

SCOMM

147:27

Remarks on House Bill 134

Dick Mylius, Acting Director, Department of Natural Resources (DNR),
Division of Mining, Land and Water (DMLW)

March 2, 2007

The Department of Natural Resources does not have a position on this bill but would like to explain how it impacts DNR's water management program and how it could impact state lands.

First, I would like to briefly explain the Division of Mining, Land and Water's role in water management. DMLW is responsible for allocations of the state's water resources under Alaska Statutes 46.15, the Alaska Water Use Act. Our authority deals with water quantity. We approve water rights for long term uses of water, issue permits for temporary water use, and are responsible for the state's instream flow program.

We do not deal with water quality, that is a DEC issue.

DMLW also manages the state owned land, including land under navigable waters and tidelands and submerged lands out to three mile. DMLW issues permits for uses of these lands.

House Bill 134 has a significant impact on these DMLW programs. The bill would limit where we can approve water rights or permits for water use.

HB 134 requires that no water can be taken from surface or subsurface waters of this area except for uses that area already approved, drinking water and domestic use, municipal uses, traditional, cultural and residential uses, energy projects, seafood processing, and transportation.

This would impact DNR's water management authority over approximately 19 million acres of land and waters within the watersheds of the Nushagak, Kvichak, Naknek, Egegik and Ugashik Rivers. Because all of the state's water resources are reserved to the people of Alaska, any restrictions apply to all water users, whether on state, municipal, federal, or private lands.

There are no resources in Alaska that can be developed without the use of water.

If this legislation passes, DNR would not be allowed to issue water rights or water use permits for many activities that may occur within these watersheds, or even for many existing uses that do not yet have water rights.

The state owned portion of these lands (approximately 9 to 10 million acres) contain numerous, significant mineral deposits and is considered to have

high mineral potential. The area also has potential for oil or gas development, DNR has held lease sales within this area and portions of the reserve are on the state's areawide leasing schedule. These uses need water for exploration and development.

In addition to mining and oil gas potential, these lands are suitable for other commercial uses, including commercial recreation. Most new commercial and industrial uses, including commercial recreational activities, within this area could not get approval to use water and could not be developed under this legislation.

In addition, DMLW permits in water uses such as erosion control structures, fish weirs and under the bill these uses would generally not be allowed.

The Department has three general concerns about the legislation as proposed – first it raises constitutional issues; second the location of the proposed statute raises questions about what department and third, the exceptions in part b, on page 2, lines 17-21, are not defined.

Briefly on each of these:

Constitutionality: The water rights program that DNR administers is based on specific guidelines established in Article VIII of the Constitution. There are serious questions of whether the proposed action to outrightly prohibit most appropriation, use or management of water resources by legislation violates Article VIII of the Constitution, particularly Section 13. It is suggested that the Attorney General's office review this bill for any constitutional conflicts.

Whose Authority. The bill creates ambiguity with regard to which agency determines whether a proposed water used is prohibited under AS 16.10.015(a) or allowed under (b). Currently the appropriation of water resources is managed by DNR under AS 46.15, however the bill places the prohibition/allowance language under DEC's authority under Title 16, Chapter 10, Article 1. This conflict in statute and authority for determination of water use needs to be addressed.

Terms: Several of the terms used in the bill such as "ordinary existing and future municipal uses", "traditional uses", "cultural uses", "residential uses", "energy projects" are not defined either in this proposed legislation or in the body of state law dealing with water use and management. These terms need to be defined in order that the proper legislative intent is made known.

Thank you for opportunity to comment.



Katmailand Inc.

February 22, 2007

Rep Paul Seaton
State Capitol, Rm 102
Juneau AK 99801-1182

Dear Representative Seaton,

This letter is to express my support for HB 134, "The Alaska Wild Salmon Protection Act". We all know that this bill is intended to protect the Bristol Bay fisheries from the Pebble Mine.

I am no fan of Pebble Mine, but I am no bunny-hugger either. If it were oil development at the pebble site, I would welcome it as a project worth the risk. With oil, pollution only happens if the valuable product itself is spilled by accident. (Open pit mines create pollution as an inevitable byproduct that must be forever contained. This is a significant difference.

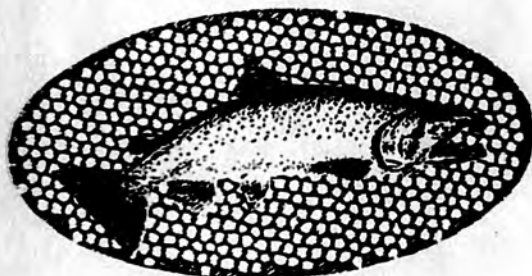
If Northern dynasty says they promise "no net loss of fish", then why do they oppose HB 134? You just have to wonder.

I will support Pebble when it can be developed without a polluted tailings pond that will inevitably leak into the watersheds. In order to do this, the tailings would have to be disposed of elsewhere, very expensive. This will probably never happen. Let's pass HB 134.

Raymond F. Petersen

Located in Katmai National Park

Websites: www.katmailand.com or www.bear-viewing.com • E-mail: info@katmailand.com
4125 Aircraft Drive • Anchorage, Alaska 99502 • 907-243-5448 • Toll-Free Reservations 800-544-0551 • Fax 907-243-0649
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Cook Inlet Alliance

Promoting the Responsible Use
of Public Resources

February 27, 2007

Rep. Paul Seaton
Fisheries Chair
State Capitol, Rm 102
Juneau, AK 99801-1182

Dear Representative Seaton:

The Cook Inlet Alliance wants to express support for HB 134, a bill relating to the conservation and protection of wild salmon production in drainages affecting the Bristol Bay Fisheries Reserve.

Given the recent potential for significant change to the landscape of the Bristol Bay Fisheries Reserve, particularly from mining, and the impacts that this could have on salmon and trout populations and habitat, we believe that it is now necessary for the legislature to step forward and clearly establish, via HB 134, that protection of fish habitat should prevail over the extraction of minerals. Historically, large open-pit mines and tailings have had long-term and severe impacts on water availability and quality (i.e., fish habitat). This risk is of particular concern in the Bristol Bay area because of its abundant and complex watersheds. HB 134 would minimize the risk and the external costs that mining operations have often imposed on fish habitat. Although this may tend to restrict some predatory aspects of mining, it would not prohibit mining, thereby not raising any legitimate takings issue.

HB 134 essentially says "fish first." By approving HB 134, the legislature will be recognizing that fish have been the economic mainstay of the Bristol Bay area for over 100 years and that this resource has been successfully and sustainably managed by the state for nearly 50 years; longer than the existence of any mine in Alaska. The legislature will also be taking a much needed step to assure that the Bristol Bay salmon and trout fisheries will be just as thriving in the future as they have been in the past.

Sincerely,

George Matz
CIA Issues Coordinator

PAINTER CREEK LODGE



*"Alaskan
Fishing Adventure"*

February 19, 2007

Rep. Paul Seaton
Fisheries Chair
State Capitol, Rm 102
Juneau, AK 99801-1182

Dear Representative Seaton,

My name is Jon Kent, and I am the owner of Painter Creek Lodge on the Alaska Peninsula, one hundred miles south of King Salmon. We have been in operation since 1983. I am writing to express my total support for HB 134, "The Alaska Wild Salmon Protection Act". As everyone in Alaska, and indeed, most of the world knows, Bristol Bay is home of the largest wild salmon run on earth. It is a renewable resource that has sustained the population of this region for thousands of years, and will continue to do so as long as it is not destroyed. The proposed Pebble Mine project poses an unacceptable risk to a resource that is so vital to the lively hood of everyone in the Bristol Bay region, native and non-native alike. An (open pit mine) the size of, and in the location of, the proposed one, with it's huge tailing dams, and all the other interrelated infrastructure, is a disaster waiting to happen. It's not a question of "if", but "when". The lure of fifty, or even seventy five years, of a few jobs sounds mighty good when times are economically tough, as they have been, but at what price? Who can honestly risk the natural resource legacy of untold future generations for personal profit? You can't eat gold or copper. And as far as "corporate responsibility" in dealing with "unintentional accidents, or spills"; I say look no farther than Exxon: they still haven't paid for the 1989 disaster in Prince William Sound. I'm all for economic progress, but let's build on resources we already have. The fishing industry will rebound; the world needs food. It makes absolutely no sense to jeopardize an existing, sustainable, expandable resource, in the name of shareholder profits. We need to protect what we already have. So again, I'm urging you to support HB 134. Thank you for your time.

Best regards,

A handwritten signature in black ink, appearing to read "Jon Kent". The signature is fluid and cursive, with a long, sweeping underline that extends to the right.

Jon Kent
President
Painter Creek Lodge

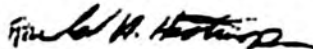
City of New Stuyahok
Main Street Box 10
New Stuyahok, Alaska. 99636

Representative Edgmond

RE: House Bill NO. 134

Representative Bryce Edgmond:

As Mayor of the city of New Stuyahok and a local resident of 28 years, I strongly support House Bill NO. 134. As you know the people of the Nushagak River, strictly rely on subsistence living, and over 90% of the average house holds income comes from commercial fishing. What revenues are generated from commercial fishing is just enough to get their yearly supply of heating oil, gas, and in general the basic necessities from the store. We rely on the Salmon to make our yearly income, and to feed our family. We hunt for Moose, Caribou, ducks, and we gather vegetation off the land as well to feed our families with. Such as berries, beach greens, and other edible plants. As you know a large amount of residents in Rural Alaska are either at the poverty level or below it. Is the State of Alaska ready to support every community that will be effected by the mine, by destroying fish habitats, destroying the worlds largest Salmon habitat in the world. What will become of those of us that actually live on the river and land that will be affected by the mine. There will be no more game to hunt to feed our families with. The water will be undrinkable. We must protect our fisheries habitats and lands the animals live on. My question is, is the state prepared to lose a multibillion dollar fisheries? This is not just a commercial fishery, there are hundreds of visitors that come to this great state to sports fish, and hunt. This will all end without protecting the Salmon streams. Especially within certain drainages affecting the Bristol Bay.



Sincerely Mayor Randal A. Hastings

cc: Ramras
Dahlstrom
Gara
Kertula

**Alaska Independent Fishermen's
Marketing Association**

P.O. Box 60131
Seattle, WA 98160
Phone/Fax (206) 542-3930



February 19, 2007

Representative Paul Seaton
Fisheries Chair
State Capitol, Rm 102
Juneau, AK 99801-1182
Fax: 907-465-3472

Dear Representative Seaton,

Re: AIFMA Supports HB 134—Protection of Spawning Habitat

Bristol Bay is home to the world's largest sockeye salmon run. The Bristol Bay Fisheries Reserve was created in 1972 in order to protect this valuable commercial and subsistence fishery in the area from the threat from certain mineral leasing and permitting. HB 134 proposes to extend protections to the Nushagak, Kvichak, Naknek, Egegik and Ugashik ground water, aquifer systems of river drainage systems.

HB 134 would protect Alaska's greatest salmon fishery by prohibiting the withdrawal, obstruction, diversion, pumping or pollution of surface or subsurface water in any Bristol Bay drainages that support salmon. The legislation also prohibits the destruction of salmon habitat, creates a fining schedule for violating these protections, and protects existing water uses authorized prior to the passage of the bill.

In recent years the salmon industry and the State of Alaska have invested a great deal in Alaska's Wild Salmon and this investment is beginning to pay dividends throughout the state. Thousands of existing Alaskan jobs depend upon the purity of Bristol Bay's renewable and sustainable salmon fishery and the integrity of its spawning habitat. These jobs depend on protection of the pristine habitat of the Bristol Bay watershed.

AIFMA is the largest fishermen's association in Bristol Bay, and has represented the interests of fishermen fishing for salmon in the Bristol Bay region for over 40 years and is a property owner in the region. Many of our members are residents of the Bristol Bay region.

Thanks you for your consideration.

Regards,

David Harsila,
President

LIO Dillingham

ATTN: REP. PAUL SEATON, CHAIRMAN

From: Jacquelyn Wilson [quenluk@yahoo.com]**Sent:** Friday, March 02, 2007 10:42 AM**To:** LIO Dillingham**Subject:** POM from Quenluk

I am Quenluk, English name Jacquelyn Stor Wilson. I am a teacher at Dillingham. I love my culture, traditions, and lifestyle as a first Alaskan. It has been interesting to see changes in Alaska from territorial days to statehood. Since European contact, first Alaskan cultures were looked down on. Educational system worked at throwing away my culture and language. I fought my way through school and discrimination. I love my culture too much.

Culture and environment go hand in hand. My husband Verner Stor II and I are commerical and subsistence fishermen, as so many Native people in Bristol Bay. Please protect our lifestyle and enviroment by passing HB 134. I plead to this committee and legislature to do what is right for Bristol Bay Natives and the rest of Alaska. We are the last frontier, so let us work on preserving the cultures and environment. Thank you for your attention.

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842 - 1052
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Public Testimony in favor of House Bill 134

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Gina M. Pope
PO Box 1235
12 East Street
Dillingham Ak 99576
(907)842-4138
bsgmp@uaf.edu

March 2nd, 2007

Chairman Seaton and Committee members,

I am here to speak in favor of House Bill 134 and the revisions/amendments and sponsors of the bill.

I've grown up in the Iliamna/Lake Clark area, specifically Pope-Vannoy Landing in the Intricate Bay area between Pedro Bay and Kokhanok Bay. Pope-Vannoy Landing borders Alaska Peninsula Corporation Land and sits a mile and a half away from Copper River, a world class trophy rainbow river prized by fly fishermen. My mother owns a Native Allotment of 160 acres between Copper River and Pope-Vannoy Landing.

The last census counted about 7,520 people in the Bristol Bay region (according to a report by the Alaska Department of Fish and Game). If you count the people who visit as fishing/hunting clients or as summer visitors, my guess is that the population may rise to approximately 10,000 – 15,000 over the months of June, July, and August. I would guess it does not rise cumulatively much above that.

In addition to the current scant population I have listened to the radio news and determined that if a community rises in residency to over 6,000 people, that community may lose subsistence priority. Right now our communities are much below that figure, but large-scale development in the

Public Testimony in favor of House Bill 134

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future looms (Think of what 60,00 people injected into the region would do to the social structure).

By supporting this bill, people are asking that some assurance be made that changes will not wipe our region of the salmon that it has taken eons to establish. Social changes of population increase are one thing, but we all seem to have agreed to sustain the salmon.

I am surprised that the public support of HB 134 is not unanimous. What will our region look like 60 years from now if we protect the river systems? What if we don't allow obstructions and pollution to the lakes and drainages? Will we suffer economically because we kept our renewable resource in a natural, wild state?

Besides eating salmon for subsistence, I have gained meaningful employment because of the valuable sport fishing area we have right next to the water bodies. My first job at age 16 was at a lodge near my home. My six older brothers and sisters, all of Alaska Native descent, worked there before me. I earned enough tips and wages at the lodge to buy lumber and build a house by the age of 17. I did not feel like I was living in poverty, nor do I today.

The label of poverty is put on us not by ourselves but is a label designed to further ideas of those who overlook cultural richness and understand not the value put on an untainted food source. Even berries benefit from the nutrients which are present because of salmon returns.

I really truly thank each of you for your hard work and endurance and hope you each have a good day today.

ALASKA STATEWIDE PUBLIC OPINION RESEARCH SURVEY

February 12th to 20th, 2007

Sample size = 402; margin of error $\pm$ 4.89%

HELLENTHAL AND ASSOCIATES

**2200 Vanderbilt Circle
Anchorage, Alaska 99508
(907) 276-1001 or
277-2315 (fax)
hellenthal@gci.net (e-mail)**

Introduction and Methodology

This report presents an analysis of a survey of Alaskan statewide registered voters. The survey measured properties of Alaskan voters' demographics, behaviors and attitudes concerning the proposed Pebble Mine project.

Research typically involves estimating the characteristics of a designated population. Because of the costs of conducting a census of all items in a population and the adequacy of sample results, sample statistics were used to make statistical inferences concerning population parameters.

Four hundred and two (402) Alaskan registered voters were interviewed between February 12th and 20th, 2007. Interviewing was conducted by telephone on a random digit basis. That is, random numbers were computer generated for the last two digits of the suffix of each workable telephone prefix in Alaska. All Alaskan voters who are accessible by telephone had an equal chance of being interviewed.

