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Economic Comparisons of Commercial and Sport Fisheries: Measures, Things to Keep in Mind, and Potential Misuses

Prepared for
Cook Inlet Salmon Task Force
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Gunnar Knapp
Professor of Economics
Institute of Social and Economic Research
University of Alaska Anchorage
907-786-7717
Gunnar.Knapp@uaa.alaska.edu

Who I Am and Why I am Testifying

- I am a professor of economics at the UAA Institute of Social and Economic Research (ISER). I've been studying economic issues related to Alaska fisheries for many years. I also teach a course at UAA on the Alaska economy, and will be teaching a new online course (beginning September 2008) on "An Introduction to Fisheries Economics and Markets."
- I'm currently engaged in a research project (funded by the Alaska Sea Grant program) on what kinds of economic information exists and does not exist for Alaska's commercial, sport and subsistence fisheries.
- I'm testifying today because Rep. Craig Johnson, co-chair of the Task Force, asked me to testify and provide the task force some background information about what kinds of economic data are available for Cook Inlet salmon fisheries and what they mean.
- I'll testify again next week in Wasilla about "Economic Impacts and Net Economic Value of Cook Inlet Commercial and Sport Salmon Fisheries: What We Know and What We Don't Know."
- I'm available to assist the Task Force over the next few months in providing additional economic information or data if it would be helpful to you.
- I'm not taking any position on any of the issues which the Task Force is addressing.

Commercial and Sport Fisheries
What They Produce and Who the Consumers and Producers Are

	Commercial fisheries	Sport fisheries
What the fishery produces	Fish	Angling experience Aesthetics Fishing Catching fish Fish
Consumers	Fish consumers	Sport fishermen
Producers	Commercial fishermen Processors Fish transportation industries Distributors Retailers Restaurants	Independent anglers Charter operators Lodges Passenger transportation industries
Production measures	Number of fish	Number of fishing trips Number of fishing days Number of fish

How can we measure the economic contributions of a fishery?

	Economic impact	Net economic value
Definition	How the fishery affects the economy	What people would be "willing to pay" for what the fishery produces, minus the costs of production

Examples of measures	Number of jobs
	$ of income
	$ of tax revenue
		$ of net value

How hard is it to understand the concept?	Relatively easy	Relatively hard
How hard is it to calculate the measures?	Relatively easy	Relatively hard
How much data do we have?	Some	Less

How economists define "value" . . .

- The value of a product or experience is what someone would be willing to pay for it—regardless of whether they actually do pay for it.

HYPOTHETICAL EXAMPLES:

- The value of my beat-up old car is $2300, because that's what I could sell it for
- The value of a ticket to the Elton John concert in Anchorage is $500 because that's what some people would be willing to pay for a ticket, even if the official ticket price is $65*
- The value of a day of cross-country skiing at Kincaid Park in Anchorage is probably at least $20, even though people can ski there for free—because that's what people pay for that kind of skiing in other places

**I made these Elton John concert prices up for the purposes of the example. I have no idea what the actual prices were or what people would have been willing to pay for tickets!*

"Total Value" vs. "Net Value"

- Total value is consumers' total willingness to pay.
- Net value is consumers' total willingness to pay minus the cost of producing the product or experience.

- Economists often argue that net value is the most useful and important measure of the economic contribution of an industry—for the same reason they argue that profits are a more useful measure of how a business is doing than gross revenues.

Contrasting "Economic Impact" and "Net Economic Value"
Effect of Using More Workers

Measure	Effect of more workers	Change in the measure
Economic impacts	Increases number of jobs Increases wage income	Increases economic impact
Net value	Increases costs	Reduces net value

Note that "greater economic impact" doesn't necessarily mean greater net economic value. It might mean less net economic value.

More broadly, our public policy goal shouldn't necessarily to maximize economic examples. For example, suppose we are building a new road. We could maximize economic impacts such as employment by requiring that the road be built with manual labor (pickaxes and shovels and wheelbarrows) rather than bulldozers. But that might not be the best choice from other perspectives, such as getting the cheapest or best-constructed road.

Here is a simplified hypothetical example of how we might calculate "net value" for a sport fishing day. One thing that makes it difficult is that we can't directly observe an angler's "willingness to pay" for a sport fishing day. Economists have ways of estimating willingness to pay, but they require a lot of data and aren't all that precise.

Hypothetical Net Value Calculation for a Sport Fishing Day

		Costs and Revenues	Net value	Are data collected on a regular basis?
Angler	Angler's willingness to pay	$600		E
	Angler's payment to gas station	$50		No*
	Angler's payment for guide service	$250		No*
	Angler's net value		$300	
Gas Station	Gas station revenue	$50		
	Gas station costs	$40		No
	Gas station net value		$10	
Guide service	Guide service revenue	$250		
	Guide service costs	$100		No
	Guide service net value		$150	
Total			$460	

E: Can't be observed--can only be estimated

*ADFG has a study underway which is intended as the first of a regular data collection effort.

Note: This simple example doesn't adjust for what portion of value may be going to non-resident anglers or guides.

Here is a simplified hypothetical example of how we might calculate "net value" for a commercially caught fish. One thing that makes it difficult is that we can't directly observe a consumer's "willingness to pay" for a fish. But in general that's less of an issue for commercial fisheries, partly because consumers pay for the fish, and partly because most of the consumers are non-residents.

Hypothetical Net Value Calculation for a Commercially Caught Fish

		Costs and Revenues	Net value	Are data collected on a regular basis?
Consumer	Consumer's willingness to pay	$6.00		E
	Consumer's payment to store	$5.00		No
	Consumer net value		$1.00	
Store	Store's revenue	$5.00		No
	Store's payment to processor	$2.40		Yes
	Store's other costs	$2.00		No
	Store's net value		$0.60	
Processor	Processor revenue	$2.40		
	Processor payment to fisherman	$1.50		Yes
	Processor's other costs	$0.60		No
	Processor net value		$0.30	
Fisherman	Fisherman revenue	$1.50		
	Fisherman costs	$1.00		No
	Fisherman net value		$0.50	
Net value			$2.40	

E: Can't be observed--can only be estimated

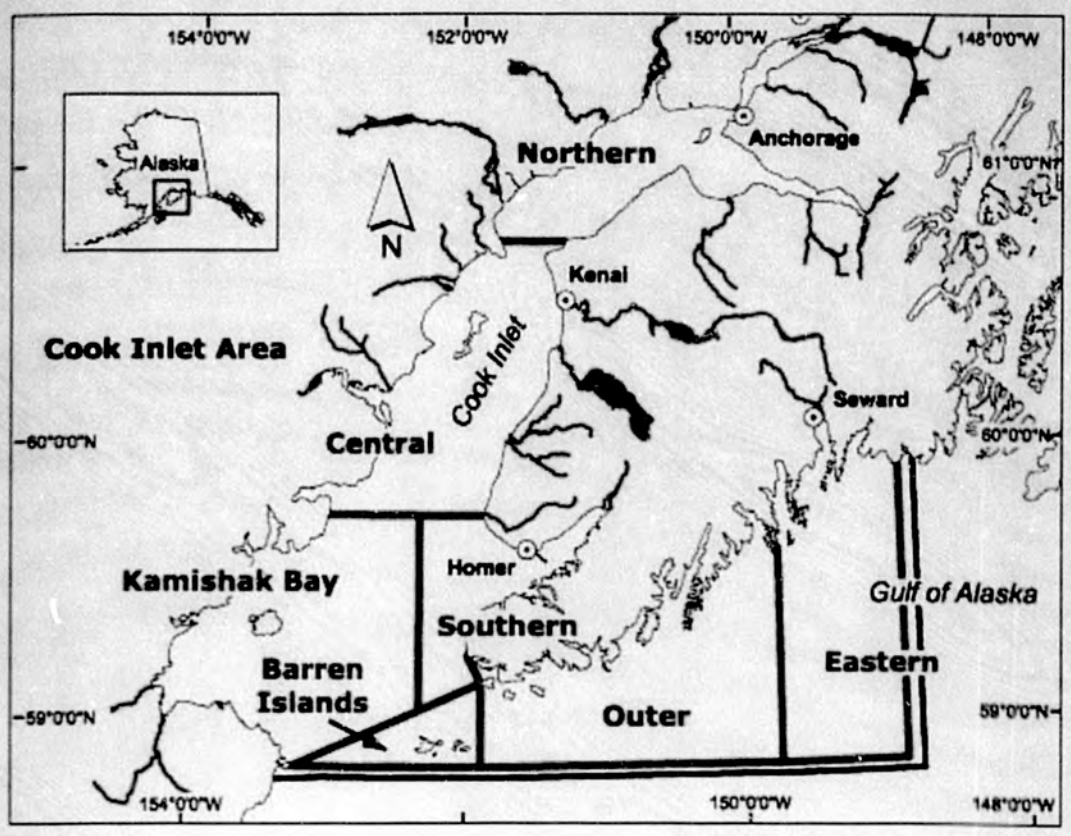
Note: This simple example doesn't adjust for what portion of value may be going to non-resident consumers, stores, processors or fishermen.

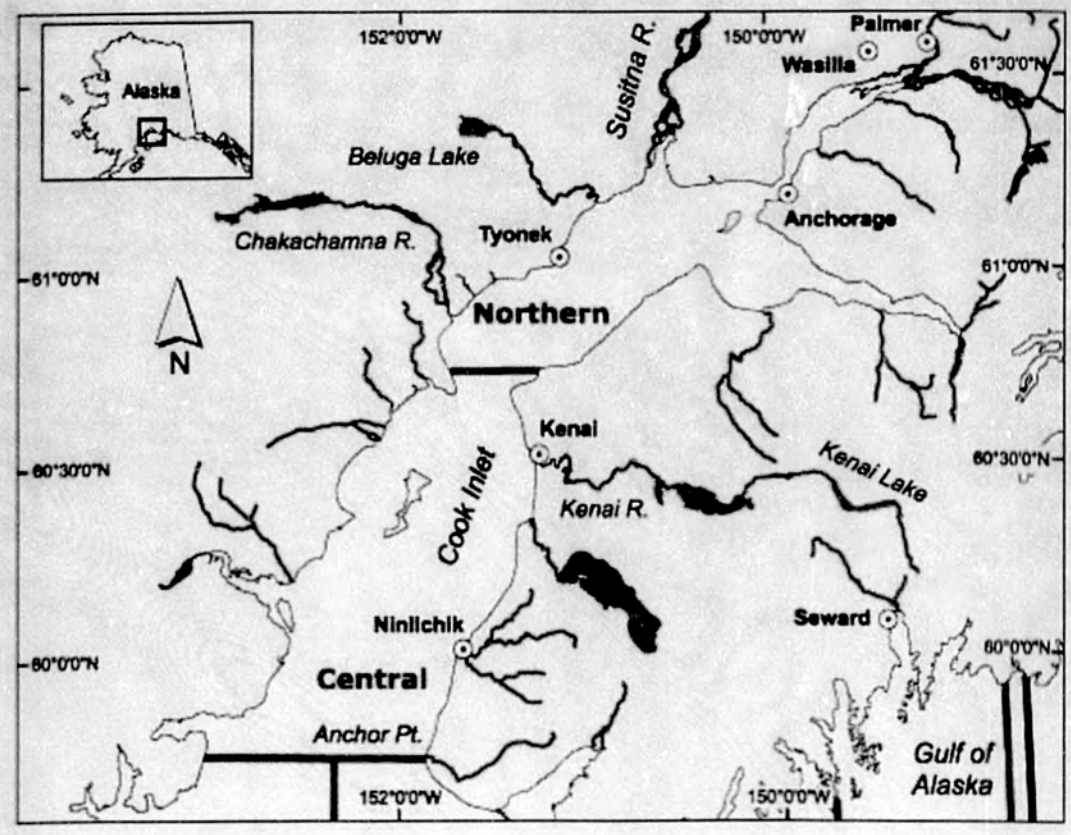
Here are some important things to keep in mind when thinking about economic impacts and net values of commercial and sport fisheries, and using estimates that exist for what these impacts and values are:

- Not all economic impacts or benefits go to residents.
- You may not be interested in all economic impacts or benefits.
- How fisheries are managed affects their economic impacts and value
- Public investments affect fisheries' economic impacts and value
- Even if catches and allocations stay the same, economic impacts and value can change significantly from year to year
- Economic impacts and value aren't necessarily proportional to fish catches
- The effect of catching one more fish on economic impacts and value isn't necessarily the same as average impact and value

Comparing Commercial and Sport Fishing Economic Impacts and Values
How to Misuse Economics

- Compare economic values with economic impacts
- Compare complete measures of impact and value with incomplete measures of impact and value
- Cherry-pick high or low years to characterize the impact or value of fisheries
- Present economic information that isn't relevant to the policy issue under consideration
- Use average values as economic effects of marginal changes in catches
- Present irrelevant information about economic impacts and values in other areas
- Overstate the accuracy of estimated impacts or values


154°0'0"W
152°0'0"W
150°0'0"W
148°0'0"W
Alaska
N
Northern
Anchorage
61°0'0"N
Kenai
Cook Inlet Area
Cook Inlet
Seward
60°0'0"N
Central
Homer
Kamishak Bay
Gulf of Alaska
Southern
Eastern
Barren Islands
Outer
59°0'0"N


Alaska
152°0'0"W
150°0'0"W
Susitna R.
Palmer
Wasilla
61°30'0"N
Beluga Lake
Anchorage
Chakachamna R.
Tyonek
61°0'0"N
Northern
N
Kenai
60°30'0"N
Cook Inlet
Kenai R.
Kenai Lake
Seward
Nikilichik
60°0'0"N
Central
Anchor Pt.
Gulf of Alaska

May 22, 2008

Joint Legislative Cook Inlet Salmon Task Force
State of Alaska

Committee Members:

I was unable to attend your meeting at the Soldotna Sports Center on May 22, 2008 as I have a bad case of the flu. But, I do wish to offer testimony to the committee and hope that this will be an acceptable alternative based upon my illness.

The task force was formed to hear the concerns of upper Cook Inlet Salmon users about inequitable apportionment of the salmon resources. But, Kenai Peninsula residents have concerns also. We hope you can incorporate our concerns into your consideration of possible remedies.

I firmly believe that all fish and wildlife resources should be managed by "Professional" biologists. When they refuse to do their jobs, or are swayed by political influences, then the Legislature needs to step in and dictate formal direction for them. The very worst option is to apportion these resources from the ballot box by referendum(s). The State of Alaska Constitution has numerous citations that should be strictly adhered to. Specifically:

In Section 1.23 Resident Preference, the Constitution allows preference to Alaskan residents over non-residents.

In Section 8.1 Statement of Policy, the Constitution makes its' resources available for MAXIMUM use consistent with the public interest.

In Section 8.2 General Authority, the Constitution requires the Legislature to make sure all natural resources are available for the MAXIMUM benefit of its people.

In Sections 8.3 and 8.4 the Constitution provides for common and beneficial users of the resources.

In Section 8.15 No Exclusive Right of Fishery, the Constitution specifically does not allow any exclusive right to the fishery resources.

So, what are my, and fellow Kenai Peninsula residents, concerns? Somehow, the commercial salmon fishery has slowly swung into an exclusive fishery. The rationale seems to hinge on "over escapement" into spawning areas. My question is this – How did the salmon fisheries manage to survive before the arrival of professional biologists? It seems that we must have numerous back to back emergency openings to curb this "over escapement" into rivers. These openings were to the detriment of Alaskan dip netters on the very last weekend of the season last year, to the detriment of resident bank fishermen (some who can only fish on weekends), to the dismay of thousands of tourists who spend a great deal of money to fish on the Kenai River, and to the loss of future tourism when the fishermen return home and report their experiences of barren rivers over several days until a few fish are allowed into the river for the non-commercial fishing interests..

I, and many others, closely monitor the local commercial fishing recording. We do this to determine whether we will have a "good, fair or bad fishing day." When we dial up this recording and listen to a recording from the commercial fisheries biologist paraphrased to say the following: "we will not be extending the emergency opening at the end of this fishing period as we must let some fish into the river or we will have a riot on our hands." This apparent bias to commercial fishing interests totally violates all of the Constitutional citations given above. He needs to be asked why there are more "emergency openings on weekends when working Alaskans have an opportunity to fish. He needs to be asked why an extra effort can not be made to ensure that Alaskan dip netters have a fairly good chance of harvesting their fish – especially this year with the high cost of fuel to travel to the Kenai Peninsula. My guess is that he has absolutely no concerns whether Alaskan sportsmen have any allocation at all. He also apparently does not care if the local tourism suffers as a result of his back-to-back emergency openings. His only concern is to appease the commercial fishing interests. If he can't eliminate his bias, then he should be replaced by someone who can do the job in accordance with the Constitution of Alaska.

You, as Legislators, have the Constitutional power to fix all of the allocation questions – once you have heard the evidence and testimony. You do not need to enter into the "Biology" – just provide direction to the biologists/agency as to what is expected. They can do their job. I hope that you will debunk the "over escapement" issue as part of your direction.

Alaskans deserve a fair share of the fishery resource – whether they dip net them, fish for them, or buy them from a commercial fisherman. Let's make that the priority and make sure that weekends are not a barren desert on the rivers.

Thank you for your time,

Len A. Malmquist
PO Box 3472
Soldotna, AK 99669
(907) 262-7375

COOK INLET SPORTFISHING CAUCUS
Robert C. Penney, Member
913 Keystone Drive, Soldotna
907-262-5782

I have been active in Kenai River sportfishing issues for over thirty years, as some of you know. I have no financial interests in sportfishing, but own a considerable interest in Trapper's Creek Smoking Company of Anchorage and Seattle. We are the largest processors of wild Kings in the state. We buy 800,000 to 1,000,000 pounds of Kings a year. We sell $300,000 of kippered Kings a month to Costco/Albertson's, etc.

We would be out of business without commercial fishing, so I'm not just a sportfish zealot, commercial fishing is very important to us all, <u>except</u> here in Cook Inlet; and Cook Inlet is different as you will learn. It is our state's population base.

We sincerely thank the legislature for creating this task force and you for your time serving on it. Your in depth review of Cook Inlet fishing issues is long overdue. The Board of Fisheries handling of conservation and allocation of Cook Inlet salmon stocks is broken; it needs fixing. That board answers to you, you created it. You, the legislature is the public's court of last resort, we need your help.

Since statehood, in most of our state, A,D,F & G and the Board have set exemplary standards for managing fishery stocks. They are respected nationwide. But there is never a valid reason to allow any stock to not achieve an escapement goal due to harvest interception of returning spawning stocks and, that is what is happening.

In this complex issue, I have three issues to touch on today – a. stock conservation, b. allocation, c. economic valuation.

a. <u>Stock conservation</u> – There is no excuse for not meeting escapement goals for Reds and Chums in the "Yentna and Susitna drainages". You will hear reasons for not enough escapement, like, Pike, beaver dams, faulty sonar counters, more studies needed, etc. Don't be deceived, they are all "red herrings"! I remember all of the same type of excuses in Washington and Oregon when they lost their wild runs. Everyone points a finger somewhere else and wants to keep fishing. Blame everyone else while the run dies off.

One simple thing <u>must</u> be done! Stop the interception! Curtail or halt any fishing that infringes on these mixed stock escapement goals. "The fish come first"! You must see that is the rule in Cook Inlet for the future.

b. <u>Allocation</u> – You have a member of your committee that knows more

about the battle in Cook Inlet than most any one else in the legislature. We understand he doesn't have a Cook Inlet drift permit any longer, but he is very biased on the side of commercial, as we well know and you will hear loud and clear. And that is interesting, as in his District Q, 62% of the households have sportfishing licenses versus only 3% with commercial permits. The same Motznik chart shows on average in Cook Inlet that 48.7% families have sportfishing licenses versus .8 of 1% with commercial permits. The public is the overwhelming majority; and, while quiet, we do vote our fishing rods.

The lopsided allocation of salmon stocks in Cook Inlet is the most unfair example of state management that I have seen in the 55 years we have lived here.

There are 750 set net permits that were issued in Cook Inlet by the Limited Entry commission. There are approximately 610 drift fleet permits. These 1,360 permits have historically been allocated, by the Board of Fisheries, 85% of the salmon harvest. 210,000 licensed anglers are allowed only 15%. The dip net fishery in the Kenai benefits tens of thousands of Alaskan families, yet, the commercial fought us vigorously to take that away at the Board of Fish meeting in February.

Kenai River Kings are the largest salmon in our nation. The ten largest Kings ever caught in the world came from the Kenai and, they all weighed over 90 pounds! Yet, these world class trophy fish are managed primarily as a commercial fishery, with a historic 60% of them taken in set nets. Now, what do you think any other state in the Union, any other nation in the world, would do if they had this wonderful resource? Take them in nets for 10% of their value? Not hardly!

Catching a Kenai King in a net is like cutting down a Redwood tree and using it for firewood. It ought to be against the law.

The population of Cook Inlet is growing. We demand a fairer share of this resource that is accessible on the state's highway system.

c. <u>Economic valuation</u> – Harvest of surplus salmon stocks above escapement goals is a decision made by people. These surplus stocks could be taken by pitchforks, nets, rod and reels or Hooligan nets. The same highest return that the state uses with leases for oil, gravel, extraction mining, or timber should be used by the Board of fish; the highest economic return. That conclusion, as proven by prior state studies here and on the West Coast, should be followed. The economics are overwhelming for the sportfishery, like 10-15 times as high a value to a sport caught fish. Why isn't the Board of Fish required to elevate that to the top of their harvest

criteria? Why isn't the highest economic return to our communities a mandated directive to fishery management of harvestable stocks?

You will hear many comments of, "Let the biologists manage the fishery." Except for under-escapement, we agree 100% with that. No question, the biologists should manage the stocks. But, after escapement goals are met, the allocation of harvest stocks is a political one made by people, not a biological one.

In Cook Inlet, the public has been treated 'politically' unfairly. We have a constitutional right to our share of the harvest.

Don't complain, unless you can give a solution, right? A three part solution would be:

1. Any time a Cook Inlet escapement goal is not reached for any specie, cause the Board of Fisheries to report an to an oversight committee of the legislature and explain why. You'll see, they will quickly change their harvest practices and achieve the escapement goals, Example: Have the Central District drift fleet use a "corridor", no more than one area-wide regular period per week in the Central District prior to July 20th. This would keep the drift fleet off the northern bound Sockeyes and have minimal effect on the overall commercial harvest. It will allow additional escapement of northern stocks.

2. Create with state, federal and sport license money, a fair and equitable buy back of the set net permits and sites in Cook Inlet. Compensate them with money or permits elsewhere. (This will also require changes in the limited entry regulations).

   Start such a buy out study right away. It would probably cost $60-90 thousand. Use the University of Alaska or some other group. Buying out the set nets and sites, at least on the "eastside beaches", and leaving that area as a sanctuary would:

   a. Protect and stop harvest of Kenai Kings.
   b. Allow the drift Fleet to make even more money.
   c. End the 'Fish Wars' in Cook Inlet by allowing the public a fairer share of Cook Inlet stocks.

3. Direct the Board of Fisheries to allocate the harvest of salmon stocks to a "50/50 split" in Cook Inlet. Why wouldn't that be fair? It would also create a big economic force in South-central by creating in Cook Inlet the largest sportfishery in our nation. You can do this, you are our "court of last resort". We ask you to be fair.

We thank each of sincerely for the time you are spending on this committee. If you can collectively solve this allocation battle, and that – quite simply – is what most of what this is, you will remember it as one of the most satisfying things you ever did while serving in the legislature.

Dear Members of the Joint Legislative Cook Inlet Salmon Task Force,

I just returned from attending the Joint Legislative Cook Inlet Salmon Task Force meeting at the Soldotna Sports Center. The reason you are receiving this letter is because you advertised for months that I would be able to verbally give you my thoughts regarding the fisheries escapement problems in Cook Inlets northern district. I came to your meeting expecting to share my thoughts but because the Task Force mismanaged the amount of time they had to listen to the public, you denied me the opportunity to voice my thoughts.
I signed up on your list to testify but was later not given the chance to even say a word.

Many people have been wondering for some time now what monumental issues this Task Force has been assigned to address. I listened to 3 hours of public testimony and I was not even allowed to testify myself. I lay this error at the feet of Task Force Chairman Representative Craig Johnson and his mismanagement of the time within the meeting. Many other peninsula residents were also told that they could not give testimony at this meeting, for this same reason.
All that waiting and then not being allowed to speak was frustrating enough but it was only the beginning of the huge numbers of swirling fisheries issues, which were raised at this meeting.

Many long time peninsula residents are familiar with the "Fish Wars", which have come and gone in the past on the peninsula but the people at this meeting have taken those issues and arguments and refined them greatly.

Basically the entire meeting was a 3 hour long reenactment of 30 years worth of Cook Inlet Fish Wars.

Most of the people there spent the entire 3 hours accusing each other for being the reason for any fisheries problem found within Cook Inlets fisheries. The issues varied but all focused in on a general claim from Yana and Sustina drainages, that someone is catching their northern district salmon!

Once the premise of the meeting was set, the responsible culprit was then to be searched out. This is the finger pointing part where everyone in the room claimed that since they are not "the problem", guess who that leaves to be the problem? The accusations then began flying with the resulting disclaimers coming from their targets. The MANY solution issues varied quite a bit.

Some of the issues and accusations were;

"A limited entry permit buy back". Just plant hatchery fish to make up for any escapement problems. Get rid of the pike in the lakes. Over-escapement. There is no such thing as "over-escapement".

We want fair public fisheries representation. 5% of Cook Inlets residents currently receive 80% of its salmon! 95% of Cook Inlets residents are upset because they cannot catch a salmon in rivers and streams!

80% of Cook Inlets northern bound salmon make it to their rivers! 80% of Cook Inlets northern bound salmon DO NOT make it to their rivers! We need more fisheries research to identify the reason for this northern district escapement problem. We need to "micro-chip" some northern bound returning salmon down beyond Kodiak Island and collect them to find the interception culprit.

The Commercial Fisheries Entry Commission should be given the job of removing some Cook Inlet permits. Gill netters are supposedly the pin within a type of "fisheries hand grenade", if you pull them out, the fishery will self destruct. Gill netters are the reason for the general lack of salmon within the northern district. Stocks are being over fished by all user groups. Alaska's fisheries must be allocated to generate a maximum benefit to all the states residents. The Fish & Game sonar's are mis-counting salmon.

Many northern district rivers and streams are failing to reach their required escapements. If everyone in the fresh water is required by law to log king salmon, why not also require everyone in the saltwater to do the same?

These were some of the major issues kicked about within this meeting. The point of the meeting was to basically let everyone know that Alaska's largest population center is extremely upset because they believe "someone" is wiping out their salmon before they even have a chance to reach their native rivers and streams. This Task Force appears to have been specifically designed to search out the offending culprit and eliminate them.

The commercial fishing industry at this meeting could defiantly feel the heat radiating from this Task Force.
The commercial industry basically got up and did a "song and dance" about how their industry is so much a basic part of the Cook Inlet fisheries equation, that if you were to remove or replace them, its fisheries would literary "self-destruct".
Their "fisheries self-destruction argument" focused in on the term "over-escapement" of salmon. The industries claim is that once you remove their gill nets, all Cook Inlets rivers and streams will automatically "over-escape" and result in the complete extinction of all Cook Inlet salmon. It is this commercial fisheries "over-escapement" term, which I would like to fully address.

There are some people out there who believe that the "salmon over-escapement" term is a real, scientific term, which is used to describe a real, scientific fact, however nothing could be farther from the truth. This "over-escapement" claim is the equivalent of making a Global Warming / Polar Bear connection.

The "bear claim" latches onto the Global Warming issue by placing an endangered species label on them, thus leaving lots of bears with no ice to live on at the North Pole.

This endangered species claim is the equivalent of making it illegal to kill a resident New Yorker after the Twin Towers were blown-up, rather than going after the people who planned the attack.
If there is a real global warming threat to our polar caps, that would be the threat issue to resolve.

Placing an endangered species label on a bear does not address that threat, it could only result in a ton of bears left doing the doggy paddle at the north pole in the future.
Global Warming / Polar Bear Claims are in fact being used to prevent petroleum development in northern Alaska. Rather than just attempting to convince people of the need to prevent this development, environmental extremists have attempted to do an "end run" around the forces promoting northern petroleum development.

The salmon "over-escapement term" is also being used to do an "end run" around Alaskan residents who desire to remove gill nets from the waters of Cook Inlet. The endangered species solution on bears claims to save them for now but it cannot prevent their extinction within a watery grave in the future.

The salmon "over-escapement term" claims to require commercial fisherman to remove "excess" salmon from our waters, thus preventing fisheries disaster, which would result in excess baby salmon and not enough food for them to all live on during the winter. Polar bears left swimming around hundreds of miles out in the Arctic Ocean is the obvious outcome of an endangered species label but the flawed thinking within the "over-escapement term" is much less obvious and requires a much closer look.

Over-Escapement Of Salmon

The problem is that sport, commercial and personal use fisheries may all have legitimate claims involving Cook Inlets fisheries but what good are those claims if the fisheries in question vaporize away like ALL of the other great salmon fisheries, which do not exist anymore?

The term "over-escapement" of salmon has long been spouted as a real and natural consequence of not allowing the commercial fishing industry to remove "perceived excess fish" from fisheries.
The "over-escapement" of salmon term is a "smoke-screen concept" used by the commercial fishing industry to confuse people who do not understand fisheries management. The term attempts to persuade the general public into believing whatever the commercial fishing industry wants it to believe.

Try asking someone what the real definition is of the over-escapement term. The answer you will no doubt receive is one which involves fisheries management allowing so many salmon to escape and spawn, that the resulting "excess baby salmon" consume all the zooplankton which lives in the lake, resulting in them all starving to death. The result of such illogical fisheries management leaves all fisheries users with zero salmon to catch in the future. This

is an extremely simplistic explanation to an extremely complex question and results in many people jumping to the flawed "over-escapement " conclusion.

Over-escapement theory may exist, but to claim that it exists today, anywhere in Cook Inlet, is like claiming that because the possibility of war exists in the world, that it in fact also exists today in Alaska.The commercial fishing industry sees a dead and rotting river salmon, as a waste if it escaped beyond their opinion of a maximum sustained yield definition.

In reality the death and rotting of a salmon is as much a part of the natural salmon cycle, as any other part but the commercial fishing industry has decided to surgically remove it from the salmon cycle story for "their own reasons". The commercial fishing industry uses the term "over escapement" to justify their minimum escapement desires, which just happen to also make them more money within salmon sales.

These spawned-out carcasses are a vital link between generations of salmon. Without these decomposing carcasses it is impossible for nursery lakes to maintain adequate nutrient levels. Minimum sockeye escapements force nutrient levels to decline as biogenic fertilization is removed from the salmon cycle. Decomposing carcasses from adult sockeye have the real ability to enhance zooplankton by increasing phytoplankton production, thus allowing the same lake to feed many, many more salmon fry than was historically believed. The term "over escapement" is not even an issue in any Alaska fishery because our freshwater lakes have the unique ability to expand their total salmon rearing capacity with increased biogenic fertilization. This expandable biogenic factor has completely escaped the commercial fisheries thought process.

Freshwater zooplankton enhancement also improves an adult salmons ocean survival by increasing the average size of out-going smolt salmon. Maximum biogenic fertilization, MBF in freshwater nursery lakes, like in a garden, produces the best environment for sustainable or extra phytoplankton. It is very necessary
to deliver maximum or even excess biogenic fertilization to freshwater phytoplankton.

Without this fertilization, nursery lakes will eventually become nutrient impoverished.
This impoverishment works to prevent increased phytoplankton, which works to prevent increased zooplankton, which works to prevent increased juveniles, which works to prevent increased returning adult salmon. The desire for increased returning adult salmon is therefore directly linked to providing MBF.
It is then just logical that system escapement goals will be at a maximum if salmon carcass fertilization goals are also at a maximum. Biogenic fertilization extends from rivers and lakes into inlets and oceans where these biogenic nutrients function at the start of the food chain to produce adult salmon within all stocks.

This chain of [escapement events] shows that minimal salmon escapement goals must result in minimal biogenic fertilization, which must result in reducing both juvenile and adult salmon survival.

Commercial fisheries "over-escapement logic" leaves out the fact that maximum salmon production can be expanded with additional biogenic fertilization. This expansion is possible the same way it is possible to also expand the production of a vegetable garden by replenishing the soils nutrients with fertilizers.

Increasing phytoplankton production within a freshwater lake has the ablity to increase the total number of salmon returning to that system. This is possible because the same area of a lake can sustain many more salmon fry, if that lake has received a maximum dose of biogenic fertilization from rotting salmon carcasses.

This is the plain truth which the commercial fishing industry refuses to accept, while instead claiming that excess salmon carcasses are a total waste and that there is no lack of nitrogen within our lakes, rivers or oceans.

The truth is that the Pacific Ocean is currently at an all time historic low with regard to nitrogen levels.
It is not coincidental that the Pacific Ocean is currently at a 50 year low in both salmon production and it's water nitrogen ratio. It is also not a coincidence that minimum escapement "sterilization commercial gillnetting" has been active for the past 50 years in Alaska.

