet from the person. This includes National Forest System lands within or partially within Sections 33 thru 35, T5N, R4W; Sections 4 and 9, T4N, R4W, SM as shown on attached Exhibit A.

36 CFR 261.53 – Special Closures

Public Health and Safety [Title 36, 261.53 (e)]

Possessing, transporting, or allowing entrance of pets; unless they are on a leash no greater than six (6) feet in length. This includes National Forest System lands within or partially within Sections 33 thru 35, T5N, R4W; Sections 4 and 9, T4N, R4W, SM as shown on attached Exhibit A.

Definitions:

- (1) "Attractant" means any substance, natural or man-made, including but not limited to items of food, beverage, personal hygiene, or odiferous refuse that may draw, entice, or otherwise cause a bear, or other wildlife to approach.
- (2) "Food" means any substance, solid or liquid, which is or may be eaten or otherwise taken into the body to sustain health or life, provide energy, or promote growth of any person or animal. Includes items such as soft drinks, alcoholic beverages, gum, candy, canned foods, pet foods, and all lawfully retained portions of processed fish meant for human consumption.
- (3) "Acceptably stored" means
 - a. Retained on the person or within the subject's immediate control, but in no case more than 3 feet from the place a person is located at the time in question; or
 - b. Located within the closed area of a motor vehicle such as a trunk or passenger compartment; or within a camper unit made of solid, non-pliable material.
 - c. Containment within a commercially produced and certified bear-resistant container.
- (4) "Closely Attended" means in no case more than 12 feet from the place a person is located at the time in question.
- (5) "Possession" means to have personal control.

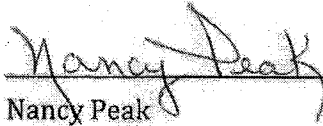
Exceptions:

Pursuant to Title 36 CFR 261.50 (e) the following are exempt from this order:


1. Any person with a permit authorizing the otherwise prohibited act or omission.
2. Any Federal, State, or local officer, or member of any organized rescue or fire fighting force in the performance of an official duty.
3. Any Federal, State, or local law enforcement officer in the performance of an official duty.

These prohibitions are in addition to the general prohibitions in 36 CFR Part 261, Subpart A.

This order is effective only during the following time period: May 1 through October 1.



Nancy Peak
Forest Supervisor
Chugach National Forest



Date

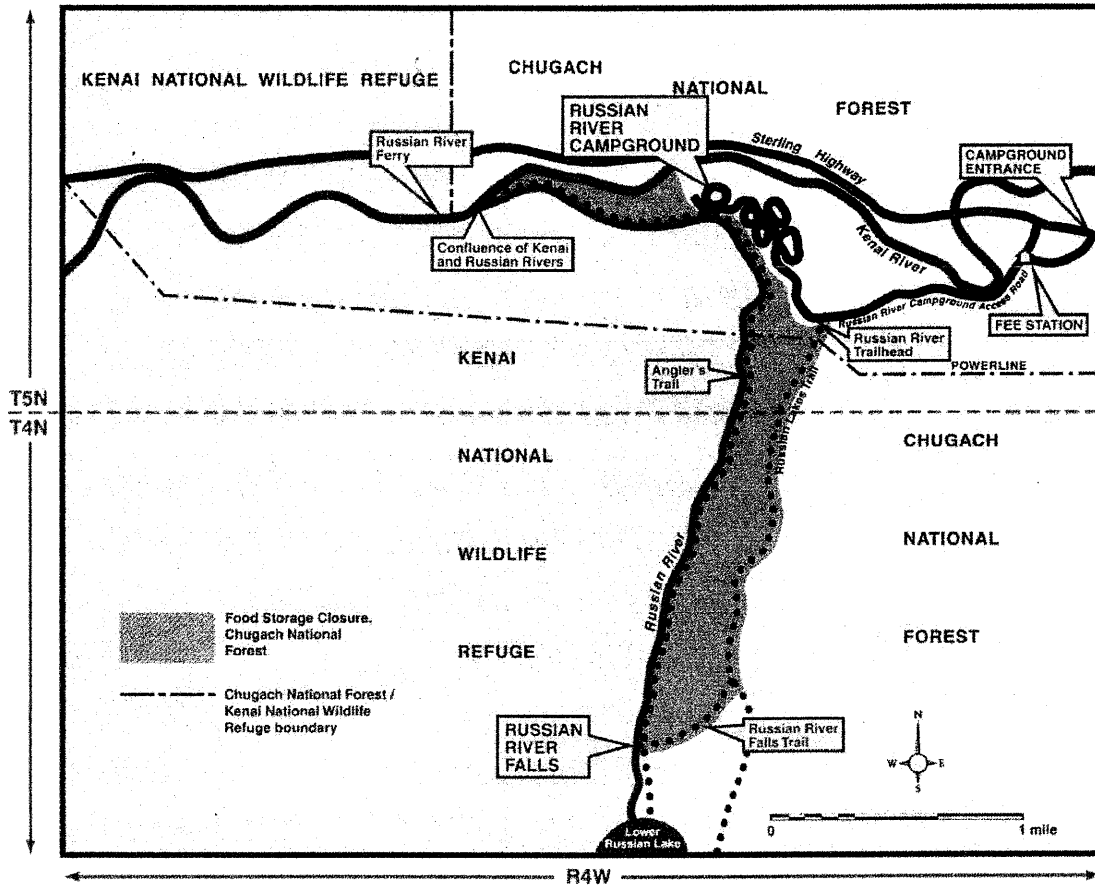
Executed in Anchorage, Alaska, this Fifth day of April 2010.