This survey is a true random digit survey. Other research firms promote "supervoter" surveys. These surveys are not true surveys of voters or supervoters. Their sample does not include unlisted or underlisted registered voters and, therefore, cannot be generalized to voters or supervoters. They only are surveys of registered voters whose telephone numbers can be determined from a telephone directory. They save the researcher money, to the detriment of their clients' desire for accuracy.

Margin of error

At a 95% confidence level, the empirical proportions reported in the general population survey can be projected, within plus or minus 4.89%, to the entire Alaskan registered voter population. This means one can be 95% sure that the frequencies reported in the general population survey are within 4.89% of the true Alaskan registered voter population proportions.

The areas of Alaska surveyed for the general population survey were as follows:

THE FOLLOWING VARIABLE IS CALCULATED USING THE TELEPHONE PREFIX

AREAS OF ALASKA	FREQUENCY	PERCENT	MARGIN OF ERROR
Southeast.....	52.....	12.9%.....	+ 13.6 %
Valdez-Kenai-Matsu...	76.....	18.9%.....	+ 11.2 %
Anchorage.....	164.....	40.8%.....	+ 7.6 %
Greater Fairbanks....	52.....	12.9%.....	+ 13.6 %
Rural/Bush.....	58.....	14.4%.....	+ 12.9 %
TOTALS.....	402.....	100.0%.....	+ 4.89%

Margin of error

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The questionnaire with results is as follows:

ALASKA STATEWIDE PUBLIC OPINION RESEARCH SURVEY

February 12th to 20th, 2007

Sample size = 402; margin of error $\pm$ 4.89%

Hello, I am _____ from Hellenthal and Associates. We are conducting an area-wide public opinion research survey. Your telephone number was randomly selected. The questions I need to ask will take only a few minutes. All of your responses will be completely confidential. (PAUSE AND PROCEED)

- S1. Is this telephone number _____? (IF NO, TERMINATE WITH, "I'm sorry, I dialed the wrong number.")
- S2. Am I talking to you at a place where you live?
- S3. Are you registered to vote in the State of Alaska?
IF YES, THEN PROCEED TO QUESTION #1
IF NO, THEN ASK...
Is there anyone home who is registered to vote in the State of Alaska?
IF YES THEN ASK...
May I speak with them?
IF NO, THEN ASK...
When will someone be home who is registered to vote?

THE FOLLOWING VARIABLE IS CALCULATED USING THE TELEPHONE PREFIX

AREAS OF ALASKA	FREQUENCY	PERCENT	MARGIN OF ERROR
Southeast.....	52.....	12.9%.....	+ 13.6%
Valdez-Kenai-Matsu...	76.....	18.9%.....	+ 11.2%
Anchorage.....	164.....	40.8%.....	+ 7.6%
Greater Fairbanks....	52.....	12.9%.....	+ 13.6%
Rural/Bush.....	58.....	14.4%.....	+ 12.9%
TOTALS.....	402.....	100.0%.....	+ 4.89%

1. I am going to read to you a list of names of organizations and public figures. Please tell me whether your feelings toward each of them are very positive, somewhat positive, somewhat negative, or very negative -- or if you don't know who he/she/it is. Are your feelings toward _____ (FILL IN ORGANIZATIONS & PUBLIC FIGURES) very positive, somewhat positive, somewhat negative, or very negative -- or don't you know who it/he/she is?

(IF POSITIVE OR NEGATIVE SAY, "Is that very positive/very negative or just somewhat positive/negative?")

(IF THEY ONLY RECOGNIZE NAME OR ARE TRULY UNABLE TO GIVE A POSITIVE OR NEGATIVE RECORD A "2" OR "NEUTRAL")

	4	3	2	1	0		
	VERY	SOMEWHAT		SOMEWHAT	VERY		
ORG/FIGURES	POSITIVE	POSITIVE	NEUTRAL	NEGATIVE	NEGATIVE	WHO?	MEAN
Alaska Miners							
Association...	12.7%	23.6%	36.7%	5.8%	1.8%	19.4%	2.491
Trout Unlimited...	7.1%	18.3%	24.8%	3.5%	1.2%	45.1%	2.484
Renewable Resour-							
ces Coalition...	5.8%	12.5%	31.1%	3.7%	0.7%	46.2%	2.352
The Bristol Bay							
Alliance.....	3.2%	9.8%	31.1%	1.8%	2.3%	51.8%	2.202
Rio Tinto.....	1.2%	1.0%	19.9%	2.3%	1.9%	73.6%	1.895
Northern Dynasty...	2.7%	9.7%	31.6%	11.7%	10.2%	34.1%	1.744
Pebble Mine.....	5.4%	16.1%	30.9%	16.3%	24.4%	7.0%	1.590
Alaska							
Legislature....	6.8%	38.0%	31.4%	17.3%	6.5%	0.0%	2.211
Sarah Palin.....	38.0%	35.0%	19.9%	5.0%	2.1%	0.0%	3.018
Ted Stevens.....	22.0%	33.5%	13.1%	19.1%	12.4%	0.0%	2.336
Lisa Murkowski...	14.8%	38.4%	18.4%	19.3%	9.0%	0.0%	2.308
Don Young.....	16.4%	31.2%	17.5%	14.1%	19.4%	1.4%	2.114

(ROTATE ORDER)

2. Have you heard of the proposed Pebble Gold Mine Project?

HEARD OF PEBBLE MINE	FREQUENCY	PERCENT
Yes.....	364.....	90.6%
No.....	38.....	9.4%

3. The proposed Pebble Mine would develop a gold and copper deposit at the headwaters of the Bristol Bay watershed near Lake Iliamna (ILL-EE-AM-NAH). The Pebble Mine is potentially one of the largest deposits of gold and copper in North America. Do you strongly favor, somewhat favor, somewhat oppose, or strongly oppose opening Pebble Mine Project to gold and copper mining?

PEBBLE MINE #1	FREQUENCY	PERCENT
4. Strongly favor.....	62.....	15.4%
3. Somewhat favor.....	101.....	25.1%
2. Neutral.....	42.....	10.3%
1. Somewhat oppose.....	77.....	19.1%
0. Strongly oppose.....	121.....	30.1%
(Mean = 1.766)		

4. The Bristol Bay watershed is the source of the world's greatest wild salmon fishery generating more than \$300 million dollars annually. A bill is now before the state legislature to protect this valuable natural resource and to prohibit the draining and destruction of salmon spawning streams for industrial purposes. Do you strongly favor, somewhat favor, somewhat oppose, or strongly oppose protecting Bristol Bay salmon spawning areas in this manner?

PROTECTING WATERSHED	FREQUENCY	PERCENT
4. Strongly favor.....	253.....	63.0%
3. Somewhat favor.....	81.....	20.2%
2. Neutral.....	23.....	5.6%
1. Somewhat oppose.....	20.....	5.0%
0. Strongly oppose.....	25.....	6.2%
(Mean = 3.289)		

5. Another proposal before the legislature would establish a game refuge in the watersheds that make up the headwaters of Bristol Bay. It would be named after the late Governor Jay Hammond and is supported by his widow Bella Hammond. Do you strongly favor, somewhat favor, somewhat oppose, or strongly oppose the creation of such a game refuge?

GAME REFUGE	FREQUENCY	PERCENT
4. Strongly favor.....	156.....	38.7%
3. Somewhat favor.....	113.....	28.2%
2. Neutral.....	41.....	10.1%
1. Somewhat oppose.....	51.....	12.6%
0. Strongly oppose.....	41.....	10.3%
(Mean = 2.724)		

10. Would you strongly favor, somewhat favor, somewhat oppose, or strongly oppose a statewide ballot initiative that would require large mines to pay 10% of their gross profit to the state? What about _____ (FILL IN 15%, 20%, 25%)?

	4	3	2	1	0	
TAX RATES	STRONGLY FAVOR	SOMEWHAT FAVOR	NEUTRAL	SOMEWHAT OPPOSE	VERY OPPOSE	MEAN
10%.....	45.4%	24.5%	9.8%	6.8%	13.6%	2.81
15%.....	38.0%	18.9%	11.2%	12.9%	19.0%	2.44
20%.....	36.8%	11.3%	12.9%	14.1%	24.8%	2.21
25%.....	38.0%	9.0%	12.7%	12.0%	28.3%	2.17

11. Would you strongly favor, somewhat favor, somewhat oppose, or strongly oppose 50% of the gross profit paid to the state by large mines going directly to the Permanent Fund?

50% PROFIT TO P.F.	FREQUENCY	PERCENT
4. Strongly favor.....	172	42.8%
3. Somewhat favor.....	64	16.0%
2. Neutral.....	36	9.0%
1. Somewhat oppose.....	44	11.0%
0. Strongly oppose.....	85	21.3%
(Mean = 2.480)		

12. Do you feel that the creation of one of the world's largest open pit mines at the headwaters of the Bristol Bay watershed is a very positive, somewhat positive, somewhat negative, or very negative development for Alaska?

WORLD'S LARGEST OPEN PIT MINE	FREQUENCY	PERCENT
4. Very positive.....	31	7.7%
3. Somewhat positive.....	62	15.5%
2. Neutral.....	31	7.6%
1. Somewhat negative.....	80	19.8%
0. Very negative.....	198	49.4%
(Mean = 1.124)		

13. Do you support a statewide ballot initiative to strengthen Alaska's clean water laws and enhance the safety of its earthen dams?

BALLOT INITIATIVE	FREQUENCY	PERCENT
Yes.....	326	81.2%
No.....	76	18.8%

14. If you had to choose between fish, wildlife and native habitat or gold and copper -- which natural resource would you choose -- would it be fish, wildlife and native habitat or gold and copper?

FISH OR GOLD	FREQUENCY	PERCENT
Fish, wildlife & native habitat....	353.....	87.9%
Gold and copper.....	49.....	12.1%
Don't know.....		0.0%

15. How would you rank the following Alaskan activities and natural resources as to their importance in promoting Alaska's heritage and legacy? Would you say _____ (FILL IN ACTIVITIES AND NATURAL RESOURCES) is very important, somewhat important, somewhat unimportant, or very unimportant in promoting Alaska's heritage and legacy?

ORGS/INDIVIDUALS	4	3	2	1	0	MEAN
	VERY IM- PORTANT	SOMEWHAT IM- PORTANT	NEUTRAL	SOMEWHAT UNIM- PORTANT	VERY UNIM- PORTANT	
Commercial Fishing.....	62.9%	31.1%	1.2%	2.7%	2.0%	3.50
Recreational Fishing.....	59.5%	31.3%	2.1%	4.1%	3.0%	3.40
Tourism.....	60.5%	29.2%	2.1%	4.5%	3.6%	3.39
Hunting.....	53.4%	36.6%	3.4%	4.1%	2.5%	3.34
Oil Development.....	41.0%	37.8%	5.0%	9.9%	6.3%	2.97
Mining.....	18.4%	47.7%	5.1%	15.5%	13.4%	2.42

(ROTATE ORDER)

16. Please let me ask again, the proposed Pebble Mine would develop a gold and copper deposit at the headwaters of the Bristol Bay watershed near Lake Iliamna (ILL-EE-AM-NAH). The Pebble Mine is potentially one of the largest deposits of gold and copper in North America. Do you strongly favor, somewhat favor, somewhat oppose, or strongly oppose opening Pebble Mine Project to gold and copper mining?

PEBBLE MINE #2	FREQUENCY	PERCENT
4. Strongly favor.....	40.....	9.9%
3. Somewhat favor.....	88.....	21.9%
2. Neutral.....	20.....	5.0%
1. Somewhat oppose.....	70.....	17.5%
0. Strongly oppose.....	184.....	45.8%

(Mean = 1.327)

The last few questions are being collected purely for statistical purposes.

17. When it comes to politics, do you consider yourself to be very liberal, somewhat liberal, somewhat conservative or very conservative?

IDEOLOGY OF RESPONDENT	FREQUENCY	PERCENT
1. Very liberal.....	26.....	6.5%
2. Somewhat liberal.....	133.....	33.0%
3. Moderate.....	43.....	10.6%
4. Somewhat conservative.....	153.....	38.1%
5. Very conservative.....	47.....	11.8%
(Mean = 3.157)		

18. Are you, or any person presently living in your household, a member of a labor union?

LABOR UNION HOUSEHOLD	FREQUENCY	PERCENT
Yes.....	109.....	27.1%
No.....	293.....	72.9%

19. How many total years of education have you completed? (FORMAL ATTENDANCE IN SCHOOL -- FIRST GRADE = 1; EIGHTH GRADE = 8; HIGH SCHOOL = 12; TRADE SCHOOL = 13; ASSOCIATE DEGREE - AA or AS = 14; COLLEGE GRADUATE - BA, AB, BS = 16; MASTERS DEGREE - MA, MS, MEng, MEd, MSW, MBA = 18; PROFESSIONAL OR DOCTORATE DEGREE - MD, DDS, DVM, LLB, JD, EdD, LAWYER, DOCTOR, PhD = 20)

EDUCATION	FREQUENCY	PERCENT
High school or less.....	84.....	20.8%
1-2 years College.....	108.....	26.9%
3-4 years College.....	109.....	27.1%
Post College.....	101.....	25.2%
(All Adult Mean = 15.022 years)		

20. How many years and months have you lived in Alaska?

ALASKA RESIDENCY	FREQUENCY	PERCENT
1993 to 2007.....	93.....	23.2%
1982 to 1992.....	66.....	16.4%
1973 to 1981.....	97.....	24.0%
Before 1973.....	146.....	36.4%
(All Adult Mean = 27.618 years)		
(All Adult Median = 17.928 years)		

21. In what year were you born? (COMPUTED TO AGE BY SUBTRACTING FROM 2007)

AGE OF RESPONDENT	FREQUENCY	PERCENT
18 to 30.....	50.....	12.4%
31 to 40.....	70.....	17.5%
41 to 50.....	129.....	32.0%
51 to 60.....	93.....	23.2%
61 or older.....	59.....	14.8%
(Mean = 47.140 years)		
(Median = 47.020 years)		

22. Are you married or single?

MARITAL STATUS	FREQUENCY	PERCENT
Married.....	260.....	64.7%
Single.....	142.....	35.3%

23. Which one of the following groups best describes you? (CHOOSE ONLY ONE)

ETHNICITY	FREQUENCY	PERCENT
White.....	322.....	80.2%
Alaska Native.....	49.....	12.2%
Black or African American.....	10.....	2.6%
American Indian.....	8.....	2.0%
Native Hawaiian or Other Pacific Islander.....	6.....	1.6%
Hispanic or Latino.....	4.....	0.9%
Asian.....	2.....	0.5%

24. GENDER (USUALLY DO NOT NEED TO ASK).....

GENDER	FREQUENCY	PERCENT
Male.....	201.....	50.0%
Female.....	201.....	50.0%

THE FOLLOWING VARIABLES ARE CALCULATED USING THE MARITAL AND GENDER VARIABLES

MARITAL BY GENDER	FREQUENCY	PERCENT
Married Males.....	130.....	32.3%
Married Females.....	130.....	32.3%
Single Males.....	71.....	17.7%
Single Females.....	71.....	17.7%

THIS COMPLETES THE SURVEY, THANK YOU FOR HELPING US -- GOODBYE

From: Adam Berg
Sent: Friday, March 02, 2007 2:20 PM
To: Louie Flora
Subject: FW: Addendum to testimony
Attachments: ADN_TBristolCompass.doc

From: Scott Brennan [mailto:scott@renewableresourcescoalition.org]
Sent: Friday, March 02, 2007 1:16 PM
To: Adam Berg
Subject: Addendum to testimony

Adam,
Please add the following and attached file to my testimony on HB 134 this week.
Scott

###

Dear Chair Seaton,

Several individuals have testified this week that no permit applications related to the proposed Pebble Mine have been submitted to date. Such statements are false. Northern Dynasty Mines submitted applications for 11 mine-related permits in September 2006.

Excerpts of these permit applications are online at
<http://www.dnr.state.ak.us/mlw/mining/largemine/pebble/index.htm>

Please add these permit applications and the attached Compass piece to my previously submitted testimony.