This nitrogen reduction has effected the production of everything in our oceans. Low freshwater biogenic fertilization production results in low saltwater production of herring, shrimp, sandlances, candlefish, squid, anchovies and many other elements within the oceans food web. When these elements are reduced within the food web, that reduction will be felt by all salmon stocks.

Sterilization fisheries management operates off an incorrect assumption that nursery lakes cannot utilize additional salmon carcasses.
The truth is that maximum salmon production cannot be completely based on the square footage of a lake like the commercial fishing industry would have you believe. The truth is that an EXPANDABLE life cycle exists, thus the same lake can feed many more additional juvenile salmon if the proper amount of nutrients are added to the water.

The "one-size fits all" salmon management rearing philosophy of the commercial fishing industry, is a bankrupt philosophy. Sterilization fisheries management does produce maximum commercial fisheries profit, thus motivating persons benefiting from these profits to "honestly testify" that we need to "minimize salmon escapements in order to reach a maximum yield".

Unfortunately these individuals do not understand that their "one-size fits all" salmon management beliefs are flawed. These people do not understand that additional rotting salmon within a lake, allows that lake to expand its salmon product just like a vegetable garden.

When a person views thousands of salmon carcasses washing up on a shore, they should be able to see the truly amazing connection those carcasses have within our fisheries future. The "in-river or lake death" and rotting of a single salmon must be viewed as a gift to our fisheries future and NOT as a negative, past management error, which needs to be corrected.

In Conclusion

I have presented this information because of the many confused persons testifying at your May 23 meeting, concerning the use of the "over-escapement" term, here in Soldotna, Alaska. The meeting was more about "who the salmon culprit is, that is intercepting northern bound salmon" but I think that the real problem rests within fisheries managers who believe in sterilization gillnetting management.

The Bristol Bay fisheries environment allows millions and millions of salmon to "over-escape" into their rivers and streams, yet those systems produces many more salmon than Cook Inlet. I believe Cook Inlet's main problem is that we have way to many gill nets fishing its waters and escapement levels need to dramatically raised inlet wide.

Commercial fishermen are not the pin in the "fisheries hand-grenade", which prevents our fisheries from self-destruction. Alaska's salmon fisheries are not totally measured by the square footage of spawning area or freshwater lake habitat available to salmon. These fisheries are like expandable engines, which have their upper limits like everything but we are not even close to approaching those yield limits within Cook Inlet.

In conclusion I request that the State of Alaska allocate specific funds to finance research beyond Kodiak waters to discover the industry or culprit who is intercepting northern bound salmon. This could be easily done within a micro-chip tagging program with tracking chips inserted within the body of a salmon, west of Kodiak Island waters. Once these tags are then located within dead salmon, the true culprits will be identified and corrective actions may be taken.

Thank you for taking the time to read my thoughts on this important issue.
I do wish I could have given you this information within testimony.

Don Johnson
ccpwow@gci.net
P.O. Box 876
Soldotna, Alaska 99669
907 262 7893

Good evening chair and other task force members:

My name is Dennis E. Gease. I live at 36710 Virginia Drive, Kenai, Alaska.

I am Vice President and board member of The South Central Alaska Dip-netters Association. (S.C.A.D.A)

We're the new kids on the block. Last year we had over 20,000 permits issued , and with the state avg. of 4 in a family , we had over 80, 000 Alaskans involved in this very popular and growing fishery..

It appears to our members; our greatest concern is that we are not in any category of user groups when it comes to allocations of fish in the Cook Inlet…..

a) We're not commercial
b) We're not sport fish
c) We're not native subsistence

Some throw us in with sport fish, some throw us in with subsistence, and others say we don't belong out there at all

We believe the Alaskan constitution guarantees the residents of this state an equal share in their fishery resources.

When allocations were first established the personal use fishery was non-existent..

When allocations were first established, perhaps, the 80 percent of the fishery allocated to commercial fishing was fair, for that day and time…now however, less then 4 % of the users are allocated over 80% of the resource, resulting in less then 20% of the revenues generated in Cook Inlet.. I will repeat that

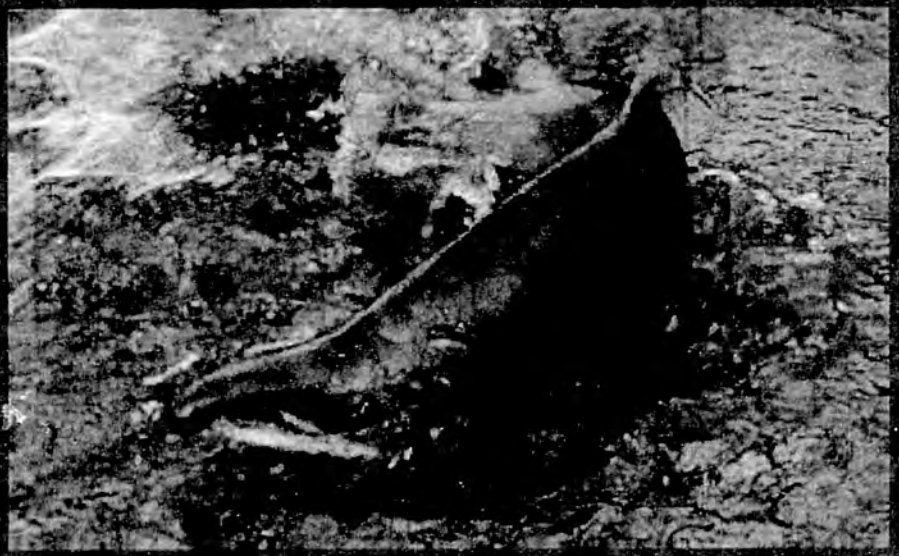
Now with the tremendous growth in sport fishing and the new expanding growth in the dip-netting fishery, the old allocation system is way out of balance and should be corrected.

I don't know if fish and game has the authority to do so… if they don't have the authority, or refuse to do so, then I respectfully ask, that this task force go back to the legislature and institute a fare and equitable allocation program for ALL the residents and citizens of this state …

I thank you for being here and for your willingness, time and effort to come out and listen to all sides of this very complex problem. I wish this task force the utmost success in this vital and important undertaking.

THANK YOU.

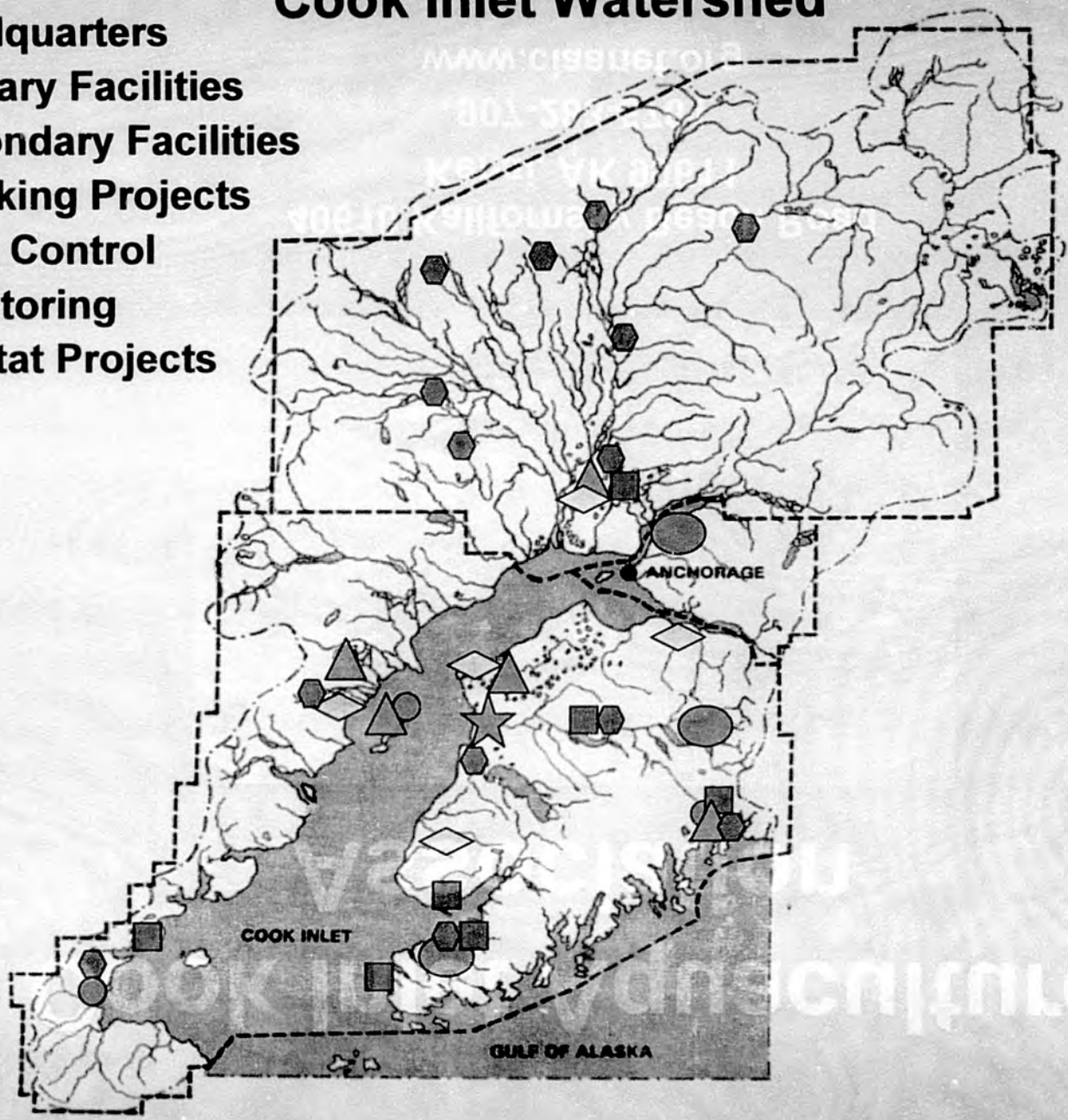
Cook Inlet Aquaculture Association

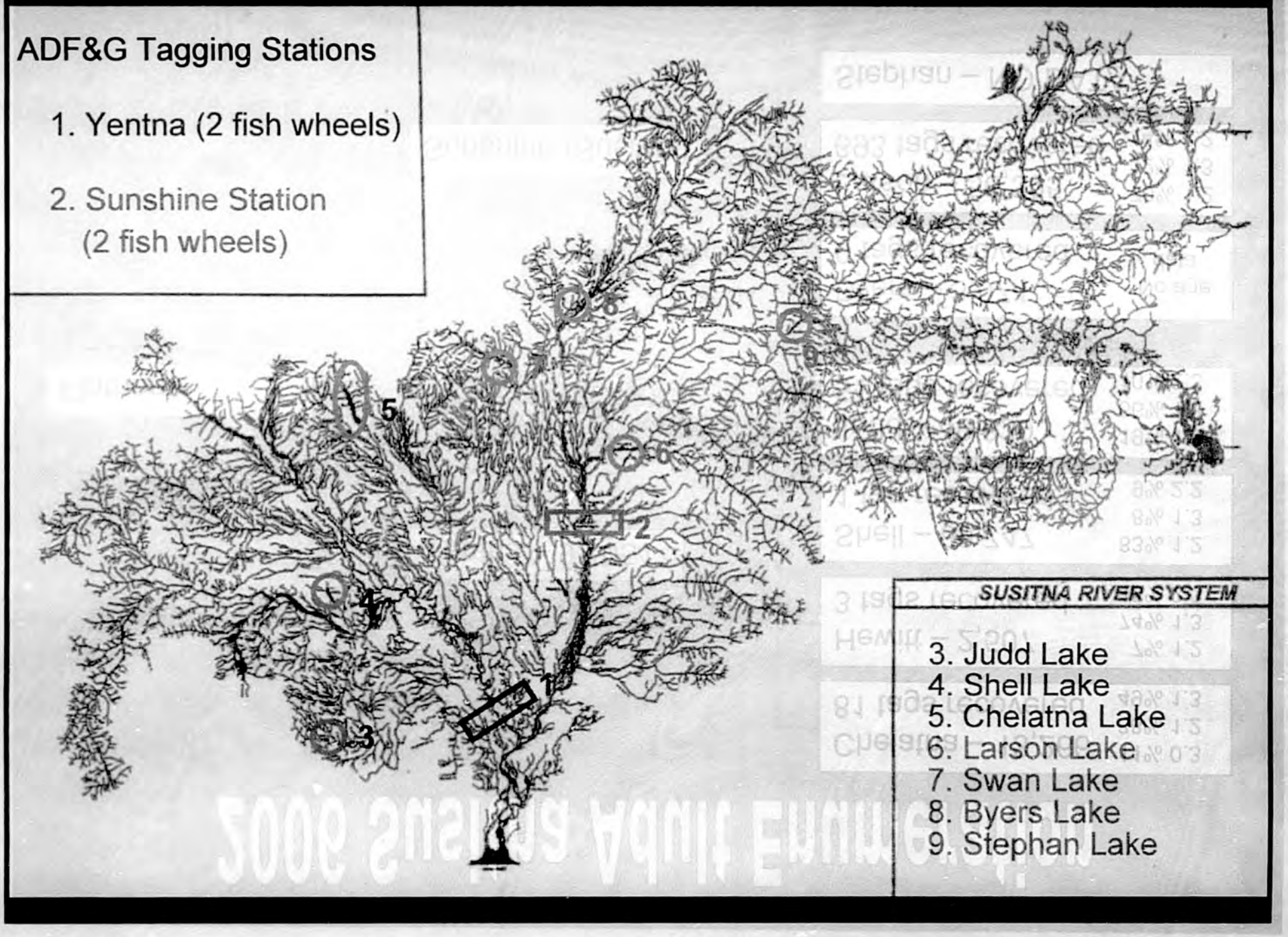


40610 Kalifornsky Beach Road
Kenai, AK 99611
907-283-5761
www.ciaanet.org

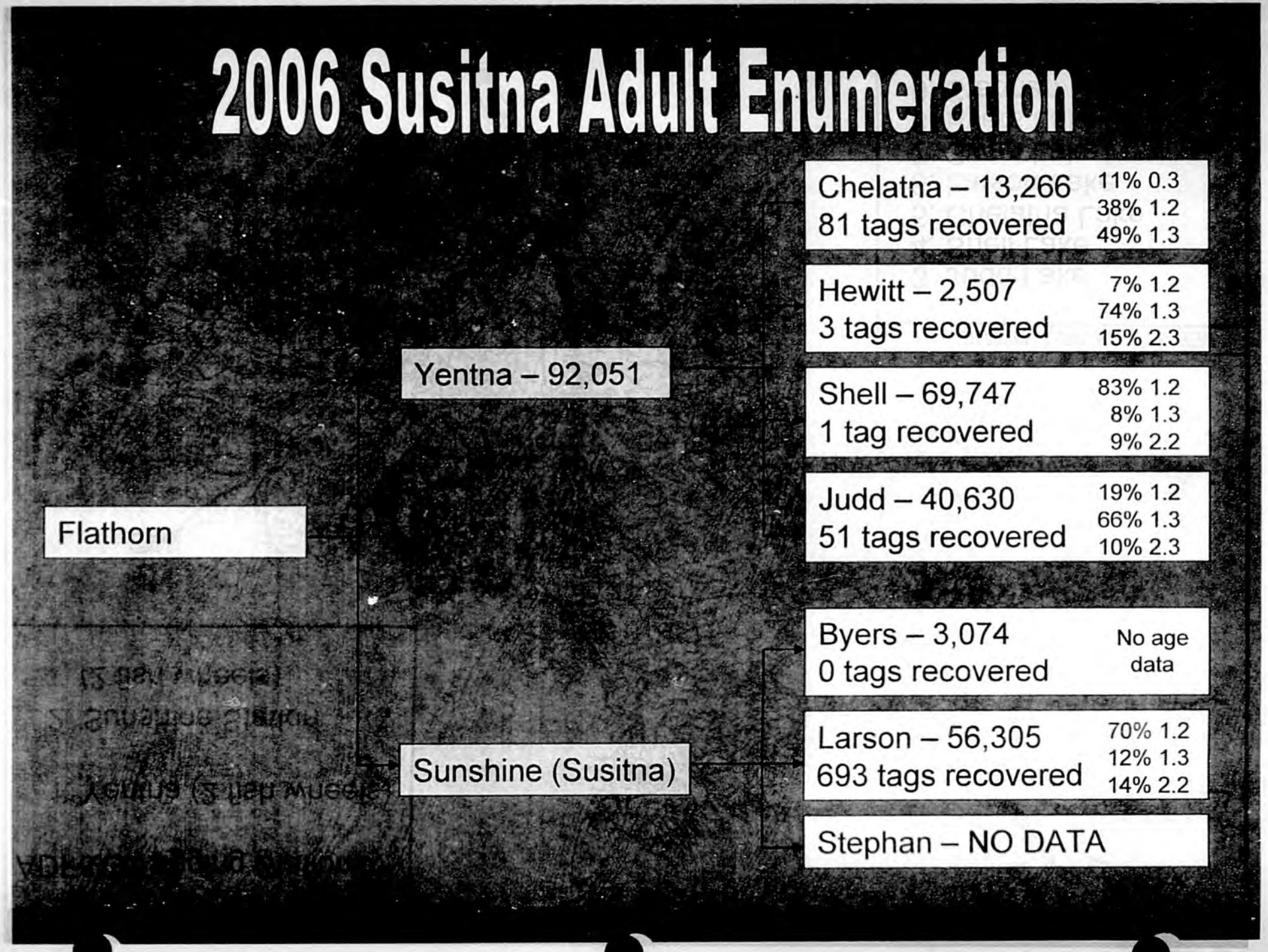
Cook Inlet Watershed

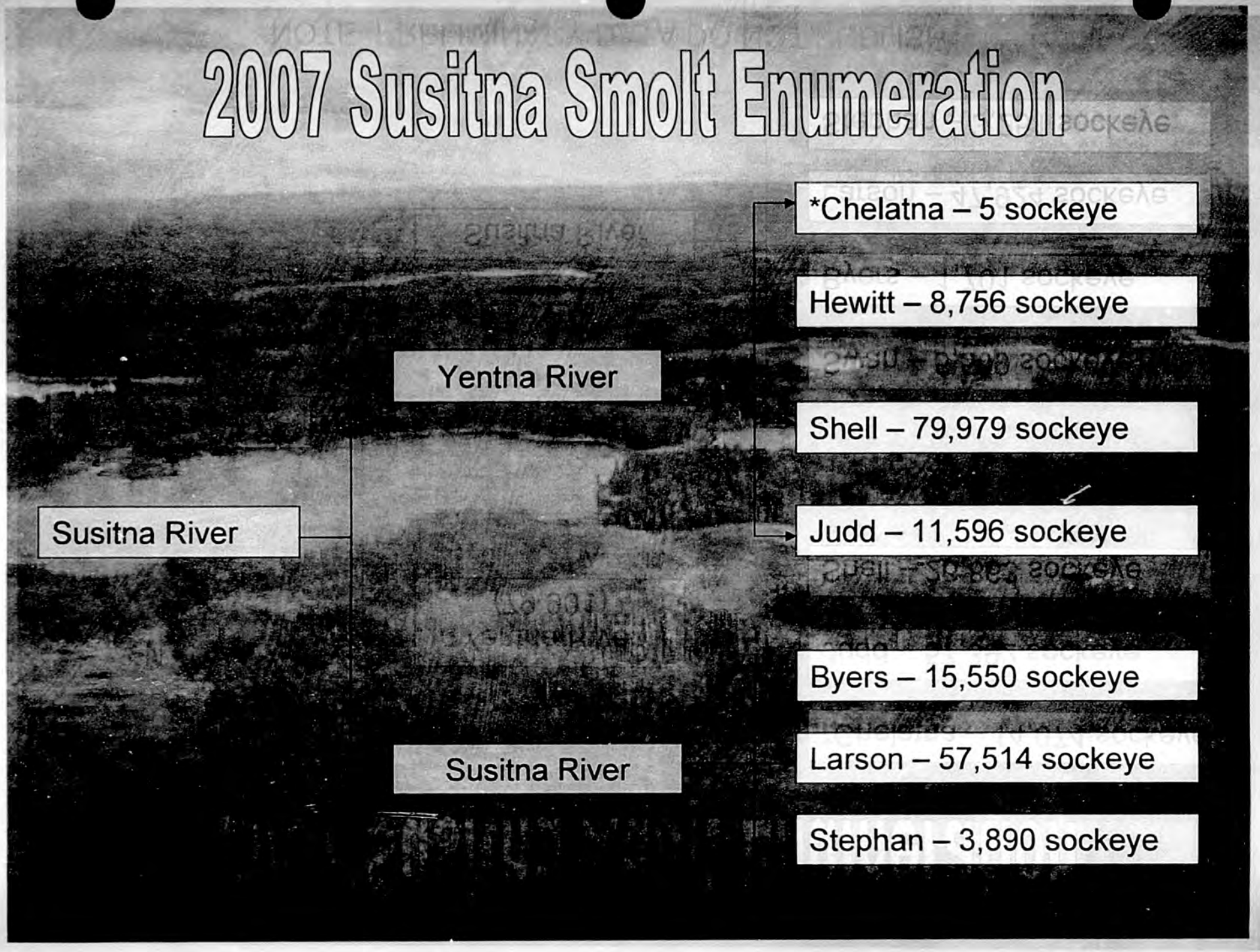
- Headquarters
- Primary Facilities
- Secondary Facilities
- Stocking Projects
- Flow Control
- Monitoring
- Habitat Projects

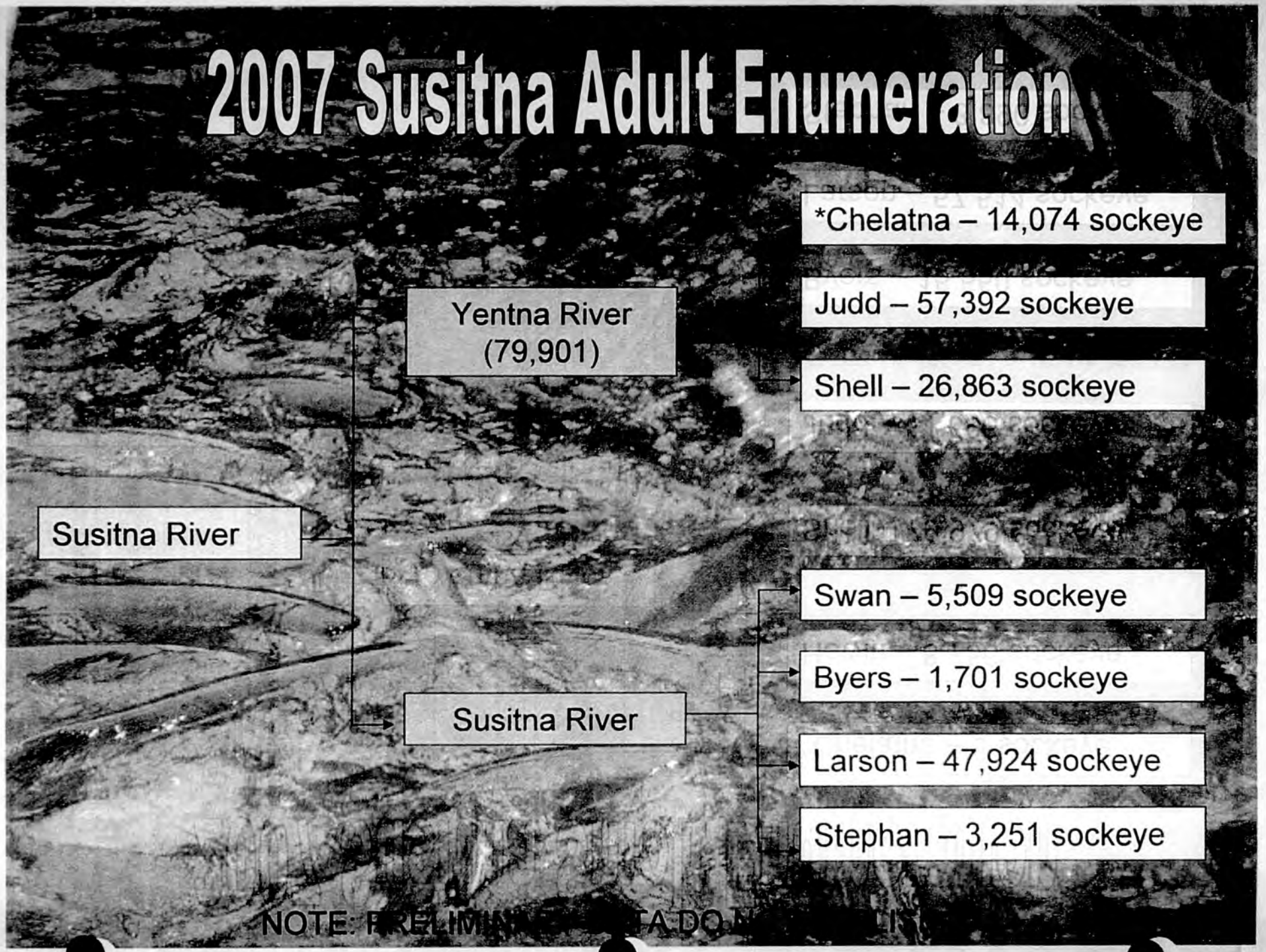



ADF&G Tagging Stations
1. Yentna (2 fish wheels)
2. Sunshine Station
(2 fish wheels)
SUSITNA RIVER SYSTEM
3. Judd Lake
4. Shell Lake
5. Chelatna Lake
6. Larson Lake
7. Swan Lake
8. Byers Lake
9. Stephan Lake

2006 Susitna Adult Enumeration




2007 Susitna Smolt Enumeration
*Chelatna – 5 sockeye
Hewitt – 8,756 sockeye
Yentna River
Shell – 79,979 sockeye
Susitna River
Judd – 11,596 sockeye
Byers – 15,550 sockeye
Susitna River
Larson – 57,514 sockeye
Stephan – 3,890 sockeye



NOTE: PRELIMINARY DATA DO

Larson Lake

area=177 ha volume=29 million m^3 max depth=46 m average depth=16 m

2005	2006	2007	2008	2009
9,955 Adult Sockeye	**XXXX Fry**	**57,514 Smolt** *Age 1 - 53,488 *Age 2 – 4,026 *Based on 4 year average 1985 -1988 93% Age 1 and 7% Age 2	Age 2 smolt	
BY 2004			Age 1 smolt	
	56,305 Adult Sockeye	**XXXX Fry**		Age 2 smolt
		47,924 Adult Sockeye	**XXXX Fry**	Age 1 smolt
			Adult Sockeye	**XXXX Fry**

LIMNOLOGY







CIAA monitors water quality and zooplankton populations at Bear Lake, Hidden Lake, Leisure Lake and 7 lakes in the Susitna River drainage.

Assures CIAA that release of salmon is compatible with the environment in to which they are being released.

SEASONAL BARRIERS

Shell Lake





Ensuring adult salmon can reach their spawning grounds is an important enhancement technique; CIAA biologists and technicians survey salmon streams to identify barriers to migration usually beaver dams. Small *modifications to seasonal migration barriers* can allow the fish to continue towards their spawning destination with minimal impact to the barriers.

Seasonal Migration Barrier



Seasonal Migration Barrier



Seasonal Migration Barrier



HABITAT RESTORATION

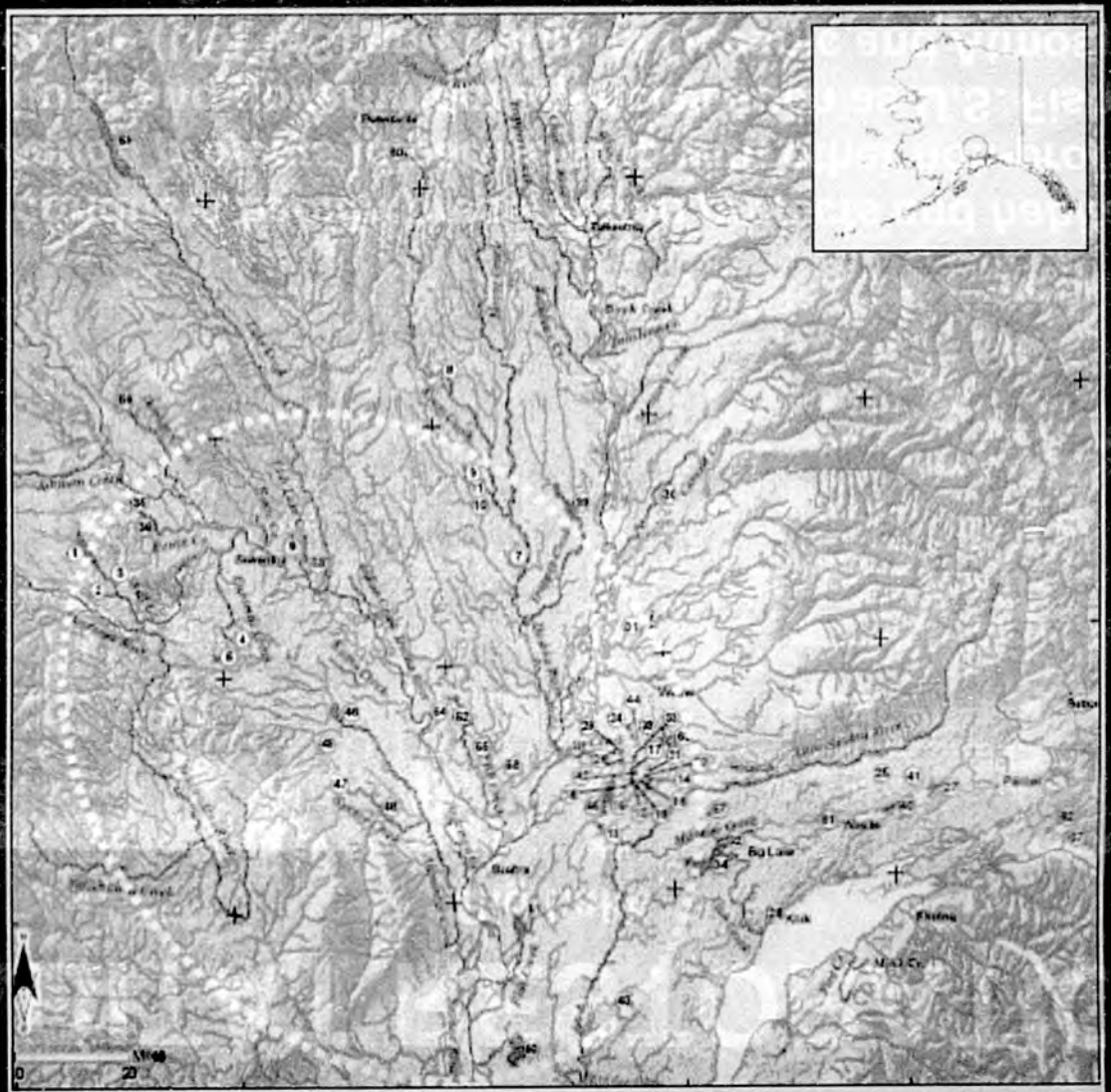
Big Lake





CIAA conducts *habitat preservation projects* and *habitat restoration projects* in partnership with other non-profit organizations and government agencies such as U.S. Fish and Wildlife Service (USFWS) and National Oceanic and Atmospheric Association (NOAA) in order to protect and preserve salmon habitat throughout the Cook Inlet watershed.

Northern Pike Lakes



General area within the Susitna Basin with the most ideal habitat for pike

FLOW CONTROL







Some streams are persistently low at the time when returning adult fish require greater water flow; a small *flow control structure* can allow some of the early spring water to be saved for release later in the season when the adult fish return.