Penalty:

Violations of these Prohibitions are punishable by a fine of not more than \$5,000 for an individual or \$10,000 for an organization, or imprisonment for not more than six months or both. [16 U.S.C. 551, and 18 U.S.C. 3559 and 3571]

Exhibit A

All National Forest System land along the Kenai and Russian River and along the Russian River Trail, as shown in the gray shaded area on the Exhibit B Map. This area is within or partially within Sections 33 thru 35, T5N, R4W; Sections 4 and 9, T4N, R4W, SM.





United States Department of the Interior

FISH AND WILDLIFE SERVICE
Kenai National Wildlife Refuge
P.O. Box 2139
Soldotna, AK 99669

IN REPLY REFER TO:

TEMPORARY RESTRICTION ORDER

ISSUED: May 7, 2010

Kenai National Wildlife Refuge
Soldotna, Alaska

AUTHORITY: 50 CFR 36.42(f)

To reduce the likelihood of negative bear and human encounters, and risk of harm to people and bears, the following restriction is put in place as of 12:00am on 05/15/2010:

- 1) On all lands and waters within $\frac{1}{4}$ mile of the Russian and Kenai Rivers, extending from the Russian River Falls downstream to the confluence of the Kenai River, then proceeding downriver on the mainstream Kenai River to the crossing of the powerline:
 - a. all food, beverage, garbage and all equipment used to transport or store these items (for example, coolers and backpacks) must be locked in a hard-sided vehicle or camper, in a commercially produced bear resistant container, or within immediate grasp which means within 3 feet of the person at all times.
 - b. all lawfully retained fish must be locked in a hard-sided vehicle or camper, in a commercially produced bear resistant container, or closely attended which means within 12 feet of the person.
 - c. Pets must be kept on a leash no greater than 6 feet in length.

This temporary restriction will remain in effect until 12:00 pm October 1, 2010, unless extended, or rescinded prior to that time by the Refuge Manager.

Exempted people:

- (1) Any Federal, State, or local officer, or member of an organized rescue or fire fighting force in the performance of an official duty;
- (2) Any Federal, State or local law enforcement officer in the performance of an official duty.
- (3) Any person with permit specifically authorizing the otherwise prohibited act or omission.

Questions regarding this temporary restrictions order should be directed to the Kenai National Wildlife Refuge, Janet Schmidt at (907) 262-7021 or janet_schmidt@fws.gov.

Andy Loranger

Andy Loranger
Refuge Manager
Kenai National Wildlife Refuge

7 MAY 2010

Date