Cordially,

Scott Brennan
Executive Vice President
Chief Operating Officer
Renewable Resources Coalition, Inc.
500 L Street, Suite 502
Anchorage, AK 99501
Telephone: (907) 632-9933
Fax: (907) 272-9319
scott@renewableresourcescoalition.org
<http://www.renewableresourcescoalition.org>

Anchorage Daily News

ALASKA'S NEWSPAPER

www.adn.com

Seen enough? Say no to Pebble mine

COMPASS: POINTS OF VIEW FROM THE COMMUNITY**By TIM BRISTOL****Anchorage Daily News****(Published: October 23, 2006)**

Northern Dynasty has asked Alaskans to "wait and see" before making a decision to support or oppose its proposed Pebble open pit mine in the Bristol Bay region. Now the waiting's over and it's hard to imagine that anyone who cares about wild Bristol Bay salmon likes what they see.

Northern Dynasty has filed 11 applications, with thousands of pages, to take the surface and groundwater of three rivers and construct five earthen dams to create two tailings lakes.

Incredibly, two of the proposed dams could become the largest in the world.

Currently, the world's largest dam is the Three Gorges Dam in China -- 1.4 miles long, 607 feet high, and constructed of concrete. But according to documents filed with the state, over time two of Dynasty's dams would merge to become one -- stretching 4.3 miles and standing 740 feet high. A third proposed dam would be 2.9 miles long and 700 feet high.

The two impoundments would flood 6.5 and 3.6 square miles of surrounding land respectively. They would be filled with a toxic, acidic soup of tailings mixed with water withdrawn from nearby rivers.

Pebble would actually produce two sorts of tailings. Three percent to 5 percent would be "reactive" and stored in these massive lakes. These reactive tailings must be covered with water in order to avoid oxidation, which leads to the creation of sulfuric acid.

The other 95 percent to 97 percent of the tailings would be "bulk tailings" piled on the ground and formed into miles of "beaches" (Dynasty's word) surrounding the lakes. To get an idea, in 1993, when the Pebble plan was one-third as large as what Dynasty now envisions, public officials said the

bulk tailings containment area would be 8 miles by 2 miles by hundreds of feet deep.

The applications describe bulk tailings as "silt-sized particles." Dynasty would spray water on the silt "beaches" to keep them from blowing away. Cold, wind, rain, snow and seismic activity will likely make this idea, which may look OK on paper, much harder to pull off in the real, rugged world of Southwest Alaska.

Also keep in mind Pebble is mainly a copper mine. More than any element, copper disrupts the ability of salmon to find natal streams. Copper will be in the dust, from the pit, tailings and roads. Ten thousand years of genetic separation of hundreds of the world's most valuable salmon stocks could be at risk.

And Dynasty proposes huge pipelines. Thirteen miles of 54-inch-diameter pipe will discharge a slurry of bulk tailings to make "beaches" and discharge reactive tailings into the lakes. A 3-mile, 54-inch pipe will retrieve water from them to the mill. A 100-mile, smaller-diameter pipe will carry ore concentrate in slurry to a port on Cook Inlet and a parallel pipe will return the water. Imagine a 54-inch pipe gushing silt to make miles of beaches surrounding toxic and acidic lakes behind miles of dams hundreds of feet high. The picture is barren, cold and sterile.

Finally, the applications asked Dynasty whether it intends to use a sewage system, or dispose of sewage solids or sludge. In July, Dynasty checked "yes." In September, Dynasty changed the answer to "no." What is Dynasty thinking? It says roughly 2,000 people would be needed to build the mine and 1,000 would operate it. It's safe to say that, eventually, each and every one of these people would need a bathroom break.

The fact is sewage treatment requires federal permits. Checking the yes box triggers a federal environmental-impact statement on the whole project now instead of later. It seems Dynasty will do what it can to avoid coming clean with Alaskans -- even on the subject of sewage -- if it will help it perpetuate its "wait and see" piecemeal approach to information disclosure.

Alaskans have waited long enough, and they've seen enough. Now is the time to reject the Pebble mine.

Tim Bristol is director of Trout Unlimited's Alaska Program in Juneau.



Division of Mining, Land & Water

Alaska Department of Natural Resources

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PEBBLE PROJECT

Complete Water Right Applications submitted by Northern Dynasty Mines Inc.

Pebble Project Surface Water Right Applications Filing Priority Date of July 7, 2006

- LAS 25874 South Fork Koktuli River
Supplemental Completeness Response
- LAS 25871 Unnamed Tributary (NK1.190) North Fork Koktuli River
Supplemental Completeness Response
- LAS 25876 Upper Talarik Creek
Supplemental Completeness Response

Pebble Project Groundwater Right Applications Filing Priority Date of September 21, 2006

- LAS 25873 South Fork Koktuli River
- LAS 25872 Unnamed Tributary (NK1.190) North Fork Koktuli River
- LAS 25875 Upper Talarik Creek

Pebble Project Mining Claim Ownership Documents

Pebble Project Initial Application for Certificate of Approval to Construct a Dam

Tailings Impoundment A
Tailings Impoundment A - Figures

Tailings Impoundment G
Tailings Impoundment G - Figures

Related Correspondence

DNR / OPMP Water Right Application Acceptance Letters
(assignment of filing priority date and case file number)

ACMP Completeness Determination Letter, and
Northern Dynasty Mines Request to suspend the review process until further notice

The Pebble Project is a copper-gold porphyry deposit in Southwest Alaska approximately 15 miles northwest of the community of Iliamna, near Iliamna Lake. The Project proponent, Northern Dynasty Mines, Inc. (NDM) is proposing to construct a large open pit mine and milling operation that would produce gold, copper, molybdenum, and silver. The project is currently in the very early development stages.

NDM expects to submit applications to state and federal agencies in 2008. The application submittal will likely require the development of an Environmental Impact Statement, a multi-year process with formal public review. The Alaska Department of Natural Resources, Office of Project Management and Permitting, is coordinating the state permitting process for the Pebble Project.

Mining Resources Index

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»	Large Mine Permitting
»	Placer Mine Permitting
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»	Mining Forms

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- » [Fort Knox Mine](#)
- » [Greens Creek Mine](#)
- » [Kensington](#)
- » [Nixon Fork Project](#)
- » [Pebble Project](#)
- » [Pogo Project](#)
- » [Red Dog Mine](#)
- » [Rock Creek Project](#)
- » [True North Mine](#)
- » [Tulsequah Project](#)

Although there are no formal public meetings planned by state or federal agencies prior to the submittal of the applications, state agency staff is in the process of meeting with communities, local government officials, and non-governmental organizations to discuss the project.

Currently, NDM is in the process of collecting baseline environmental data for the project area. State and federal agencies are providing guidance to NDM for this data collection effort. NDM has submitted a Draft Environmental Baseline Studies Plan, which is currently being reviewed by agencies. You can download a copy of the 2004 progress reports, 2005 study plans & field sampling plans, and the proposed 2004 study plans by following the links below. If you have concerns or comments on the draft environmental baseline studies, you can contact NDM directly, or you can send them to the contact listed at the bottom of this page.

Draft Environmental Baseline Studies

- [2004 Progress Reports](#)
- [2005 Study Plans & Field Sampling Plans](#)
- [Proposed 2004 Study Plans](#)

If you would like to find out more about the state's permitting process for the Pebble Project, please contact:

Tom Crafford
Acting Large Mine Coordinator
Alaska Department of Natural Resources
Office of Project Management and Permitting
550 West 7 th Avenue, Suite 900D
Anchorage, AK 99501-3577
Phone: (907) 269-8629
Fax: (907) 269-8930
E-mail: tom_crafford@dnr.state.ak.us

Last updated on Monday, 05-Feb-2007 09:06:22 AKST. Site optimized for Netscape 7, IE 6 or above.
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From: mark munro [munro@xyz.net]
Sent: Friday, March 02, 2007 11:03 AM
To: Rep. Paul Seaton
Subject: HB 134 Salmon Spawning Waters
Follow Up Flag: Follow up
Flag Status: Blue

Hello Paul –

Today I just spoke in support of house bill 134 to protect the salmon spawning waters of the Bristol Bay watershed. My husband and I have fished Bristol Bay for 15 years with our children, and hope to continue to bring this resource to market. Over 50 Bristol Bay permit holders reside in the Homer area alone, many employing their families, as well as the many people who have worked as crew or on tenders.

By damaging only one stream, the entire Bristol Bay salmon fishery will be devastated by loss of market confidence. This effect will ripple down through the rest of Alaskan communities such as Homer. We need to safeguard not only this industry, but this way of life for so many Alaskans. How can we put such a large, sustainable, renewable resource to such risk?
Thank you for listening to my testimony today.

Lisa Krebs
PO Box 1971
Homer, AK
99603
munro@xyz.net

Brian Kraft
Trout Unlimited
SW Alaska Project Director
PO Box 231985
Anchorage, AK 99523-1985
907-227-8719

Fisheries Committee

My name is Brian Kraft. I own two sport fishing lodges in Alaska. One on Kodiak Island in Old Harbor and one on the Kvichak River 4 miles downstream from Lake Iliamna. I am also the SW Alaska Project Director for Trout Unlimited. TU has over 3,000 members in Alaska and over 170,000 nationwide.

TU and I support HB 134 and for that matter any bill that would promote the protection and conservation of our rivers and the habitat that support our fisheries. The proposed protection of the area that HB 134 addresses is and has always been needed. We are just fortunate that until recently our rivers and fish habitat have not been threatened. HB 134 addresses the need to ensure that these critical areas remain intact and able to provide the nutrient rich environment that allows our Bristol Bay salmon stocks to continue to return in massive numbers each summer. It also ensures that resident fish populations, which are used for subsistence choice of lifestyle and support a \$100M a year sport fish industry, will also remain healthy. A bill such as HB 134 would be needed no matter if the industry to come into the area were going to be Oil, gas, logging, mining, or a bunch of fishing lodges or tourism based businesses. Since spawning and rearing grounds are of vital importance in the life cycle of our salmon, a law should be in place that ensures the compatibility with this habitat of any industry that wishes to operate in these critical areas. The industry should not be allowed if it is going to destroy rivers, lakes and groundwater. Therefore, it should be a law, such as HB 134, that makes it illegal to do so. It just so happens that our luck has run out in regards to the status quo for the headwaters of some of these critical rivers in the Bay area. We are no longer able to just rely on Mother Nature combined with conservative fish and game management to ensure us of healthy fish stocks. We must now take action to protect these waters and habitat. The threat that has expedited the need for this bill to the forefront just happens to be large

①

scale chemical metallic sulfide mining. The reason the threat to these rivers is very real in respect to this industry is simply because of the location of the minerals and the process in which it takes to extract them in regards to vital habitat. The very nature of the large scale mining industry is that it crushes up earth on a massive scale—or as is the case in this area—spawning grounds. The recent track record of chemical mining has had in the Western US is dismal. Montana has outlawed the process that would be used at Pebble. We are having water quality problems in the Nevada desert. But as bad as the mining industry has been in sensitive areas like Montana that have some similar environmental characteristics as the Bristol Bay area, this bill is not an anti-mining bill. As I stated, the protection of clean rivers and healthy fish habitat is paramount. All other uses should be consistent and compatible with operating will not destroying rivers and fish. This bill does not scrutinize the permitting process or DEC requirements or EPA regulations. This bill is simply a pro clean water and pro healthy habitat bill. It is a bill that does not prohibit any industry from operating in Bristol Bay. Since DNR and ultimately the Governor have the authority, and as I learned 2 weeks ago, the discretion to determine if it is ok to destroy habitat because of a perceived benefit, a law is needed that eliminates any political agenda and in plain language states that we, the people of Alaska, will not allow the spawning grounds of our salmon to be ruined. This bill would make it the law that an industry can operate in the region, but it just can not destroy rivers and healthy fish habitat to do so. What is wrong with that? Do the project, just don't take the water from our streams and destroy vital habitat to do so. How can you not support a bill that promotes that? I would like to know exactly how this bill would make it so that Pebble or any other mine would not be able to operate in the Bristol Bay area. Maybe that question needs to be asked here today by this committee. The answer might open all of our eyes as to what really is planned for the region and to further justify the need for the passage of HB134.

Thank You,


Brian Kraft

From: Adam Berg
Sent: Thursday, March 01, 2007 3:04 PM
To: Louie Flora
Subject: FW: HB 134

From: Sally Gumlickpuk [mailto:gumlickpuk_sally@yahoo.com]
Sent: Thursday, March 01, 2007 2:48 PM
To: Adam Berg
Subject: HB 134

Can you please forward my comment onto the Representatives Harris, Johansen, LeDoux, Wilson, Edgmon, and Holmes. Thanks

I am in support of House Bill 134. My family and I put up subsistence fish every summer and harvest the moose and caribou when in season. These foods that we harvest survive on the clean waters of our region. So in order for our continued survival and for our future generations to come, we urge you to pass this HB 134.

I know you are hearing lots of testimonies on this HB 134 so I am making my comment short and to the point.

Thank you for your time in taking my comment.

Sally Gumlickpuk
Alaskan Resident and
President of Stuyahok Limited

Have a burning question? Go to [Yahoo! Answers](#) and get answers from real people who know.

From: Rep. Paul Seaton
Sent: Friday, March 02, 2007 12:21 PM
To: louie.flora@legis.state.ak.us
Subject: FW: More on my Testimony concerning House Bill 134

From: everett thompson [mailto:everettleroythompson@yahoo.com]
Sent: Friday, March 02, 2007 12:20 PM
To: Bryce Edgmon; Carl Gatta; Rep. Craig Johnson; Rep. Paul Seaton; Izetta Chambers; Rhonda Wayner; Betty Jane Bonin; Gramma Violet and Arch; Everett Leroy Thompson
Subject: More on my Testimony concerning House Bill 134

Hello again. This is Everett Thompson of Naknek writing to give more of my opinion on HB134, for the record. My sisters, mother, Grandmother and the youth that I have spoken to lately are also in favor of this bill. In youth I am referring to young commercial fisherman. Scottie Savo, age 16, Laurence Stewart, age 24, Nathan Wagner, age 21 and Terry Wagner, age 24. I have spoken to them and they have given me permission to express their opinion of "Protection of Salmon Spawning". Although these are my words.

I want to add that I appreciate the sport fishers and the lodges. These people working for them and owning them are my friends and clients. They buy my halibut and buy my mothers salmon, we are catcher/sellers before the salmon run really hits us. They do contribute to our communities.

I also want to address the topic about eliminating development in my area. I would love to develop our salmon industry to its highest heights. I am not for Mining or offshore oil and gas development. Shell came to speak to the people at our village council this last week of their interest in offshore gas development.

Anyways, I am for our best resource of all, FISH.

I also want make comment about the rigorous permitting process and Alaska State's involvement on the National Pollution Discharge Elimination System. Yesterday, during another Alaska state conference call it sounded like any Negligent discharge of pollutants would be only classified as a misdemeanor instead a criminal offense, when or if Alaska gets more control of this federal system now in place. If this bill, HB 134 does not go through and be effected immediately, we are in more of a risk than ever.

I'm not a hard core environmentalist, definitely not really active in politics.

I am a Hard Core Fisherman though! And no, I don't have a real nice boat, in fact I have one of the oldest aluminum boats in the Bay. F/V Chulyen. ADF&G # 7211 Boy is she slow but I still make a living and deliver quality, value added salmon and did better than average last year. In fact, I have done outstanding with that old boat of mine for the last three years. Prior to that, I always made it. I have been fishing every season, all season since age seven, same as some of these young men that I have mentioned at the top of this testimony. We are the kids that bought our own braces, bought our own wheelers and bought our mothers nice gifts.

We want our hard working legacy to continue forever. We want to continue to fish. We always want

clean water our fish, our animals and yes, even our insects. Of course, for Ourselves.

And yes, I know that gold isn't just for jewelry, and I know what uses copper and molybdenum have. I also know the devastating consequences us local people have to face if something goes wrong in our Waters. So do the people I have mentioned.

We the People. For the People.

Thanks for taking the time to read a piece of my heart and mind, significant as it appears to you.