FISH LADDERS

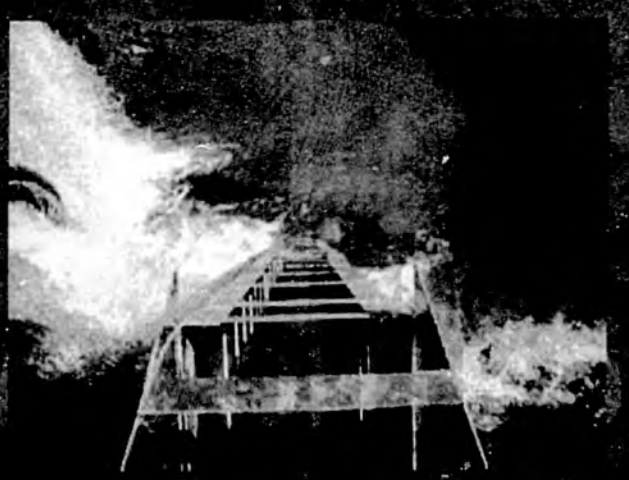
Cannery Creek













CIAA Facilities



Trail Lakes Hatchery



Eklutna Salmon Hatchery



Bear Lake/Creek Weir



Tutka Bay Lagoon Hatchery

SOCKEYE SALMON



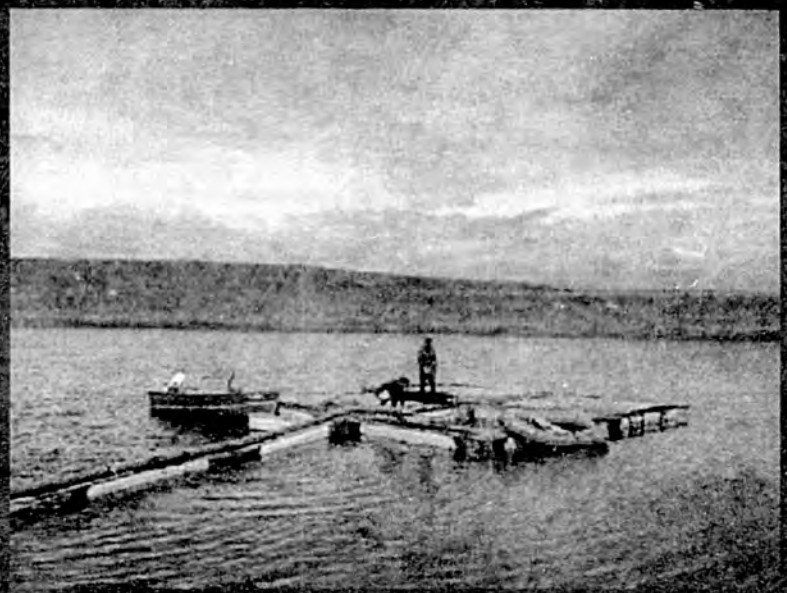




CIAA released 11,280,000
sockeye fry and smolt in 2007

COHO SALMON





CIAA released 860,000 coho fry and smolts in 2007



Proposed Findings

for the

Upper Cook Inlet

Joint Legislative

Salmon Task Force

Presented by

United Cook Inlet Drift Association



Proposed Findings

The Integrated Fishing Community of the Kenai Peninsula (page 3)

1. The Kenai Peninsula has a highly integrated seafood industry that is worth over a half a billion dollars annually.
2. Salmon harvests are a vital component of this highly integrated seafood industry of the Kenai Peninsula.
3. Alaskan families involved in this seafood industry depend on predictable and stable harvests of seafoods.
4. All Alaskans receive a reduced freight dividend on goods coming into South Central from the export of millions of pounds of seafood products.

Mat-Su Salmon Returns (page 4, 8-9)

5. Over 95% of the Chinook Salmon originating from the Mat-Su Area return to the Mat-Su Area.
6. On average, 95% of the Chum Salmon originating from the Mat-Su Area return to the Mat-Su Area.
7. Over 95% of the Pink Salmon originating from the Mat-Su Area return to the Mat-Su Area.
8. Over 85% of the Coho Salmon originating from the Mat-Su Area return to the Mat-Su Area.
9. Well over 50% of the Sockeye Salmon originating from the Mat-Su Area return to the Mat-Su Area.

Salmon Escapements in the Mat-Su (page 4, 10)

10. The Bendix Sonar Counter vastly underestimates the actual sockeye escapements into the Yentna River.
11. The DIDSON Sonar Counter demonstrates that escapement goals are being met.
12. The Fish Weirs, actual salmon passage counts, demonstrate that escapement goals are being met.
13. ADF&G Mark/Recapture escapements clearly indentify that sockeye salmon overescapements are occurring in the Yentna, Mat-Su Area.

Board of Fish

14. The Board of Fisheries (BOF) appropriately considered thousands of pages of written materials and public testimony before rendering its regulatory decisions.

ADF&G

15. The ADF&G, as well as the sport and commercial harvesters all understand the decisions rendered by the BOF at its 2008 meeting.
16. The ADF&G has taken upon itself to unilaterally change the management plans without new, significant inseason information.

Susitna River Sport Harvests (page 11)

17. The numbers of angler days of the Susitna River are decreasing while the sport harvests of salmon remain stable.

Chinook Harvests from Eastside Susitna, Westside Susitna, West Cook Inlet and Knik Arm management units 1979-2006 (pages 51,59)

18. Chinook harvests in these areas have remained stable since the early 1980's.
19. Chinook harvests in the Westside Susitna management units have significantly increased since the mid 1990's.

Coho Harvests – Knik Arm, Little Susitna River (pages 17,19)

20. During 2006 fishing guides and anglers reported above average catches of coho salmon throughout the season despite extremely high water levels which occurred near the peak of the salmon run.
21. Total sport harvest of coho salmon in Knik Arm streams (excluding Little Susitna River) was 27,300 fish in 2006, about 150% of the 2001-2005 mean of 17,600 fish (Table 16) Total harvest was driven by a record high harvest from Jim Creek. The 2006 harvest of 19,300 on Jim Creek was nearly double the 2001-2005 mean of 10,900 fish.

Pike – Presence and Distribution in the Mat-Su (pages 87, 121-125)

22. Northern Pike have both extensive and abundant distribution in the Mat-Su Area. These pike populations are highly predatory toward salmon populations.



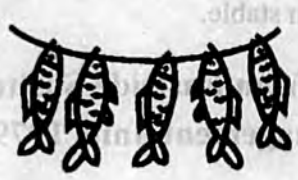




The Integrated Fishing Community of the Kenai Peninsula

The Kenai is richly endowed with abundant renewable and non-renewable natural resources. In many ways we are an island community much like Kodiak. The Kenai Peninsula has a huge coastal area that is one of the largest in the United States. The Kenai has some of the most productive fresh and salt water fish habitat areas in Alaska. This productive and diverse resource base provides one of the economic foundations for our communities. Since World War II there have been thousands of families that have made the Kenai home and have economically invested in the infrastructure necessary for the production, harvesting, processing and marketing of these abundant fishery resources. Along with the fishery infrastructure, the families of Alaska and the Kenai have made very large economic investments to build a society comprised of the Borough schools, roads, banks, electrical, medical and transportation infrastructures. We have encouraged many families and small business owners involved in support industries to locate and develop on the Kenai.







Fishing Activity of the Kenai

<u>Halibut:</u>

One out of every three halibut (35%) caught in the entire Pacific Ocean are brought to the docks of the Kenai Peninsula. In 2006, there were 17,762,774 million pounds of halibut delivered. These halibut generate in excess of $267,000,000 of economic activity. As families are paid for harvesting these halibut, they in turn spend these funds throughout the Kenai, Anchorage and Alaskan economy for the purchase of goods and services.

<u>Black Cod (Sablefish):</u>

Most Alaskans are not familiar with this premium quality fishery. In 2006 there were 9,975,098 pounds of sablefish delivered across the Kenai Peninsula docks. These deliveries represent 30% of the total landing generating in excess of $100,000,000 of economic activity. Again, as the harvesters are paid, these families in turn purchase goods and supplies throughout Alaska. The 3,000,000 - 4,000,000 pounds of bait needed to harvest the 27,000,000 pounds of halibut and black cod are purchased locally. This bait industry is integrated into the halibut and black cod production.

<u>Salmon:</u>

The Kenai Peninsula has the second largest sockeye salmon fishery in the world. In 2006 the landings of salmon came to 76,569,129 pounds representing over $200,000,000 in economic activity. Like halibut and sablefish landings, these funds provide for families, schools, roads, professional services and governments all supported by the payment of taxes.

All seafood products from the Kenai or its residents collectively amount to over 139,263,760 pounds of seafood worth over a half a billion dollars. The integration of vessels, fuel stations, docks, ice plants, processing facilities, crews, processing workers, truck drivers, packaging, marketing, management and recordkeeping add thousands of jobs for Alaskan families. Millions of dollars are spent in Anchorage, the Mat-Su and the Kenai by all these harvesters, processors, workers and their families. There are dozens of semi-truck loads of packaging, cardboard boxes and plastic materials purchased in Anchorage in order to prepare these seafood products for shipment to the lower 48.

These harvesters and infrastructure workers are volunteer firemen and paramedics; they sit on assemblies, city councils, school boards, planning commissions and hundreds of local civic groups.









Economic New Money and Indirect Benefits

As seafoods from Kenai residents and the Peninsula enter the larger USA and world economy, there is a transfer of money from their economy to our local economy. These resources bring new money to the Kenai much the same as oil and gas when they are sold outside of Alaska. This new money is much different than money that already exists in the Kenai/Alaskan economy. Economic health and wealth are created as we bring new money to our economy, as compared to trading the same dollar back and forth.

Every semi truck or ocean container that leaves the Kenai loaded with seafood represents a savings for all of us. It costs us all to ship empty semis or containers back to the Lower 48. Every **full** semi or container going south helps to reduce the transportation costs to get groceries and consumable goods delivered into Alaska. This reduced freight subsidy generated by the export of over 2,500 truckloads of seafood annually is an economic blessing to all Alaskan families and businesses.

This 100,000,000 pounds of seafood produced by the Kenai provides for over 125,000,000 meals for Alaskans and families across America. It takes a well-integrated seafood industry to provide this quantity and quality of seafoods.

Kenai Peninsula Borough and Resident Landings in 2006

Fishery Group	Number of Fishermen Who Fished	Number of Permits Fished	Total Pounds Landed	Estimated Ex-Vessel Earnings
Crab	11	13	1,504,821	$3,212,603
Halibut	674	677	17,762,774	$66,897,960
Herring	33	42	**	**
Other Finfish	0	0	0	$0
Other Groundfish	88	93	15,632,269	$6,016,077
Other Shellfish	31	32	**	**
Sablefish	251	260	9,975,098	$23,556,306
Salmon	1,260	1,261	76,569,129	$37,619,569
Unknown	0	0	**	**
Total	2,348	2,378	139,263,760	$139,225,621

**Numbers in table are estimated due to confidentiality

The Mat-Su Issue

Some folks in the Mat-Su have made two complaints. First: this area is not getting enough fish. Secondly: they want a larger economic slice of the salmon industry. In the last 5 - 10 years the following percentages of salmon have gone through the Central and Lower Inlet to the streams in the Mat-Su:



- 95% of the King Salmon from the Mat-Su have returned to the Mat-Su
- 95% of the Chum Salmon from the Mat-Su have returned to the Mat-Su
- 95% of the Pink Salmon from the Mat-Su have returned to the Mat-Su
- 85% of the Coho Salmon from the Mat-Su have returned to the Mat-Su
- 50% of the Sockeye Salmon from the Mat-Su have returned to the Mat-Su

Yentna River (sockeye) counts – Escapement Goal 90,000 – 160,000 Range

Method	2006	2007	
Bendix	**92,896**	79,901	
DIDSON	**160,462**	**130,000**	**Bold – within escapement goal range**
Fish Weirs	**126,218**	**96,589**	
Mark / Recapture	***417,750***	***247,000***	***Bold Italic – above escapement goal range***

*This weir count occurred on 5 of the 12 known sockeye salmon producing lakes in the Yentna Drainage.

State of Alaska

Commercial Fisheries Entry Commission

May 7, 2008

Kenai Peninsula Borough Residents with Landings Within the Kenai Peninsula Borough in 2006

Fishery Group	Number of Fishermen Who Fished	Number of Permits Fished	Total Pounds Landed	Estimated Gross Earnings
Crab	0	0	0	$0
Halibut	285	287	5,513,742	$21,086,768
Herring	13	13	**	**
Other Finfish	0	0	0	$0
Other Groundfish	33	35	3,130,057	$1,393,740
Other Shellfish	4	4	**	**
Sablefish	62	66	1,477,196	$3,446,391
Salmon	585	584	22,373,843	$12,241,229
Unknown	0	0	0	$0
Total	795	989	32,525,625	$38,204,934

Notes:

1. Due to the confidential nature of fish ticket information (AS 16.05.815) at least four people, permits, vessels, or processors must have recorded landings for CFEC to report pounds and gross earnings information. When fewer than four people, permits, vessels, or processors are represented, the pounds and estimated gross earnings are masked with "**". It is sometimes necessary to mask additional values so that masked pounds or gross earnings information cannot be calculated.

2. Residency in the Kenai Peninsula Borough is based on the residency permit holders claimed and the permanent address they provided on CFEC license forms. For the purposes of this report, persons who claimed to be Alaska residents and provided an address in the Kenai Peninsula Borough are treated as Borough residents. Persons claiming to be nonresidents but who provided an address within the Kenai Peninsula Borough are considered non-Borough residents. Any permit holder providing a permanent address outside the Kenai Peninsula Borough, regardless of Alaska residency, is considered a non-Borough resident. Communities considered within the Kenai Peninsula Borough are based upon the 2000 U.S. Census.

3. For the purposes of this report, the location of the landing is based on the port code indicated on the fish ticket. Landings are considered to occur within the Kenai Peninsula Borough for the following ports: Homer (HOM), Kasilof (KAS), Kenai (KEN), Nikishka or Nikiski (NIK), Ninilchik (NIN), Port Graham (GRM), Seldovia (SEL), Seward (SEW), and Soldotna (SOL). All other landings, including those with an unknown port (UNK), are considered outside the Borough.

4. Non-commercial catch, such as derby, research, confiscated, and personal use, is excluded from this table.

5. The number of fishermen who fished reflects the number of people who made at least one landing as a permit holder. This figure includes anyone who participated, including persons who later transferred away their permit, who later had their permit revoked, or who only held the permit temporarily due to an emergency transfer. In cases where a permit has been transferred, more than one person may have fished the same permit.

6. The number of permits fished reflects the number of permits attributed with at least one landing, including those that were later revoked.

7. The total pounds of fish landed on permits in each fishery group include both targeted and incidental catch. In the case of halibut landings, the pounds reflect net pounds of fish. For all other fisheries, the pounds reflect round pounds.

8. The estimated gross earnings of all fish landed on permits in each fishery group is derived from an ex-vessel price per pound developed by the CFEC Research section.

CFEC Project #2008107

State of Alaska
Commercial Fisheries Entry Commission

May 7, 2008

Kenai Peninsula Borough Residents with Landings Outside the Kenai Peninsula Borough in 2006

Fishery Group	Number of Fishermen Who Fished	Number of Permits Fished	Total Pounds Landed	Estimated Gross Earnings
Crab	11	13	1,504,821	$3,212,603
Halibut	77	77	1,899,458	$6,615,389
Herring	20	29	**	**
Other Finfish	0	0	0	$0
Other Groundfish	45	47	12,181,928	$4,453,788
Other Shellfish	3	4	**	**
Sablefish	32	35	1,187,137	$2,752,681
Salmon	260	262	46,056,919	$19,980,925
Unknown	0	0	0	$0
Total	362	467	80,224,557	$38,557,155

Notes:

1. Due to the confidential nature of fish ticket information (AS 16.05.815) at least four people, permits, vessels, or processors must have recorded landings for CFEC to report pounds and gross earnings information. When fewer than four people, permits, vessels, or processors are represented, the pounds and estimated gross earnings are masked with "**". It is sometimes necessary to mask additional values so that masked pounds or gross earnings information cannot be calculated.

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5. The number of fishermen who fished reflects the number of people who made at least one landing as a permit holder. This figure includes anyone who participated, including persons who later transferred away their permit, who later had their permit revoked, or who only held the permit temporarily due to an emergency transfer. In cases where a permit has been transferred, more than one person may have fished the same permit.

6. The number of permits fished reflects the number of permits attributed with at least one landing, including those that were later revoked.

7. The total pounds of fish landed on permits in each fishery group include both targeted and incidental catch. In the case of halibut landings, the pounds reflect net pounds of fish. For all other fisheries, the pounds reflect round pounds.

8. The estimated gross earnings of all fish landed on permits in each fishery group is derived from an ex-vessel price per pound developed by the CFEC Research section.

State of Alaska

Commercial Fisheries Entry Commission

May 7, 2008

Non-Borough Residents with Landings Within the Kenai Peninsula Borough in 2006

Fishery Group	Number of Fishermen Who Fished	Number of Permits Fished	Total Pounds Landed	Estimated Gross Earnings
Crab	0	0	0	$0
Halibut	312	313	10,349,574	$39,195,803
Herring	0	0	0	$0
Other Finfish	0	0	0	$0
Other Groundfish	10	11	320,284	$168,549
Other Shellfish	24	24	**	**
Sablefish	157	159	7,310,765	$17,357,234
Salmon	415	415	8,138,367	$5,397,415
Unknown	.	.	**	**
Total	749	922	26,513,578	$62,463,532

Notes:

1. Due to the confidential nature of fish ticket information (AS 16.05.815) at least four people, permits, vessels, or processors must have recorded landings for CFEC to report pounds and gross earnings information. When fewer than four people, permits, vessels, or processors are represented, the pounds and estimated gross earnings are masked with "**". It is sometimes necessary to mask additional values so that masked pounds or gross earnings information cannot be calculated.

2. Residency in the Kenai Peninsula Borough is based on the residency permit holders claimed and the permanent address they provided on CFEC license forms. For the purposes of this report, persons who claimed to be Alaska residents and provided an address in the Kenai Peninsula Borough are treated as Borough residents. Persons claiming to be nonresidents but who provided an address within the Kenai Peninsula Borough are considered non-Borough residents. Any permit holder providing a permanent address outside the Kenai Peninsula Borough, regardless of Alaska residency, is considered a non-Borough resident. Communities considered within the Kenai Peninsula Borough are based upon the 2000 U.S. Census.

3. For the purposes of this report, the location of the landing is based on the port code indicated on the fish ticket. Landings are considered to occur within the Kenai Peninsula Borough for the following ports: Homer (HOM), Kasilof (KAS), Kenai (KEN), Nikishka or Nikiski (NIK), Ninilchik (NIN), Port Graham (GRM), Seldovia (SEL), Seward (SEW), and Soldotna (SOL). All other landings, including those with an unknown port (UNK), are considered outside the Borough.

4. Non-commercial catch, such as derby, research, confiscated, and personal use, is excluded from this table.

5. The number of fishermen who fished reflects the number of people who made at least one landing as a permit holder. This figure includes anyone who participated, including persons who later transferred away their permit, who later had their permit revoked, or who only held the permit temporarily due to an emergency transfer. In cases where a permit has been transferred, more than one person may have fished the same permit.

6. The number of permits fished reflects the number of permits attributed with at least one landing, including those that were later revoked.

7. The total pounds of fish landed on permits in each fishery group include both targeted and incidental catch. In the case of halibut landings, the pounds reflect net pounds of fish. For all other fisheries, the pounds reflect round pounds.

8. The estimated gross earnings of all fish landed on permits in each fishery group is derived from an ex-vessel price per pound developed by the CFEC Research section.

CFEC Project #2008107

MARK-RECAPTURE POPULATION ESTIMATES OF COHO, PINK, AND CHUM SALMON RUNS TO UPPER COOK INLET IN 2002

By
T. Mark Willette
Robert DeCino
Nancy Gove

Regional Information Report No. 2A03-20

Alaska Department of Fish and Game
Commercial Fisheries Division
333 Raspberry Rd.
Anchorage, Alaska 99518-1599

June 2003

[1]The Regional Information Report Series was established in 1987 to provide an information access system for all unpublished divisional reports. These reports frequently serve diverse ad hoc informational purposes or archive basic uninterpreted data. To accommodate timely reporting of recently collected information, reports in this series undergo only limited internal review and may contain preliminary data; this information may be subsequently finalized and published in the formal literature. Consequently, these reports should not be cited without prior approval of the author or of the Commercial Fisheries Division.

ABSTRACT

This project estimated the total population sizes, escapements, and exploitation rates for coho, pink, and chum salmon returning to Upper Cook Inlet (UCI) in 2002 as a first step toward determining escapement levels needed to achieve sustained yields for these species. Mark-recapture techniques were used to estimate the total population sizes for each species returning to UCI as a whole. Salmon were tagged along a transect running from Anchor Point to the Red River delta on the west side of Cook Inlet during July and early August. Total population sizes for each species were estimated from recoveries of passive integrated transponder (PIT) tags in commercial fishery harvests. Recoveries of radio telemetry tags were used to estimate the total escapement of coho salmon into all UCI streams for comparison to the estimate derived from PIT tags. Radio telemetry tag data were also used to estimate coho salmon escapements into 33 streams and 5 areas around UCI. Our best PIT tag estimate of the total population size of coho salmon returning to UCI was 2.52 million (95% CI: 2.16-2.87 million). Given a commercial harvest of 0.25 million, the total escapement of coho salmon into all UCI streams was 2.27 million (95% CI: 1.91-2.62 million), and the exploitation rate in the commercial fishery was about 10%. Our radio tag estimate of the total escapement of coho salmon into all UCI streams was 1.36 million (95% CI: 0.98-1.96 million). Thus, our PIT tagging experiment estimated a population size for coho salmon entering UCI streams that was higher than the estimate obtained from radio tagging. Although, the 95% confidence intervals around the two estimates overlapped slightly, the z-test statistic indicated the two estimates were significantly different. Of the total coho salmon escapement into all UCI streams, 56% (0.76 million) returned to the Susitna and Little Susitna River drainages, 19% (0.26 million) returned to streams along the west side of UCI, 17% (0.24 million) returned to streams along Knik Arm, 5% (0.07 million) returned to streams along Turnagain Arm, and 3% (0.04 million) returned to streams on the Kenai Peninsula. However, these estimates for Turnagain Arm and Kenai Peninsula streams do not include the entire escapement, because we stopped tagging before the runs to these areas were complete. Our PIT tag estimate of the total population size of pink salmon returning to UCI was 21.28 million (95% CI: 1.60-40.96 million). However, this estimate was of questionable value due to its very low precision resulting from problems with tag recovery. Therefore, we estimated a maximum exploitation rate on pink salmon in the commercial fishery by simply summing escapements that were actually enumerated in 3 streams. Given a commercial harvest of 0.45 million, the maximum exploitation rate in the commercial fishery was about 12%. However, the actual exploitation rate must have been much lower, because we did not include escapements into numerous other streams around UCI. Our PIT tag estimate of the total population size of chum salmon returning to UCI was 3.88 million (95% CI: 3.30-4.47 million). Given a commercial harvest of 0.24 million, the total escapement of chum salmon into all UCI streams was 3.64 million (95% CI: 3.06-4.23 million), and the exploitation rate in the commercial fishery was about 6%. Despite uncertainty in our salmon population estimates, it is reasonable to conclude that exploitation rates on coho, pink, and chum salmon in the UCI commercial fishery were substantially below optimal rates in 2002.

KEY WORDS: Coho salmon, *Oncorhynchus kisutch*, pink salmon, *O. gorbuscha*, chum salmon, *O. keta*, mark-recapture, passive integrated transponder tags, radio telemetry tags, total population size, escapement, exploitation rate.

RC 83 - pg. 30 Committee "B"

Proposal 91: Susitna River Mark Recapture Study, 2006-2007

	Yentna Sonar		Weir Counts (Yentna Side)					Weir Counts (Susitna Side)				
Year	Bendix	Didson	Judd	Shell	Hewett	Chelatna	Total	Byers	Larson	Swan	Stephan	Total
2006	[redacted]	[redacted]	40,633	69,800	2,513	13,272	[redacted]	3,071	57,411			[redacted]
2007	[redacted]	[redacted]	58,134	26,784		11,671	[redacted]	1,707	47,819	5,489	4,120	[redacted]

Mark Recapture Estimates (2007 estimates are PRELIMINARY)

Year	River	Estimate	95% CI		Method
2006	Susitna	[redacted]	49,180	164,820	Pit tag
2006	Yentna	[redacted]	261,930	573,570	Pit tag (July 29 & later)
		[redacted]	252,000	391,000	Radio tags (entire year)
2007	Susitna	[redacted]			Radio tags (entire year)
	Yentna	[redacted]			Radio tags (entire year)

1977

Susitna River Sport Harvest, ~~1977~~-2006 SwHS

Approximate numbers

Year	# Resp.	Days	Chinook	Sockeye	Coho	Pink	Chum	Total
1977	2,577	76,101	3,581	5,177	9,379	26,783	1,611	46,531
1978	1,103	112,116	2,843	971	15,072	55,418	15,667	89,971
1979	1,988	115,808	6,910	1,586	12,893	12,516	4,027	37,932
1980	2,648	129,161	7,389	1,571	16,499	56,621	4,759	86,839
1981	1,726	87,843	6,944	1,283	9,391	8,660	4,207	30,485
1982	1,659	120,444	10,521	2,205	16,664	16,822	6,843	53,055
1983	1,781	119,385	12,211	4,057	8,096	4,531	5,034	33,929
1984	1,520	129,656	15,651	3,665	20,063	11,036	5,659	56,274
1985	1,338	124,781	16,353	2,072	15,747	2,868	2,303	39,343
1986	1,074	156,841	21,022	6,798	24,401	13,040	5,069	70,330
1987	1,519	148,194	20,691	4,093	17,510	3,676	3,259	49,229
1988	2,111	191,017	24,271	4,477	31,996	6,093	7,223	74,060
1989	3,698	184,606	28,539	3,819	31,941	3,237	4,458	71,994
1990	3,685	185,707	26,193	3,562	23,879	5,223	1,671	60,528
1991	3,719	211,814	29,958	4,517	36,987	2,318	2,141	75,921
1992	5,612	239,645	39,183	4,643	46,780	7,136	2,272	100,014
1993	5,149	232,253	43,804	6,129	40,535	4,501	1,602	96,571
1994	4,484	217,485	25,000	4,852	34,420	3,227	1,516	69,015
1995	3,065	156,421	14,005	5,596	34,668	2,634	3,825	60,728
1996	2,889	121,594	16,849	3,448	39,589	4,448	3,105	67,439
1997	2,889	132,570	18,607	8,728	16,728	3,141	3,719	50,923
1998	3,069	129,551	19,905	7,930	35,250	7,107	2,613	72,805
1999	3,483	212,815	29,468	9,504	42,563	3,464	3,362	88,361
2000	4,524	234,469	29,105	11,420	60,852	13,580	3,873	118,830
2001	3,658	198,792	27,372	12,430	45,525	4,724	3,619	93,670
2002	3,440	183,056	22,052	5,308	41,379	4,460	3,766	76,965
2003	3,100	181,886	24,534	11,394	34,725	2,224	3,201	76,078
2004	2,782	174,137	24,192	6,465	38,269	5,613	3,067	77,606
2005	2,483	162,906	24,632	4,105	36,223	3,156	2,665	70,781
2006	2,488	166,067	24,864	2,308	45,775	4,505	1,499	78,951
Ave.1977-1996		153,044	18,596	3,736	24,326	12,539	4,313	63,509
Ave 1997-2006		177,625	24,473	7,959	39,729	5,197	3,138	80,497

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1-7-10-(4) Blk.

by

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Harvest chinook

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

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

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

Chinook Harvests

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

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

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

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

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1-7-10 - (4) Bills. -

by

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Alaska Department of Fish and Game

Divisions of Sport Fish and Commercial Fisheries



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

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

Fishery Performance and Escapement in 2006 and 2007

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

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

KNIK ARM MANAGEMENT UNIT: OTHER COHO SALMON FISHERIES

Fishery Description

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

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

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

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

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

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

Fishery Performance and Escapement in 2006 and 2007

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

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

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

	Northern Cook Inlet Management Area[a]													
	Knik Arm Management Unit[b]		Eastside Susitna Management Unit		Westside Susitna Management Unit		West Cook Inlet Management Unit		Total		Southcentral Region		Statewide	
Year	Catch[c]	Harvest	Catch[c]	Harvest	Catch[c]	Harvest	Catch[c]	Harvest	Catch[c]	Harvest	Harvest	% NCIMA	Number	% NCIMA
1977		0				132		0		132	321	41.1	11,982	1.1
1978		0				316		0		316	767	41.2	12,520	2.5
1979		0				382		0		382	762	50.1	12,741	3.0
1980		0				232		0		232	1,358	17.1	17,000	1.4
1981		0				125		0		125	1,411	8.9	16,536	0.8
1982		0				607		0		607	1,707	35.6	18,964	3.2
1983		0				944		0		944	2,642	35.7	21,476	4.4
1984		0				1,821		0		1,821	4,424	41.2	18,641	9.8
1985		156				1,248		0		1,404	2,240	62.7	17,943	7.8
1986		458				1,519		0		1,977	2,894	68.3	21,890	9.0
1987		924				1,540		0		2,464	4,839	50.9	19,079	12.9
1988		364				2,818		291		3,473	3,598	96.5	23,440	14.8
1989		863				2,257		0		3,120	4,434	70.4	21,659	14.4
1990	2,593	754			14,465	2,088		0	17,058	2,842	3,655	77.8	15,985	17.8
1991	7,021	2,709			11,193	3,931		0	18,214	6,640	8,704	76.3	29,611	22.4
1992	7,097	2,605			13,828	2,777		0	20,925	5,382	7,314	73.6	18,616	28.9
1993	10,141	2,102	0	0	24,077	3,619	19	0	34,237	5,721	7,131	80.2	19,366	29.5
1994	2,816	1,328	0	0	5,436	2,556	18	9	8,270	3,893	5,800	67.1	25,558	15.2
1995	825	522	0	0	15,414	3,024	0	0	16,239	3,546	5,323	66.6	19,006	18.7
1996	12,220	4,021	368	11	17,657	3,902	0	0	30,245	7,934	10,503	75.5	23,043	34.4
1997	9,137	4,858	795	95	16,266	4,026	75	45	26,273	9,024	10,489	86.0	16,603	54.4
1998	10,223	4,272	130	130	17,928	3,753	321	25	28,602	8,180	9,595	85.3	15,617	52.4
1999	14,231	6,785	441	260	14,348	3,686	334	93	29,354	10,824	13,327	81.2	19,766	54.8
2000	16,717	5,698	308	101	27,381	3,692	234	86	44,640	9,577	12,019	79.7	18,062	53.0
2001	15,457	6,544	776	55	25,147	5,479	1,042	661	42,422	12,739	16,673	76.4	23,623	53.9
2002	13,079	5,716	647	618	18,450	5,865	284	119	32,460	12,318	14,862	82.9	22,567	54.6
2003	14,094	4,026	11	0	14,818	3,816	355	182	29,278	8,024	11,282	71.1	17,388	46.1
2004	11,179	4,961	119	91	21,878	6,626	704	493	33,880	12,171	17,122	71.1	28,799	42.3
2005	11,347	6,160	513	104	25,704	4,889	330	103	37,894	11,306	13,802	81.9	24,819	45.6
Means 1977-2005	9,886	2,270	316	113	17,749	2,678	286	74	28,124	5,073	6,862	63.9	19,734	24.5
2001-2005	13,031	5,481	413	174	21,199	5,335	543	322	35,187	11,312	14,748	76.7	23,439	48.5
2006	14,754	6,664	312	137	15,685	4,318	799	285	31,550	11,404	13,261	86.0	18,184	62.7

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

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

[c] Catch estimates available beginning in 1990.

Pike Harvest

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

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

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

-continued-

Appendix B1.-Page 2 of 4.

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

-continued-

Appendix B1.-Page 3 of 4.

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

-continued-

Appendix B1.-Page 4 of 4.

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

From: Mel - Krog's Kamp [mailto:fishing@krogskamp.com]
Sent: Tuesday, May 27, 2008 11:57 AM
To: Sen. Lyda Green
Subject: Cook Inlet Salmon Task Force

Dear Senator Green,

Here are some interesting sites that I think you will find interesting as they pertain to the subject of the over-escapement myth. Also, there was a Salmon Biologist down at the University of Washington by the name of Jeff Cedarholm who has published some very interesting studies he has done. He was retained by the Comm Fish Division of Fish and Game as a consultant and actually came to Alaska to meet with them. I don't think you'll see any of his opinions on the ADF&G website as I think they didn't like what he had to say. Unfortunately, Jeff died last year according to the internet. He would have been a great resource for your Task Force.

http://www.noaanews.noaa.gov/stories/s518.htm

http://www.nature.com/nature/journal/v416/n6882/full/416729a.html

http://www.evostc.state.ak.us/Files.cfm?doc=/Store/AnnualReports/2004-040649-Annual.pdf&

http://www.cf.adfg.state.ak.us/region4/finfish/salmon/kodiak/research/karluk/karluk_research.php

Additionally, something else that someone might want to look into is why are there so many set net sites on the east side beaches? When limitied entry first came into being, there were 78 set net sites on our beaches. Now, there are well over 400 maybe even 500. Also, they use to only be able to go out 3 nets from the beach, now they go out 3 sets of nets or 9 nets out if I am not mistaken. Another thing that should be taken into consideration is that the commercial fishermen do not have to log their fish until they sell them. I have been told by some of my tradesmen, that there are commercial fishermen who have large walk in freezers with kings in them stacked up like cord wood. When the time for having to report fish has passed, that they take these fish south and sell them. Perfectly legal the way the system is now, but certainly circumventing the intent of trying to find out how many fish have been harvested. As the one gentleman testified, the kings especially should have to be logged when taken from the net.

Another suggestion that was brought up at the hearing that I certainly agree with is that we should fund a buyback program. If I am not mistaken, the mechanism for this is already in law. Otherwise, perhaps those of us who are involved in the Tourism Busines should ask for a buyback program for our businesses.