Sincerely, Everett Leroy Thompson of Naknek, Alaska

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From: ahr kipling [sirhiss@iwon.com]
Sent: Thursday, March 01, 2007 10:22 AM
To: Rep. Bryce Edgmon
Cc: Rep. Paul Seaton
Subject: pebble mine

i am proud and excited to see the development of the pebble mine being scrutinized. it is imperative to consider fish stocks and habitat before this scale of development. not to mention, i believe open pit mining has been banned in the lower 48 and other countries are considering implementing the same ban.

the evidence of the damage done by such mines is exhaustive and conclusive..they decimate fish habitat and stocks everywhere (see history of calumet and hecla copper mining on the shores of lake superior). our fisheries still bring the second largest amount of money to this state and should not be treated as being expendable. they are irreplaceable and at the same time, they are being threatened by development without conscience even by such notable institutions as NOAA who, as i understand it, has legislation before the us congress to place fish farms all along the coast of alaska outside the 200 mile limit. this is what i mean by development without conscience.

i applaud your efforts and wish you the greatest success. if i can be of any help to you, please feel free to contact me. my prayers are with you.

sincerely,

darlene coyle

From: Paul & Rhonda Wayner [naknekians@arctic.net]
Sent: Thursday, March 01, 2007 9:29 AM
To: Rep. Craig Johnson; Rep. Carl Gatto; Rep. Paul Seaton
Cc: Adam Berg
Subject: FW: support HB 134

February 28, 2007

Dear Honorable Representatives:

I am writing to express my support for HB 134, a Bill to Protect Wild Salmon in Bristol Bay and surrounding areas. I am currently a resident of Unalaska, but was raised in Naknek and lived there for 28 years. I am also a small business owner, a member of the Naknek Native Village, a commercial set-net fisherman of Bristol Bay that fishes traditionally for subsistence purposes, and a proud family member of the budding Naknek Family Fisheries. My family has successfully fished the waters of Bristol Bay for centuries and they continue to do so.

HB 134 is a positive step in the right direction to ensure that our livelihoods, investments and local industry are sustained. It also leaves a legacy for much loved former Gov. Jay Hammond. The key component of this heated issue is sustainability which is defined as: *a collection of methods to create economic growth which protects the environment, relieves poverty and does not destroy natural capital in the short term at the expense of the long term....meeting the needs of the present without compromising the ability of future generations to meet their own needs.*

Our communities would be greatly diminished without the salmon industry. Bristol Bay Borough residents alone have earned 5.5 million per year based upon information from 1991-2000 (Commercial Fisheries Entry Commission - www.cfec.ak.us). In 2005 Bristol Bay commercial harvests of salmon totaled over \$93 million (2005 ADF&G Bristol Bay Commercial Salmon Fishery Season Summary <www.cf.adfg.state.ak.us/region2/finfish/salmon/bbay/brbpos05.php>). Those who are willing to work hard and diversify how they fish (direct marketing, improved quality, value added options) have continued to thrive.

We need to protect our salmon fisheries from the threat of this and future mines, and HB 134 does just that. It will ensure Bristol Bay's prominent position throughout the world as a source of pure, natural wild Alaskan salmon. Additionally, our people depend on the subsistence resources that our pure waters afford. Families, local government, and small businesses all rely on this resource for food, taxable income and for goods and services sold. Mining of this magnitude and type have been scientifically proven to greatly harm not only the fish stock but surrounding land based habitat. HB 134 ensures that whether development progresses there is at least a standard to hold high not just for the well being of the fish and habitat but for the people who thrive off of them. Please vote in favor of HB 134 and protect our precious wild Bristol Bay salmon.

Thank you,

Rhonda Wayner

From: Mary Jane Shows
Sent: Thursday, March 01, 2007 11:13 AM
To: louie.flora@legis.state.ak.us; Rep. Paul Seaton
Subject: FW: New Pom:HB 134 Protection Of Salmon Spawning Water

-----Original Message-----

From: POMS@legis.state.ak.us [mailto:POMS@legis.state.ak.us]
Sent: Thursday, March 01, 2007 10:45 AM
To: Mary Jane Shows
Subject: New Pom:HB 134 Protection Of Salmon Spawning Water

Harry Macaully I
576 Klondike Ave

Homer 99603,

I'm in support of HB 134. I commercial fish in Bristol Bay and believe Pebble Mine would hurt the fisheries.

Louie Flora

From: phoenix@xyz.net
Sent: Saturday, March 03, 2007 2:48 PM
To: Rep. Paul Seaton
Cc: Rep. Carl Gatto; Rep. Craig Johnson
Subject: HB 134

Dear Representatives Seaton, Gatto, and Johnson,

I write today to express my strong support of the CS for House Bill 134, recently introduced by Representative Edgmon, and to request yours.

Our rich natural resources, in particular our fisheries, are immeasurably valuable to Alaska's healthy future. Protection of sustainable resources, such as the Bristol Bay watershed, must be a top priority for Alaskans if we want to ensure economic and cultural vitality. I hope you will work hard to pass this bill to protect wild salmon in Bristol Bay.

Thank you for your time and your service to Alaska.

Sincerely,

Barbara Seaman
PO Box 2843
Homer, Alaska 99603
907-235-6395

3/5/2007

Louie Flora

From: Karen Case [spiritdriven@sbcglobal.net]
Sent: Sunday, March 04, 2007 1:16 PM
To: Rep. Paul Seaton
Subject: Support HB 134: The Alaska Wild Salmon Protection Act

To: Representative Paul Seaton, Fisheries Chair

RE: HB 134: The Alaska Wild Salmon Protection Act

I strongly urge you to **support HB 134**, and protect wild salmon throughout the Bristol Bay watershed, including the five major river systems that flow into Bristol Bay, home to the world's largest sockeye salmon runs,

Rep. Bryce Edgmon (D-Dillingham) bill would add common sense safeguards to legislation championed 35 years ago by Alaska's late Governor Jay Hammond during his time in the Alaska State Senate. The Wild Salmon Protection Act would protect Alaska's greatest salmon fishery by prohibiting the withdrawal, obstruction, pumping or pollution of surface or subsurface water in any Bristol Bay drainages that support salmon. The legislation also prohibits the destruction of salmon habitat, creates a fining schedule for violating these protections, and protects existing water uses authorized prior to the passage of the bill.

In commenting on the Bill, Representative Edgmon noted, *"As a legislator, Jay Hammond saw fit to add protections to this valuable area in 1972 before allowing oil exploration. HB 134 adds protections to the same area at a time when mining on a massive scale is being proposed. If mining is to eventually take place in our watershed, I want to make sure that our clear-running salmon streams and rivers are not put at risk."*

The pristine lakes and rivers that empty into Bristol Bay support world-renowned spawning and harvesting of all five species of Pacific salmon -- king, sockeye, silver, chum, and pink -- as well as rainbow trout, arctic char, grayling, northern pike, lake trout and Dolly Varden. Beluga whales and Orcas (killer whales) can be seen following the salmon runs. The area is home to caribou, moose, bear, and walrus, as well as small game such as beaver, porcupine, otter, and fox, and varied waterfowl.

I urge you to be a good steward of the Alaska land and wildlife -- and **support HB 134**.

Thank you.

Respectfully,
Karen Case
P O Box 27944
Fresno, CA 93729

Louie Flora

From: lin golden [lagolden@telus.net]
Sent: Sunday, March 04, 2007 6:08 PM
To: Rep. Paul Seaton
Subject: HB 134

Dear Rep. Seaton,

RE: HB 134: The Alaska Wild Salmon Protection Act

I strongly urge you to **support HB 134**, and protect wild salmon throughout the Bristol Bay watershed, including the five major river systems that flow into Bristol Bay, home to the world's largest sockeye salmon runs,

Rep. Bryce Edgmon (D-Dillingham) bill would add common sense safeguards to legislation championed 35 years ago by Alaska's late Governor Jay Hammond during his time in the Alaska State Senate. The Wild Salmon Protection Act would protect Alaska's greatest salmon fishery by prohibiting the withdrawal, obstruction, pumping or pollution of surface or subsurface water in any Bristol Bay drainages that support salmon. The legislation also prohibits the destruction of salmon habitat, creates a fining schedule for violating these protections, and protects existing water uses authorized prior to the passage of the bill.

In commenting on the Bill, Representative Edgmon noted, *"As a legislator, Jay Hammond saw fit to add protections to this valuable area in 1972 before allowing oil exploration. HB 134 adds protections to the same area at a time when mining on a massive scale is being proposed. If mining is to eventually take place in our watershed, I want to make sure that our clear-running salmon streams and rivers are not put at risk."*

The pristine lakes and rivers that empty into Bristol Bay support world-renowned spawning and harvesting of all five species of Pacific salmon -- king, sockeye, silver, chum, and pink -- as well as rainbow trout, arctic char, grayling, northern pike, lake trout and Dolly Varden. Beluga whales and Orcas (killer whales) can be seen following the salmon runs. The area is home to caribou, moose, bear, and walrus, as well as small game such as beaver, porcupine, otter, and fox, and varied waterfowl.

I urge you to be a good steward of the Alaska land and wildlife -- and **support HB 134**.

As a person writing from British Columbia, I know how damaged pristine habitats and rivers can get in misguided spoilage of the land for gain. Our salmon fisheries have plummeted. Protect yours!

Thank you.

Respectfully,
Linda Golden
4306 Macaulay Rd.
Black Creek, B.C.
V9J 1E1
lagolden@telus.net

Louie Flora

From: Sylvia-Gaertner [Sylvia-Gaertner@gmx.de]
Sent: Monday, March 05, 2007 6:17 AM
To: Rep. Paul Seaton
Subject: HB 134 The Alaska Wild Salmon Protection Act

Dear Representative Paul Seaton,

I strongly urge you to **support HB 134**, and protect wild salmon throughout the Bristol Bay watershed, including the five major river systems that flow into Bristol Bay, home to the world's largest sockeye salmon runs,

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I urge you to be a good steward of the Alaska land and wildlife -- and **support HB 134**.

Thank you.

Respectfully,
Sylvia Gaertner
Tremsbuettel / Germany

E-Mail : Sylvia-Gaertner@gmx.

RENEWABLE RESOURCES COALITION



Renewable Resources Coalition, Inc.

500 L Street, Suite 502
Anchorage, AK 99501
Telephone: (907) 632-9933
Fax: (907) 272-9319

Renewable Resources Coalition Testimony in Support of HB 134 Submitted by Scott Brennan, Chief Operating Officer February 28, 2007

Mr. Chairman, members of the committee, thank you very much for this opportunity to testify in support of House Bill 134 today. My name is Scott Brennan and I am the Chief Operating Officer of the Renewable Resources Coalition.

The Renewable Resources Coalition is a non-profit corporation formed in Alaska, by Alaskans to protect Alaska's renewable resources and the existing jobs, families and communities they support. The Coalition also seeks to promote awareness of public policy issues that affect the well-being of businesses and individuals that depend upon fish and game resources.

Our more than 300 members include many Alaskan businesses and individuals from the commercial, sport and subsistence fishing communities and we strongly support the salmon conservation concepts at the core of HB 134. While the committee process plays an important role in refining legislation and there are certainly opportunities for word-smithing and addressing nuances, the concepts at the core of HB 134 are sound and we strongly support them as expressed in the CS for HB 134.

I would like to highlight several reasons that we support stronger salmon conservation measures in Bristol Bay.

- Bristol Bay's wild salmon are a powerful economic engine for our state. In 2005 alone, the Bristol Bay salmon economy was worth more than \$330 million dollars with \$62 million of that total coming from the sportfishing sector alone. Please include the attached economic report from renowned Natural Resource Economist Dr. John Duffield of the University of Montana in the record of these deliberations.
- Current salmon protections in Bristol Bay today range from non-existent to inadequate due in large part to the actions of the Murkowski Administration. These recent rollbacks have eliminated the much-needed checks and balances from our system and have done great damage to our ability to protect clean water and healthy wild salmon in Bristol Bay. From the dismantling of ADF&G's Habitat Division to allowing, for the first time in many, many years, toxic mixing zones in salmon spawning habitat, the damage done in recent years is significant and serious cause for concern. HB 134 would restore and improve our inadequate salmon habitat protection and it represents a step in the right direction.

- For additional details regarding the inadequacy fish habitat protection and the resulting risks, please consider the following statement offered in written testimony before the Board of Fisheries in December 2006 by Lance Trasky, former Alaska Department of Fish and Game Habitat Division Regional Supervisor for Bristol Bay. Please also include Mr. Trasky's testimony in its entirety (attached) in the record for this hearing.

"...if mine permitting is allowed to proceed under current state and federal standards and permitting processes the very large scale mining of sulfide based copper ore in the Nushagak and Kvichak drainages will physically destroy thousands of acres of very high quality spawning and rearing habitat and over time will almost certainly seriously degrade fisheries habitat and fisheries production in downstream portions of these drainages."

- When evaluating the risks and rewards associated with resource development proposals and policy decisions, it is helpful to consider the economic benefit resource development provides to all Alaskans and the risks that development poses. According to an analysis commissioned by Chair Seaton, in 2005, the oil and gas industry paid 20 cents for every dollar of product purchased in Alaska. That same year, the mining industry paid all Alaskans 0.7 cents for every dollar of hardrock minerals purchased here in the state. This failure to pay fair market value for our resources calls into question the wisdom of risking an abundant, renewable resource economy for the limited, short-term benefits of large-scale mining in the absence of adequate habitat protections.

In conclusion, I would like to thank the committee for this opportunity to testify and I urge you, on behalf of my hundreds of members, to move forward with your efforts to provide adequate protections for clean water and salmon habitat in Bristol Bay.

Please include two attachments: Bristol Bay Economic Study and Lance Trasky Testimony.

The Myth of the "Rigorous Permitting Process"

The following testimony by Lance Trasky, former Alaska Department of Fish and Game Habitat Division Regional Supervisor for Bristol Bay, dispels the myth of the rigorous permitting process and is required reading for all Alaskans concerned with the future of the Bristol Bay salmon fishery. This testimony, reprinted here by permission of the author is proof that the permitting process is broken and in dire need of improvement.

December 4, 2006

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

ATTN: BOF Comments

Re: Proposal 121 – Comments and Recommendations

Dear Chairman Morris and Members of the Alaska Board of Fisheries:

1. I am Lance Trasky and I reside in Anchorage. I am a fisheries and habitat biologist with over 34 years of experience in fisheries research and in regulating activities that impact fisheries habitat. For 26 years I was the ADF&G Habitat Division Regional Supervisor for Region II which includes the majority of the major fish producing regions of the state including Bristol Bay. I reviewed and permitted thousands of projects ranging from coal mines to stream bank restoration. I also was the Alaska Department of Fish and Game (ADF&G) lead on many state and federal resource plans including the cooperative State Federal Bristol Bay Land Use Plan. A short resume of my experience and accomplishments is included in my packet. I am here today to urge the Board to expand 121 and establish a much larger fish and game refuge area in the Nushagak and Kvichak River drainages which would establish standards for mining and other habitat disrupting activities.

2. The reason you should expand Proposal 121 is that if mine permitting is allowed to proceed under current state and federal standards and permitting processes the very large scale mining of sulfide based copper ore in the Nushagak and Kvichak drainages will physically destroy thousands of acres of very high quality spawning and rearing habitat and over time will almost certainly seriously degrade fisheries habitat and fisheries production in downstream portions of these drainages. Additional impacts will occur in the road and electrical transmission corridors, at the site where power is generated and the ore is processed, and at the port area. Unless stricter standards and more balanced processes are adopted, such as through a refuge, these impacts will outlive many generations of Alaskans. I strongly believe that new standards need to be established to regulate mining of sulfide ore in the Nushagak and Kvichak drainages, outside of the existing regulatory process, which I feel is badly compromised.

3. The primary argument that claim holders, their employees and Murkowski administration proponents of mega scale strip mining in Bristol Bay have used to counter very real concerns about the impacts of large scale copper mining in the Nushagak and Kvichak drainages is that the state has a large mine process that will insure mining permits will insure that "no net loss of fish" will occur. Why do they want you to wait and let this process to take its course? Because the Murkowski administration has stacked the process in their favor. I will summarize eight facts or reasons why this is so.

First, as one of his first acts Governor Murkowski transferred the authority to protect anadromous fish and maintain fish passage under the Anadromous Fish Act and the Fishways Act from the Department of Fish and Game to the Department of Natural Resources by executive order. Overnight the mandate went from ADF&G's statutory responsibility to 'protect, preserve, maintain, and where possible extend the fish and wildlife resources of the state in the interest of the economy and well being of the state', to facilitating the issuance of permits to applicants. The few habitat biologists who did this work were transferred to ADNR. Some have left when other job opportunities at ADF&G became available, and inexperienced replacements have been hired. The result is that Department of Fish and Games no longer has staff who have expertise and years of experience in assessing the impacts of large projects on fish and wildlife and harvest, and ADF&G's fish and wildlife. I do not believe that either ADF&G or ADNR have staff that has the expertise to evaluate the extremely complex chemical, hydrological and physical impacts associated with a landscape scale mine. Although, ADF&G has many good scientists and dedicated biologists their role has largely been reduced to providing ADNR decision makers with information on the location and abundance of the resources that will be impacted by the mine.

Second, the Governor dismantled the Alaska Coastal Management Program by eliminating the guidelines and habitat standards which required that federal and state permits be consistent with a high level of protection to fish and wildlife habitat and resources. He also stripped local governments of their opportunity to

veto projects which harm local interests. He eliminated the Office of Governmental Coordination which consolidated agency comments of federal permits and actions and mediated disputes between agencies. He transferred the administration of what little remains of the Coastal Management Program to the Department of Natural Resources.

Third, the next step in consolidating all of the authority and responsibility to regulate activities impacting fish and wildlife resources within the Department of Natural Resources was to get the Commissioner of Fish and Game to sign a memorandum of understanding transferring ADF&G's authority under the federal Fish and Wildlife Coordination Act to ADNR. As some of you may know the Fish and Wildlife Coordination Act was created by Congress because of concerns that the Corps of Engineers was issuing wetlands fill permits that were destroying the nation's productive wetlands and fish streams. The FWCA requires that all permits applications under the Corps Section 10, 404 and 401 permit programs and EPA Clean Water Act be submitted to the states fish and wildlife agency for review and that their comments be incorporated unless there is an overriding federal interest. Under the MOU, ADNR's Commissioner now makes the decisions on what is best for fish and wetlands.

Fourth, next step in the process to make it easier to trade fish habitat for mining was to change the Alaska Department of Environmental Conservation's (ADEC) regulation's to allow the discharge of harmful substances into salmon spawning areas. Although, the creation of so called mixing zones in spawning streams was strongly opposed by fishing organizations, the American Fisheries Society, conservation groups and the public because of concerns that it will result in the degradation of the states valuable fish resources, the ADEC changed the regulations to allow the discharge of substances shown to be harmful to fish and aquatic life into salmon spawning streams and lakes. The reason is that it is very costly to treat some types of industrial waste to levels where it is not harmful to fish and aquatic life, and these costs could make large scale mining of sulfide ore uneconomic. The ADEC is also attempting to take over administration of the Clean Water Act from EPA. Unfortunately ADEC's record in enforcing regulation on pipeline corrosion, and approving the Prince William Sound Oil Spill Plan a few months before the Exxon Valdez Oil spill does not bode well for fish habitat.

Fifth, a system has also been established whereby the mining company conducts or pays for baseline research to be used in the permitting the mine, and pays the salaries of all of the state employees reviewing large mining applications. ADNR controls the RSA process and decides which studies will be funded and how much funding other state agencies receive. Some may argue that this does not buy favorable action on permits, but it certainly buys access and oversight, because applicants review and approve spending. It also creates a system where staff whose jobs are dependent on this funding may lose their funding and jobs if the project doesn't proceed.

Sixth, in my discussions with ADF&G biologists it is clear that ADF&G, which is by state law supposed to be the states fisheries experts, does not have either the technical capability or the staff to review a world scale copper mine. A mega mine such as the proposed Pebble Copper mine is an incredible complex projects with many potential impacts on water quality and fish habitat, both on and off the mine site. These include but are not limited to construction of an access road which will cross hundreds of streams, a power plant which will have to generate enough power to light a large city, coal mining if a coal burning power plant is used, processing and transportation of millions of tons of acid generating heavy metals laden ore and concentrate, generating incredible amounts of sulfide laden dust, treatment of trillions of gallons of contaminated wastewater from the pit and milling operations, warehousing of trillions of tons of acid generating waste rock and tailings behind earth fill dams, and a giant pit which will probably leach polluted water into the ground and surface water for millennia. ADF&G needs to hire new fisheries biologists, biochemists, and engineers with extensive backgrounds in impacts from very large sulfide mines to review projects, but has no funding or support to do this.

Seventh, don't count on federal agencies to deny projects which are likely to be harmful to fish. Project review staffs at U.S. Fish and Wildlife Service have been drastically cut in recent years, and their ability to adequately review large mine projects has been greatly diminished. The Corps and EPA approved the disposal of mine tailing into a lake at the Kensington Mine near Juneau. Although this lake only has resident fish, the permitted disposal is significant because it sets precedence for the destruction of more important fish habitat such as Frying Pan Lake, and the headwaters of Tularik Creeks and the Koktuli River. If a mine violates federal water quality statutes don't count on federal agencies to shut them down. Existing mines in Alaska such as the Red Dog mine have had hundreds of water quality violations, but continue to operate. It appears that once a mine has been permitted it isn't going to be shut down unless mining becomes unprofitable or the mining company goes out of business. Unhappiness with the process and with permits issued for the Kensington Mine and the Rock Creek Mine near Nome under the large mines process has caused local residents to file suite to overturn Corps of Engineer permits for these projects.

Eight, what this means is that all of the state authority to protect fish and wildlife under state statutes and to make recommendations on the issuance of federal permits is now in the hands of the Commissioner of the Department of Natural Resources. Based on the record I believe that this means there is a greater chance that a mega mine which will have very serious impacts on fish and wildlife resources will be approved. I cannot find any case where permits for any large mine have been denied, even where these mines have received serious opposition from some interests i.e. Kensington and Rock Creek. It is ironic that at the same time Wisconsin was outlawing the mining of sulfide ore and Montana was prohibiting cyanide heap leaching, the State of Alaska was dismantling the regulatory framework that had been established to protect fish habitat at statehood

and expediting the process to approve these types of mines.

These eight facts and reasons have two implications. First, the likelihood has increased that a very large scale mine with very serious impacts on fish and wildlife resources, habitat, and commercial, sport and subsistence fishing and marketing will be approved. Second, all state regulatory authority to protect fish and wildlife under state and federal statutes is now in the hands of the Commissioner of the Department of Natural Resources, except the authority of the Boards of Fish and Game to recommend a refuge to the legislature under AS. 16.05.251 and AS 16.05.255. The Board must act. The Boards sustainable salmon and trout policies, at AAC 39.222(d)(6) and 5AAC 75222(d)(6), provide that where actions are needed to regulate human activities that affect wild salmon and trout and their habitats that are outside the authority of the Department or the Board, the "board shall correspond with the relevant authority, including the Governor, relevant boards and commissions, commissioners and chairs of appropriate legislative committees, to describe the issue and recommend appropriate action."

Thank you for the opportunity to comment.

From: Nina Faust [fausbail@horizonsatellite.com]
Sent: Wednesday, February 28, 2007 8:02 PM
To: Rep. Lindsey Holmes; Rep. Kyle Johansen; Rep. Paul Seaton; Rep. Bryce Edgmon; Rep. Peggy Wilson; Rep. Gabrielle LeDoux; Rep. John Harris
Subject: HB 134

P.O. Box 2994
Homer, AK 99603

March 1, 2007

Representative Paul Seaton
Fisheries Chair
State Capitol, Room 102
Juneau, AK 99801-1182

Dear Paul:

We support HB 134, which would conserve and protect wild salmon production in drainages of the Bristol Bay Fisheries Reserve.

This additional protection is important given the proposed mining projects that have the potential to impact fish habitat in the water bodies of this region. Protecting water quality and our fish habitat needs to have a higher priority than mining. Our own research has convinced us that the track record of large scale open pit mines is not good, particularly in the area of water pollution.

We know that some have raised the issue that raising standards constitutes a takings, but no mine has successfully argued this claim in other states where standards were raised. The State needs to protect the public interest first, and that public interest is in protecting a valuable renewable fishery resource and our clean water. The mines are "Johnny Come Latelys" that wants to exert their desires to extract minerals and potentially ruin a very valuable resource that belongs to all Alaskans. Mines contribute very little to state coffers, yet they may actually damage an industry that does pay its share through fishery taxes. Please pass this bill.

Sincerely,

Nina Faust and Ed Bailey

3/1/2007

Lindsey Bloom

AIFMA, BBDA, TU

883 Basin Rd

Juneau, AK 99801

(907) 463-3327

aklindsey@immanentbloom.net

Rep. Paul Seaton
Fisheries Chair
State Capitol, Rm 102
Juneau, AK 99801-1182
Fax: 907-465-3472
Email: Representative_Paul_Seaton@legis.state.ak.us

Good Morning Chairman Seaton and Members of the board:

My name is Lindsey Bloom I was born and raised here in Juneau. I am a Bristol Bay Drift Permit Holder. I am here today representing the Alaska Independent Fisherman's Marketing Association; AFMA and the Bristol Bay Drift-netters Association; BBDA, who's combined membership includes several hundred Bristol Bay Fisherman. We strongly support HB 134. I also work for Trout Unlimited on a contract basis with commercial fisheries outreach.

The Bristol Bay watershed is an extraordinary resource that sustains one of our states greatest runs of wild salmon. It's hard for me to believe that such an extraordinary resource lacks any special protections. In the face of unprecedented industrial development HB 134 provides the critical standards of protection to safeguard this phenomenal resource. The absence of such standards permits unacceptable risks to fish and the waters that sustain the great fisheries of Bristol Bay.

In passing this bill lawmakers will lay the foundation for responsible development of the regions other resources without compromising the fantastic gift of renewable fisheries that come back year after year. The alternative: gambling the wild, pristine, and thriving salmon of Bristol Bay along with local economy, and a healthy subsistence lifestyle is completely unacceptable to us.

The Bristol Bay fishery is in immediate need of higher standards of protection because unlike any other fishery in the state, it has no special protections and is threatened by mining development on a scale larger than has ever before been seen in this state.

Thank you.

From: aklindsey@immanentbloom.net [mailto:aklindsey@immanentbloom.net]
Sent: Thursday, March 01, 2007 6:22 PM
To: Rep. Paul Seaton
Subject:

Here are the questions and results from the Hellenthal poll which I cited from a press release in my testimony on Wednesday. If you would like a copy of the poll itself, in it's entirety, please contact the Renewable Resources Coalition. Thanks!

The Bristol Bay watershed is the source of the world's greatest wild salmon fishery generating more than \$300 million dollars annually. A bill is now before the state legislature to protect this valuable natural resource and to prohibit the draining and destruction of salmon spawning streams for industrial purposes. Do you strongly favor, somewhat favor, somewhat oppose, or strongly oppose protecting Bristol Bay salmon spawning areas in this manner?

PROTECTING WATERSHED	FREQUENCY	PERCENT
4. Strongly favor.....	253.....	63.0%
3. Somewhat favor.....	81.....	20.2%
2. Neutral.....	23.....	5.6%
1. Somewhat oppose.....	20.....	5.0%
0. Strongly oppose.....	25.....	6.2%

(Mean = 3.289)

Another proposal before the legislature would establish a game refuge in the watersheds that make up the headwaters of Bristol Bay. It would be named after the late Governor Jay Hammond and is supported by his widow Bella Hammond. Do you strongly favor, somewhat favor, somewhat oppose, or strongly oppose the creation of such a game refuge?

GAME REFUGE	FREQUENCY	PERCENT
4. Strongly favor.....	156.....	38.7%
3. Somewhat favor.....	113.....	28.2%
2. Neutral.....	41.....	10.1%
1. Somewhat oppose.....	51.....	12.6%
0. Strongly oppose.....	41.....	10.3%

(Mean = 2.724)

Lindsey Bloom
Home Office (907) 463-3327
Cell (413) 636-6128

From: Rep. Paul Seaton
Sent: Wednesday, February 28, 2007 3:08 PM
To: louie.flora@legis.state.ak.us
Subject: FW: HB 134

From: everett thompson [mailto:everettleroythompson@yahoo.com]
Sent: Wednesday, February 28, 2007 1:29 PM
To: representative_carl_gatta@legis.state.ak.us; Rep. Craig Johnson; Rep. Paul Seaton; edgmon@hotmail.com; Izetta Chambers
Subject: HB 134

Hey Guys. My name is Everett Thompson and I hope since I couldn't testify this morning over the phone that I could do this online.
Can you put this testimony on record or does it have to be in a session over the phone on friday? Or does it matter?

Anyways, I live here in Naknek. I commercial fish for a living and I thought that I had to reach you to express my opinion on House Bill 134.

I am in support of this bill as is my two sisters, Izetta Chambers and Rhonda Wayner. My Mom, Betty Jane Bonin and my Gramma Violet Willson. All of us have been fishing since childhood. Obviously my intelligent cousin Valli is also in support of it as well, after hearing her in the session over the phone.

I am one of the fishers that got that 82 cents this last fishing season, had my best season ever and delivered all my fish in slush ice. I am a single father and even though I don't see my six year old daughter much when I am fishing, fishing helps me spend a lot of time with her in the off season. I take care of her all the time!

Our fishing has seen its low, in my eyes. Our fishing is going to get better. Our price is going to go up through quality and a bill like this will make our salmon more appealing!

Northern Dynasty and all the mining that will destroy our beautiful backyard is no hope. Yes, some of our villiages are getting smaller and some of our schools are closing because of economics but after these mines rape our backyard, we will have less hope to keep our communities strong. We won't be able to live here anymore and as a Alaskan Native from this area, my grandchildren won't be able to subsist here. There will be nothing for us anymore and we haven't had a problem keeping alive here as Alaskan Natives, that is why we are still here. Water has always produced life here.

You want to protect us? The mine(s) and the salmon can't coexist and we can't coexist with the mine(s) niether!

The risk-vs-benifit doesn't way good to me. Not at all. The cooperate ones will benifit and we have a HUGE risk. This mine is the scariest thing that Bristol Bay has ever faced. We now also have the challenge of Oil and Gas exploration=Drilling for Oil and Gas. Please don't let us get crushed.

Some are saying that this bill will hurt our subsistance but the bill states:

"The bill establishes exceptions to the law for previously approved uses, drinking water and domestic uses, ex and future municipal uses, and for traditional, cultural, or residential uses."

This bill is a strong one and one that is so, so posotive. I am very glad that Bryce Edgmon got my vote and the vote of the people in our region. That expresses our opinion on our area right there. I knew that he was anti-mine, I think the voters had to know that as well. That is why I think he is our regional rep.

Please don't table this. Pass House Bill 134! Keep Bristol Bay safe!

Sincerely from the heart, Everett Leroy Thompson

And for off the record:

I wish other members of my family that were testifying had the same view as myself but I think they have alterior motives, even if it is an all expense paid visit to Junuea. I still love them anyways.

Need a quick answer? Get one in minutes from people who know. Ask your question on Yahoo!
Answers.



February 28th, 2007

Attn: Representative Paul Seaton

Subject: House Bill 134

THE TENTH FLOOR
2200 SIXTH AVENUE
SEATTLE, WA 98121-1830
206.725.6000
OPERATION FAX 206.441.9090
SALES FAX 206.728.1355

Mr. Committee Chairman, members of the Fisheries Committee. My thanks for the opportunity to testify before you today. My name is Norman Van Vactor and I am a commercial seafood processor who has lived and worked in Bristol Bay for 31 years. I am here today to testify and give my strong support for House Bill 134, which I understand is also being called the Wild Salmon Protection Act. My sincere thanks to the the bipartisan sponsors of this bill. Your bipartisanship support on this issue in Juneau is only magnified by the bipartisan support for this issue and the protection of our resources and habitat by those of us who work and live in Bristol Bay. The manner in which the Subsistence, Sport, Recreation, and Commercial Business interests in Bristol Bay have galvanized and come together around the subject of Habitat and Resource protection is truly incredibly and gratifying.

Each year, millions of fish pour into the bay and its drainages, putting food on the tables and paychecks in the pockets of thousands of local Alaskans, not to mention pumping an estimated \$400 million into Alaska's economy annually to say nothing of sustaining a cultural way of life to which no dollar value could be attributed. This bill's purpose is not to preclude development in Bristol Bay but to instead provide standards and a level of protection that our incredible natural resource deserves and demands.

Fishing prices are rebounding. Salmon run returns in the Nushagak River hit an all-time record last year. The King salmon season was exceptional, and the Kvichak River salmon run is making a big comeback. Why gamble a thriving wild salmon fishery, a local economy, and a healthy subsistence lifestyle.

Two years ago the statement was made to me and my staff by a scientific consultant for one of the companies interested in developing mining interests, that "we probably couldn't have picked a more difficult place in all of Alaska to site this project". When queried as to why, the response was "its all about the water and the hydrology of the area". I couldn't agree more and as important as the water is, its about the incredibly variety of natural resources that call this area home and are



given life supporting birth and growth by that very water and natural habitat of the region.