One last idea.... why are we continuing to allow gill nets along our shores. I wonder if perhaps the people shouldn't start an initiative petition to ban gill nets within 3 miles of our coastline just as has been done in many of the states along the southeastern border of the United States, or even better yet, legislate the ban. And finally, I have to agree with so many others who testified about the inequity of the present allocation system. Well over half of our state's population lives in southcentral Alaska and yet we get only a miniscual percentage of the harvest allocation. If you just read the Constitution, how can this be justified?

As Bob Penny said, you are our court of last resort. We need your help to get this issue resolved.

Thanks for taking time to read this.

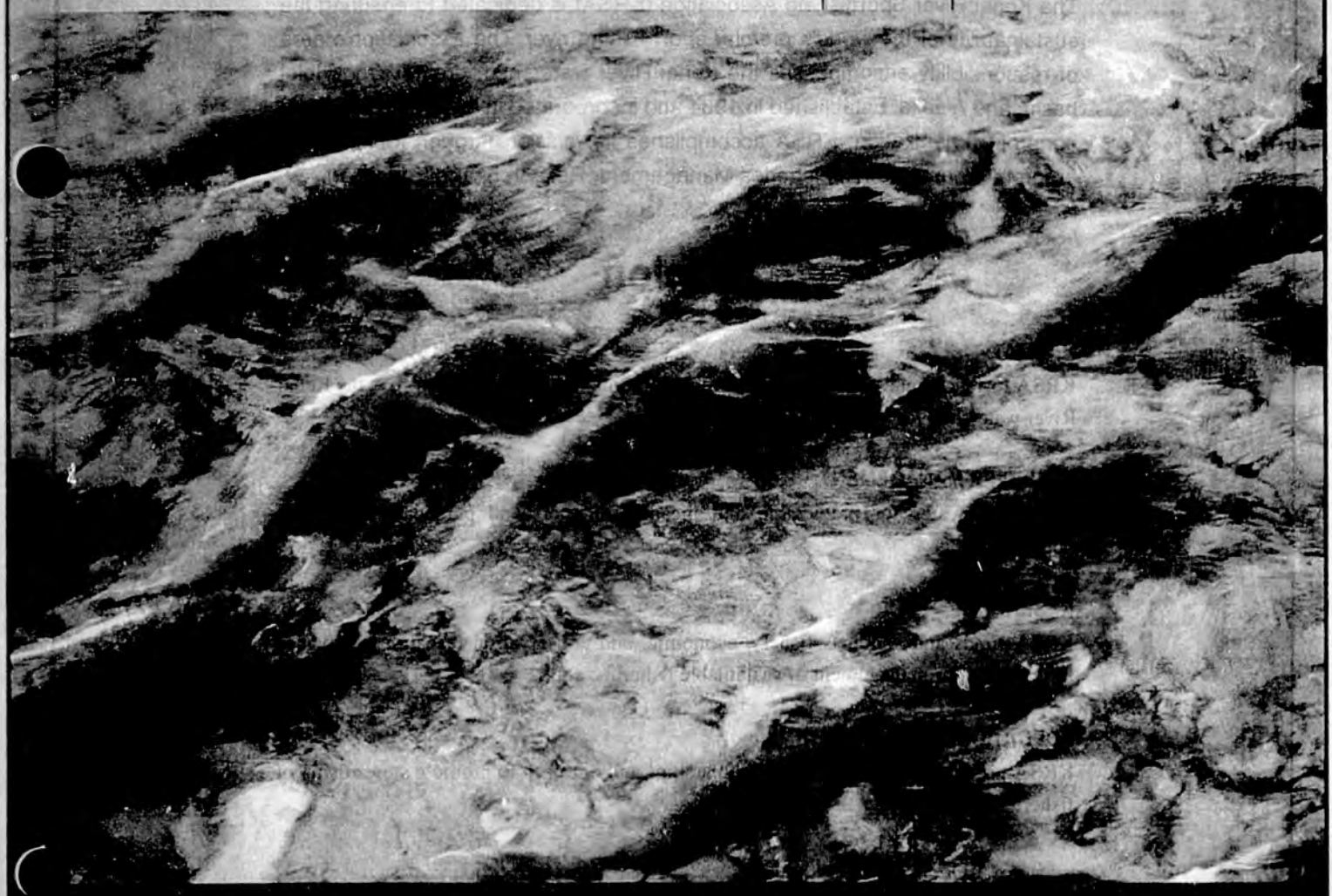
Sincerely,

Mel Krogseng, Owner
Krog's Kamp on the Kenai River
Kenai Peninsula Property Owner and Businesswoman
MatSu Property Owner
907-262-2671

Economic Values of Sport, Personal Use, and Commercial Salmon Fishing in Upper Cook Inlet

(Executive Summary)

KENAI RIVER SPORTFISHING ASSOCIATION



KENAI RIVER SPORTFISHING ASSOCIATION • P.O. BOX 1228 • SOLDOTNA, ALASKA 99669

JANUARY 2008

KENAI RIVER SPORTFISHING ASSOCIATION

Kenai River Sportfishing Association

The Kenai River Sportfishing Association (KRSA) is dedicated to ensuring the sustainability of the world's premier sport fishing river. The association's area of responsibility encompasses the Kenai River watershed, greater Cook Inlet basin, and Alaska. Established in 1984 and incorporated in 1992 as a 501(c)(3) nonprofit organization, KRSA accomplishes its mission through four primary program areas: Habitat, Fisheries Management, Research, and Education.

Mission

HABITAT:
KRSA fosters habitat conservation and rehabilitation to maintain and improve the Kenai River watershed for sustainable fisheries;

FISHERIES MANAGEMENT:
KRSA advocates for predictable and meaningful sport and personal use fishing opportunity;

RESEARCH:
KRSA funds and conducts fishery, economic, and conservation research to advance information for management of sustainable fisheries; and

EDUCATION:
KRSA provides public education, scholarships and outreach to promote stewardship of fisheries resources.

Quick Reference

PARTICIPATION

- 160,000 anglers—Alaskans and visitors—sport fish for salmon, and 20,000 Alaskans harvest salmon for personal use in Upper Cook Inlet recreational salmon fisheries each year.
- 1,375 to 2,500 individuals are seasonally employed in commercial salmon harvesting and processing or have jobs arising indirectly from the effects of commercial harvest and processing activity in Upper Cook Inlet.
- Sport and personal use salmon fishing in Upper Cook Inlet account for well over one-third (37%) of all recreational fishing in Alaska.
- Upper Cook Inlet accounts for 2% of the total statewide commercial salmon catch.
- Cook Inlet commercial salmon fisheries have substantially lower yields and substantially higher rates of permits not fished than comparable fisheries.

ECONOMIC SIGNIFICANCE

- Recreational salmon fishing in Upper Cook Inlet generates 3,400 average annual jobs producing $104 million (2006 dollars) in income.
- Commercial salmon fishing in Upper Cook Inlet generates between 275 and 500 average annual jobs producing between $10 and $18 million (2006 dollars) in income.
- The average commercial salmon harvest size in Upper Cook Inlet from 2002 to 2006 is greater than the average harvests over the past ten and past fifty years.
- The current (2000-2006) value of Upper Cook Inlet commercial salmon harvests is 14% of the highest historic value (1986-1992) and 39% of the most recent decade (1991-2000).

NET ECONOMIC VALUE (NEV)

- The average value over and above expenses that individual Alaskans place on their annual recreational fishing is $776 (2006 dollars).
- The net economic value of recreational salmon fishing in Upper Cook Inlet to Alaskans and visitors is $115 million (2006 dollars)—almost half (47%) of the statewide net economic value total—with $62 million of that total going to Alaskans.
- The net economic value of Upper Cook Inlet commercial salmon fishing to all permit holders—Alaskans and non-residents—is less than $1 million.

FUTURE TRENDS

- Demand for recreational fishing opportunities in the Cook Inlet boroughs is expected to continue to grow by 2.3% per year through 2011—a net increase of almost 29,000 anglers over 2002-2006 levels.
- Salmon farming and globalization of seafood markets will continue to exert downward pressure on prices and values in all of Alaska's commercial salmon fisheries.

ECONOMIC IMPACTS

- Institute of Social and Economic Research (ISER) study models from the mid-1990s suggest that at current commercial prices and values, increasing sockeye salmon allocations for sport fishing in Upper Cook Inlet would generate overall economic gains in the region.

ALLOCATION

- Commercial fisheries are currently allocated 82% of the Upper Cook Inlet salmon harvest, while sport and personal use fisheries are allocated 18% of the harvest.
- In Alaska 2% of the total salmon harvest is allocated for recreational use. For allocations in Alaska to be comparable with other North American Pacific salmon fisheries, allocation rates for recreational fishing would need to be increased two (200%) to five (500%) times.

Economic Values of Sport, Personal Use, and Commercial Salmon Fishing in Upper Cook Inlet

Executive Summary

Upper Cook Inlet is unique among all of Alaska's maritime regions in its relative proportions of recreational and commercial fishing. Upper Cook Inlet supports Alaska's largest and most economically valuable recreational fisheries. Sport and personal use fishing is heavily concentrated in the region, and the economic values associated with these activities are very substantial. By contrast, commercial fisheries in Upper Cook Inlet yield a small fraction of the state's commercial harvest and the associated economic values are very modest.

Over the past decade the economic values of sport and personal use salmon fisheries in Upper Cook Inlet have greatly surpassed those of the commercial salmon fisheries by every available measure. State fisheries management systems—designed primarily to accommodate commercial fisheries—continue to grapple with the profound and ongoing changes in both recreational and commercial salmon fisheries in the region.

To more clearly define the economic importance and relative values of salmon fisheries in Upper Cook Inlet, this report reviews published studies and agency data on participation, economic significance, net economic value, and potential economic impacts of management practices in the region's sport, personal use, and commercial salmon fisheries.

COOK INLET SALMON FISHERIES

Cook Inlet is divided into two fisheries management areas—Upper and Lower Cook Inlet. Anchor Point (near Homer) is the boundary between the two areas. Upper Cook Inlet is divided into two districts—the Central District (from Anchor Point north to Boulder Point) and the Northern District (from Boulder point north). The Central District is the gateway for salmon returning to the Kenai, Matanuska-Susitna, and Anchorage Borough watersheds.

Almost two-thirds (64%) of the total Cook Inlet commercial salmon catch comes from Upper Cook Inlet. An even greater percentage of the total harvest value—about five-sixths (83%)—comes from Upper Cook Inlet. This means that the great bulk of high-value salmon species caught in Cook Inlet are taken in Upper Cook Inlet. Sockeye salmon constitute almost all (93%) of the value of the Upper Cook Inlet commercial salmon harvest with Chinook and coho each constituting 3% and chum 1%.

Upper Cook Inlet Commercial Salmon Harvest Value by Species

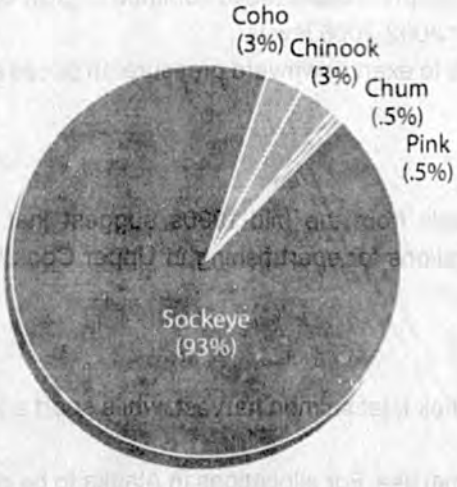


Figure ES 1. From 2002-2006, sockeye salmon averaged 93% of the annual harvest value with Chinook and coho each constituting 3%, chum 1%, and pink less than a half of a percent. Source: ADF&G 2007.

Upper Cook Inlet Commercial Sockeye Salmon Harvest by Gear Type & Location

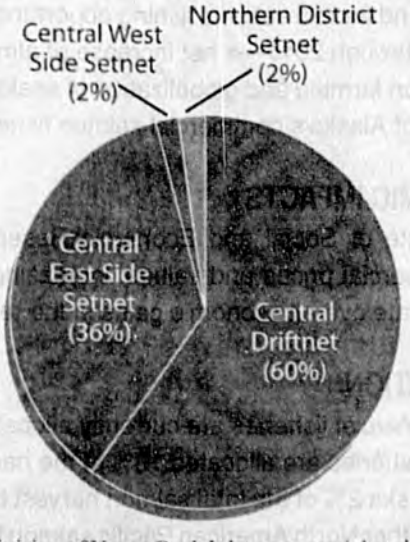


Figure ES 2. Division of Upper Cook Inlet commercial sockeye salmon harvest by gear type and location, 1990-1994. Source: ISER 1996.

While sockeye salmon is by far the most commercially valuable fish species in Cook Inlet, run-timing and migration routes utilized by all salmon species overlap in Upper Cook Inlet to such a degree that the commercial fishery is largely mixed-stock and mixed-species in nature.

Sockeye salmon are one of the most highly valued salmon species and by far the most abundant species in recreational fisheries in Upper Cook Inlet. Chinook salmon is perhaps the most highly valued salmon species in recreational fisheries, but Chinook harvests are by far the smallest of any salmon species in the region. Though less abundant than sockeye, coho salmon are much more abundant than Chinook and are very highly valued in Upper Cook Inlet recreational fisheries.

Essentially all (98-99%) commercially harvested salmon in Upper Cook Inlet are caught in the Central District. Set gillnets take half of the Upper Cook Inlet commercial salmon harvest and more than two-thirds (70%) of these set gillnets are concentrated on the east side of the Central District where the Kenai River watershed is located. Kenai sockeye generally comprise more than half (52%) of the total Upper Cook Inlet commercial salmon harvest.

The Kenai River watershed supports the largest and most intensively used recreational salmon fisheries in the state. Low numbers of salmon passing through the Central District commercial salmon fisheries to the Northern District of Upper Cook Inlet have limited the development of recreational salmon fishing in Matanuska-Susitna Borough watersheds.

Upper Cook Inlet Commercial Fisheries Management Districts

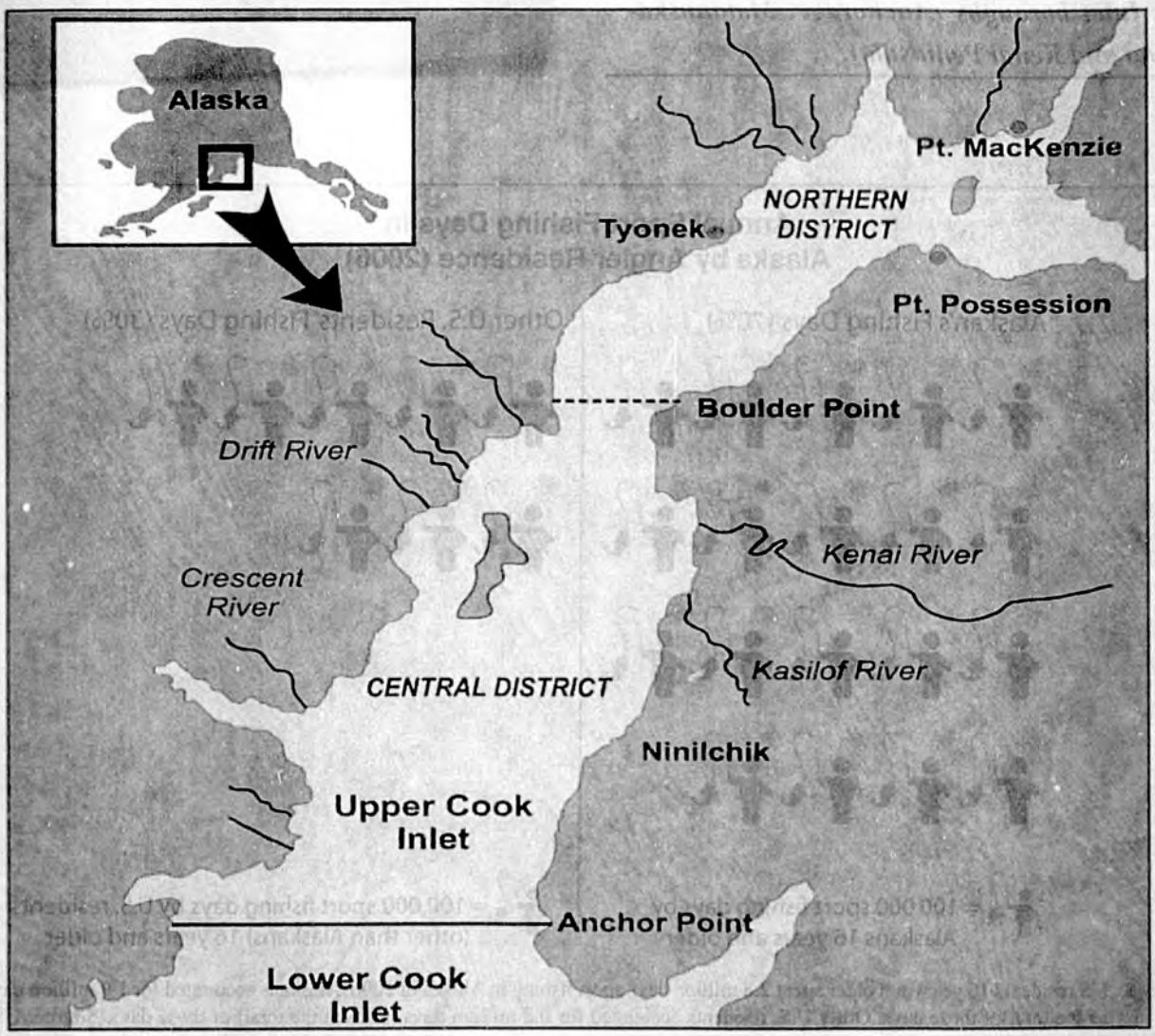


Figure ES 3. Upper Cook Inlet Commercial Management Districts. Source: ADF&G 2004.

PARTICIPATION

Sport and Personal Use

With one out of every three Alaskans active in sport fishing (some 207,000 resident anglers), Alaska has the highest rates of participation in recreational fishing in the nation. The great bulk of sport fishing activity in Alaska is attributable to Alaskans who account for well over two-thirds (70%) of some 2.8 million annual sport fishing days in the state. Moreover, recreational fishing by Alaskans is highly concentrated in the Southcentral region with almost three-quarters (72%) of all established resident anglers living and doing nearly all (95%) of their sport fishing in the region.

More than a quarter of a million anglers—Alaskans and visitors—fish each year in the Cook Inlet boroughs (Anchorage, Matanuska-Sustina and Kenai Peninsula).



Sport Fishing

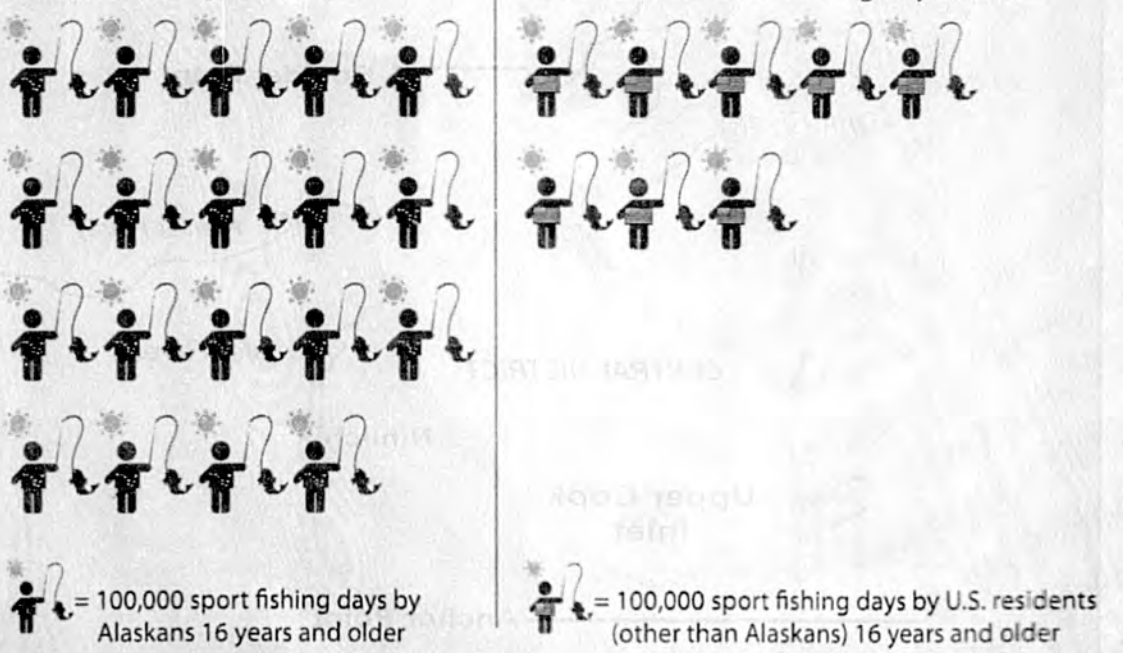


Figure ES 4. US residents 16 years and older spent 2.8 million days sport fishing in Alaska in 2006. Alaskans accounted for 1.9 million days (70% of the total)of those days. Other U.S. residents accounted for 0.8 million days (30% of the total) of those days. Source: USF&WS 2007.



Figure ES 5. Percentage of all Alaskans who sport fish by region of residence, 2002-2006. (2% of anglers are of unknown residence.) Source: ADF&G 2007.

More than half (51%) of all summer fishing trips in the state—by Alaskans and visitors—are in Upper Cook Inlet. Salmon fishing in Upper Cook Inlet accounts for almost three-quarters (73%) of all fishing trips in the area and well over one-third (37%) of all recreational fishing in the state.

More than a quarter of a million (261,000) anglers—Alaskans and visitors—fish each year in the Cook Inlet boroughs. Of these, some 160,000 anglers fish for salmon in Upper Cook Inlet. In addition, some 20,000 Alaskans obtain personal use permits to net Upper Cook Inlet salmon to feed their households. Alaskans with personal use permits harvest about the same number of sockeye salmon (~300,000) in Upper Cook Inlet each year for household use as all anglers—Alaskans and visitors—take in the Upper Cook Inlet sport fisheries. Alaskans with personal use permits take about one-third and sport anglers—Alaskans and visitors—take about two-thirds of the total Upper Cook Inlet recreational (non-commercial) salmon harvest of all species.

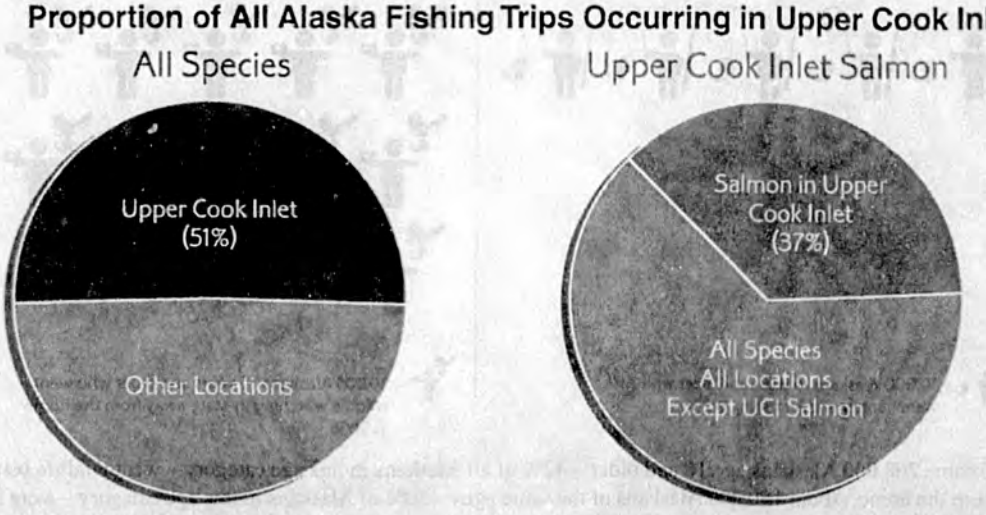


Figure ES 6. Proportion of all Alaska fishing trips (by Alaskans and visitors) occurring in Upper Cook Inlet and proportion of all state fishing trips targeting salmon in Upper Cook Inlet, 1993. Source: Tabulation of site-specific trip data in Haley et al. 1999.

Wildlife Watching

Salmon runs also play a critical role in wildlife watching in Alaska, an activity with even greater rates of participation than recreational fishing and hunting combined. Salmon runs draw marine mammals—such as orcas, belugas, and Steller sea lions—and terrestrial mammals and birds—such as bears, eagles, and land otters—into concentrations and locations where it is both possible and attractive for Alaskans and visitors to view them. Both private and commercial wildlife watching in Cook Inlet rely on access by small plane, motorized and non-motorized boats, conventional and off-road vehicles, and foot to areas where wildlife is concentrated in sufficient numbers to engage participants. Ultimately the spawn and decomposing bodies of salmon provide the critical nutrients in a terrestrial food web extending from insects and plants to a broad host of birds and animals that support more extended wildlife watching opportunities.



Bear with Salmon (Alaska Stock Images)

Not quite half of all adult Alaskans (42%) and over half of all U.S. summer visitors (56%) actively engage in wildlife watching—in trips away from the home—for a total of more than a half million participants (514,000) and well over 4.2 million days of activity annually.

Alaskans Active in Hunting, Sport Fishing & Wildlife Watching (2006)

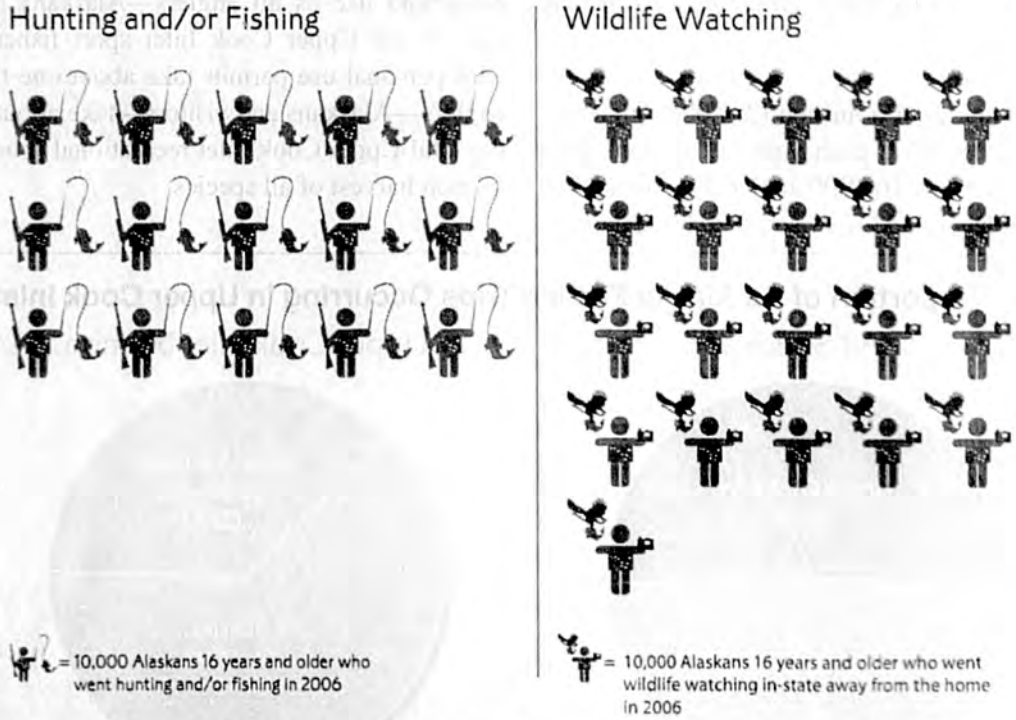


Figure ES 7. In 2006 some 208,000 Alaskans age 16 and older—42% of all Alaskans in this age category—went wildlife watching in-state away from the home. About 150,000 Alaskans of the same ages—30% of Alaskans in this age category—went hunting and/or fishing in 2006. Source: USF&WS 2007.

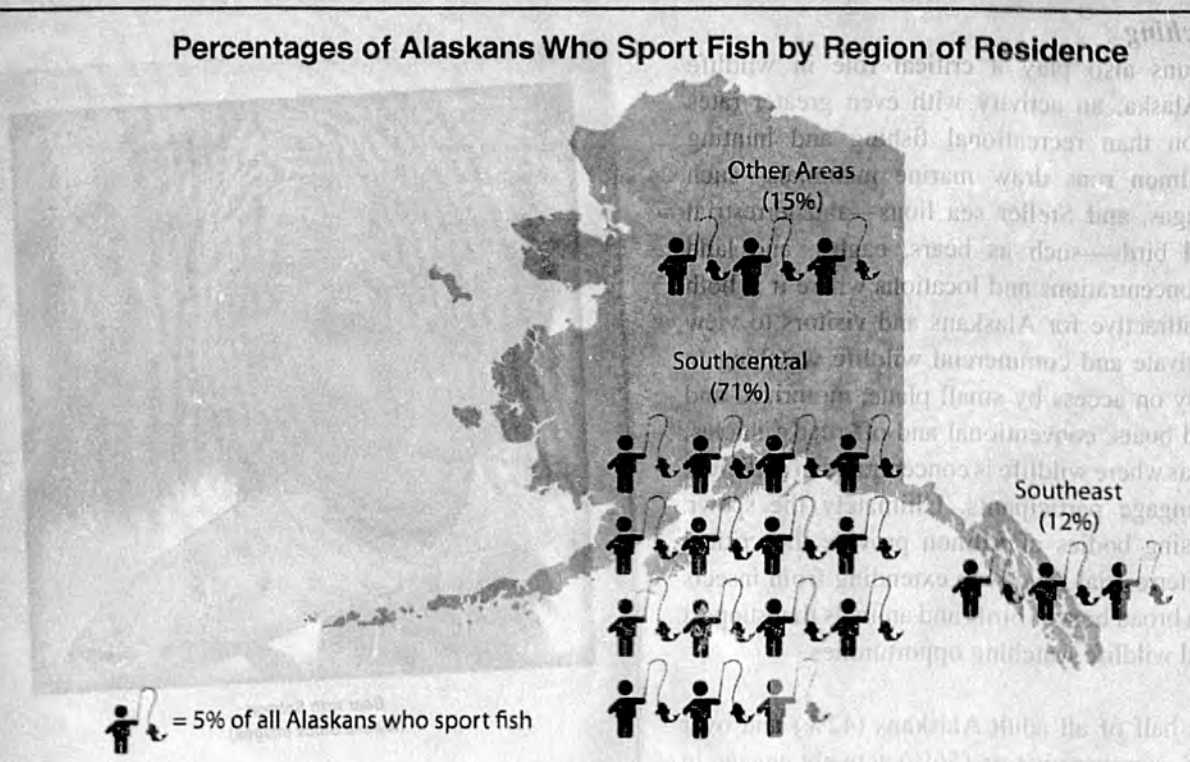


Figure ES 5. Percentage of all Alaskans who sport fish by region of residence, 2002-2006. (2% of anglers are of unknown residence.) Source: ADF&G 2007.

More than half (51%) of all summer fishing trips in the state—by Alaskans and visitors—are in Upper Cook Inlet. Salmon fishing in Upper Cook Inlet accounts for almost three-quarters (73%) of all fishing trips in the area and well over one-third (37%) of all recreational fishing in the state.

More than a quarter of a million (261,000) anglers—Alaskans and visitors—fish each year in the Cook Inlet boroughs. Of these, some 160,000 anglers fish for salmon in Upper Cook Inlet. In addition, some 20,000 Alaskans obtain personal use permits to net Upper Cook Inlet salmon to feed their households. Alaskans with personal use permits harvest about the same number of sockeye salmon (~300,000) in Upper Cook Inlet each year for household use as all anglers—Alaskans and visitors—take in the Upper Cook Inlet sport fisheries. Alaskans with personal use permits take about one-third and sport anglers—Alaskans and visitors—take about two-thirds of the total Upper Cook Inlet recreational (non-commercial) salmon harvest of all species.