THE TENTH FLOOR
2300 SIXTH AVENUE
SEATTLE, WA 98121-1620
206.728.6000
OPERATION FAX 206.441.9090
SALES FAX 206.725.1555

Not only are the state's greatest wild salmon runs found in the watershed, so too are the world's biggest rainbow trout and brown bears, and one of the state's largest caribou herds. Bristol Bay is truly one of Alaska's outstanding natural treasures and its long-term health is crucial for the bay's growing economy and the prosperity of those who live there.

Desperate to silence its critics, opponents to house bill 134 talk about jobs and resource development. The reality and comparative history of the risks speak for themselves. We are wise to ask the questions now and put protections like HB 134 in place that protect what we have, which is truly one of wonders of the world.

Before he died former Alaska Governor Jay Hammond told the Kodiak Daily Mirror: "I could think of no place in Alaska where I'd less rather see the largest open pit mine in the world than at the headwaters of the Koktuli and Talarik Creek, two world-class fishing streams and wild salmon spawning areas." While I could not agree more HB 134 does not preclude major development. What it does do is raise the bar and standards for Habitat protection. Our Natural resource deserves nothing less. Thank You.....

A handwritten signature in dark ink, appearing to read "N. Van Vactor".
Norman Van Vactor

[Print](#) | [Close Window](#)

Subject: [REDACTED] Media Alert! MOST ALASKANS SUPPORT BRISTOL BAY PROTECTION
From: scott@renewableresourcescoalition.org
Date: Wed, Feb 28, 2007 9:26 am
To: scott@renewableresourcescoalition.org

NEWS RELEASE – FOR IMMEDIATE RELEASE

February 28, 2006

Contact: Scott Brennan, Renewable Resources Coalition, (907) 632-9933
Jack Hobson, President, Nondalton Tribal Council (907) 294-2220
Marc Hellenthal, Hellenthal & Associates, (907) 276-1001

NEW POLLS SHOWS MOST ALASKANS SUPPORT BRISTOL BAY PROTECTION BILLS
83 percent support salmon protection measures of Rep. Edgmon's HB134, subject of today's House Fisheries Committee hearing

Anchorage – A new public opinion poll commissioned last week shows that Bristol Bay protection legislation enjoys the support of the vast majority of Alaskans. More than 80 percent support the concepts at the core of bi-partisan HB 134, "The Alaska Wild Salmon Protect Act." The House Fisheries Committee will take testimony today on HB 134, which is the first of the Bristol Bay bills to see a hearing.

The poll, commissioned by the Renewable Resources Coalition (RRC) and conducted by Hellenthal & Associates, asked over 400 registered voters statewide whether they favored or opposed legislation proposed in the Alaska State Legislature that would protect the Bristol Bay fisheries.

Key findings of the Hellenthal survey include:

83% of Alaskans support salmon protections of HB 134, a bill now before the state legislature to protect Bristol Bay's valuable natural resource and to prohibit the draining and destruction of salmon spawning streams for industrial purposes.

67% of Alaskans support the habitat protection concepts at the heart of SB 67, a proposal to establish a game refuge in the watersheds that make up the headwaters of Bristol Bay. It would be named after the late Governor Jay Hammond and is supported by his widow Bella Hammond and other family members.

69% of Alaskans feel that the creation of one of the world's largest open pit mines at the headwaters of the Bristol Bay watershed is a negative development for Alaska.

"Rep. Edgmon, Sen. Stevens and their co-sponsors are visionary leaders, putting people and fisheries first. Despite Northern Dynasty's corporate spin, these bills are widely supported in Alaska. Our Bristol Bay fisheries are too valuable to risk," said Scott Brennan, chief operating officer of RRC.

Alaska Native leaders from Bristol Bay praised the pending legislation calling it long past due.

"Bristol Bay's wild salmon should have been this level of protection a long time ago," said Jack Hobson, President of the Nondalton Tribal Council, the largest village nearest the site of the proposed Pebble Mine. "This is something that is needed to protect our salmon and I'm glad that someone has finally come out with this bill to do something to protect our salmon in the Bristol Bay Watershed."

The Hellenthal & Associates survey was conducted February 12-20, 2007. At a 95 percent confidence level, the random digit survey has a margin of error of plus or minus 4.9 percent.

###

BACKGROUND:

The proposed Pebble Mine has drawn opposition from many Alaska Native communities and organizations, commercial fishermen, sport fishing industry leaders and Alaskans from all walks of life. The Bristol Bay watershed is the source of the world's greatest wild salmon fishery generating more than \$300 million dollars annually.

HB 134 was introduced by Representative Edgmon (D-Dillingham) and co-sponsored by Ramras (R-Fairbanks), Dahlstrom (R-Eagle River), Gara (D-Anchorage), and Kerttula (D-Juneau). SB 67 is sponsored by Sen. Gary Stevens (R-Kodiak) and Johnny Ellis (D-Anchorage).

The Renewable Resources Coalition (RRC) is a non-profit corporation formed to protect Alaska's renewable resources and the existing jobs, families and communities they support. The Coalition also seeks to promote awareness of public policy issues that affect the well-being of businesses and individuals that depend upon fish and game resources.

Learn more at www.renewableresourcescoalition.org

—
Scott Brennan, Chief Operating Officer
Renewable Resources Coalition, Inc.
500 L Street, Suite 502
Anchorage, AK 99501
Telephone: (907) 632-9933
Fax: (907) 272-9319
scott@renewableresourcescoalition.org
<http://www.renewableresourcescoalition.org>

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From: Mariann Petersen [mariannp@alaska.net]
Sent: Wednesday, February 28, 2007 9:39 AM
To: Rep. Craig Johnson; Rep. Carl Gatto; Rep. Paul Seaton
Cc: 'Mariann Petersen'
Subject: HB 134

Dear Sirs,

Please support HB 134, a bill to protect wild salmon in Bristol Bay. This area could be severely compromised if we do not have laws protecting this tremendous renewable resource. Bristol Bay is home to our planet's largest salmon run, an eco-system like no other on this earth. This area belongs to Alaska; this is our treasure and needs to be protected by us, the people of Alaska.

The majority Bristol Bay residents have elected Bryce Edgmon to represent them, they want HB 134 passed. Mr. Edgmon unseated a greatly respected 11-term lawmaker, something many might have thought to be unthinkable, but it happened for the sole reason that the people in this region want this area protected. Please consider that this is what the majority of Bristol Bay is supporting, HB 134. We should not compromise this treasure; HB 134 will help keep the integrity of our renewable resource. A resource that we hope will continue, under our protection, to be strong for centuries to come.

The reality is that the mineral deposit at Pebble is immense, one of the largest found in the world. The mining industry is not going to walk away from this find, they want to develop it but unfortunately the majority of mines, mines on a much smaller scale, have proven that the pollution levels can't be controlled. The tract record with the mining industry is horrendous. The mining industry needs to develop new technology and procedures so that their practices won't create such contamination in the environment. Bills such as this, HB 134 will help motivate the mining industry into developing innovative and environmentally safer ways to extract minerals to make this industry more viable in the Bristol Bay area.

Money is the ultimate motivator that is putting this area at risk. However, there is no amount of money that could correct the potential damage that can occur. There is no amount of money that could compensate Alaskans, as this area is priceless. Please protect our wild salmon, please endorse HB 134.

Mariann Petersen
4720 Sportsman Drive
Anchorage, Alaska 99502
907-243-1725

2/28/2007

From: Michael Herbeck [upstream@gci.net]
Sent: Wednesday, February 28, 2007 8:42 AM
To: Rep. Paul Seaton; Rep. Carl Gatto; Rep. Craig Johnson
Subject: New & Improved HB 134 The Alaska Wild Salmon Protection Act

Gentlemen:

I urge you to support the full, complete, and unassailable protection of Alaska's wild salmon throughout the Bristol Bay watershed, including the five major river systems that flow into Bristol Bay, where the world's richest gift of sockeye salmon and Rainbow trout run.

Please protect this irreplaceable Renewable Resource for all the World's benefit!

Thank you,

Michael Herbeck

451-2764

2/28/2007

From: John Kent [pattykent@gci.net]
Int: Wednesday, February 28, 2007 9:42 AM
cc: Rep. Paul Seaton
Subject: HB 134

Dear Representative Seaton,

My name is Jon Kent, and I own Painter Creek Lodge on The Alaska Peninsula. I Have been operating there since 1984. I attempted to call in this morning to the committee hearing on HB 134, but was unable to connect. I would like to express my support for this bill; it is vital to the interests of everyone in the Bristol Bay Region, and all of Alaska, that Wild Salmon habitat be protected. I have spent a good deal of time every winter the past 24 years promoting my business in the lower 48 at various shows, fishing clubs' etc. The one thing that everybody I talk to asks about is: Wild Salmon. This is a resource that has sustained the region since humans first arrived here 5,000 years ago, and has the potential to do so for another 5,000, as long as it is protected. The future will most certainly increase the demand for wild Salmon; recent studies prove the superiority of wild versus farm raised fish: it's inevitable that demand will grow. The passage of this bill would preserve the future of this incredibly important renewable resource. My livelihood, as well as that of the thousands of other residents of the region depend on passage of HB134. Thank you for your time.

Sincerely,

Jon Kent

Nondalton Tribal Council
P.O. Box 49
Nondalton, A.K 99640
Ph. (907) 294-2220
Fax (907) 294-2234

RESOLUTION # 02-27-07-1

A Resolution in support of House Bill No. 134

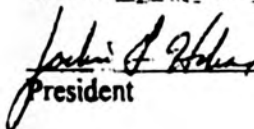
WHEREAS, The Nondalton Tribal Council is a federally recognized tribe for the village of Nondalton, Alaska, and;

WHEREAS, In 1972, the Seventh Alaska State Legislature determined that a heightened level of protection was needed for the Bristol Bay Fisheries and acted by designating the Bristol Bay Fisheries Reserve in order to protect the longstanding and valuable commercial, subsistence, and sport fishing in the area

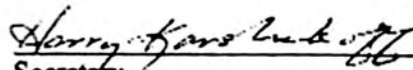
THEREFORE BE IT RESOLVED: the Nondalton Tribal Council supports House Bill No. 134, and the amendment made to the Bristol Bay Fisheries Reserve enacted in 1972 by the Seventh Alaska State Legislature.

CERTIFICATION:

This resolution was duly considered and adopted at a regular meeting of the Nondalton Tribal Council called and convened this 27th day of February, 2007 with a vote of 7 for 0 against and 0 abstaining.



President



Secretary

February 23, 2007

We the people of the community of Nondalton are in support of:

House Bill Number 134 in the legislature of the state of Alaska.

A bill for an act entitled "An act relating to conservation and protection of wild salmon production in drainages affecting the Bristol Bay Fisheries Reserve; and providing for an effective date.

The community of Nondalton is approximately 12 miles from the proposed mining district. Our community relies on a subsistence way of life. We depend on our lands abundant natural resources for subsistence such as: land, water, fish, wildlife, plants, and the water qualities in our waterways. We greatly value our culture and heritage ways of living off the land; we have relied on this subsistence way of life for survival. We are intimately connected to the environment we live in. We are extremely concerned about our traditional and ancestral lands, so we believe that it is our responsibility to protect our land for future generations.

Name	Address	Signature
1. Kinesha Balluta	P.O. Box 126 Nondalton AK 99640	Kinesha Balluta
2. Nancy Delkittie	Box 208 Nondalton, AK 99640	Nancy Delkittie
3. Charlotte V. Balluta	P.O. Box 115 Nondalton, AK 99640	Charlotte V. Balluta
4. Marvin J. Balluta	P.O. Box 115 Nondalton, AK 99640	Marvin J. Balluta
5. Clifford Hobson	P.O. Box 93 Nondalton AK 99640	Clifford Hobson
6. Shane Trefon	P.O. Box 23 Nondalton AK 99640	Shane Trefon
7. Betty Wilson	P.O. Box 71 Nondalton, AK 99640	Betty Wilson
8. William E. Vandoff	P.O. Box 71 Nondalton, AK 99640	William E. Vandoff
9. Woody Trefon	Box 45 Nondalton AK 99640	Woody Trefon
10. Eric Balluta	P.O. Box 115 Nondalton, AK 99640	Eric Balluta
11. Katrina P. Trefon	86 Nondalton AK 99640	Katrina Trefon
12. Rose L. Trefon	P.O. Box 007 Nondalton AK 99640	Rose L. Trefon
13. Julia L. Delkittie	P.O. Box 103 Nondalton, AK 99640	Julia L. Delkittie
14. Bob Gibson	PO 113 Nondalton AK 99640	Bob Gibson
15. Ida Trefon	P.O. Box 63 Nondalton, Alaska 99640	Ida Trefon
16. Virginia Delkittie	Box 94, Nondalton AK 99640	Virginia Delkittie
17. Melvin Trefon	P.O. Box 055 Nondalton AK 99640	Melvin Trefon
18. Gabe Trefon	P.O. Box 055 Nondalton AK 99640	Gabe Trefon
19. Terrell Kicketoff	Box 73 Nondalton AK 99640	Terrell Kicketoff
20. Aaron Alexis	Box 63 Nondalton AK 99640	Aaron Alexis
21. Shannon Cusack	Box 115 Nondalton, AK 99640	Shannon Cusack

February 23, 2007

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Name	Address	Signature
22. Louis Weedknow	P.O. Box 22 Nondalton	Louis Weedknow
23. LAVONNE HOBSON	P.O. Box 36 Nondalton	Lavonne Hobson
24. Lethor E. Hobson Jr.	P.O. Box 92 Nondalton, AK 99640	Lethor E. Hobson Jr.
25. Olga Balluta	P.O. Box 11 Nondalton, AK 99640	Olga Balluta
26. Melissa Carltiff	P.O. Box 35 Nondalton, AK 99640	Melissa Carltiff
27. Nickeli BALLUTA	P.O. Box 51 Nondalton, AK 99640	Nickeli Balluta
28. Spyrdon G. Balluta	P.O. Box 51 Nondalton, AK 99640	Spyrdon G. Balluta
29. Martin Delkittie	P.O. Box 32 Nondalton, AK 99640	Martin Delkittie
30. Okzenia Delkittie	P.O. Box 12 Nondalton, AK 99640	Okzenia Delkittie
31. Victoria Delkittie	P.O. Box 08 Nondalton, AK 99640	Victoria Delkittie
32. Carol E. Ewert	P.O. Box 12 Nondalton, AK 99640	Carol E. Ewert
33. Jake G. Hobson	Gen Del Nondalton, AK 99640	Jake G. Hobson
34. Joseph Steve NOLAN	P.O. Box 116 Nondalton, AK 99640	Joseph Steve NOLAN
35. Harry G. Harkoff	P.O. Box 35 Nondalton, AK 99640	Harry G. Harkoff
36. RAY K. KATWIK	P.O. Box 116 Nondalton, AK 99640	RAY K. KATWIK
37. Rick DELKITTIE Sr.	Box 008 Nondalton, AK 99640	Rick DELKITTIE Sr.
38. Derrick Alexis	Gen Del Nondalton, AK 99640	Derrick Alexis
39. Ricky Delkittie Jr.	Gen Del Nondalton, AK 99640	Ricky Delkittie Jr.
40. Dian Alexis	Gen Del Nondalton, AK 99640	Dian Alexis
41. Charlene Alexis	Gen Del Nondalton, AK 99640	Charlene Alexis
42. Gina Rae Kaktelash	P.O. Box 28 Nondalton, AK 99640	Gina Rae Kaktelash
43. Kristina Alexis	P.O. Box 16 Nondalton, AK 99640	Kristina Alexis
44. Ronald G. Alexander	P.O. Box 28 Nondalton, AK 99640	Ronald G. Alexander
45. Chuck Trefen	P.O. Box 69 Nondalton, AK 99640	Chuck Trefen
46. Shana Alexis	P.O. Box 42 Nondalton, AK 99640	Shana Alexis
47. Ronald Alexis	P.O. Box 45 Nondalton, AK 99640	Ronald Alexis
48. Mark N. Alexis	P.O. Box 95 Nondalton, AK 99640	Mark N. Alexis
49. Ricco G Joseph	P.O. Box 15 Nondalton, AK 99640	Ricco G Joseph
50. Carrie Harried	P.O. Box 05 Nondalton, AK 99640	Carrie Harried

February 23, 2007

We the people of the community of Nondalton are in support of:

House Bill Number 134 in the legislature of the state of Alaska.

A bill for an act entitled "An act relating to conservation and protection of wild salmon production in drainages affecting the Bristol Bay Fisheries Reserve; and providing for an effective date.

Name	Address	Signature
51. CARA LOFTFIELD	P.O. Box 4 Nondalton AK 99640	Carla Loftfield
52. Paul & Jeanne Cusina	Box 27 Nondalton AK 99640	Jeanne Cusina
53. Fawn Silas	P.O. Box 81 Nondalton, AK 99640	Fawn Silas
54. Gladys Evandoff	P.O. Box 105 Nondalton, AK 99640	Gladys Evandoff
55. Darlene Nilon	P.O. Box 114 Nondalton AK 99640	Darlene Nilon
56. GARY ALEXIE	P.O. Box 84 Nondalton AK 99640	Gary Alexie
57. LINDA KKHTEE	P.O. Box 41 Nondalton AK 99640	Linda KKHTEE
58. Leslie H Agency	P.O. Box 113 Nondalton, AK 99640	Leslie H Agency
59. Claudine H. Garsen	16354, Nondalton, 99640	Claudine H. Garsen
60. Donald Wilson	Box 104 Nondalton, AK 99640	Donald Wilson
61. Debbie Westman	Box 72 Nondalton, AK 99640	Debbie Westman
62. Chris Alexie	P.O. Box 13 Nondalton, AK 99640	Chris Alexie
63. Jeff T. Farn	Box 45 Nondalton, AK 99640	Jeff T. Farn
64. Angela Alexie	Box 100 Nondalton, AK 99640	Angela Alexie
65. Erika A. Balluta	P.O. Box 108 Nondalton, AK 99640	Erika A. Balluta
66. Dina Hobson	P.O. Box 82 Nondalton, AK 99640	Dina Hobson
67. Evelyn S. Kasper		Evelyn S. Kasper
68. Ada Tretton	P.O. Box 084 Nondalton, AK 99640	Ada Tretton
69. Sally Tretton	P.O. Box 007 Nondalton, AK 99640	Sally Tretton
70.		
71.		
72.		
73.		
74.		
75.		
76.		
77.		
78.		

From: Bobby Andrew [mailto:bandrew@nushtel.com]
Sent: Wednesday, February 28, 2007 1:00 AM
To: Adam Berg
Cc: Big Brother
Subject: Please provide to House Special Committee on Fisheries

Representative Seaton, Chair

Representatives Harris, Johansen, LeDoux, Wilson, Edgmon and Holmes

On behalf of the Board of Directors of Nunamta Aulukestai "Caretakers of our Lands" Luki Akelkok, Sr., President of this organization and I would like to thank Representatives Edgmon, Ramras, Dahlstrom, Gara, and Kerttula for introducing House Bill No. 134.

This very important bill will protect the fisheries for many years to come which has been in existence for over 100 plus years. Not only the fisheries but the waters that are currently clean are used by people of the region, animals and mostly the fish who begin and end their life cycle in these waters. These rivers, streams and lakes provide nourishment to animals and subsistence users. Others who use these waters for sports fishing and recreational visitors also benefit.

The Legislators in 1972 had a good foresight to recognize the need to protect the rivers, streams, and lakes and the protection needs to be extended in perpetuity for our future generation's enjoyment and well being.

Once these waters are contaminated it will take many years to get back to its original state and the future generations will have to work hard attempting to clean the environment.

Please do pass and advocate to the rest of the Legislators to act and pass this very important bill.

Thank You,

Bobby Andrew
P.O. Box 98
Dillingham, Alaska 99576
PHONE: 907-842-5983
FAX: 907-842-2057
E-MAIL: bandrew@nushtel.com

Luki Akelkok, Sr.
Ekwok, Alaska 99580
PHONE: 907-464-3317
FAX: 907-464-3305
E-MAIL: luki2akelkok@yahoo.com

From: Roy Smith [roy@selectakcatch.com]
Sent: Tuesday, February 27, 2007 2:33 PM
To: Rep. Paul Seaton
Subject: HB134

Rep. Seaton

I am lifelong 57year old self-employed Alaskan. I would like to comment in support of HB 134.

Putting some teeth into an old bill championed by the late Jay Hammond in my opinion is prudent for legislators to act on at this time. Oversight and accountability are major issues confronting the Alaska legislature this year and this bill would help create a very responceable approach(oversight&accountability) to development in a very important naturally productive area of the state.

Roy Smith
Roy's Select Alaskan Catch
Juneau Ak

Betty J. Bonin
PO Box 183
Naknek, AK 99633
Email: betz@bristolbay.com

February 19, 2007

Representative Paul Seaton
Fisheries Chair
State Capitol, Rm 102
Juneau, AK 99801-1182
Fax: 907-465-3472

Dear Representative Seaton,

Re: HB 134—Protection of Spawning Habitat

Bristol Bay is home to the world's largest sockeye salmon run. The Bristol Bay Fisheries Reserve was created in 1972 in order to protect this valuable commercial and subsistence fishery in the area from the threat from certain mineral leasing and permitting. HB 134 proposes to extend protections to the Nushagak, Kvichak, Naknek, Egegik and Ugashik ground water, aquifer systems of river drainage systems.

HB 134 would protect Alaska's greatest salmon fishery by prohibiting the withdrawal, obstruction, diversion, pumping or pollution of surface or subsurface water in any Bristol Bay drainages that support salmon. The legislation also prohibits the destruction of salmon habitat, creates a fining schedule for violating these protections, and protects existing water uses authorized prior to the passage of the bill.

In recent years the salmon industry and the State of Alaska have invested a great deal in Alaska's Wild Salmon and this investment is beginning to pay dividends throughout the state. Thousands of existing Alaskan jobs depend upon the purity of Bristol Bay's renewable and sustainable salmon fishery and the integrity of its spawning habitat. These jobs depend on protection of the pristine habitat of the Bristol Bay watershed.

Thanks you for your consideration.

Sincerely,

Betty J. Bonin
Commercial Fisher in Bristol Bay 50+ years

**Stuyahok Limited
P.O. Box 50
New Stuyahok, Alaska 99636**

RESOLUTION 2007- 02

RESOLUTION SUPPORTING HOUSE BILL 134

" An Act relating to conservation and protection of wild salmon production in drainages affecting the Bristol Bay Fisheries Reserve; and providing for an effective date."

WHEREAS, STUYAHOK LIMITED, an Alaska corporation, created under the Alaska Native Claims Settlement Act, PL 92-203 (43 U. S. C. & 1601, et seq.); and

WHEREAS, STUYAHOK LIMITED, has grave concerns pertaining to the river systems, ground water, aquifer systems, and other hydrologic regimes, including any hydrological interrelated or connected surface and ground water, within the drainage systems that connect to the Nushagak drainages; and

WHEREAS, the Board of Directors of STUYAHOK LIMITED has fiduciary responsibilities to protect their corporate lands and the rights of their shareholders to use these river systems owned by the State of Alaska and the Bureau of Land Management for traditional subsistence activities; and

WHEREAS, the rivers, streams, and lakes within the watershed provide drinking water for all renewable wild life resources, for subsistence users, and all other users, and

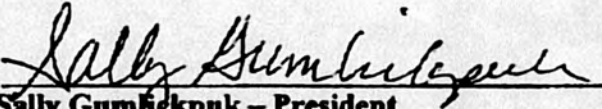
WHEREAS, future generation of shareholders, tribal members, and others will continue to use the river systems for traditional and cultural subsistence activities and sports fishing; and

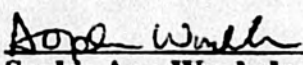
WHEREAS, the development of lands adjacent to the river systems feeding the Bristol Bay could result in adverse impacts to local and regional air quality, to the environment, and to the river systems including the dependent to the fish and wild life resources, and to the health of residents, subsistence hunter and fishers; and

NOW THEREFORE, BE IT RESOLVED, that the STUYAHOK LIMITED Board of Directors respectfully request all State of Alaska Legislators to pass House Bill 134 for the benefit of all Alaskans; and

BE IT FURTHER RESOLVED, to request the House Special Committee on Fisheries and Resources pass, support and advocate for this very important bill.

PASSED BY THE BOARD OF DIRECTORS OF STUYAHOK LIMITED
ON 26th DAY OF FEBRUARY 2007


Sally Gumiekpuk - President


Sophie Ann Wonhola - Acting Secretary

2007
Lydia
Kara
Devir
Jonath
Silva



2007

Land Lydia
Dear State Representatives,
I am in 8th grade I want
our Land ALONE!

Shawn Andrew
01/26/07

Land

Dear State Representatives
don't hurt are Animals are
fish and are Land. don't
ruin are water because
we want to drink are
water and we want
to hunt Animals to
eat.

Mariah

Hi my name is
Mariah Blunka we are
from New York
don't want the stat to
let the pebble mine come
here at New Ste. cause we
could eat and stat because
we don't want the pebble
mine to come here
in New York because
so we could cook and
stat and we could have
water and juice and get
big if we have water
from the sink

land
I am a student at New
York. I know why you
won't like gold and copper!

It will give people jobs and
help lots of people. But
people don't like the
fish carrying people (like)
bald eagles, hawks, geese, etc.
etc. etc.

YOUR friend

JUSTUS WILLIAM McNETTE

Darrel Andrew

Dear State Representatives
Please don't ruin or water
and or animals and we could
swim in the water so I
could dive in the water don't
ruin or fish and don't ruin or
land even the moose and the
animal please don't ruin or
land and dad and I want to
hunting for moose so we
could have some fish.

Dear _____ Representative _____

My name is Catherine Shope and I am in 2nd grade. The name of my village is called Neustupuk. The name of the river is called Ushak River. We have five different salmon fish, bear meat, and all different kinds of berries and if you do the pollute mine all these things will die. And how can we make Eskimo ice cream when we have no berries? How can we eat this kind of meat and fish when this water is bad?

When the clean water turn bad nothing will grow and we can't drink our clean water. The pebble mine will make the water bad and kill everything we have. The Alaskans don't want to move to another city or village. So can you please help us stop the pebble mine from developing.

Some people here can suffer from these chemicals in our water and killing our animals that eat or drink this can make us suffer and die. And I thank you for reading this letter which the pebble mine is making our native culture. And I hope you help us stop the pebble mine off our backs.

Catherine Shope

Dear State
Representatives

Devina
01-26-07

don't hurt our land because
we want to swim and we
want to have animals and
we want to go hunting and
fishing.

Don't hurt
the animals we want animals
and we want to travel to
other places and we could
go fish camp and fish.

So we can go ice fishing
and drink water and we
can swim and we can't have
no good water and we won't
drink water.

pebble Mthc people:

Please Leave our Land alone. We
want to have moos for us to eat.
I know you want to make money.

and gave people gold. and
other stuff, but I do not want you
to poison the water. Water

is very important to us.
without water we could
get sick could you find
a way to get

out a better way to get
yer minerals?

Silas Joseph marte
(10/2) 4

you could you kill a

- Lot of animals you could kill fish caribou, moose, eagles, wolves, foxes, bears, and ptarmigan,

Jalen

Land

01-25-07

Dear State,

Why you want
to ruin our land
in Alaska. If you
ruin our land we
won't have any
animals in Alaska
we will miss our
fish and I will
miss ice fishing and
hunting. We won't be
able to make
hot water at the
beach here in
New Stuyahok and
Alaska. Why you
want to have the
Mine? To come
to Alaska and have
money. Why I will
miss picking berries
in Alaska?

My name is
Talen y. m. Mickia
Honuk peak

Date 01-25-07
Age 8

(242) b

Land

Dear State
Representatives don't hurt
are land. We want to
drink the water, swim, hunting
and go fishing.

Tiffany

Threatens Salmon, Subsistence Communities

Leaders Want Bristol Bay Protected from Mining

New Stuyahok, Alaska—Leaders of 13 Bristol Bay Native organizations called on Alaska's congressional delegation and the Bureau of Land Management (BLM) to respect their unprecedented August request to protect the Bristol Bay's clean water, fish and wildlife by creating a multi-million acre fish and wildlife resource area in the Bristol Bay Watershed. They specifically ask to halt the proposed Pebble Mine and looming Bristol Bay Mining District. The request counters BLM's newly-released draft resource management plan that ignores public opposition to a proposed massive mining district in the salmon-rich waters of Bristol Bay. The plan recommends opening an additional 2.5 million acres of public lands in the Bay area to mineral development.

"BLM lands in the Bristol Bay watershed, which are today closed to mining, are critical for subsistence activities for residents of Native communities throughout the region. We sent a clear message that we want them safe and healthy, but BLM's proposal disrespectfully ignores our needs," said Bobby Andrew, President of Aleknagik Natives Limited and a Nunamta member.

In a recent letter sent with the resolution to Senators Stevens and Murkowski and Representative Young, the groups made the following statement:

"We oppose the creation of the Bristol Bay Mining District, including the proposed Pebble Mine. We request the Alaska Delegation take action to permanently withdraw all BLM administered lands within the Bristol Bay watershed from locatable mineral entry. The management priority for these public lands and waters should be the wild salmon fishery, wildlife habitat, and subsistence way of life, not mining."

Residents are concerned because an extensive mining district of millions of acres, precariously located in the headwaters of the world's largest sockeye salmon fishery, looms on the horizon. Currently, the state and federal lands in the area are virtually roadless and accessible only by air. However, minerals development will bring roads, infrastructure, and access routes to these remote lands, which undoubtedly will disturb pristine wildlife habitat and enable the creation of a mining district bigger than most states in the nation.

"Our lands are surrounded by federal lands and BLM wants to open these lands to mining; to that we say 'No!'" said Herman Nelson, President of Koliganek Natives Limited and New Koliganek Village Council. "These lands are far more important for traditional subsistence use rather than mining because our animals need a vast area to feed and survive. So we don't want BLM to open these lands for mining purposes. We want to keep these lands open for subsistence needs from generation to generation."

On August 19, 2006, Nunamta Aulukestai (Caretakers of Our Land), an association of Native Corporations were joined by Tribes from throughout Bristol Bay in passing a resolution stating strong support for permanently protecting millions of acres of public land in the Bristol Bay watershed from the harmful impacts of hardrock mining. Nunamta Aulukestai is an association of eight Bristol Bay Native Corporations representing hundreds of Alaska Natives who live in Dillingham, Aleknagik, Koliganek, New Stuyahok, Ekwok and Portage Creek. This is the first time the corporations and Tribes have worked together in this manner.

The Native groups characterized BLM's various proposals to open wild watersheds to mining as "flawed and inadequate" in their August resolution, and criticized the BLM for ignoring thousands of requests last year to protect these lands.

"Our fish and wildlife are the real gold mine in this region," said Andrew. "Our renewable resources support families, communities and culture and they must be protected. We will not allow a mining district to poison our fish and game and destroy our way of life. We are tired of being ignored by federal bureaucrats and we hope Senators Stevens and Murkowski and Representative Young will listen to us Alaskans."

"My family has hunted and fished on these lands for generations. I have several Native allotments surrounded by BLM lands. I want my kids to be able to hunt, fish, and continue the subsistence way-of-life on these lands, which would be ruined by mining," said Luki Akelkok, an Alaska Native elder and subsistence user from Ekwok who is also Chairman of Nunamta Aulukestai. "We have to tell our elected officials loud and clear that BLM's plan must change."

"Like many native allotment owners down river from the proposed Pebble Mine, I am a land owner on the Mulchatna, any mining done in our region will jeopardize our way of life," said Lucy Weedman, President of New Stuyahok Tribal Council. "My family for generations has relied on a subsistence lifestyle and I plan to pass on to my kids and grandchildren our cultural and traditional lifestyle. BLM aren't helping me do that, they don't even hear us, our voices echo right back to us unanswered."

The BLM's Bristol Bay plan will set management direction for 2.5 million acres of Alaskan wild lands within the watersheds of the largest wild salmon fishery in the world. The agency is in similar planning processes for much of the over 70 million acres it administers across Alaska, an area bigger than the State of Colorado.

BLM is accepting public comments on its draft Bristol Bay Resource Management Plan until January 5, 2007. The agency is working on the schedule for public meetings, and is looking to hold ANILCA 810 subsistence hearings in Goodnews Bay, Dillingham, Aleknagik, New Stuyahok, Naknek, and Newhalen from December 1-6, 2006. An Anchorage open-house meeting is scheduled for November 28, 2006.