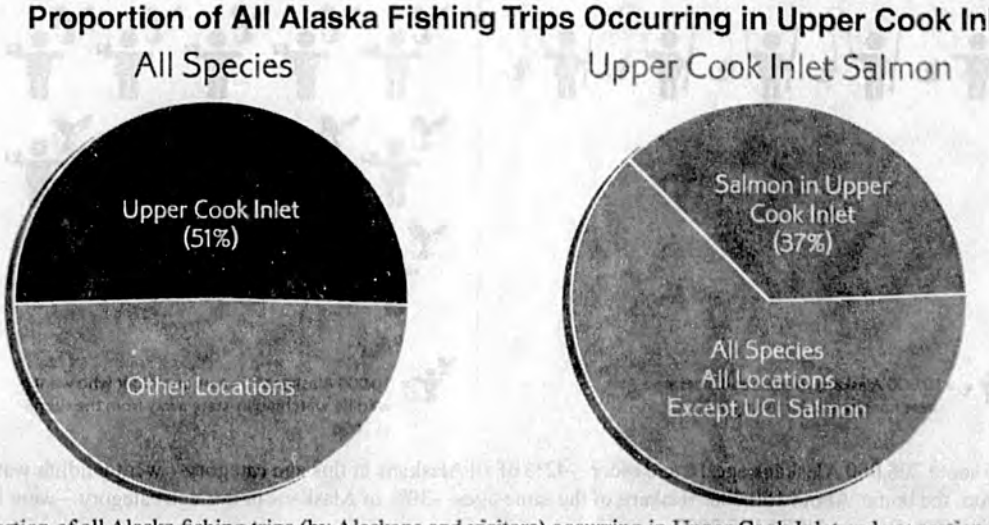


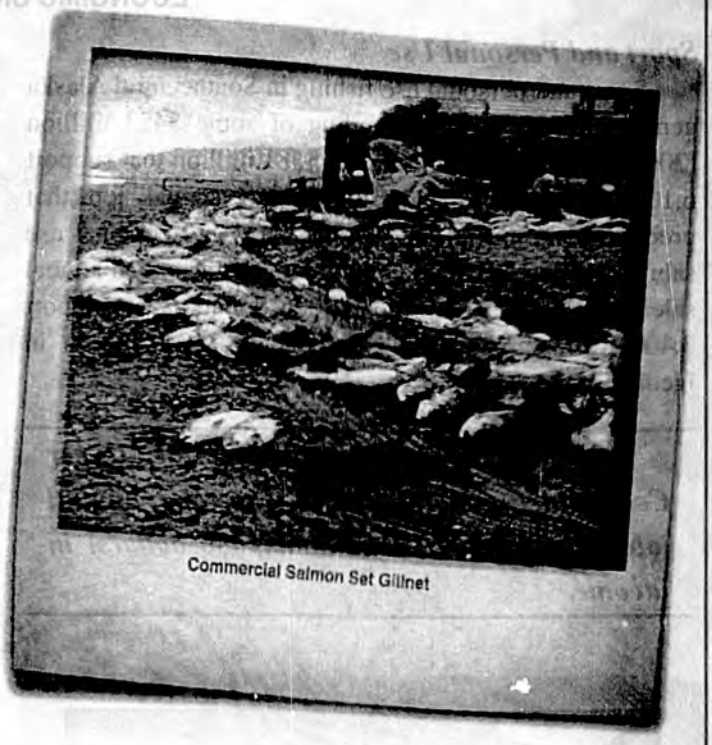
Figure ES 6. Proportion of all Alaska fishing trips (by Alaskans and visitors) occurring in Upper Cook Inlet and proportion of all state fishing trips targeting salmon in Upper Cook Inlet, 1993. Source: Tabulation of site-specific trip data in Haley et al. 1999.

Commercial

Some 844 commercial permit holders reported a catch in the Upper Cook Inlet management area in 2006. One out of five (22%) commercial permit holders in Cook Inlet are nonresidents. Between 1,375 and 2,500 individuals are estimated to be seasonally employed in commercial harvesting and processing or have jobs arising out of the indirect economic effects of commercial salmon harvests in Upper Cook Inlet.

The Upper Cook Inlet commercial salmon catch accounts for 2.2% of the total statewide commercial salmon harvest.

Comparisons of commercial salmon harvest yields in Cook Inlet with yields in other commercial salmon fisheries in the state indicate that commercial salmon fishing effort is disproportionately concentrated in Cook Inlet. Cook Inlet commercial salmon fisheries have substantially lower yields and substantially higher rates of permits not fished than comparable fisheries. In Cook Inlet there are 25 commercial salmon permits fished for every 100,000 fish harvested, compared to three permits fished for every 100,000 fish harvested in the rest of the state. Comparison of Upper Cook Inlet percentages of commercial salmon caught and permits fished statewide indicate that commercial salmon fishing effort is disproportionately concentrated in Upper Cook Inlet.



Commercial Salmon Set Gillnet

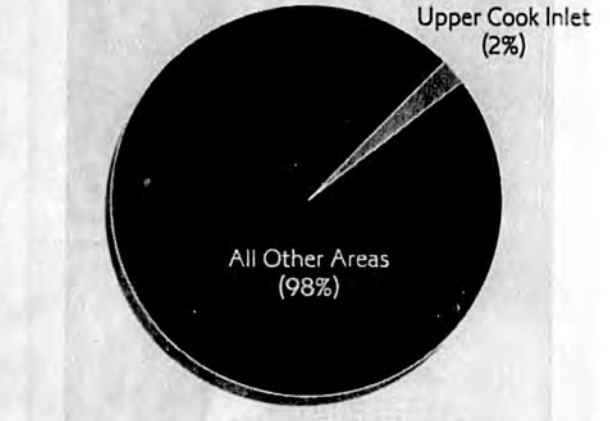


Figure ES 8. Average annual proportions of statewide commercial salmon catch by area 2000-2006. Source: ADF&G 2007.

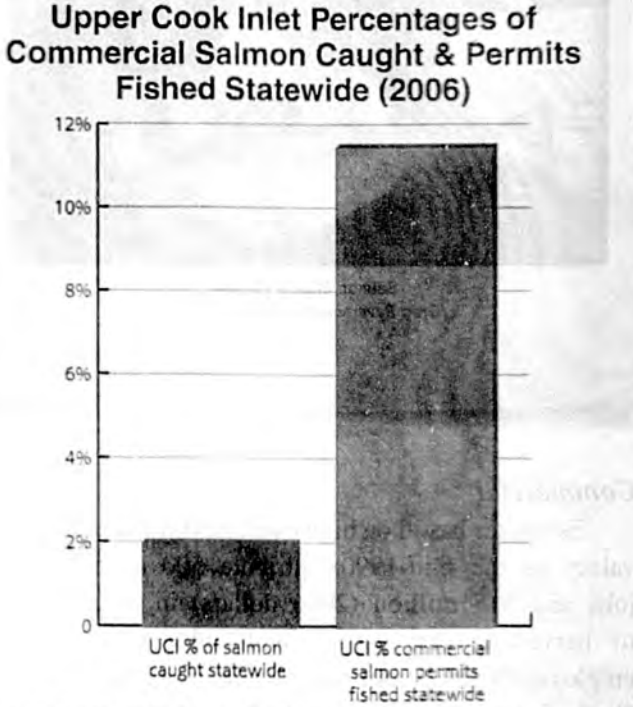


Figure ES 9. In 2006 Upper Cook Inlet accounted for 11.5% of all actively fished commercial salmon permits but only 2.0% of the statewide salmon catch. Source: ADF&G 2007, CFEC 2007. (From 2000-2006 the Upper Cook Inlet commercial salmon catch averaged 2.2% of the statewide harvest total. Source: ADF&G 2007.)

ECONOMIC SIGNIFICANCE

Sport and Personal Use

Sport and personal use fishing in Southcentral Alaska generate direct annual spending of some $453 million (2006 dollars) and total sales of $581 million that support 6,100 "full-time equivalent" or "average annual" jobs that produce $186 million in income. Sport and personal use salmon fishing in Upper Cook Inlet generates total annual sales of some $316 million (2006 dollars) that support 3,400 average annual jobs producing $104 million in income in the region.

Recreational salmon fishing in Upper Cook Inlet generates 3,400 average annual jobs producing $104 million (2006 dollars) in income.



Salmon Charter Fishing
(Greg Syverson/Accent Alaska.com)

Commercial

Estimates based on high ex-vessel (commercial catch) values of the mid-1990s attribute 500 average annual jobs and $18 million (2006 dollars) in annual income to harvesting, processing, and indirect and induced employment from commercial salmon harvests in Upper Cook Inlet. At current (2000-2006) average annual commercial harvest values for salmon in Upper Cook Inlet, employment arising from commercial harvesting and processing as well as indirect and induced employment is estimated to be between 275 and 500 average annual jobs, and average annual income is estimated to be between $10 and $18 million (2006 dollars).

Commercial salmon fishing in Upper Cook Inlet generates between 275 and 500 average annual jobs producing between $10 and $18 million (2006 dollars) in income.

Though the size of wild salmon runs fluctuates from year to year, the recent average annual commercial salmon harvest in Upper Cook Inlet is greater than long-term averages. The average commercial salmon harvest in Upper Cook Inlet over the most recent five-year period (2002-2006) of 4.34 million is greater than the average harvests in the region over the past ten years (1996-2005) of 3.70 million and past fifty years (1966-2005) of 4.27 million. By contrast, the inflation adjusted average annual value (in 2006 dollars) of Upper Cook Inlet commercial salmon harvests from 2000-2006 of $16 million is one-seventh (14%) of the highest historic average annual value for an equivalent time period (1986-1992) of $108 million and about one-third (39%) of the average annual value of the most recent decade (1991-2000) of $40 million.



Salmon Row Processor
(Terry Chick/Accent Alaska.com)

Average Annual Jobs and Income Generated by Salmon Fishing in Upper Cook Inlet by Harvest Type

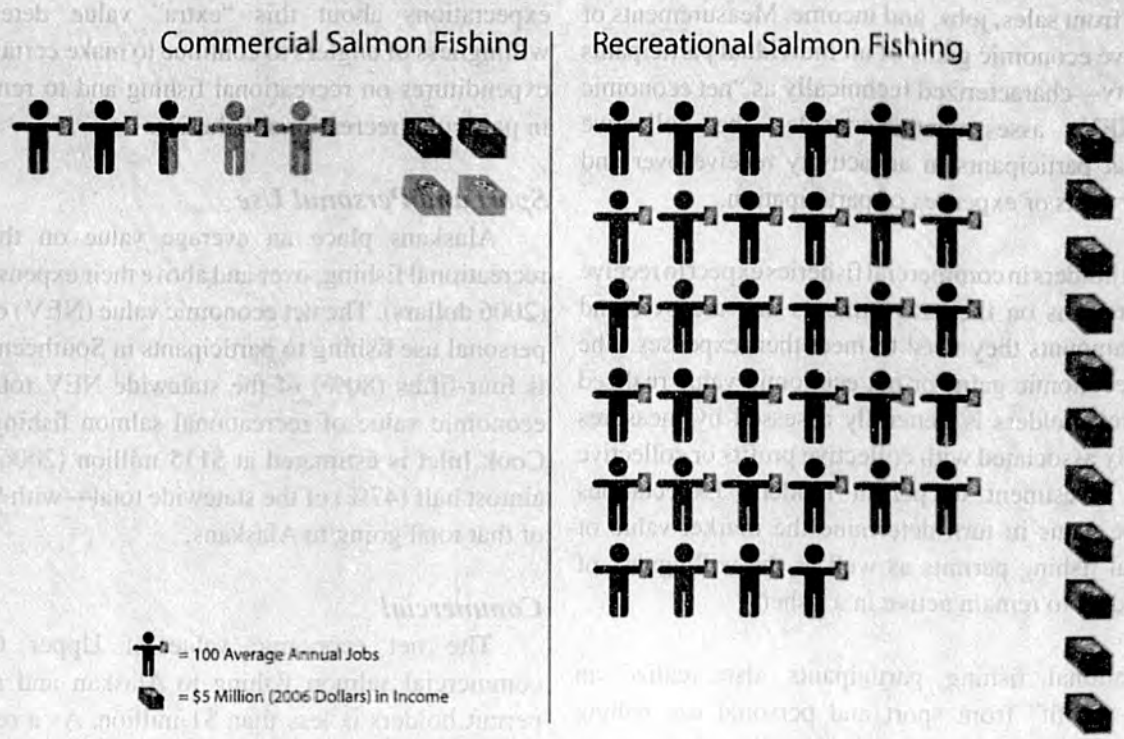


Figure ES 11. Commercial salmon fishing in Upper Cook Inlet generates between 275 and 500 average annual jobs producing between $10 and $18 million (2006 dollars) in income. Recreational salmon fishing in Upper Cook Inlet generates 3,400 average annual jobs producing $104 million (2006 dollars) in income. Source: Calculations based on data reported in ADL&WD 2007, ADF&G 2007, ADF&G 2006, ADF&G 2005(b), Colt 2001, Haley et al. 1999, ISER 1996.

Upper Cook Inlet Commercial Salmon Ex-Vessel Values by Decade & Most Recent Period (Inflation Adjusted)

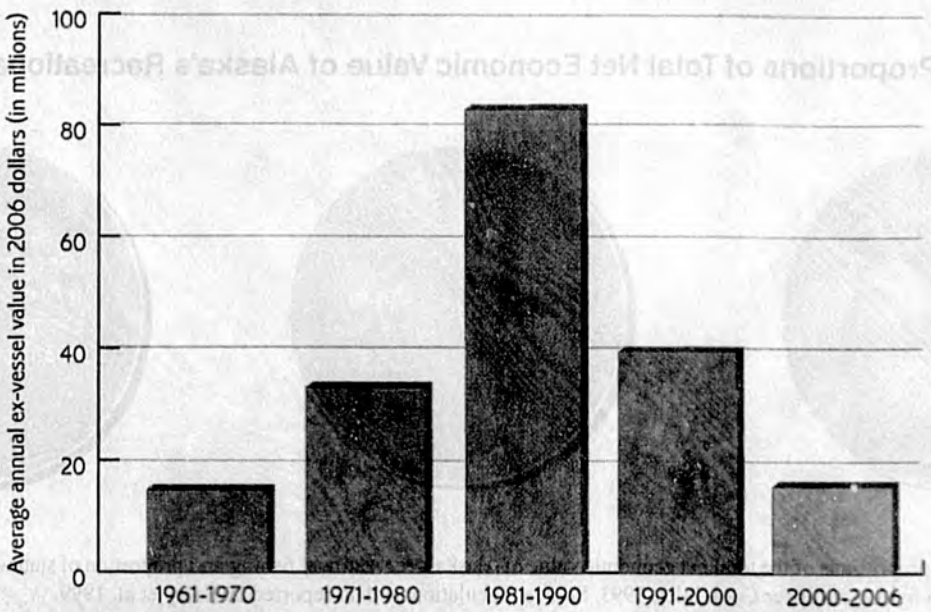


Figure ES 12. Average annual ex-vessel value of commercial salmon harvests in Upper Cook Inlet by decade and most recent period. Source: ADF&G 2007, ADL&WD 2007.

NET ECONOMIC VALUE (NEV)

Both commercial and recreational fishing have economic worth in addition to the value created in local economies from sales, jobs, and income. Measurements of the collective economic gains of all individual participants in an activity—characterized technically as "net economic value" (NEV) assessments—consider the collective benefits that participants in an activity receive over and above their costs or expenses of participation.

Permit holders in commercial fisheries expect to receive profits or returns on their investments that are over and above the amounts they need to meet their expenses. The collective economic gains or net economic value realized by all permit holders is generally assessed by measures most closely associated with collective profits or collective return on investment to permit holders. Expectations about these gains in turn determine the market value of commercial fishing permits as well as the willingness of permit holders to remain active in a fishery.

Recreational fishing participants also realize an economic "profit" from sport and personal use fishing if they value their experience more than the amount they actually have to pay to go fishing. Economists can measure the amount of this "profit" by determining the extra amount that a recreational fishing participant would be willing to pay in addition to the actual costs of going fishing. The collective total of the "extra" value obtained by each participant is characterized by economists as the net economic value of recreational fishing. Participants' expectations about this "extra" value determine the willingness of anglers to continue to make certain levels of expenditures on recreational fishing and to remain active in particular recreational fisheries.

Sport and Personal Use

Alaskans place an average value on their annual recreational fishing, over and above their expenses, of $776 (2006 dollars). The net economic value (NEV) of sport and personal use fishing to participants in Southcentral Alaska is four-fifths (80%) of the statewide NEV total. The net economic value of recreational salmon fishing in Upper Cook Inlet is estimated at $115 million (2006 dollars)—almost half (47%) of the statewide total—with $62 million of that total going to Alaskans.

Commercial

The net economic value of Upper Cook Inlet commercial salmon fishing to Alaskan and nonresident permit holders is less than $1 million. As a result of low ex-vessel prices and correspondingly low net economic value, current values of commercial salmon permits in Cook Inlet are about one-tenth (10%) of the all-time high values in the late 1980s and early 1990s.

Regional Proportions of Total Net Economic Value of Alaska's Recreational Fishing

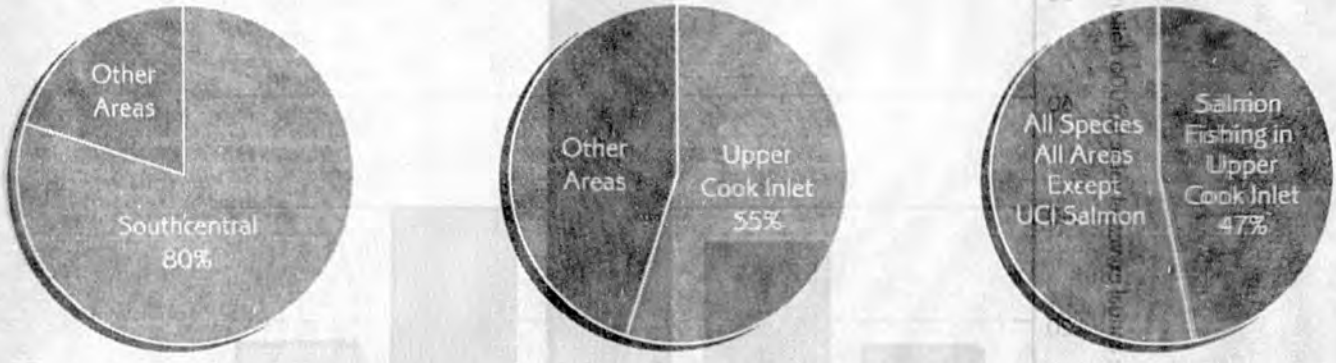


Figure ES 13. Regional proportions of the total net economic value of Alaska's recreational fishing and proportion of statewide net economic value of salmon fishing in Upper Cook Inlet, 1993. Source: Tabulation of data reported in Haley et al. 1999.

FUTURE TRENDS

Sport and Personal Use

Demand for recreational fishing opportunities in the Cook Inlet boroughs is expected to grow by 2.3% per year through 2011—a net increase of almost 29,000 anglers over 2002-2006 levels. From 2002 to 2006, ADF&G issued an average 20,000 permits for Upper Cook Inlet personal use fishing. A record 21,910 personal use permits were issued in Upper Cook Inlet in 2004. Increases in sport and personal use harvests in Upper Cook Inlet will be determined by administrative allocation rather than underlying demand for fishing opportunities.

Commercial

Comparisons of historical harvest data show that the size of the current commercial salmon catch in Upper Cook Inlet cannot be used as the explanation for current low commercial salmon harvest values. The size of the average annual commercial salmon harvest in Upper Cook Inlet in recent years is greater than the average harvest sizes in the region over the past ten and past fifty years, yet the current average market value of the harvest is lower than any decade since the 1960s.

This fundamental change in price regimes for Alaska salmon has resulted from dramatic increases in production of farmed salmon and globalization of world seafood markets. Salmon farming and globalization of seafood markets will continue to exert downward pressure on prices and values in Alaska's commercial salmon fisheries and act as a driving force for changes in salmon fisheries management.

In this new economic environment, the exceptional values of commercial salmon harvests in Upper Cook Inlet from the late 1980s to the early 1990s can no longer realistically be used to set benchmarks for fisheries management goals and objectives. To match the historic financial yields of Upper Cook Inlet commercial salmon permit holders under current market conditions, the average annual commercial salmon harvest in Upper Cook Inlet would have to be increased by two (200%) to five (500%) times and exceed the highest average annual harvest of any decade on record.

ECONOMIC IMPACTS

In 1996, the Institute of Social and Economic Research (ISER) published a study assessing the potential economic impacts of increasing management targets for late-run Kenai sockeye by 200,000 fish thus making more fish available in-river for sport and personal use fishing on the Kenai River while potentially reducing commercial harvests and profits. The study modeled scenarios projecting ranges of sockeye run sizes and salmon prices—reflective of values in the early 1990s—ranging from a low of $1.00 per pound to a high of $1.75 per pound.

The study found that during high runs there would be no economic impacts, at medium runs and low prices sport gains would exceed commercial losses, and at low runs commercial losses would probably exceed sport gains. The study's authors noted that "given the range of uncertainty in our estimates, we can't definitely conclude that actual commercial losses would be larger than sport gains." The study noted but failed to assess the gains that would accrue to Northern District (Matanuska-Susitna and Anchorage boroughs) recreational fisheries from the increased number of sockeye salmon that would escape through the Central District under the higher management target.

The real (inflation adjusted) price per pound values of commercially caught sockeye salmon modeled in the ISER study are much higher than the nominal (non-inflation adjusted) values stated in the study. Characterized in constant value 2006 dollars, ISER effectively modeled commercially harvested sockeye salmon at a high value of $2.37 per pound, a low value of $1.35 per pound, and a median value of $1.94 per pound. The nominal values paid for commercially harvested sockeye salmon in Upper Cook Inlet from 2000-2006 were between $1.10 and $0.60 per pound. The average annual price per pound from 2000-2006—calculated in constant 2006 dollars—was $0.83 per pound. This means that the ISER study used price assumptions almost one and two-thirds times (163%) greater at the low end and almost three times (286%) greater at the high end than the current average annual price per pound. Moreover, commercial permit values, harvesting and processing jobs and income, and commercial fisheries net economic values are now fractions of the values used in the ISER study.

This suggests that under current commercial salmon fishery price regimes and values the ISER study model would show economic gains in sport fisheries in Upper Cook Inlet that would exceed regional losses in the commercial fisheries in essentially all of the critical harvest level study scenarios. This would indicate that increasing salmon allocations for recreational fishing in Upper Cook Inlet would generate overall economic gains in the region.

ALLOCATION AND MANAGEMENT

Commercial fisheries are allocated about five-sixths (82%) of the Upper Cook Inlet salmon harvest, while sport, personal use, and subsistence fisheries are allocated about on-sixth (18%) of the catch. The percentage of the total salmon harvest that is allocated for recreational use in British Columbia is 11%, in the Pacific Northwest it is 4%, and in Alaska it is 2%. For Alaska to be comparable with proportionate distributions in other North American Pacific salmon fisheries, allocations for recreational salmon fishing in the state would need to be increased by two (200%) to five and a half (550%) times. Since Alaska's recreational salmon fishing is so heavily concentrated in Cook Inlet, this would mean that allocations in the region would need to be substantially increased.

The success of recreational fisheries relies not only on receiving an appropriate share of the salmon harvest but also on receiving those fish in a way that is meaningful to recreational users. Recreational fisheries management is based on providing anglers predictable opportunities to harvest a meaningful number of fish incrementally over the entire course of the fishing season. Management practices that optimize commercial fisheries harvests in Upper Cook Inlet often negate management practices that sustain recreational fisheries.

Percentage of Pacific Salmon Harvest Allocated for Recreational Fishing by Region

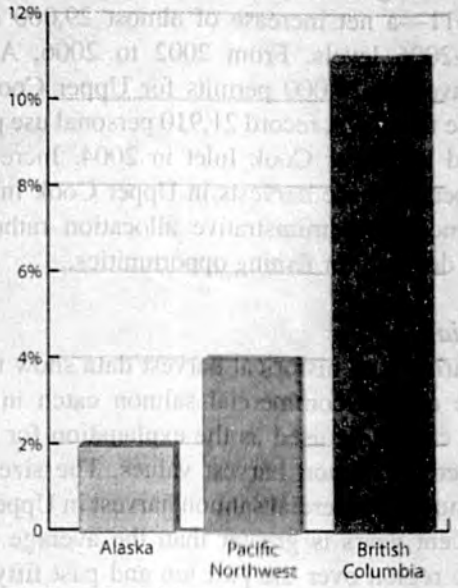


Figure ES 14. Upper Cook Inlet annual average harvest share by species for commercial and recreational (sport and personal use) fishing from 2002-2006. Source: Knapp et al, 2007.

Upper Cook Inlet Salmon Harvest Allocation by User Group & Species, 2002-2006

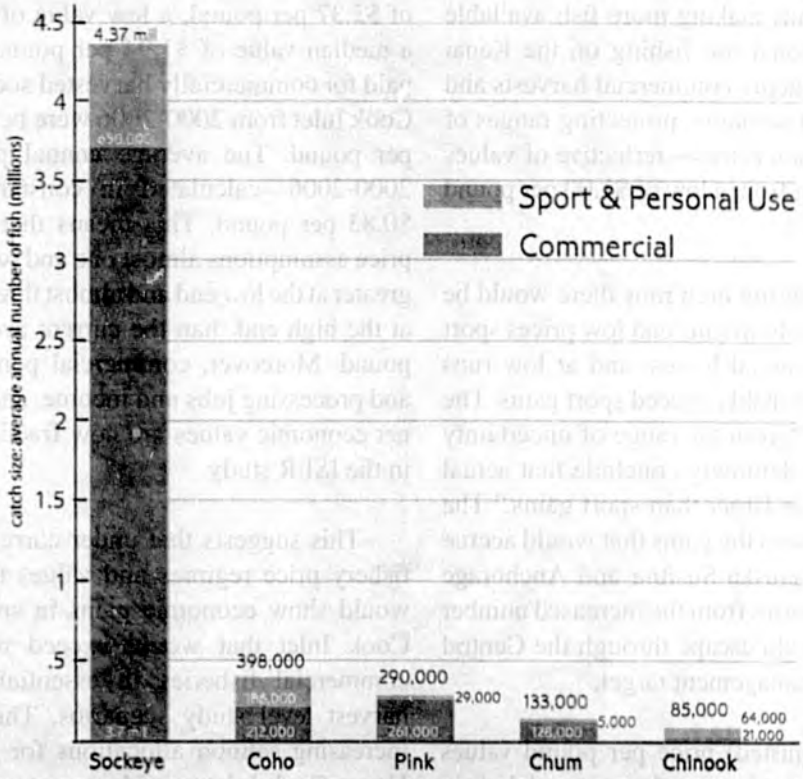


Figure ES 15. Upper Cook Inlet annual average harvest share by species for commercial and recreational (sport and personal use) fishing from 2002-2006. Source: ADF&G 2007.

CONCLUSION

The significant economic differences between commercial and recreational salmon fishing in Upper Cook Inlet are not generally understood or widely recognized. Because participation levels in recreational salmon fishing in Upper Cook Inlet are so much greater than those in commercial salmon fishing, recreational fishing produces much greater activity in local economies than does a comparable commercial harvest.

There are about eight to 15 times (800-1,454%) as many Alaskans who obtain personal use permits to harvest salmon in Upper Cook Inlet as there are individuals—Alaskans and nonresidents—who are employed in or have jobs arising out of commercial salmon harvests in Upper Cook Inlet. There are about 32 to 59 times (3,240-5,890%) as many Alaskans who sport fish for salmon in Upper Cook Inlet as there are individuals—Alaskans and nonresidents—who are employed in commercial salmon harvesting and processing or have jobs arising indirectly out of commercial salmon harvests in Upper Cook Inlet.

Recreational salmon fishing in Upper Cook Inlet generates about 7 to 12 times (680-1,236%) as many average annual jobs and 6 to 10 times (577-1,040%) as much average annual income in the region as commercial salmon fishing.

Recreational fishing also attracts visitors from outside of Alaska who bring wealth into the state in the form of new dollars spent in local economies. There are about 31 to 57 times (3,120-5,670%) as many visitors to Alaska who sport fish for salmon in Upper Cook Inlet as there are individuals—Alaskans and nonresidents—who are employed in commercial salmon harvesting and processing or have jobs arising indirectly out of commercial salmon harvests in Upper Cook Inlet.

In all, there are about 63 to 115 times (6,300-11,560%) as many anglers—Alaskans and visitors—who sport fish for salmon in Upper Cook Inlet as there are individuals—Alaskans and nonresidents—who are employed in commercial salmon harvesting and processing or have jobs arising indirectly out of commercial salmon harvests in Upper Cook Inlet.

Due, in part, to the impact of these vastly greater rates of participation, recreational salmon fishing in Upper Cook Inlet generates about seven to 12 times (680-1,236%) as many average annual jobs and six to ten times (577-1,040%) as much average annual income in the region as commercial salmon fishing.

Fisheries management in Upper Cook Inlet faces the ongoing challenge of adhering to policies and practices that recognize the central economic importance of sport and personal use fisheries in the region.

The additional worth of commercial and recreational fishing to participants—that is, the value over and above the costs and expenses of participation—is not accounted for by measures of economic activity such as sales, jobs, and income. This additional worth is measured by net economic value (NEV) assessments. The net economic value (NEV) to Alaskans of recreational salmon fishing in Upper Cook Inlet is 62 (6,200%) times greater than the NEV of commercial salmon fishing to permit holders—Alaskans and non-residents—in the region.

Markets for Alaska salmon continue to be impacted by mounting pressures from the globalization of seafood markets and an explosion in aquaculture production. There is no projected abatement of these trends, and they will continue to act as a driving force for changes in salmon fisheries management. Unprecedented commercial fishery values in the late 1980s and early 1990s are no longer realistic benchmarks for fisheries management goals and objectives. It is crucial that the inevitable restructuring of salmon fisheries management in Upper Cook Inlet necessitated by global market forces be fully informed by an awareness of the very significant economic values—both to local economies and to individual participants—of sport and personal use fisheries.

The state agencies that oversee and regulate fisheries were originally designed to address the needs and interests of commercial fisheries. Substantive consideration of the needs of sport and personal use fisheries and informal representation of recreational fishing interests on the Board of Fisheries are relatively recent developments. Fisheries management in Upper Cook Inlet faces the ongoing challenge of adhering to policies and practices that recognize the central economic importance of sport and personal use fisheries in the region.

KENAI RIVER SPORTFISHING
ASSOCIATION

KENAI RIVER SPORTFISHING ASSOCIATION • P.O. BOX 1228 • SOLDOTNA, ALASKA 99669



Economic Values of Sport, Personal Use, and Commercial Salmon Fishing in Upper Cook Inlet

(Quick Reference)



KENAI RIVER SPORTFISHING ASSOCIATION

PARTICIPATION

- 160,000 anglers—Alaskans and visitors—sport fish for salmon, and 20,000 Alaskans harvest salmon for personal use in Upper Cook Inlet recreational salmon fisheries each year.
- 1,375 to 2,500 individuals are seasonally employed in commercial salmon harvesting and processing or have jobs arising indirectly from the effects of commercial harvest and processing activity in Upper Cook Inlet.
- Sport and personal use salmon fishing in Upper Cook Inlet account for well over one-third (37%) of all recreational fishing in Alaska.
- Upper Cook Inlet accounts for 2% of the total statewide commercial salmon catch.
- Cook Inlet commercial salmon fisheries have substantially lower yields and substantially higher rates of permits not fished than comparable fisheries.

ECONOMIC SIGNIFICANCE

- Recreational salmon fishing in Upper Cook Inlet generates 3,400 average annual jobs producing $104 million (2006 dollars) in income.
- Commercial salmon fishing in Upper Cook Inlet generates between 275 and 500 average annual jobs producing between $10 and $18 million (2006 dollars) in income.
- The average commercial salmon harvest size in Upper Cook Inlet from 2002 to 2006 is greater than the average harvests over the past ten and past fifty years.
- The current (2000-2006) value of Upper Cook Inlet commercial salmon harvests is 14% of the highest historic value (1986-1992) and 39% of the most recent decade (1991-2000).

NET ECONOMIC VALUE (NEV)

- The average value over and above expenses that individual Alaskans place on their annual recreational fishing is $776 (2006 dollars).
- The net economic value of recreational salmon fishing in Upper Cook Inlet to Alaskans and visitors is $115 million (2006 dollars)—almost half (47%) of the statewide net economic value total—with $62 million of that total going to Alaskans.
- The net economic value of Upper Cook Inlet commercial salmon fishing to all permit holders—Alaskans and non-residents—is less than $1 million.

FUTURE TRENDS

- Demand for recreational fishing opportunities in the Cook Inlet boroughs is expected to continue to grow by 2.3% per year through 2011—a net increase of almost 29,000 anglers over 2002-2006 levels.
- Salmon farming and globalization of seafood markets will continue to exert downward pressure on prices and values in all of Alaska's commercial salmon fisheries.

ECONOMIC IMPACTS

- Institute of Social and Economic Research (ISER) study models from the mid-1990s suggest that at current commercial prices and values, increasing sockeye salmon allocations for sport fishing in Upper Cook Inlet would generate overall economic gains in the region.

ALLOCATION

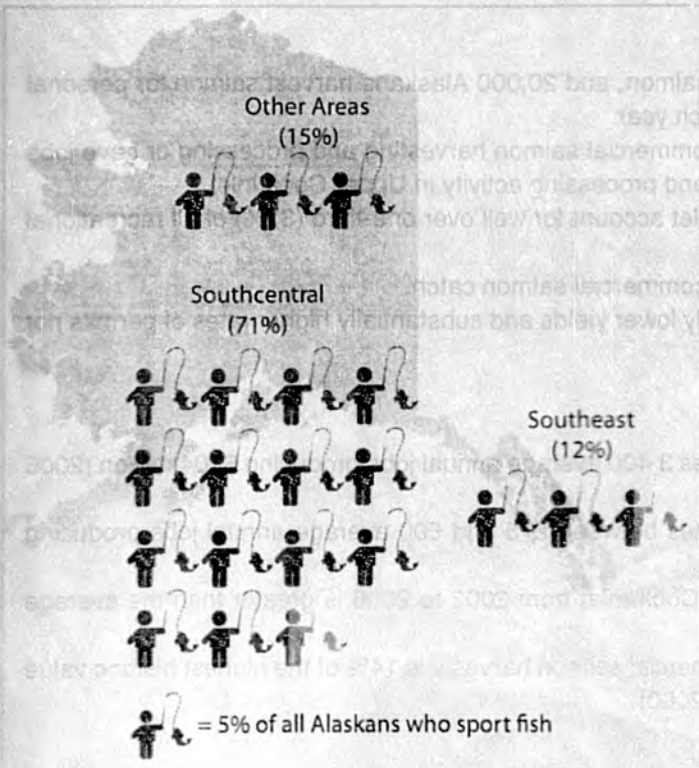
- Commercial fisheries are currently allocated 82% of the Upper Cook Inlet salmon harvest, while sport and personal use fisheries are allocated 18% of the harvest.
- In Alaska 2% of the total salmon harvest is allocated for recreational use. For allocations in Alaska to be comparable with other North American Pacific salmon fisheries, allocation rates for recreational fishing would need to be increased two (200%) to five (500%) times.

Full report available at www.kenairiversportfishing.com

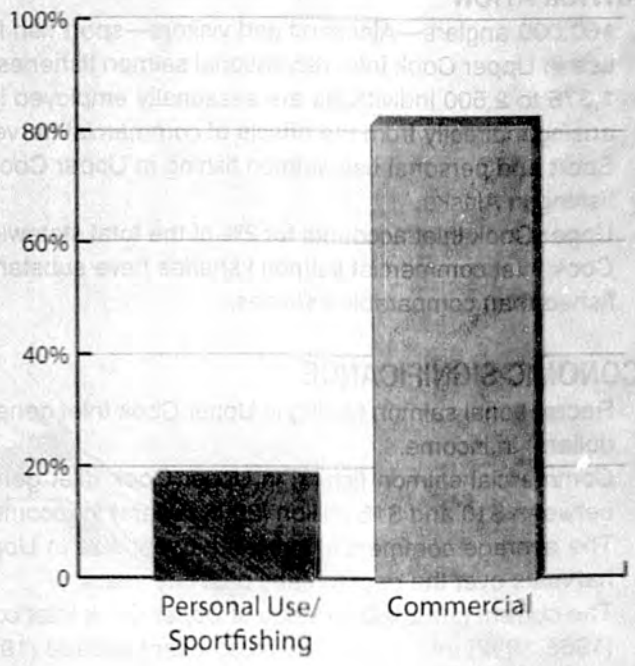
January 2008

Economic Values of Sport, Personal Use, and Commercial Salmon Fishing in Upper Cook Inlet

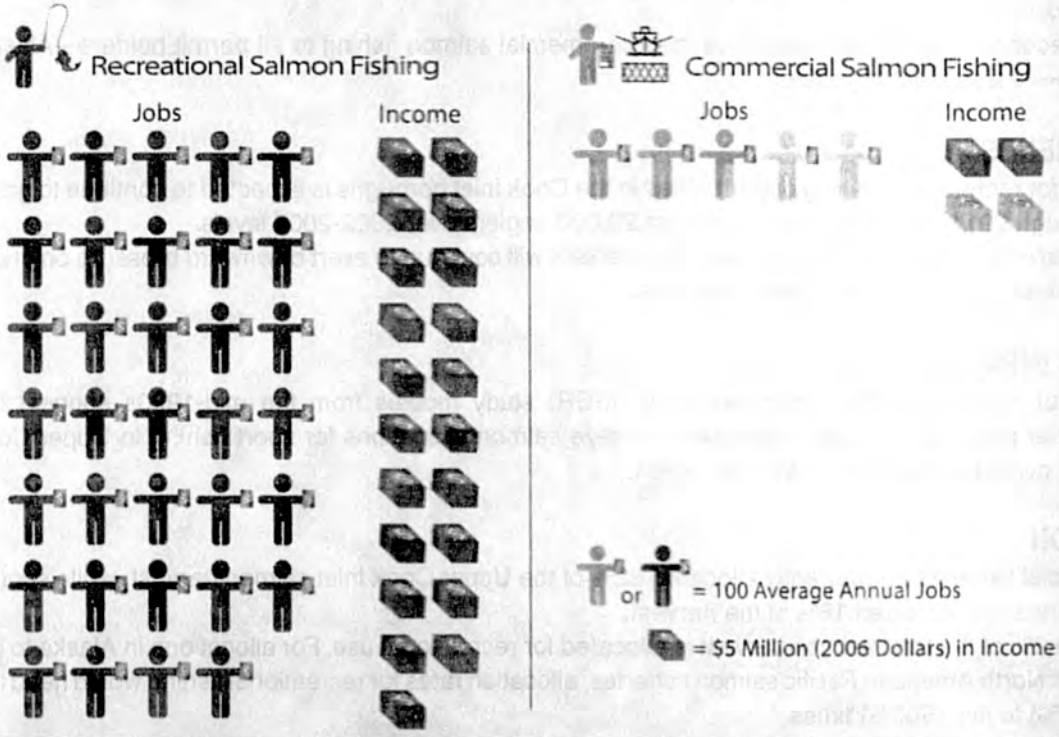
Percentages of Alaskans Who Sport Fish by Region of Residence



Allocation of Upper Cook Inlet Salmon Harvest by User Group, 2002-2006



Average Annual Jobs and Income Generated by Salmon Fishing in Upper Cook Inlet by Harvest Type



From: Bruce Knowles [mailto:bigfish@mtaonline.net]
Sent: Friday, May 16, 2008 6:11 PM
To: Rep. Craig Johnson; Rep. Bill Stoltze; Rep. Mark Neuman; Rep. Wes Keller; Sen. Charlie Huggins; Sen. Lyda Green
Subject: Mat-Su Borough Blue Ribbon Committee Comments

Rep. Johnson following our phone conversion this afternoon I am sending you the Cook Inlet Preseason Salmon Forecast from the ADFG commercial fishing web site. The Dept is forecasting a total return of 5.6 million sockeye with a harvest total harvest by all user groups of 3.9 million which equates to a 70% harvest rate.

The department has forecasted 453,000 sockeye for the Susitna River Drainage, when you subtracted 70% from the 453,000 that leaves 136,000 sockeyes to return to the Susitna River drainage that needs a minimum of a 180,000 to met both the Yetna River SEG. The harvest would have to be reduced to less than 50% to met the escapement goal.

I am also attaching a copy of the letter that has been sent to the Matanuska-Susitna Borough Mayor, from the Mat-Su Borough Blue Ribbon Sportsmen's Committee. Express our concerns about the actions of the Board of Fisheries and the Department of Fish and Game.

I serve as the chairman of the Susitna River Advisory Committee, co chair of the Mat-Su Borough Blue Ribbon Sportsmen's Committee and several committees and groups. I am available to provide information concerning the Northern District Stocks and the mismanagement that has taken place and is still currently taking place. I have some very sound and logical management action that could be taken to move all stocks into the Northern District and in two life cycles approximately 10 years would increase the runs and the harvest of commercial fishermen. When first over escapement occur on the Kenai River sockeye salmon return was going to die and each year after, dire results were forecasted. The only thing that has happen commercial fishermen have had some of their largest harvest on record year after. While the Northern District stocks decline.

Bruce Knowles
907-495-4965
232-5873

ALASKA DEPARTMENT OF FISH AND GAME
DIVISION OF COMMERCIAL FISHERIES
NEWS RELEASE

Denby S. Lloyd, Commissioner
John Hilsinger, Director



Contact:
Mark Willette, Research Project Leader
Jeff Fox & Pat Shields, Area Management Biologists
Phone: (907) 262-9368
Fax: (907) 262-4709

Soldotna ADF&G
43961 Kalifornsky Beach Rd.
Suite B
Soldotna, AK 99669

Date Issued: 12/17/2007

2008 UPPER COOK INLET SOCKEYE SALMON FORECAST

A run of 5.6 million sockeye salmon is forecasted to return to UCI in 2008 with a harvest by all user groups of 3.9 million sockeye salmon. The forecasted harvest in 2008 is about 200,000 fish below the 20-year average harvest by all user groups. The sockeye salmon run forecast for the Kenai River of 3.1 million is 16% less than the 20-year average run of 3.7 million. Age-1.3 sockeye salmon typically comprise about 65% of th run to the Kenai River. A sibling model based upon the return of age-1.2 sockeye salmon in 2007 was used to predict a return of 2.6 million age-1.3 sockeye salmon to the Kenai River in 2008, while the fry model predicted a return of 2.5 million age-1.3 sockeye salmon. Age-2.3 sockeye salmon typically comprise about 20% of the run to the Kenai River. A sibling model based upon the return of age-2.2 sockeye salmon in 2007 was used to forecast the return (286,000) of age-2.3 sockeye salmon to the Kenai River in 2008. The return of age-2.2 sockeye salmon in 2007 was 58% less than the 20-year average return for this age class. The predominant age classes in the 2008 run should be age 1.3 (85%) and age 2.3 (9%).

The sockeye salmon run forecast for the Kasilof River of 1.3 million is 33% greater than the 20-year average run of 968,000 fish. Age-1.3 sockeye salmon typically comprise about 35% of the run to the Kasilof River. A sibling model based upon the return of age-1.2 sockeye salmon in 2007 was used to forecast the return (376,000) of age-1.3 sockeye salmon in 2008. The return of age-1.2 sockeye salmon last year was 57% greater than the 20-year average return for this age class. Age-1.2 sockeye salmon typically comprise about 30% of the run to the Kasilof River. A sibling model based upon an above average return of age-1.1 sockeye salmon in 2007 was used to forecast the return of age-1.2 sockeye salmon to Kasilof River. The sibling model predicted a return of 484,000 age-1.2 sockeye salmon. However, we are less confident in this forecast, because a smolt model predicted a return of only 252,000 age-1.2 sockeye salmon. Age-1.2 sockeye salmon migrated as smolts from the Kasilof River in 2006, when their estimated abundance was only 2.6 million, about one-half of the 20-year average. The predominant age classes in the 2008 run should be age 1.2 (38%) and age 1.3 (29%).

The sockeye salmon run forecast for the Susitna River of 344,000 is 24% less than the 20-year average run of 453,000. Age-1.2 and -1.3 sockeye salmon typically comprise 72% of the run to the Susitna River. A spawner-recruit model was used to forecast the return (80,000) of age-1.2 sockeye salmon to the Susitna River. The spawner abundance for this age class was about 37% less than the 20-year average spawner abundance. A sibling model based upon the return of age-1.2 sockeye salmon in 2007 was used to forecast the return (170,000) of age-1.3 sockeye salmon to the Susitna River in 2008. The return of age-1.2 sockeye salmon in 2007 was 44% less than the 20-year average. The predominant age classes in the 2008 run should be age 1.3 (49%) and age 1.2 (23%).

The sockeye salmon run forecast for Fish Creek of 53,000 is 67% less than the 20-year average run of 159,000. Age-1.2 and -1.3 sockeye salmon typically comprise 79% of the run to Fish Creek. Sibling models based upon the abundances of age-1.1 and -1.2 sockeye salmon in 2007 were used to forecast the returns of age-1.2 (36,000) and -1.3 (10,000) sockeye salmon in 2008. The abundances of age-1.1 and -1.2 sockeye salmon returning to Fish Creek in 2007 were 74% less than the 20-year average. The predominant age classes in the 2008 run should be age 1.2 (67%) and age 1.3 (19%).

The sockeye salmon run forecast for Crescent River of 100,000 is 7% less than the 20-year average run of 108,000. Sibling models based upon returns of age-1.2 and -2.2 sockeye salmon in 2007 were used to forecast returns of age-1.3 (48,000) and -2.3 (28,000) sockeye salmon to the Crescent River in 2008. The predominant age classes in the 2008 run should be age 1.3 (48%) and age 2.3 (28%).

Forecast runs to individual freshwater systems are as follows:

System	Run	Goal Range
Crescent River	100,000	30,000–70,000
Fish Creek	53,000	20,000–70,000
Kasilof River	1,286,000	150,000–250,000
Kenai River	3,064,000	750,000–950,000
Susitna River	344,000	90,000–160,000[a]
Minor Systems	727,000	N/A

[a] The inriver goal listed for Susitna River sockeye salmon is the escapement goal range for Yentna River sockeye salmon. The sonar estimate of sockeye salmon escapement into the Yentna River is typically multiplied by 1.95 to expand the estimate to the entire Susitna River watershed.

For more information contact Mark Willette, Jeff Fox, or Pat Shields at the Soldotna ADF&G office at (907) 262-9368.

Honorable Curt Menard
Mayor, Matanuska-Susitna Borough
350 E. Dahlia
Palmer, AK 99645

May 16, 2008

Dear Mayor Menard,

The Mat-Su Borough Blue Ribbon Sportsmen's Committee finds ourselves greatly disturbed with the manner in which the Board of Fisheries (BOF) and the Department of Fish and Game (ADF&G) is addressing the Stock of Concern status of Susitna Sockeye Salmon. The Committee met following the February Board of Fisheries meeting on Upper Cook Inlet Fin Fish and discovered this sentiment unanimous among our membership. We are writing in hopes of escalating this concern to build support for bringing the Susitna Sockeye Action Plan better into compliance with the Sustainable Salmon Fisheries Policy.

During the course of the BOF meeting, the Board declared Susitna Sockeye a Stock of Concern under the Sustainable Salmon Fisheries Policy (5 AAC 39.222). Pursuant to that designation, the ADF&G proposed what they considered an "Action Plan" to the BOF for consideration. The BOF accepted that document without modification. It is our position that this document fails to meet the criteria set forth in the Sustainable Salmon Fisheries Policy (SSFP) for an Action Plan by a wide margin.

We would like to see the ADF&G and the BOF withdraw this document and generate an SSFP-compliant Action Plan for these stocks and we ask your assistance in advancing our position to the state.

The SSFP is very clear about what to do in the case where the sustainability of a salmon stock is uncertain. The ADF&G has repeatedly documented their "uncertainty" regarding Susitna/Yentna salmon. Quoting form their "Action Plan", "Although sockeye salmon escapements are estimated via a Bendix sonar system, there is *great uncertainty* surrounding their accuracy and precision. . . "the department has *low confidence* in the accuracy of our estimate of the Susitna sockeye salmon harvest".

This uncertainly has been consistent for many years and only this season has the BOF succumbed to pressure and taken steps to address the situation. On its face, this is good news, however the action part of this "Action Plan" is lacking.

The SSFP states clearly, "in the face of uncertainty, salmon stocks, fisheries, artificial propagation, and essential habitats shall be managed conservatively as follows:" Excerpting from the SSFP it reads:

(4) in association with the appropriate management plan, the department and the board will, as appropriate, collaborate in the development and periodic review of an action plan for any new or expanding salmon fisheries, or stocks of concern; action plans should contain goals, measurable and implementable objectives and provisions including

(A) measures required to restore and protect salmon habitat including necessary coordination with other agencies and organizations;
(B) identification of salmon stock or population rebuilding goals and objectives;
(C) fishery management actions needed to achieve rebuilding goals and objectives in proportion to each fishery's use of, and hazards posed to, a salmon stock;
(D) descriptions of new or expanding salmon fisheries, management concern, yield concern, or conservation concern; and;
(E) performance measures appropriate for monitoring and gauging the effectiveness of the action plan that are derived from the principles and criteria contained in this policy;

It is the position of the Mat-Su Mayor's Blue Ribbon Sportsmen's Committee that the abbreviated 6-page "Action Plan" prepared by the ADF&G and the BOF fails to comply with any of the requirements listed above.

By comparison, the 24-page 2006 Kvichak River Sockeye Salmon Stock Status and Action Plan, as well as, the 21-page Norton Sound Shaktoolik and Unalakleet Subdistrict Chinook Salmon Stock Status and Action Plan contain extensive discussion of goals and objectives along with performance measures that enable the BOF to know whether the concerns regarding these stocks are improving.

To further the insult of what many consider an "Inaction Plan" the BOF under the encouragement of the ADF&G violated the most basic principle of the SSFP by not only failing to proceed cautiously, but by further liberalizing the commercial harvest of Upper Cook Inlet sockeyes.

During the BOF meeting, the ADF&G released statistics collected in the past couple years showing that on certain days the Central District commercial fishery caught as many as 100,000 Northern District–bound sockeyes. The implication of this information is that had the fishery been closed for as little as a few days, the escapement of sockeyes to the Northern District could have been doubled.

Making matters worse, we have received word that ADG&G held closed-door meetings with Cook Inlet Aquaculture regarding the nature of research the department plans to contract for as a result of this alleged Action Plan and rumor is that they plan to discontinue the salt water research that provides this kind of information.

Again, the SSFP calls for public input and we feel the appearance of evasive behavior that denies the public any input in this highly sensitive subject will be detrimental to the ADF&G. The department has not even enlisted input from their regional Advisory Committees on this matter.

It is saddening to report that after attempting to participate in the Board of Fisheries process in good faith the perspective of our committee is that the integrity of both the ADF&G and the BOF appears questionable.

Any recommendations on how to elevate these concerns is greatly appreciated.

Sincerely,

Tom Kluberton, Chairman

Cc: John Duffy, MSB Manager

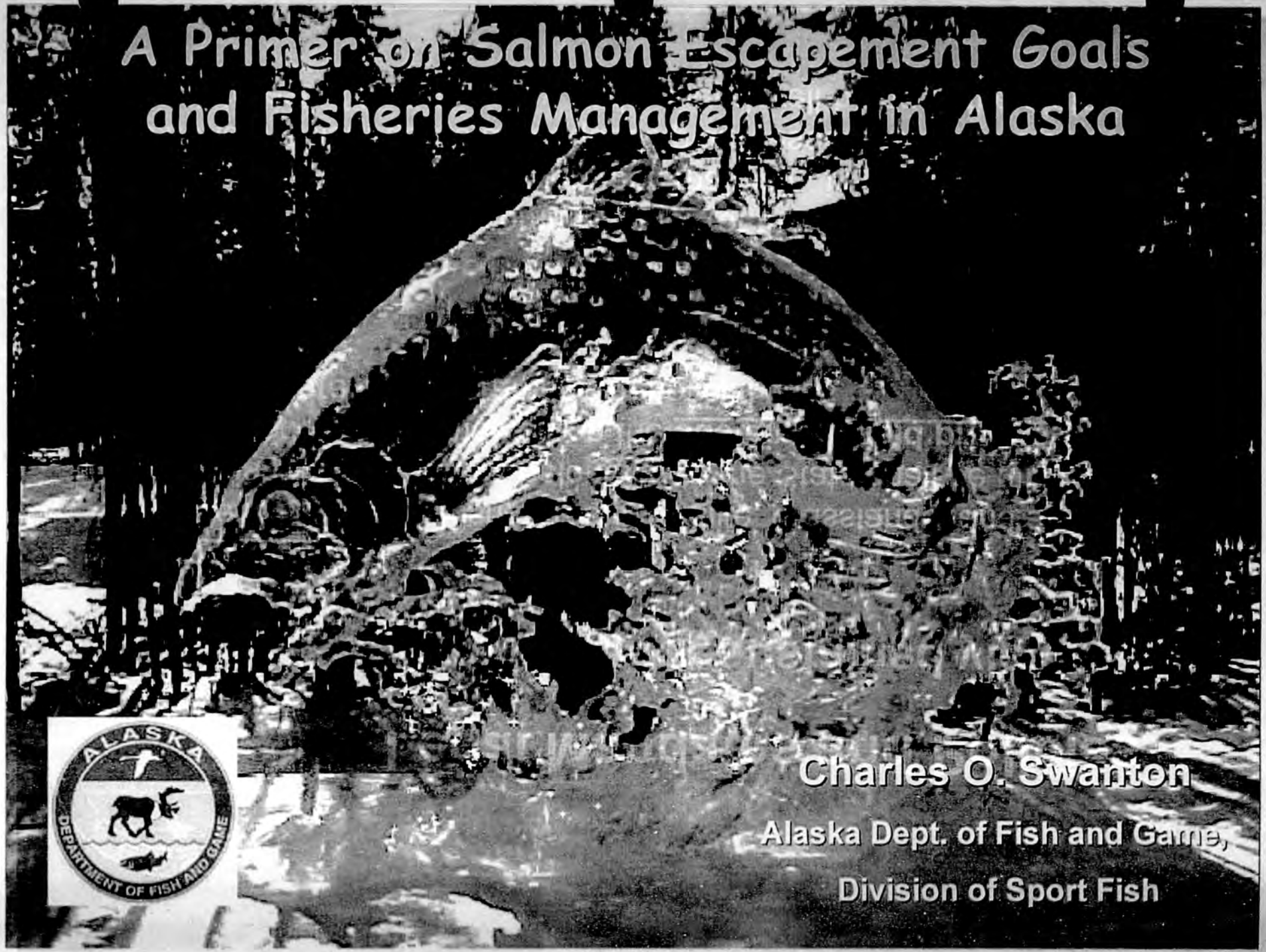
Attachments: SSFP
2008 Susitna Sockeye Action Plan
2007 Kvichak River Sockeye Salmon Stock Status and Action Plan
2003 Norton Sound Shaktoolik and Unalakleet Subdistrict Chinook Salmon Stock Status and Action Plan

KENAI PENUNSULA BOROUGH
1987 TO 2007

	Commercial Harvest	Unemployment	Taxable Sales
2007	$23.4M	Unav.	$968 M
2006	$13.9M	8.4%	$887 M
2005	$32.7M	8.6%	$822 M
2004	$20.7M	9.5%	$780 M
2003	$12.3M	10.0%	$733 M
2002	$11.6M	9.0%	$724 M
2001	$ 7.7M	7.9%	$705 M
2000	$ 8.1M	8.0%	$666 M
1999	$21.3M	11.1%	$640 M
1998	$ 8.6 M	9.9%	$612 M
1997	$32.4M	13.7%	$590 M
1996	$29.7M	14.2%	$564 M
1995	$22.0M	12.5%	$552 M
1994	$34.5M	12.8%	$527 M
1993	$30.0M	13.2%	$492 M
1992	$100.0M	15.7%	$463 M
1991	$15.2M	13.8%	$444 M
1990	$40.7M	11.9%	$439 M
1989	$59.2M	9.3%	$396 M
1988	$122.2M	14.0%	$348 M
1987	$101.1M	16.8%	$328 M

Figures came from ADF&G, Alaska Dept. of Labor and Kenai Borough. OBSERVATIONS 1. The great commercial fishing years (1992, 1988 and 1987) had high unemployment rates and the poor years (2001,2000 and 1998) had low rates. 2. Neither great nor poor commercial fishing years had any significant impact on taxable sales in the Kenai Borough.

A Primer on Salmon Escapement Goals and Fisheries Management in Alaska



Charles O. Swanton

Alaska Dept. of Fish and Game,

Division of Sport Fish

Legal Mandates and Policies

Providing for sustained yield:

Constitution:

Article VIII, Sec(4). Fish, forests, wildlife, grasslands, and all other replenishable resources belonging to the State shall be utilized, developed, and maintained on the **sustained yield principle**, subject to preferences among beneficial uses.

Statute:

AS 16.05.020(2). The commissioner (of the Department of Fish and Game) shall manage, protect, maintain, improve and extend the fish, game and aquatic plant resources of the state in the interest of the economy and general well-being of the state.

Legal Mandates and Policies

Providing for sustained yield:

Regulation:

- Mixed-Stock Salmon Policy, 5 AAC 39.220
- Sustainable Salmon Fisheries Policy, 5 AAC 39.222
- Escapement Goal Policy, 5 AAC 39.223
- Management plans for salmon fisheries

Sustainable Salmon and Escapement Goal Policies:

- Manage for escapement goals
- Biological Escapement Goal (BEG) and Maximum Sustained Yield (MSY)
- Sustainable Escapement Goal (SEG) and Sustained Yield

Key Terms and Definitions

- Escapement - annual estimated size of the spawning salmon stock; quality of the escapement may be determined not only by numbers of spawners, but also by factors such as sex ratio, age composition, temporal entry into the system, and spatial distribution within the salmon spawning habitat.

- Return - total number of salmon in a stock from a single brood (spawning) year surviving to adulthood; because the ages of adult salmon (except pink salmon) returning to spawn varies, the total return from a brood year will occur over several calendar years; the total return generally includes those mature salmon from a single brood year that are harvested in fisheries plus those that compose the salmon stock's spawning escapement.

- Run - total number of salmon in a stock surviving to adulthood and returning to the vicinity of the natal stream in any calendar year, composed of both the harvest of adult salmon plus the escapement; the annual run in any calendar year, except for pink salmon, is composed of several age classes of mature fish from the stock, derived from the spawning of a number of previous brood years.

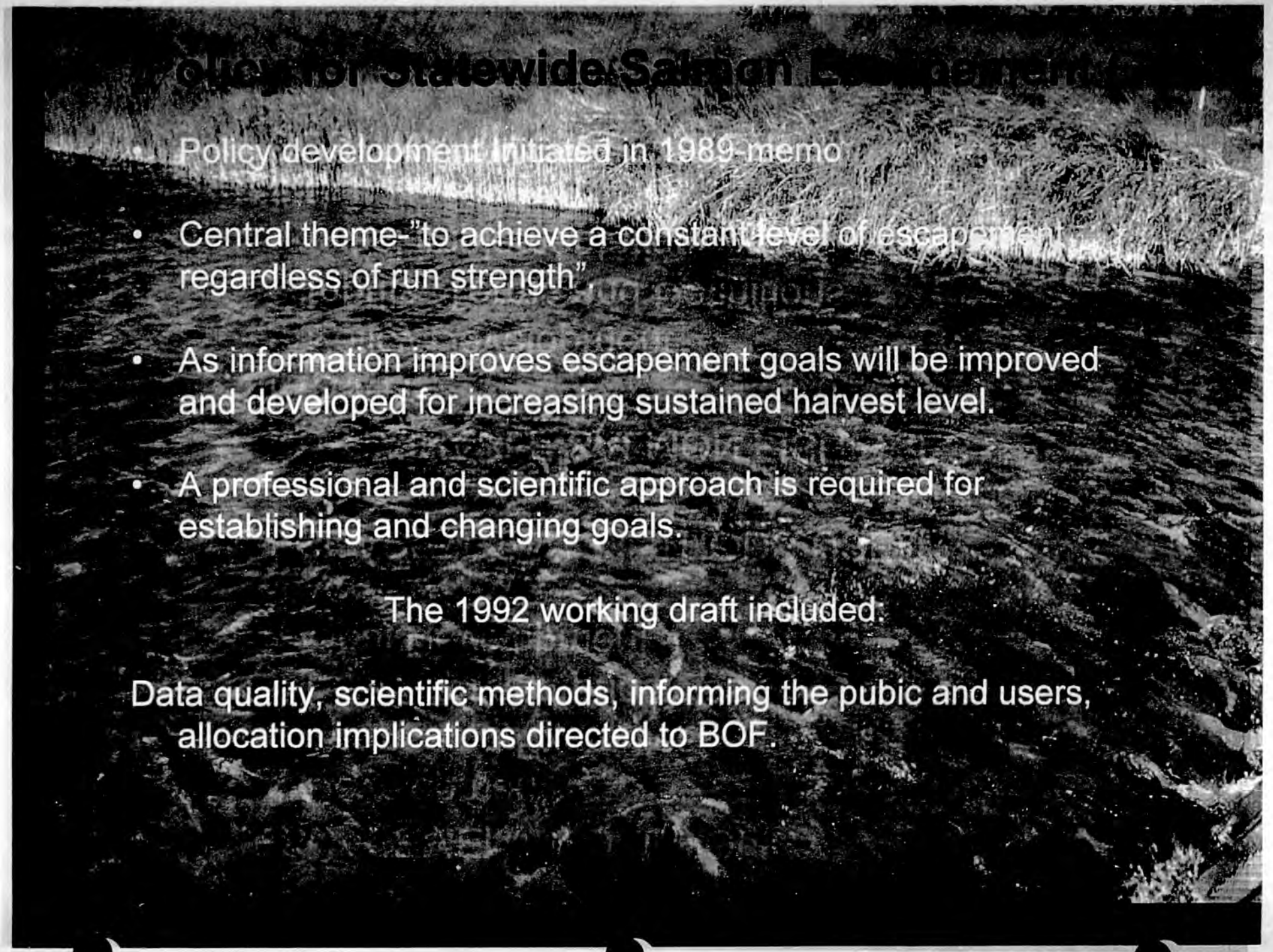
Key Terms and Definitions

- Yield - number or weight of salmon harvested in a particular year or season from a stock.
- Harvest – number or weight of salmon taken of an annual run from a specific stock.
- Exploitation Rate – fraction of the return by stock taken in a fishery (specific to a brood year).
- Harvest Rate – fraction of an annual run from a stock taken in a fishery.
- Overescapement - escapements that are above the range of the current escapement goal.
- Run timing – calendar date that a stock passes by a fixed geographic reference point (e.g., statistical management area, weir).

Key Terms and Defintions

Fishery-Related Effects	Biological Effects
Based on year of fishery	Based on brood year
Run or Total Run	Return or Total Return
Harvest Rate	Exploitation Rate
Harvest	Yield
Realized Escapement	Brood Year Escapement
Harvest ÷ Run = Harvest Rate	Yield ÷ Return = Exploitation Rate
Run – Harvest = Escapement	Return – Escapement = Yield


ESCAPEMENT GOAL POLICY
• Development
• Terms and Examples
• Elements and principles
• Goal Development
ESCAPEMTENT METHODS USED
SUSTAINABLE SALMON FISHERIES POLICY
• Policy Development
• Inputs, Terms and Definitions
• Initial implementation
SUSITNA RIVER SOCKEYE SALMON


Policy for Statewide Salmon Escapement
• Policy development initiated in 1989-memo
• Central theme-"to achieve a constant level of escapement regardless of run strength",
• As information improves escapement goals will be improved and developed for increasing sustained harvest level.
• A professional and scientific approach is required for establishing and changing goals.
The 1992 working draft included:
Data quality, scientific methods, informing the pubic and users, allocation implications directed to BOF.

Codified Escapement Goal Policy: Key Elements

1) Establish BEGs and SEGs for stocks that are actively managed.

2) Document all analyses used to establish goals.

3) Establish SETs if needed.

4) Review goals within a region every BOF cycle.

BEG: Biological Escapement Goal

- A goal that provides the greatest potential for MSY;
- Primary management Objective;
- Based on best available biological information;
- Expressed as a range;
- Seek to maintain escapements evenly within the range.



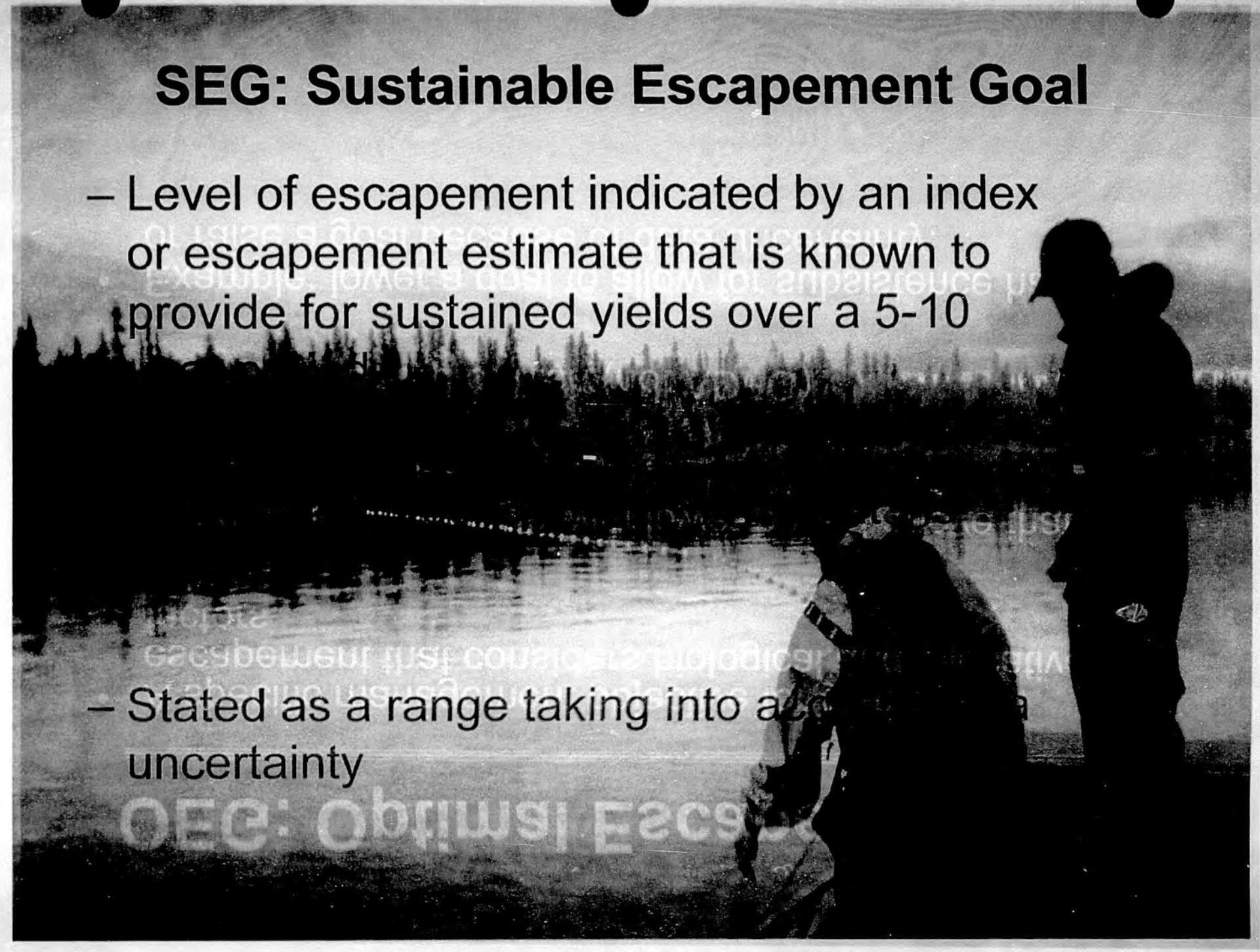
Building a Brood Table

- Escapement Estimates
- Harvest Estimates
- Age Composition of Escapement and Harvest
- Stock Identification and Run Reconstruction
- ~15+ years of DATA

Spawner-Recruit Data (chum salmon)



Year	Escapement	Return
1972	457,800	362,587
1973	249,015	856,936
1974	411,133	1,338,657
1975	900,967	843,132
1976	511,475	2,926,444
1977	358,771	1,321,297
1978	307,270	1,187,305
1979	280,537	979,514
1980	492,676	1,744,558
1981	1,486,182	2,779,191
1982	444,581	988,061
1983	362,912	1,220,480
1984	891,028	2,928,193
1985	1,080,243	1,141,620
1986	1,189,602	1,203,367
1987	455,876	1,480,599
1988	1,125,449	628,815
1989	636,906	1,318,363
1990	403,627	1,300,412
1991	847,772	1,588,212
1992	775,626	1,233,719
1993	517,409	467,159



SEG: Sustainable Escapement Goal

- Level of escapement indicated by an index or escapement estimate that is known to provide for sustained yields over a 5-10
- Stated as a range taking into a
  uncertainty

OEG: Optimal Escapement Goal

- A specific management objective for salmon escapement that considers biological and allocative factors.
- Expressed as a range with lower bound above that of an SET
- Set by the Board of Fish (not ADFG)
- Example: lower a goal to allow for subsistence harvest; or raise a goal because of data uncertainty.

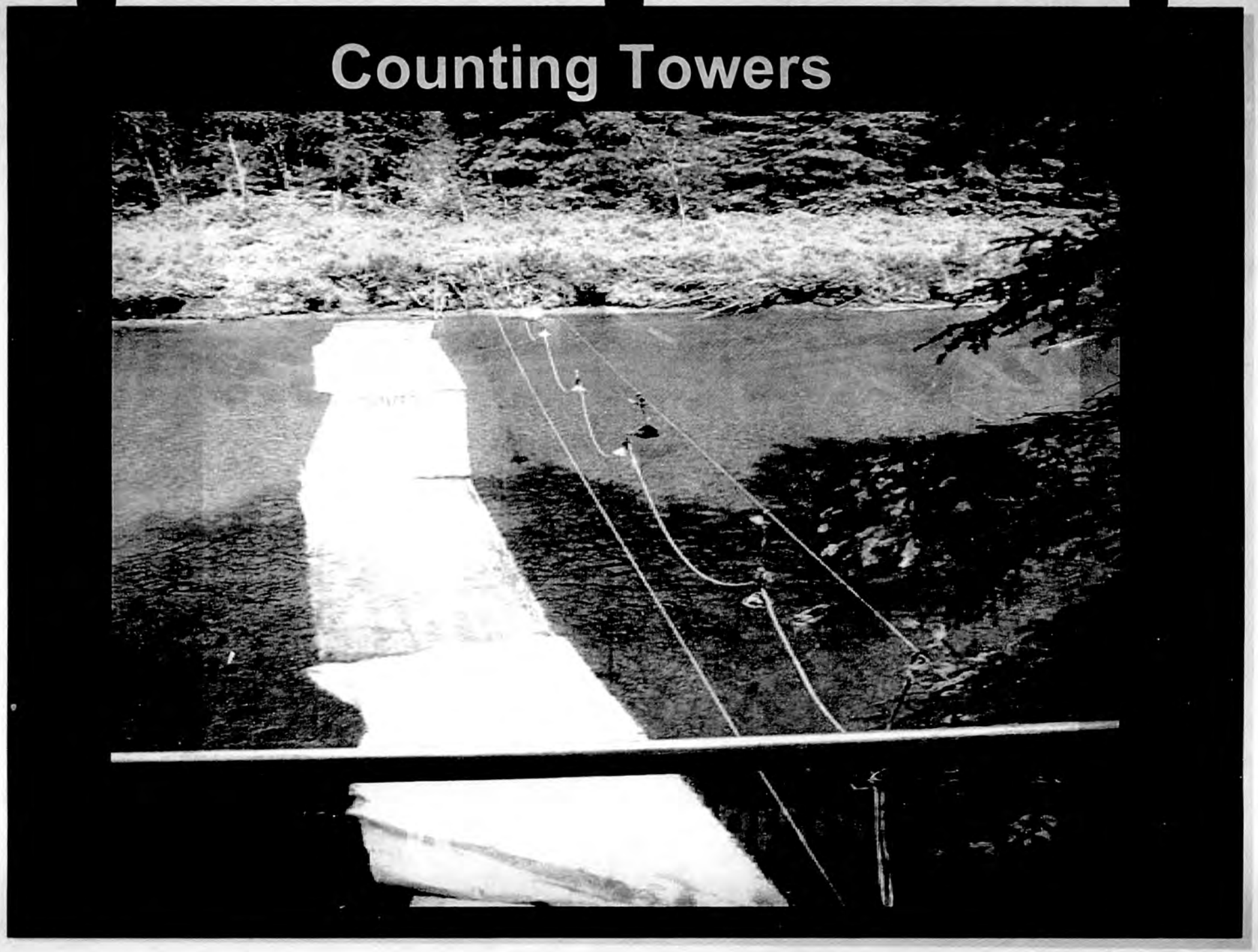
Picket Weir



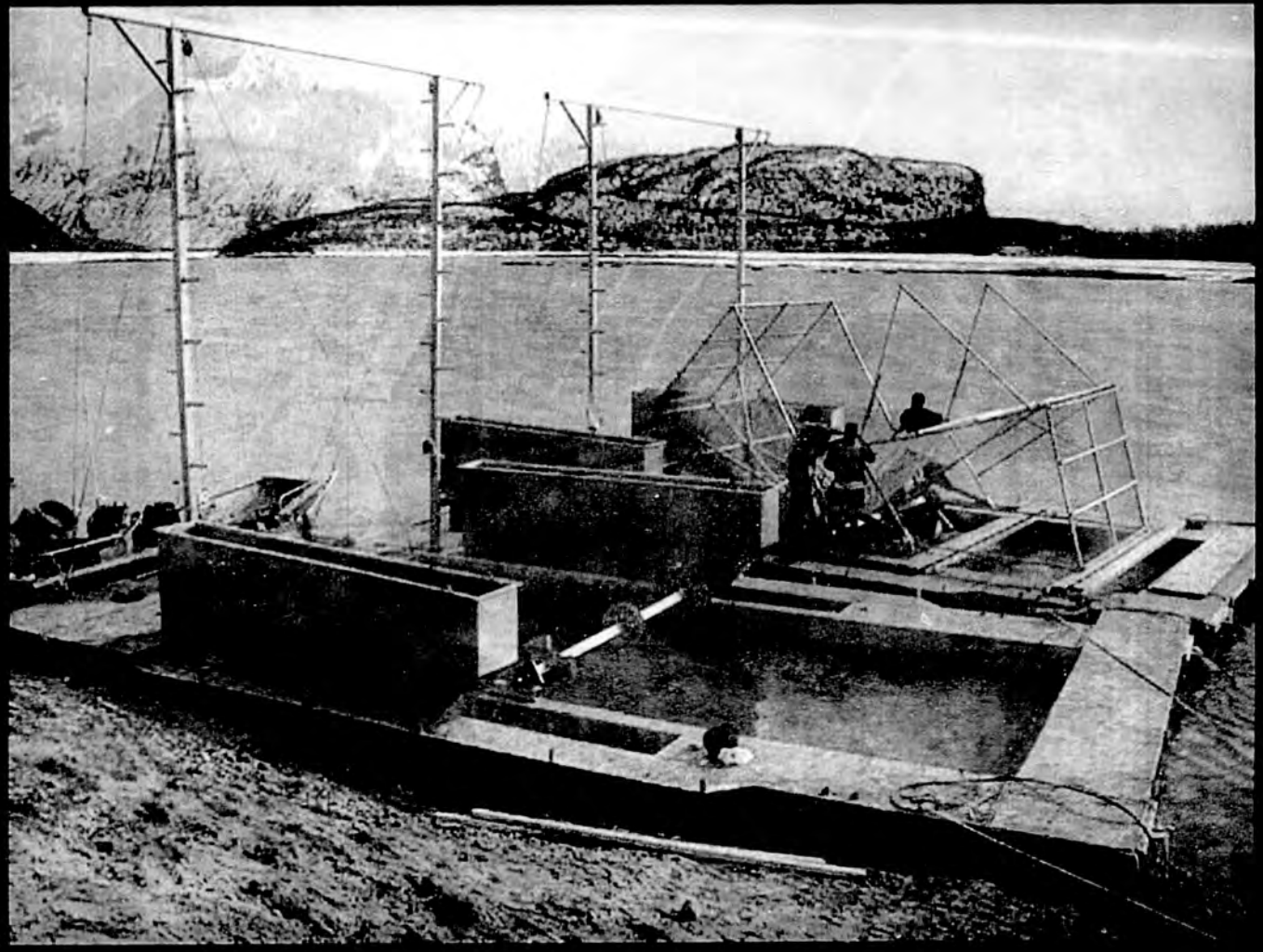
Floating Weir



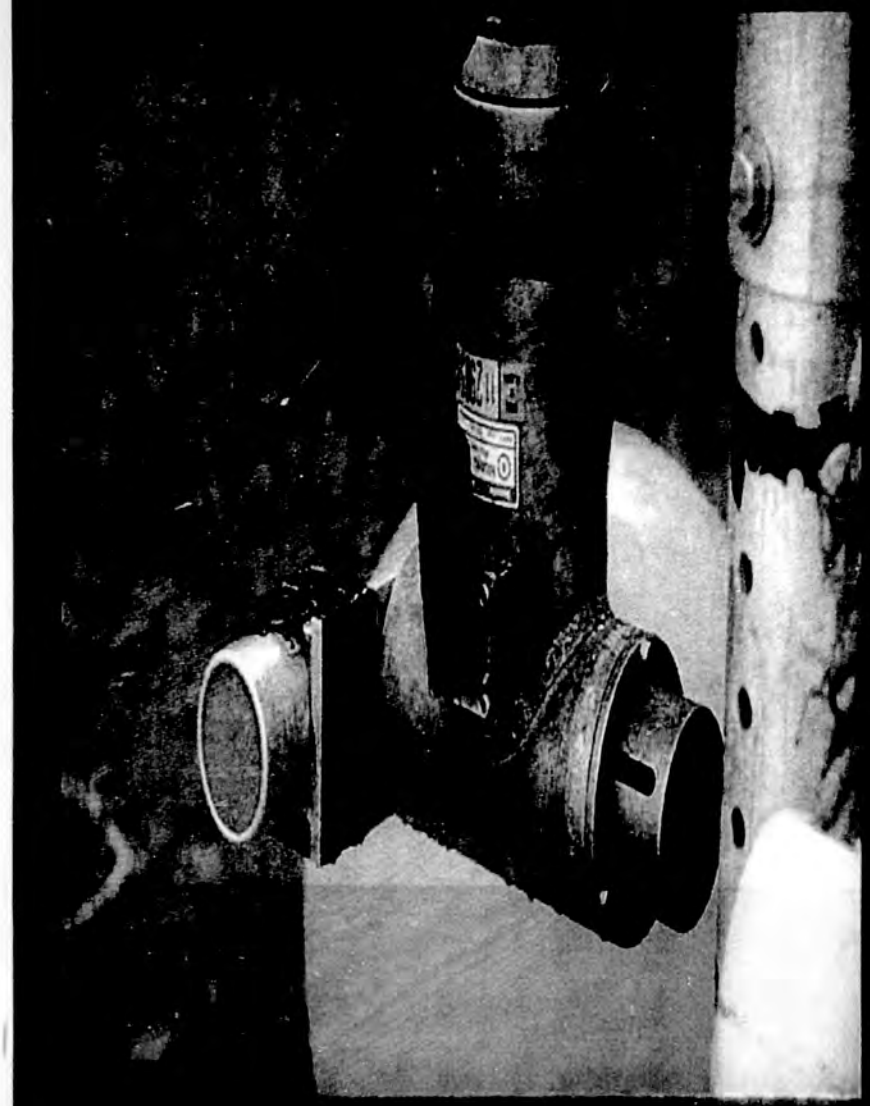
Counting Towers

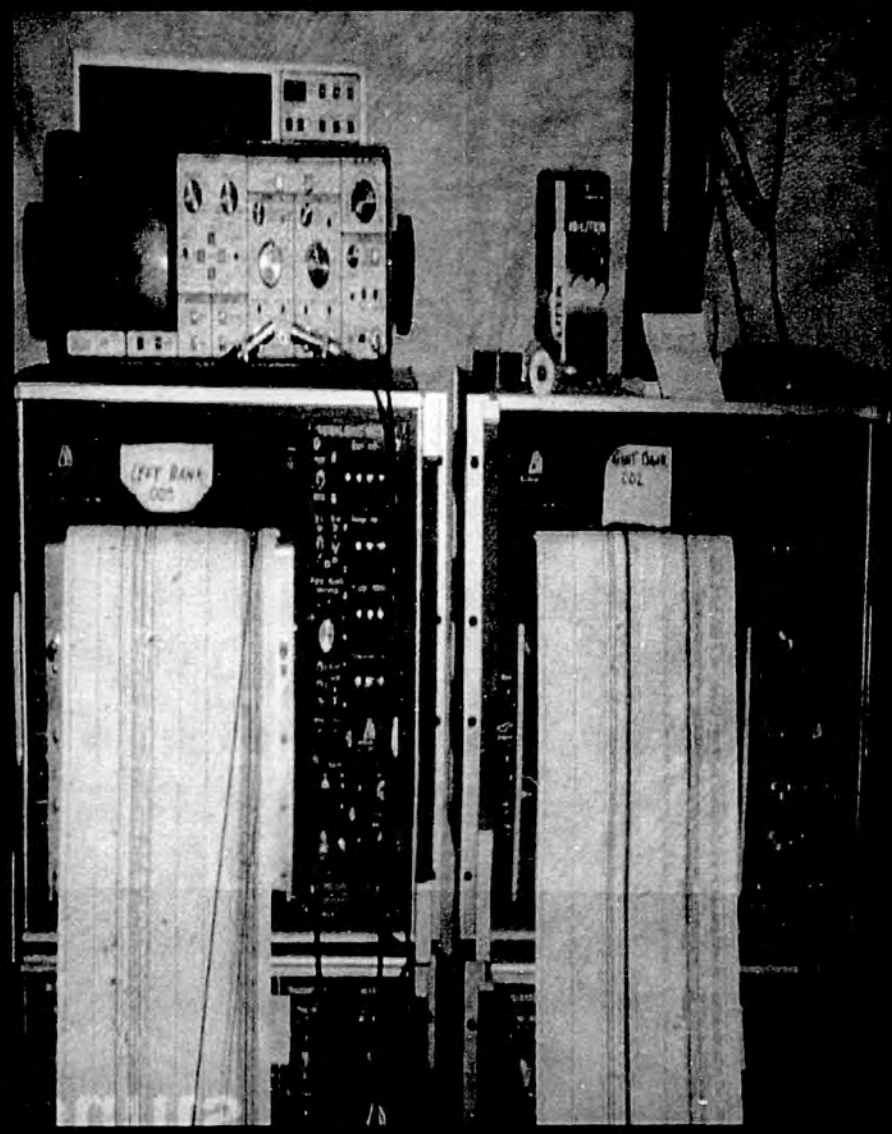


Mark-Recapture



Sonar



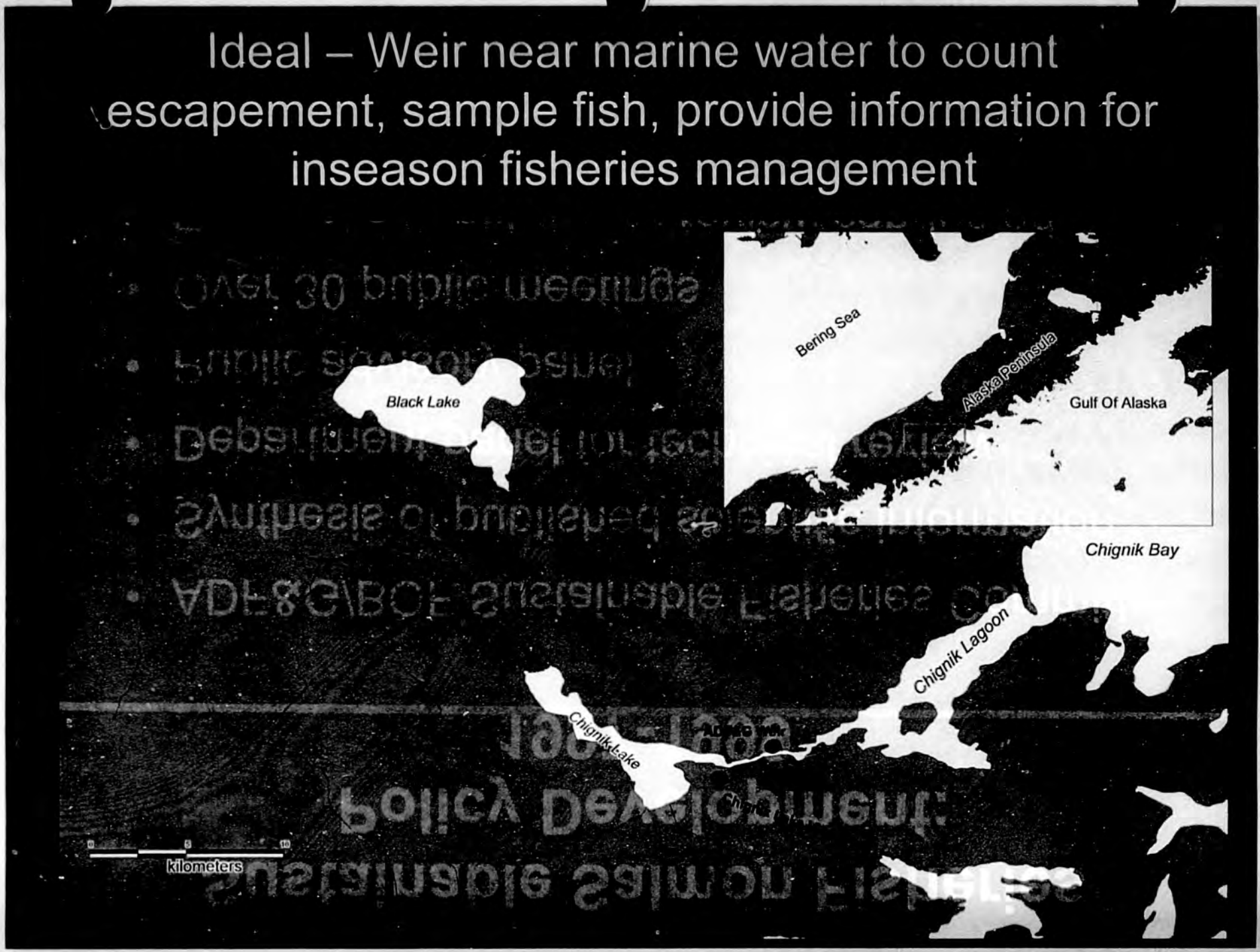


Aerial Counts





Ideal – Weir near marine water to count escapement, sample fish, provide information for inseason fisheries management



Sustainable Salmon Fisheries Policy Development: 1997-1999

- ADF&G/BOF Sustainable Fisheries Committee
- Synthesis of published scientific information
- Department panel for technical review
- Public advisory panel
- Over 30 public meetings
- External scientific peer review conducted

PARTS OF THE POLICY

I. Principles and criteria for sustainable salmon fisheries management

II. Implementation Steps

III. Definitions of terms

IV. Courtship & subsequent marriage to BEG policy (Feb 2001)

Principles

- Protect wild salmon and habitat to ensure sustained yields.
- Manage for escapement ranges that sustain production & maintain normal ecosystem functioning.
- Apply effective management systems which regulate human activities.
- Encourage public support and involvement.
- Manage conservatively commensurate with uncertainty.

General policy Implementation

- At BOF meetings/work sessions (normal cycle) ADF&G provides stock by stock review for consistency with principles and criteria.
- Each stock status report will discuss escapement goals, habitat issues, and Identify concerns.
- If concern is identified, ADF&G/BOF crafts an action plan.

Terms and Definitions

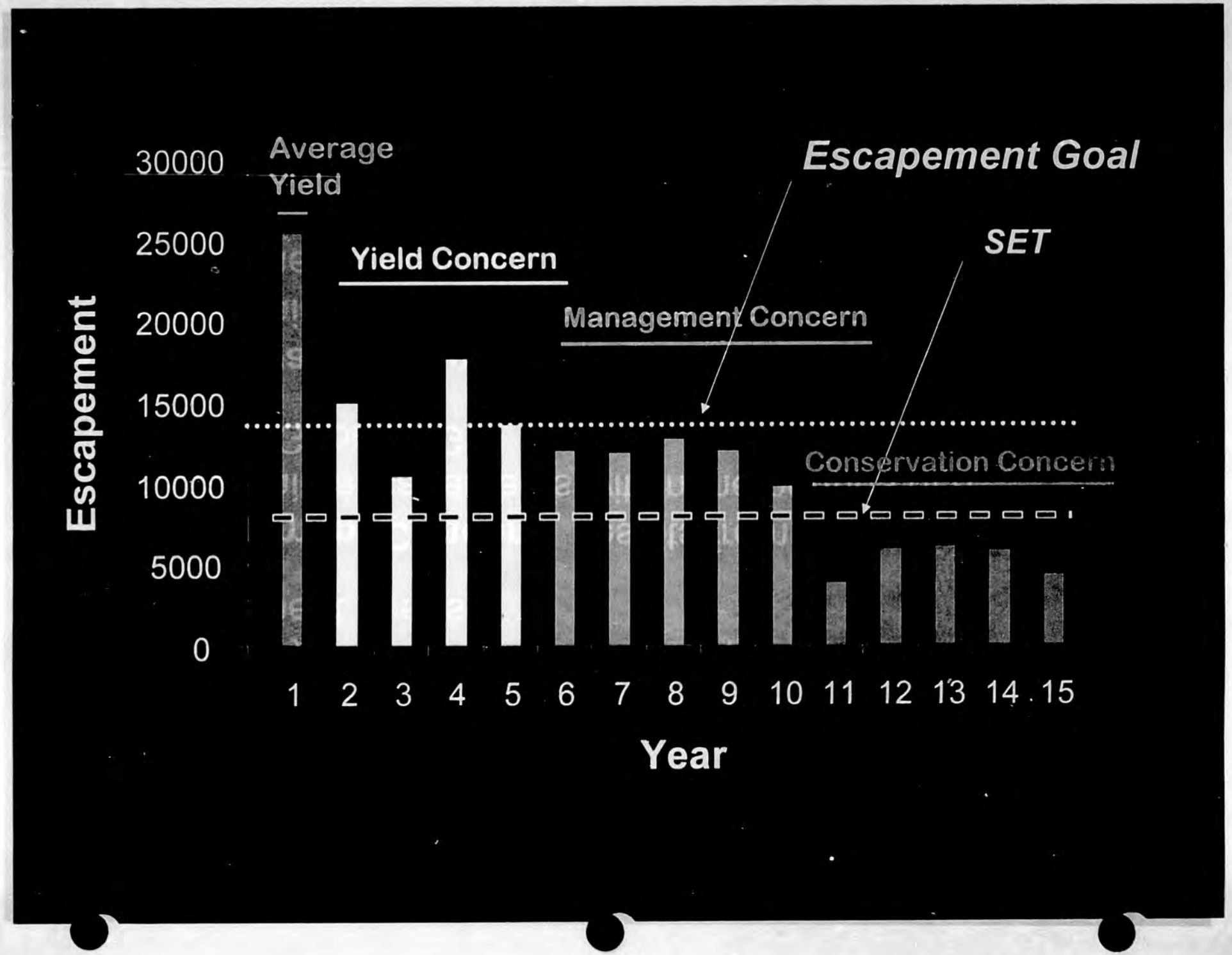
44 terms are defined

- MSY
- Burden of conservation
- Stock
- Yield
- 3 types of Escapement goals (BEG, SEG, OEG)
- 3 levels concern (yield, management, conservation)

Levels of Concern

- **Yield Concern**: results from a chronic inability to maintain yields or harvestable surplus above escapement needs
- **Management Concern**: results from a chronic inability to maintain escapements within the bounds of a BEG,SEG, or OEG.
- **Conservation Concern**: results from a chronic inability to maintain escapements above a sustainable escapement threshold (SET).

Chronic inability - continuing or anticipated inability to meet escapement threshold (goals) over 4-5 year period (generation time of most spp.) despite use of specific management measures.


Escapement
30000
25000
20000
15000
10000
5000
0
Average Yield
Yield Concern
Management Concern
Conservation Concern
Escapement Goal
SET
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
Year

Action Plan Elements

- Habitat restoration, protection measures
- Stock rebuilding goals, objectives
- Management actions
- Performance measures
- Research plan
- Communication with other agencies

Sustainable Salmon Fisheries Policy

- Provides an analytical structure for the BOF process
- Articulates ADF&G and BOF approach to salmon management
- Encompasses a large geographic, multi-stock, multi-species scope
- Is implemented in a public forum - the Board of Fisheries process

Susitna River Sockeye Salmon Escapement

Lack information on the total escapement of sockeye salmon into the Susitna River

- Sonar unknown proportion of total escapement (Bendix vs. DIDSON).
- Weir counts and mark-recapture estimates greater than sonar.
- Complicates management and estimation of both harvest and exploitation rates.

Susitna River Sockeye Salmon Escapement

Current escapement goal will be evaluated

- Historical basis for goal.
- Data uncertainty – escapement, harvest, spatial and temporal distributions.
- Improve stock assessment to better understand stock production and formulate management strategies based more on science.

Summary

- Constitution mandates fish resources be developed and maintained for sustained yields.
- SSF and EG Policies built on a harvest strategy based on fixed escapements.
- Fixed escapements offer the opportunity for greater yields than with other harvest strategies
- Regular evaluations of goals and management strategies under the SSFP ALMOST assure sustainability.

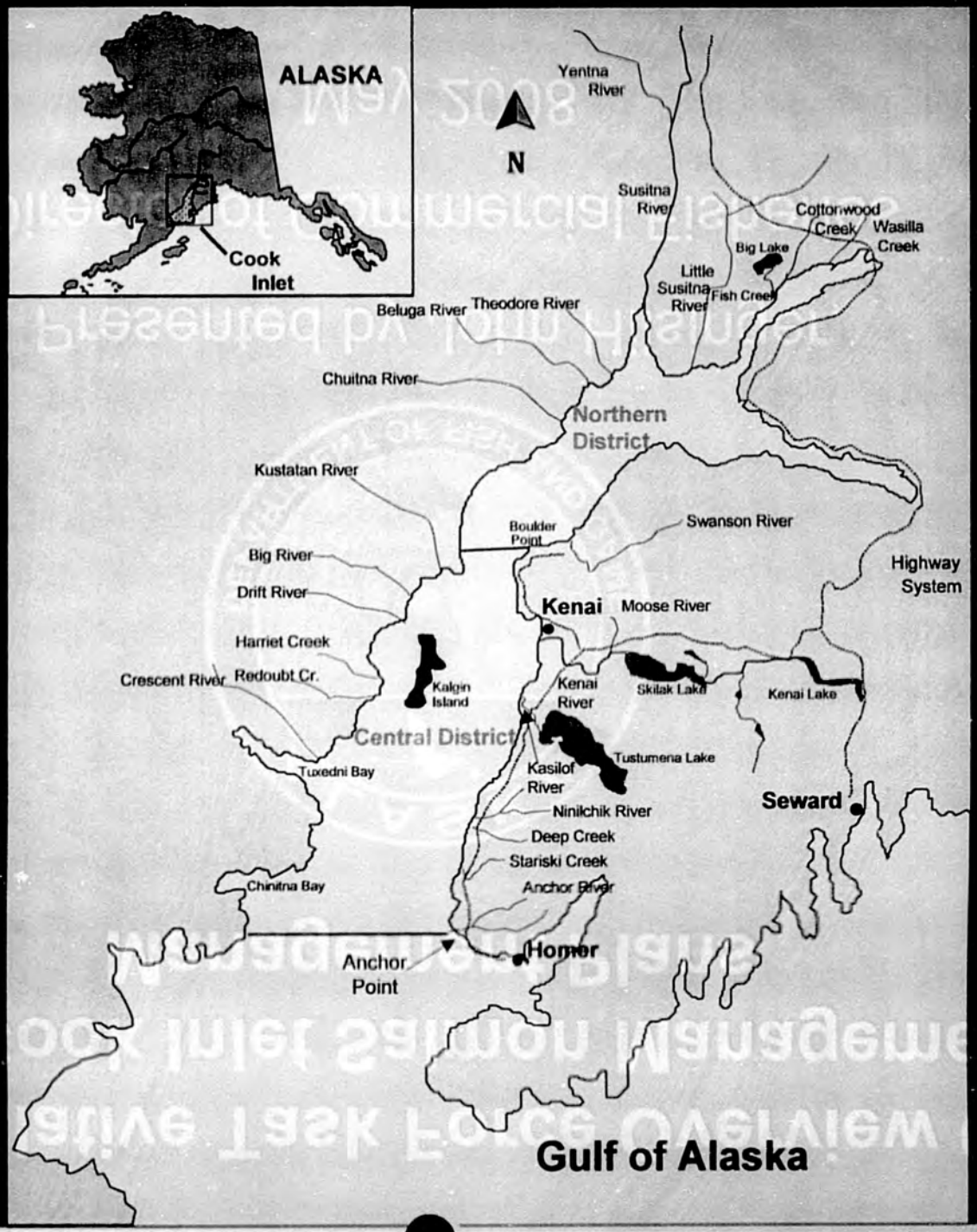
Legislative Task Force Overview Of Upper Cook Inlet Salmon Management & Management Plans



Presented by John Hilsinger,

Director of Commercial Fisheries

May 2008


ALASKA
Cook Inlet
N
Yentna River
Susitna River
Cottonwood Creek
Wasilla Creek
Big Lake
Little Susitna River
Fish Creek
Beluga River
Theodore River
Chuitna River
Northern District
Kustatan River
Boulder Point
Swanson River
Big River
Drift River
Highway System
Kenai
Moose River
Harriet Creek
Crescent River
Redoubt Cr.
Kalgin Island
Kenai River
Skilak Lake
Kenai Lake
Central District
Tuxedni Bay
Tustumena Lake
Kasilof River
Seward
Ninilchik River
Deep Creek
Stariski Creek
Anchor River
Chinitna Bay
Homer
Anchor Point
Gulf of Alaska

Latitude and Longitude are based on the North American Datum of 1983 (NAD 83) which is equilivalent to the World Geodetic System 1984 (WGS 84).

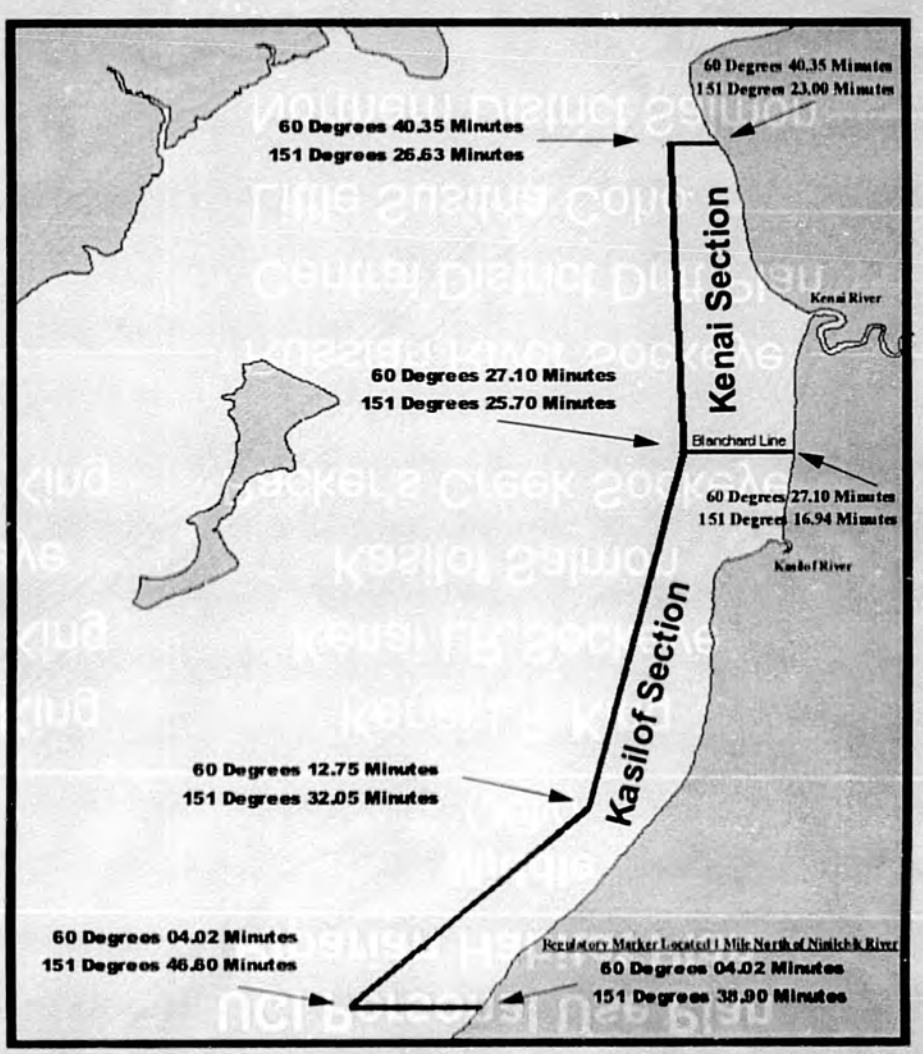


Figure 1. Map of the Kenai and Kasilof Sections with waypoint descriptions.

Organization of Management Plans in Upper Cook Inlet

UCI Salmon Management Plan
Yentna River Subsistence Plan
UCI Personal Use Plan
Riparian Habitat Plan

Early (Prior to July 1)	**Middle** (July)	**Late** (August →)
Northern District King	Kenai LR King	Kenai Coho
Kenai/Kasilof ER King	Kenai LR Sockeye	
Big River Sockeye	Kasilof Salmon	
UCI Marine Early King	Packer's Creek Sockeye	

Russian River Sockeye →

Central District Drift Plan →

Little Susitna Coho →

Northern District Salmon →

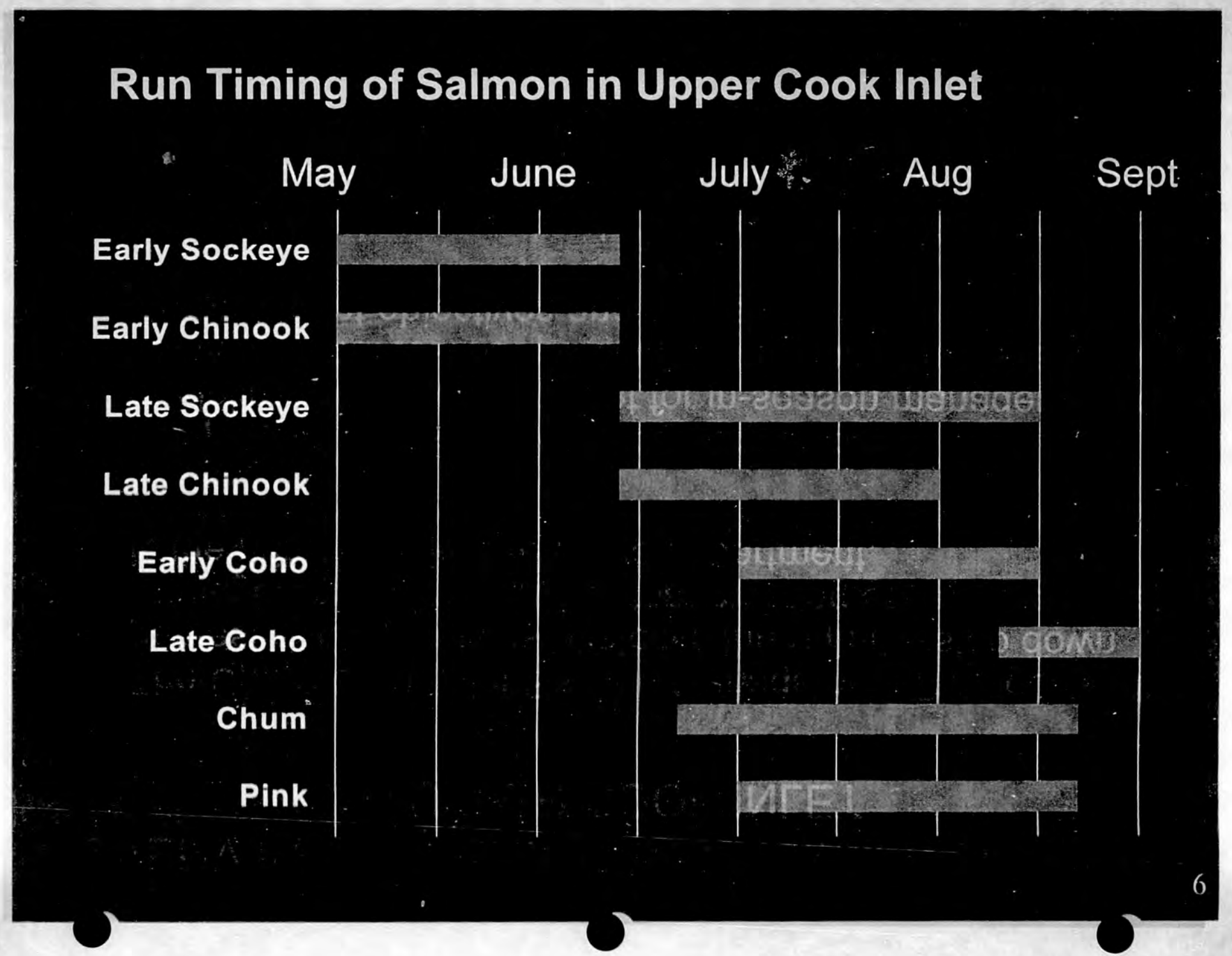
There are a total of 17 management plans in the UCI Mgmt Area

OVERVIEW OF SALMON MANAGEMENT PLANS IN UPPER COOK INLET

- The Upper Cook Inlet Salmon Management Plan guides the harvest and allocations of stocks through the step down management plans. States that meeting escapement goals is the primary objective of the department.

- "Step-down plans" provide specific objectives and guidelines to the department for in-season management of salmon resources. Of particular importance are specifying management objectives and allocative instructions.

- Step-down plans are structured around migratory timing of major stocks of salmon moving through Upper Cook Inlet


Run Timing of Salmon in Upper Cook Inlet
May
June
July
Aug
Sept
Early Sockeye
Early Chinook
Late Sockeye
Late Chinook
Early Coho
Late Coho
Chum
Pink

Organization of Management Plans in Upper Cook Inlet

UCI Salmon Management Plan

Cook Inlet Subsistence Fisheries

UCI Personal Use Plan

Riparian Habitat Plan

Early (Prior to July 1)	**Middle** (July)	**Late** (August →)
Northern District King	Kenai Late Run King	Kenai Coho -
Kenai/Kasilof ER King	Kenai Late Run Sockeye	
Big River Sockeye	Kasilof Salmon	
UCI Marine Early King	Packer's Creek Sockeye	

← Russian River Sockeye →

Central District Drift Plan →

Little Susitna Coho →

Northern District Salmon →

UCI Subsistence Fisheries

- Most of UCI is designated as a non-subsistence area.
- Two small subsistence fisheries:
  - Tyonek
    - King salmon fishery in Tyonek Section of Northern District.
    - Set gillnets used.
  - Upper Yentna River
    - Sockeye fishery in upper reaches of Yentna River.
    - Fish wheels with a live box.

PERSONAL USE SALMON MANAGEMENT PLAN

- Parts overlap all timeframes, although emphasis is during the middle-July, timeframe.

- <u>Fisheries:</u>
  - Evolved from the old subsistence fisheries.
  - One remaining set gillnet fishery- targets Kasilof sockeye.
  - Most opportunity is in the two dip net fisheries that target Kasilof and Kenai sockeye.
  - Fisheries are date-triggered and focused on stocks and species of greatest abundance.

RIPARIAN HABITAT FISHERY MANAGEMENT PLANS

- Not specific to any time frame, although emphasis is clearly during the middle time frame (July).
- The objective of these management plans are to provide the ability to regulate inriver fisheries to protect riparian habitat.
- Most of the assessment and application has been for the Kenai River late run sockeye salmon fishery.

Organization of Management Plans in Upper Cook Inlet

UCI Salmon Management Plan
Cook Inlet Subsistence Fisheries
UCI Personal Use Plan
Riparian Habitat Plan

Early (Prior to July 1)	**Middle** (July)	**Late** (August →)
Northern District King	Kenai Late Run King	Kenai Coho
Kenai/Kasilof ER King	Kenai Late Run Sockeye	
Big River Sockeye	Kasilof Salmon	
UCI Marine Early King	Packer's Creek Sockeye	

Russian River Sockeye →

Central District Drift Plan →

Little Susitna Coho →

Northern District Salmon →

MANAGEMENT PLANS DURING THE EARLY TIMEFRAME (PRIOR TO JULY 1)

- Priority: most stocks managed primarily for recreational purposes.

- Fisheries:
  - Freshwater sport fisheries for king salmon.
  - Sport fishery for early-run Russian River sockeye.
  - Commercial fisheries for Northern Cook Inlet king salmon and Western Cook Inlet sockeye.

MANAGEMENT PLANS DURING THE EARLY TIMEFRAME (PRIOR TO JULY 1)

Northern District King Salmon Management Plan

- Specifically addresses management of commercial fishery in Northern District. The Northern District king salmon fishery open for Monday periods between May 25 and June 24. (5 in 2008)

Kenai R. and Kasilof R. Early Run King Salmon Conservation Mgmt. Plan

- Purposes are to ensure adequate escapement, conserve unique large size Kenai River kings, and provide management guidelines.
- Primarily Governs the sport fishery harvest.

Russian River Sockeye Salmon Management Plan

- Purpose is to ensure adequate escapement and provide management guidelines to department to preclude allocation conflicts.
- Early run harvested primarily by sport fishery, late-run harvested by sport, commercial and personal use fisheries.

Big River Sockeye Salmon Management Plan

- Specifically addresses management of commercial fishery in the Kustatan Subdistrict and the west side of the Kalgin Island Subdistrict .

UCI Marine Early King Salmon Management Plan

- Primarily Governs the sport fishery king salmon harvest in the Deep Creek Area

Organization of Management Plans in Upper Cook Inlet

UCI Salmon Management Plan
Cook Inlet Subsistence Fisheries
UCI Personal Use Plan
Riparian Habitat Plan

Early (Prior to July 1)	**Middle** (July)	**Late** (August →)
Northern District King	Kenai Late Run King	Kenai Coho
Kenai/Kasilof ER King	Kenai Late Run Sockeye	
Big River Sockeye	Kasilof Salmon	
UCI Marine Early King	Packer's Creek Sockeye	

Russian River Sockeye →

Central District Drift Plan →

Little Susitna Coho →

Northern District Salmon →

MANAGEMENT PLANS DURING THE MIDDLE TIMEFRAME (JULY)

- Sockeye, chum, and pink salmon stocks, which move through UCI, will be managed primarily for commercial uses.
- Kenai late run king salmon stocks managed primarily for sport and guided sport uses,
- Minimize the incidental take of Northern District coho, late Kenai king, and Kenai coho.
- Major Fisheries: commercial, personal use, sport, guided sport.

KENAI RIVER LATE RUN SOCKEYE SALMON MANAGEMENT PLAN

- Directs department to manage Kenai Late Run sockeye:
  - Primarily for commercial uses
  - Minimize commercial harvests of ND coho, late-run Kenai king, and Kenai coho to provide PU, sport and guided sport reasonable opportunity to harvest salmon,
  - Management objectives specified are: 1) meet OEG range, achieve in-river goals, and distribute escapements evenly within OEG range in proportion to run size.
- Establishes in-river goals based on abundance (<2 mil, 2-4 mil, >4 mil) and provides management guidelines for each run strength range.
- 2008 Kenai R. sockeye salmon projection is 2-4 million with in-river goal= 750,000-950,000
- Gives direction regarding habitat

KENAI RIVER LATE-RUN KING SALMON MANAGEMENT PLAN

- Provides for adequate escapement of late-run king salmon.
- Directs department to manage this stock primarily for sport and guided sport uses.
- Includes direction on managing sport, guided sport, and commercial fisheries and conducting habitat assessment.

KASILOF RIVER SALMON MANAGEMENT PLAN

- Governs the harvest of Kasilof sockeye salmon excess to escapement needs, directs department to manage this stock to be harvested in fisheries that have historically harvested them.
- States achieving lower end of Kenai OEG shall take priority over not exceeding upper end of Kasilof OEG.
- Sets commercial season opening dates and allowable fishing time including limits on additional fishing time and mandatory closed periods.
- From the beginning of the fishery through July 7, no more than 48 hours of additional fishing time per week and to close the fishery for 36 consecutive hours per week (changed from 48 floating closed window at BOF in 2008), which will begin between 7:00 p.m. on Thursdays and 7:00 a.m. on Fridays.
- States that using Special Harvest Area should be rarely used, and only after exhausting other methods.
- Regulates guided sport fishery for king salmon.
- Tied to Kenai R. late run sockeye salmon management plan after July 7

Central District Drift Gillnet Fishery Management Plan

- Central District: all waters between a line extending from Boulder Point, to Shell Platform C, to a point on the west shore, and the latitude of Anchor Point Light
- Kenai and Kasilof Sections, Drift Areas 1, 2, 3, and 4
- 3.1 million sockeye projected run size for the Kenai River in 2008
- From July 9 - July 15, fishing is restricted for two regular fishing periods to the Kenai and Kasilof Sections and Drift Area 1; Because of past difficulties in achieving the Yenta River escapement goal of 90,000 to 160,000 sockeye salmon, the department will further restrict the July 10 regular drift fishing period to the Kenai and Kasilof Sections only.
- From July 16 - July 31, two of five regular drift periods are restricted based on the size of the Kenai sockeye run: (a) if < 2 million, drifting restricted to Area 1 and Kenai/Kasilof Sections; (b) if 2-4 million (2008), restricted to Areas 1 & 2 and Kenai/Kasilof Sections; (c) if >4 million, no restrictions.

NORTHERN DISTRICT SALMON MANAGEMENT PLAN

- Directs the department to manage harvest of Northern District chum, pink, and sockeye for commercial uses

- Directs the department to "minimize" the harvest of Northern District coho salmon to provide sport and guided sport reasonable opportunity to harvest by:
  - Additional Northern District periods not allowed if coho salmon expected to be most abundant stock in harvest,
  - Regular periods only in the Northern District after August 15.
  - Achieving lower end of Yentna escapement goal shall take priority over not exceeding upper end of Kenai OEG.

Organization of Management Plans in Upper Cook Inlet

UCI Salmon Management Plan
Cook Inlet Subsistence Fisheries
UCI Personal Use Plan
Riparian Habitat Plan

Early (Prior to July 1)	**Middle** (July)	**Late** (August →)
Northern District King	Kenai LR King	Kenai Coho
Kenai/Kasilof ER King	Kenai LR Sockeye	
Big River Sockeye	Kasilof Salmon	
UCI Marine Early King	Packer's Creek Sockeye	

← Russian River Sockeye →

Central District Drift Plan →

Little Susitna Coho →

Northern District Salmon →

KENAI RIVER COHO SALMON CONSERVATION MANAGEMENT PLAN

THE LATE TIMEFRAME (August - September)

- Directs department to manage Kenai coho primarily for sport and guided sport uses
- East side set nets close August 15, unless closed earlier by EO after July 31, if the department determines that less than one percent of the season's total sockeye harvest has been taken per fishing period for two consecutive fishing periods
- Closes sport and guided sport fisheries on November 30

OVERVIEW OF SALMON MANAGEMENT PLANS IN UPPER COOK INLET

Summary :

- Meeting escapement goals are the primary objective of all management plans.
- Management plans are structured around migratory timing of major stocks of salmon moving through Upper Cook Inlet.
- "Step-down" plans provide specific management objectives to the department for management and allocation of fisheries.

OVERVIEW OF SALMON MANAGEMENT PLANS IN UPPER COOK INLET

Summary :

- In Feb, 2008 BOF passed two new gear regulations for the commercial fishery:
  - All web may be single-filament (mono)
  - Provided for "stacking" on drift boats, i.e., two permit holders may fish on one boat and add an extra 50 fathoms of gear during regular fishing periods (normal maximum amount of gear is 150 fathoms per permit; this allows for up to 200 fathoms total)
  - Outlawed the use of spotter planes one-hour before a fishery opens and while the fishery is being prosecuted
  - Susitna River sockeye salmon found by the Board to be a stock of yield concern. Action plan was developed to conservatively manage the commercial fishery while research continues

SITE: Kenai LIO

COMMITTEE: Joint Legislative Cook Inlet Salmon Task Force

DATE: 5-22-08

AGENDA:

Presentation by Dept. of Fish & Game;
Kenai Peninsula public testimony

UPDATE #: **Final Stats**

TESTIFY Y or N	PRINT YOUR NAME	TOWN / CITY	REPRESENTING / AFFILIATION
Y	**Gunnar Knapp**	Anchorage	ISER
Y	**Bill Wirin**	Soldotna	Self / B&B owner
Y	**Roland Maw**	Soldotna	United Cook Inlet Drift Association
Y	**Dwight Kramer**	Kenai	Kenai Area Fishermen's Coalition
Y	**Herman Fandel**	Kenai	Self
Y	**Irene Fandel**	Kenai	Self
Y	**Dennis Gease**	Kenai	SCADA
Y	**David Martin**	Clam Gulch	Self
Y	**Ron Rainey**	Kenai	Self
Y	**William Toppa**	Soldotna	Self
Y	**Rod Berg**	Soldotna	Self
Y	**Vincent Goddard**	Kenai	Local Processing Co.
Y	**Bob Penney**	Soldotna	Cook Inlet Sport Fish Caucus
Y	**Dick Erkeneff**	Soldotna	Self

TESTIFY Y or N	PRINT YOUR NAME	TOWN / CITY	REPRESENTING / AFFILIATION
Y	**Gary Fandrei**	Kenai	Cook Inlet Aquaculture Association
Y	**Ricky Gease**	Soldotna	Kenai River Sportfishing, Inc.
Y	**Randy Berg**	Soldotna	Self
Y	**John Efta**	Kenai	Self
Y	**Brent Johnson**	Clam Gulch	Kenai Peninsula Fisherman's Association
Y	**Lee Martin**	Homer	CIAA
Y	**Dave Carey**	Soldotna	Mayor / City of Soldotna
Y	**Reuben Hanke**	Soldotna	Self
Y	**Ken Tarbox**	Soldotna	Self
Y	**Bob Merchant**	Kenai	Self
Y	**Bruce Gabrys**	Eagle River	Self – com fish
Y	**Paul R. Zobeck**	Soldotna	Self – guide
Y	**Bill Griffin**	Soldotna	Self – guide
Y	**Greg Landeis**	Sterling	Self – taxidermist
Y	**Karl Kircher**	Kasilof	Self
Y	**Dan Thompson**	Kenai	Self – com fish
Y	**Julie Marcinkowski**	Nikiski	Self – com fish

TESTI Y or N	PRINT YOUR NAME	TOWN / CITY	REPRESENTING / AFFILIATION
U	The following signed up to testify	but were unable to	do so before the meeting ended
U	Gary Hollier	Soldotna	Self – com fish
U	Jack Brown	Kasilof	Self
U	Debbie Brown	Kasilof	Self
U	Don Johnson	Soldotna	Self
U	Mike Fenton	Soldotna	Self
U	Eric Beeman	Kenai	Self
U	Mike Kinney	Soldotna	Self
U	Steve Tvenstrup	Kenai	Self
U	Mel Krogseng	Soldotna	Self
U	Arch Richardson	Soldotna	Self
U	Jim Johnson	Soldotna	Self
U	Andy Szczesny	Soldotna	Self

TESTIFY Y or N	PRINT YOUR NAME	TOWN / CITY	REPRESENTING / AFFILIATION
N	**Suzanne Mixwell**	Soldotna	Fish & Game
N	**April Faulkner**	Soldotna	Fish & Game
N	**Leon Marcinkowski**	Nikiski	Self
N	**Betty Gilcrist**		Self
U	**Greg Gabriel**	Kenai	Self
N	**Jim Wilson**	Soldotna	Self
N	**Duff Hoyt**	Homer	Icicle Seafoods
N	**Larry Reutov**	Homer	Self – drift fisherman
N	**Wayne Kuasvikoff**	Nikiski	Processor
N	**Mike Sutton**	Ninilchik	Self
N	**Richard Waisanen**	Soldotna	Self
N	**Shell Bloch**	Soldotna	Self
N	**Jim Golden**	Soldotna	Sports Den
N	**Steve Vanek**	Ninilchik	Self
N	**Tom Walker**	Kenai	Self
N	**George Showalter**	Kenai	Self
N	**Tina Showalter**	Kenai	Self

TESTI Y or N	PRINT YOUR NAME	TOWN / CITY	REPRESENTING / AFFILIATION
N	**Michael Swan**	Soldotna	Self
N	**Marcie Swan**	Soldotna	Self
N	**Monte Roberts**	Soldotna	Self
N	**Scott Aksamit**	Soldotna	Self
N	**Jim Butler**	Kenai	Self



KENAI RIVER SPORTFISHING
ASSOCIATION

To: Marine Stewardship Council Certification – 2008 Surveillance Audit
Certification Body: Moody Marine Ltd.
From: Kenai River Sportfishing Association
Date: May 16, 2008
RE: Comments on Cook Inlet Surveillance Audit

Thank you for the opportunity to provide comments on the annual surveillance audit of the Alaska Commercial Salmon Fisheries. Kenai River Sportfishing Association is a 501 c 3 non-profit fishery conservation organization located in Soldotna, Alaska. Through our work in fisheries management and research, we are very engaged in the management and oversight of the Cook Inlet salmon fisheries. We share the Marine Stewardship Council's objective of sustainable and well-managed fisheries. We understand that the MSC identified five (5) areas of concern for Upper Cook Inlet salmon stocks during the 2007 recertification process. Toward that end, we offer the following comments regarding changes in management of the commercial salmon fishery in Upper Cook Inlet that we believe will address Conditions of Certification raised in the recent assessment.

Upper Cook Inlet fisheries are managed under a suite of interrelated management plans which have been approved by the Alaska Board of Fisheries (Board). During the 2008 regulatory meeting of the Board a number of significant changes were made to these plans. These changes included significant liberalization of commercial fisheries for sockeye, chinook and coho, and increased commercial fishery management discretion to implement management measures outside of existing management plans to access large returns of strong Kenai and Kasilof sockeye stocks. These changes raise significant questions regarding the adequacy of protective measures for other less productive (Susitna sockeye) or poorly monitored (Kasilof Chinook, early-run coho) stocks and the consistency with conditions established by the MSC for continuing certification. A detailed description of those concerns follows:

Condition 35. Complete evaluations of sockeye and assess Kasilof chinook stock composition in fisheries to ensure accuracy of post-season analyses and clarify effectiveness of inseason time and area management. [Upper Cook Inlet]

Sockeye

Genetic stock identification studies for sockeye were implemented in 2005-2007 and initial results were reported in December 2007 (ADFG Fishery Manuscript 07-17). Results highlight the very high power of the SNPs genetic method for accurate stock identification. Initial results suggest that time and area stock composition is substantially different than has been previously assumed. For instance, significant numbers of Susitna sockeye are harvested in some periods in east side set net fisheries while historical run reconstructions assumed that no Susitna sockeye were harvested in this fishery. However, the analysis and results are incomplete. Only a portion of the samples from each year were analyzed and all portions of the fishing season were not evenly represented. Samples do not provide needed information

on some fishing times and areas (e.g. the effectiveness of corridor restrictions for protecting Susitna sockeye). GSI results have not been systematically compared to the long-used age-based stock apportionment method in order to evaluate biases in the historical dataset and run reconstructions that provide the basis for escapement-based management of all UCI sockeye stocks. Further, run timing and fishery patterns during the study period were not typical and may not be representative of other years. The priority and plans of additional genetic stock identification work for UCI sockeye remain unclear.

Completion of previous genetic studies and implementation of an annual genetic sampling program for sockeye stock identification are requisite to accurate assessments of run strength, harvest, and productivity of UCI sockeye stocks.

Kasilof Chinook

No effective Chinook stock identification methods have yet been implemented for UCI commercial fisheries. East side set net fisheries currently harvest significant numbers of Chinook which are apportioned by historical practice to the Kenai late run. Intensive sockeye commercial fisheries are prosecuted in the Kasilof area with sockeye exploitation rates approaching 70-80% in some years. This fishery has a significant potential of overharvesting the Kasilof late-run Chinook stock. However, harvest of late run Kasilof Chinook is not estimated. Escapement has been estimated with mark-recapture studies in recent years but is not estimated or indexed in-season. Existing escapement and harvest data for Kasilof Chinook does not appear to meet the standard identified by the MSC condition or criteria. Meaningful setnet fishery closure windows would provide an effective alternative to protecting Kasilof Chinook escapement in the absence of accurate escapement or stock identification data. However, current practice allows for closure windows to be set aside to maximize yield of Kasilof sockeye.

Condition 36. Develop appropriately reliable estimates or indices of escapement for Susitna sockeye and Kasilof Chinook and incorporate into fishery management practices. [Upper Cook Inlet]

Susitna Sockeye

ADFG has implemented a series of Susitna sockeye escapement studies (weirs, mark-recapture) that indicate Yentna (Bendix) sonar counts are significant underestimates of actual escapement but appear to be an effective index based on significant correlations with juvenile sockeye abundance in sockeye rearing lakes. In addition, Didson sonar technology is being evaluated as an alternative for the old sonar system. It is expected that continuing work will provide a reliable basis for Susitna sockeye enumeration.

We have concerns with the way Department staff is making application of these results to management. For example, sonar systems within the Kenai River utilize Bendix technology as does the system on the Yentna. These systems have a proven track record of indexing escapements well. The fact that mark recapture estimates for Yentna river sockeye suggest an undercount by the (Bendix) sonar is entirely consistent with the performance on other river systems and is not cause for dismissing the need to manage for, and attain, management targets based on sonar counts. And yet, that is precisely the tact being taken by Department managers.

Kasilof Chinook

Kasilof Chinook mark-recapture studies have been conducted in several years but information is not adequate for in-season management purposes.

To date there remains no escapement based management objective for these stocks and no long term monitoring program has been designed or implemented to provide those objectives. Kasilof Chinook remain largely absent from the suite of interrelated UCI salmon management plans, leaving a void of management objectives and direction.

Condition 37. Review stock status of Susitna sockeye and develop an action plan intended to ensure achievement of Susitna sockeye escapement goals. Action plan should provide specific goals and an anticipated timeline for achieving the goals (see condition under Principle 3 for Indicator 3.4.1.2 [Upper Cook Inlet]

The 2008 Board of Fisheries reviewed current stock status information provided by ADFG and designated Susitna sockeye as a stock of yield concern based on a chronic inability to maintain expected yields above the escapement needs. This stock has now failed to reach minimum sustainable escapement goals in 6 of the last 9 years including 2007.

The best available scientific information from recent research indicates that, while sonar counts underestimate actual escapement, they are an accurate index of escapement and an appropriate basis for existing escapement goals as adopted by ADFG. The BOF adopted an action plan that described existing management plans, recent research aimed primarily at evaluating the accuracy of historical escapement estimation and a series of proposed stock assessment and limiting factor research projects. The BOF also clarified that meeting the low end of the Yentna sockeye escapement goal takes precedence over not exceeding the top end of the Kenai and Kasilof escapement goal ranges, but at the same time, provided increased flexibility for the commercial fishery manager to prosecute more aggressive fisheries on Kenai and Kasilof sockeye. These commercial fisheries occur before significant numbers of sockeye reach the Yentna counting station and before Susitna sockeye run strength can be accurately assessed.

The action plan fails to include specific measures for restoring depleted Susitna sockeye populations, goals, or a timeline schedule for restoration as specified in condition 37. Given that current management plans are the same as those that have resulted in a chronic inability to meet minimum escapement goals, we remain concerned whether the current action plan will provide adequate protection to ensure that escapement goals are consistently met. Based on past practice, our fear is that the commercial fishery will continue to be managed to maximize harvest of the strong Kenai and Kasilof stock at the expense of the weaker Susitna stock.

We suggest that a more effective action plan would include:

1) mandatory corridor restrictions of drift net fisheries during early-mid July to protect northern district fish;
2) exploitation rate or effort limitations on east side set net fisheries to avoid excessive harvest of northern district sockeye which research has shown to be harvested in significant numbers during some years;
3) in-season genetic monitoring of sockeye stock composition in the ongoing test fishery to assess Susitna sockeye run strength and timing; and

4) continuing annual genetic stock identification studies of the upper Cook Inlet commercial sockeye harvest in order to accurately assess harvest and productivity by stock.

Condition 38. Develop a method for specifically setting an LRP that is comparable to the SET (Sustainable Escapement Threshold) outlined in the Sustainable Escapement Goal Policy (see Condition under Principle 3, Indicator 3.1.1) [Upper Cook Inlet]

Alaska's sustainable salmon policy identifies a Sustainable Escapement Threshold but SET's have not been identified for any stock in Alaska. "Sustainable Escapement Goal Thresholds" have been defined for some Prince William Sound stocks but these are merely the lower end of a yield-based escapement goal range rather than a conservation-based threshold. However, considerable work and attention has gone to into the effects of sockeye escapements exceeding escapement goal ranges. Concern for foregone yield from large escapements continues to be a driving force in UCI commercial fishery management. Limit reference points are intended to identify critical low escapement levels below which fishing does not occur. The lack of an effective LRP for the less productive Cook Inlet salmon stocks including Susitna sockeye continues to favor strong-stock management for Kenai and Kasilof sockeye at the risk of significant conservation and sustainability concerns for other stocks harvested in these mixed stock fisheries.

Condition 39. Evaluate appropriate existing age-sex-size information to determine if fisheries are exerting significant selectivity; continue ASL sampling in fisheries and several spawning stocks to continue a database for long-term evaluation of potential fishery selectivity. [Upper Cook Inlet]

Fishery selectivity for different stock components remains a significant concern for Cook Inlet sockeye fisheries. Genetic data for sockeye, coho, and Chinook has repeatedly shown that each Cook Inlet stock is an aggregate of substocks returning to many different watersheds with often different run timings. Recent sockeye telemetry studies in the Susitna and Kenai have highlighted a widespread distribution, tremendous life history diversity and complicated metapopulation structure of these runs which continue to be treated as single aggregate stocks for fishery management purposes. At the same time, a recent ADFG review of statewide sockeye production has found that Kenai and Kasilof sockeye are among the most heavily-fished sockeye runs in the state (Clark et al. 2007, Special Publ. 07-17). At estimated exploitation rates of 70-80% on these stocks, fishery selection for different portions of the run means that some subcomponents are being fished at higher rates which risk long term effects on the substock diversity and productivity. It may well be this effect explains at least part of the apparent decline in productivity of Susitna sockeye which are among the most diverse in the inlet. Upper Cook Inlet fishery management plans include prescribed commercial fishery closure windows designed to provide conservation benefits by distributing escapement throughout the duration of the run, as well as providing a regular supply of fish to in-river fisheries. However, recent management plan changes and current management practice sets aside the fishery closure windows to maximize yield in years of large returns of Kenai or Kasilof sockeye. This is a clear case of fishery yield objectives trumping conservation concerns and appears directly contrary to the precautionary management principles identified in Alaska's Sustainable Salmon Fishery Policy.

We offer these questions and suggestions with the objective of developing a clear and effective path toward continuing certification of the Upper Cook Inlet commercial salmon fishery. The commercial fishery has long been an integral part of the social fabric and economy of Southcentral Alaska. Sustainable salmon fishery management is an objective fundamental to all Alaskans.

Thank you for the opportunity to provide these comments.