###

**City of New Stuyahok
(City Council)**

RESOLUTION 2007- 02

RESOLUTION SUPPORTING HOUSE BILL 134

"An act relating to conservation and protection of wild salmon products in drainage's affecting the Bristol Bay Fisheries Reserve; and providing for an effective date."

WHEREAS, the (City of New Stuyahok), an Alaskan Municipality and,

WHEREAS, the (City of New Stuyahok), has grave concerns pertaining to the river systems, ground water, aquifer systems, and other hydrologic regimes, including any hydrological interrelated or connected surface and ground water, within the drainage systems that connect to the Nushagak drainage's; and,

WHEREAS, the (City of New Stuyahok) has fiduciary responsibilities to protect their subsistence lands and the rights of their people and future users to use these river systems owned by the state of Alaska and the Bureau of Land Management for traditional subsistence activities; and,

WHEREAS, the protection of the rivers, streams, and lakes within the watershed provide drinking water for all renewable wild life resources, as well as the subsistence users, and all other users, and spawning grounds for all species of fresh water fish, all species of salmon; and,

WHEREAS, the future generations of all Alaskans, and non Alaskans alike will continue to use the river systems for traditional and cultural subsistence activities and sports fishing; and,

WHEREAS, the development of lands adjacent to the river systems feeding the Bristol Bay could result in adverse impacts to local and regional air quality, to the environment, and to the river systems including the dependent to the fish and wild life resources, and to the health of residents, subsistence hunter and fishers, and,

NOW THEREFORE IT BE RESOLVED, that the City of New Stuyahok Council respectfully request the State of Alaska Legislators to pass House Bill 134 for the benefit on all Alaskans; and,

BE IT FURTHER RESOLVED, to request the House Special Committee on Fisheries and Resources pass, support and advocate for this very important bill

PASSED BY THE NEW STUYAHOK CITY COUNCIL ON 27, DAY OF
FEBRUARY 2007.

Randal A. Hastings
Mayor- Randal Hastings

Annie Christopher
Annie Christopher- City Clerk

We, the people and residents of New Stuyahok support House Bill No. 134 as introduced with the amendments to include other important areas.

This bill will protect the wild salmon and all fresh water fish in the drainages and will also protect the renewable wildlife resources that also survive by the use of fresh, clean water.

We, the people and residents of New Stuyahok are concerned because our village will be the first village on the Nushagak River to be hit by unknown contaminants. We urge you to pass House Bill No. 134.

Mary Ann Walcott

Natalie Bond

Steve Eschbach

Sophie Walcott

Ronald A. Heston

Jan V. Anderson

Sophie Yeketa

Nice Neta

Aphie Wonhola

W. N. B. B. B.

William S. S.

S. S. S.

Fedorie Wonhola

N. S. S.

William M. S.

N. S. S.

S. S. S.

S. S. S.

P. S. S.

S. S. S.

M. S. S.

S. S. S.

W. S. S.

S. S. S.

S. S. S.

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S. S. S.

S. S. S.

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John E. Strake

William W. Johnson

Kristen Decker

Steve M. Hunka

Robt. Cooper

Olga M. Hunka

Allison Smith

Peter Hunka

Timothy W. Hunka

Frank B. W. Hunka

Frank Hunka

William C. Hunka

Sophie Hunka

Lydia Gust

Katherine Charak

Anna Hunka

Robert Hunka

Dorothy W. Hunka

Elena Hunka

Vera Hunka

Anna Peterson

John R. Anderson

Margaret J. Hunka

Anna Hunka

Anna S. Hunka

Walter P. Hunka

Bobby W. Hunka

2/26/07

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<u>Tegel Acovak</u>	<u>Allen Winkler</u>
<u>Sophia Baker</u>	<u>Moxie Moxie</u>
<u>William</u>	<u>Julia Baker</u>
<u>Justin Giesbrecht</u>	<u>Dolly Epchosh</u>
<u>John</u>	<u>Mary Hanson</u>
<u>John</u>	<u>John Enright</u>
<u>John Epchosh</u>	<u>Jennifer Gust</u>
<u>Chris Wyagon</u>	<u>Andrew Peltz</u>
<u>Cynthia Blanka</u>	<u>Vera Andrew</u>
<u>Basil Hanson</u>	<u>Alexie Gust SR.</u>
<u>Steven Oyabuk</u>	<u>Anna Acovak</u>
<u>Chadwick Kapotak</u>	<u>* Especially Me!!!</u>
<u>Simeon Christopher</u>	<u>Anna Acovak</u>
<u>Peter Miller</u>	<u>Maha Acovak</u>
	<u>Anthony Alexie</u>

2/26/07

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Wassili Blanka

Simion Blanka

Christina (Mooch)

Bradley Bond

Michael Zinkovsk

Leon Pott

John Hansen Jr

Helen Weikula

Boris Shub

Dennis B.

Mary

and

Clement Gurd

Ken

Anastasia NIKOLA

Brenda M. Premie

Mary Walcott

KRISTINE NEWTON (GEOMETRY)

Eva

Margaret Wadley

Eva Wadley

Mary M. Chisholm

Ella Gunn Liekele
Ella Sanderson

Joan Pearson

Mary GERMAN

Rick Wyager

Elizabeth A. Graham

Dianne Blanka

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<u>Amin Christy</u>	<u>Vincent</u>
<u>Mary Kalka</u>	<u>Peter Oyaluk</u>
<u>Mary M. Khome</u>	<u>Anuska Oyaluk</u>
<u>Maria Oyaluk</u>	<u>Savally Womhok</u>
<u>Nick Wodlak</u>	<u>Steve Enayak</u>
<u>Diana Wagon</u>	<u>Philip Willeott Sr</u>
<u>Eva Oronak</u>	<u>Russel Hanson S</u>
<u>Steve Wagon</u>	<u>Charles Post</u>
<u>Druffy Naluk</u>	<u>Notch Oyaluk</u>
<u>Don Lund</u>	<u>Wendell Bell</u>
<u>Jatiana Dumbickgal</u>	<u>Tom Powell</u>
<u>Miki Yubaluk</u>	<u>Sophie Alexie</u>
<u>Must Chockchuk Sr</u>	<u>Joseph Woodman</u>
<u>Evan Oronak</u>	<u>Emilie J. Oronak Jr</u>

2/26/07

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Jenna Christy

Erin Hanson

Amy Acovak

Doree Hunt

Michelle Anderson

Nicholas Pella

Alvin Pella

Beth Hunt

Paul Romie

Marcus Wileygon

Evelyn Pella Jr

Cassie Hanson

Kurtis J. Hambrick

Chadwick HS English teacher

John Blunka

Nick Wadde

John E. Rust

Sonja Edwards

Doree Hunt

Antony Pella

William Pella

Lina Pella

Nancy Pella

Steve Pella

Steven Pella

Lilly Hambrick



Alaska Marine Conservation Council

Box 101145, Anchorage Alaska 99510
(907) 277-5357 • (fax) 277-5975
amcc@akmarine.org • www.akmarine.org

February 27, 2007

Dear Representatives Seaton:

This letter is to provide the Alaska Marine Conservation Council's (AMCC) support for the proposed CS House Bill 134, the Wild Salmon Protection Act.

AMCC's 800 members include community-based commercial and recreational fishermen, related businesses, traditional subsistence harvesters, marine scientists and a growing number of others concerned about the health of our oceans. Our mission is to protect the natural diversity and integrity of Alaska's marine ecosystems by working with coastal communities whose well-being depends on healthy oceans.

At a time when large-scale mining and offshore oil and gas drilling is being proposed for the Bristol Bay watershed, CS House Bill 134 would provide safeguards for wild salmon throughout the Bristol Bay watershed, including the five major river systems that flow into Bristol Bay, home to the world's largest sockeye salmon runs. By prohibiting the withdrawal, obstruction, pumping or pollution of surface or subsurface water in any Bristol Bay drainage that support salmon, CS House Bill 134 would protect the fishery resources and the subsistence, commercial and sport uses that are so critical to the region's coastal communities.

On behalf of AMCC's Board of Directors, thank you for your consideration of this legislation.

Sincerely,

Dorothy Childers
Program Coordinator

Cc: Representative Edgmon
Representative Johnson
Representative Gatto

Louie Flora

From: Rep. Paul Seaton
Sent: Tuesday, September 04, 2007 10:53 AM
To: louie.flora@legis.state.ak.us
Subject: FW: HB 134

-----Original Message-----

From: caprig@onid.orst.edu [mailto:caprig@onid.orst.edu]
Sent: Tuesday, September 04, 2007 8:44 AM
To: Rep. Paul Seaton
Subject: HB 134

Dear Representative Paul Seaton,

My name is Gina Capri and I would like to show my support for HB 134. Even though I am not from Alaska, this measure is of great importance to me. My dad is a commercial fisherman in Bristol Bay who depends on the continued strength and preservation of the wild salmon run to make a living. If the Pebble Mine is allowed to be built and it disrupts the salmon fry coming out of Lake Iliamna, my dad, who comes up every year from Oregon, may eventually have to stop coming up, as will his crew, and many other fishermen will be in the same situation. In the end, this will mean less money coming into your state every year, especially the very isolated Bristol Bay region. So, please consider the impact of Pebble Mine on fishermen, both local and out-of-state, and vote yes on HB 134!

Respectfully,
Gina Capri

Good Morning

First Off I would like to thank the Fisheries Committee for allowing me the opportunity to testify today.

My name is Nick Lee
I am a Bristol Bay Fisherman
My address is:

2021 4th Ave N. #9
Seattle, Wa 98109

I have 25 years of fishing experience, 18 of which have been in Bristol Bay.

I am here today representing my self and Bristol Bay Driftnetters Assosiation

I am for HB 134.

I am for responsible resource management that ensures that the fisheries of Bristol Bay remain sustainable for the fish as well as the fisherman. The Bristol bay Salmon fishery supports many jobs for people inside and outside of the drainage. It also provides tax revenues to the local communities.

I believe we need higher standards to protect the habitat of the greatest Sockeye run in the world. The stakes are too high. Having a massive tailings pond straddling the ridge that divides the water sheds of the Kvichak and Nushagak river systems scares the hell out of me. There is too much seismic activity from volcanos and earthquakes to safeguard the project from an environmental disaster. Small amounts of copper, sulfuric acid, and cyanide can be detrimental to our fish stocks.

The Alaskan Fisheries have still not recovered from the Exxon Valdez oil spill. The stake holders have still not been compensated.

ASMI with the help of the State of Alaska has marketed Wild Alaskan Salmon and has differentiated this product from other salmon caught or farmed elsewhere. One of the biggest selling points is our pristine, pure water where our fish currently live.

Consumers are very aware of the health benefits of wild Alaskan Salmon. From the low mercury levels to the high amounts of omega 3 fatty acids. Wild Alaskan Salmon is sold as a health supplement. If there is any issues with contaminated water in Bristol Bay's streams, lakes or rivers it will be detrimental to the marketing of all Alaskan Salmon. This will not just effect the marketing of Bristol Bay Salmon, it will impact the sales and marketing of salmon caught from Western Alaska, Kodiak, Prince Wiliam Sound and SE.

The potential for economic growth in the Eristol Bay commercial fishery is unknown. What I can tell you is that the price in the laast 6 yars has been as low as 40 cents and fisherman this year have been paid as high as .82 cents/ lb. I believe that the price will continue to increase as our quality improves and new markets are developed. Last year, permit holders elected to form the Bristol Bay Regional Seafood Development Association through which drifters will tax themselves 1% of their profits for product quality improvements and marketing. This demonstrates fishermens' belief in and desire to work towards capitalizing further on the economic potential of Bristol Bay's sustainable commercial fishery.

The wild Salmon Protection Act, along with the Jay Hammond State Game Refuge bill will help All of the Alaskan fisheries by enhancing the pure, pristine, contaminant free image of Wild Alaskan Salmon and help keep Bristol bay sustainable for the fish and Fisherman.

P.O. Box 957
Homer, AK 99603
March 2, 2007

Representative Paul Seaton, Chair Fisheries Committee
State Capitol, Juneau, AK 9980-1182

Re: House Bill 134

Dear Representative Seaton and Committee Members:

I am in support of the intent of HB 134, providing some modifications be made to allow for limited development under more stringent standards than are presently in place. Thank you for hearing my testimony today.

I reside in Homer and have been an Alaskan resident since 1987. My background includes being a retired Registered Geologist, (Oregon # 611), with experience in exploration hard rock mining of gold, silver, copper, lead, zinc and barite deposits as well as environmental geology. I have done geologic work in Alaska, Arizona, Idaho, Montana, Nevada and Oregon.

It is gratifying that HB 134 is a bipartisan effort because it will take the best efforts of all minds, not just those of Democrats or Republicans to resolve this issue in a manner that best protects Alaska's future. My focus is a pragmatic one. The passage of this good idea made into law would save much calamity, litigation and money. HB 134 can be likened to an insurance policy. We don't plan on a fire or a car accident but just in case we buy insurance protection. It is there in case something happens.

What could happen in the Bristol Bay watershed without the safe guards of HB 134? Perhaps another Butte, Montana Berkeley Pit one of America's largest Superfund clean up sites. Originally a series of underground mines that began in the 1870's and ran until 1972 when underground mining was no longer economically feasible, the workings included 42 miles of vertical shafts and 2,700 miles of other passageways. The pit first operated in 1955 and closed in 1982 after approximately 1 billion tons of material was mined. The pit measures 1.5 miles east to west, 1 mile north to south and is approximately 1,780 feet deep. The pit is presently flooded to a depth of 900 feet and contains 30 billion gallons of water with a pH of 2.5. There is an inflow into the pit of both surface and ground water that measures approximately 5,000 gallons per minute or 7.2 million gallons per day.

This 30 billion gallons of highly acidic water contains high concentrations of arsenic, copper, cadmium, cobalt, iron, manganese zinc and sulfate. In 1995 a large flock of migrating snow geese landed on the Berkeley Pit and were killed, most likely by the high concentration of acid. There were 342 carcasses recovered. Their livers and kidneys had bloated and many had an eroded esophagus. (wikipedia/Berkeley Pit). These contaminated mine waters require constant costly mitigation efforts to protect the areas' surface and ground water supplies.

I have personal knowledge of two additional contaminated mine areas that merit consideration. The first is Cobalt, Idaho which I last visited in 2005. The mine waters flowing out of the abandoned mine adits are thick with brown ooze which coats everything it contacts including the ground and rocks adjacent to the stream bed of Black Bird Creek. Approximately three miles down stream from the nearest adit is a warning sign posted next to the creek. The sign reads, "BLACKBIRD CREEK IS UNSAFE FOR DRINKING WATER". It should be noted that the water in the creek here is no longer the ugly brown ooze but yet is still unsafe. I have attached photos of this because they have reference value for the next area, the South Fork of the Coeur d'Alene River by Kellogg, Idaho.

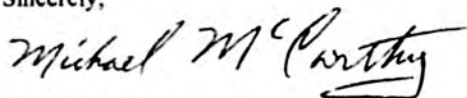
It was 1955 when I first saw this river which is approximately the same width as the Kasilof River where the Sterling Highway crosses it, or about 150 feet wide. The South Fork of the Coeur d'Alene River was very nearly the same color and clarity as Blackbird Creek only it was 15 times wider. More than fifty years later this river and the Coeur d'Alene mining district are another Superfund clean up site. The same potential for contaminated mine water run off exists for the Bristol Bay Fisheries Reserve unless the safeguards of HB 134 are enacted.

The 1872 mining law as it currently exists contains no protections from mining pollution; it gives preferential treatment to mining over other land uses; it grants special tax breaks to the mining industry and it allows the sale of public lands for less than \$5.00 an acre. Perhaps HB134 could be modified to incorporate some features of the Federal Mineral Development Act of 2005. This Act was not passed into law but it was designed to help protect water resources. Please contact Montana Environmental Information Center for details, phone (406) 443-2520 or meic@meic.org

I am faxing a 2006 report titled: Predicting Water Quality Problems At Hard rock Mines by Ann Maest, PhD and Jim Kuipers, P.E. This report shows that a review of 104 Environmental Impact Statements for 71 major hard rock mines in the United States produced a startling finding. The reports for these mines were evaluated for predictions related to surface water, ground water, and mine drainage quality during and after mining. These predictions were then compared with actual water quality conditions during and after mining. A shocking 76% of mines polluted groundwater or surface water severely enough to exceed water quality standards. Of the sites that did develop acid drainage, 89% predicted that they would not. In short there is a universal vast discrepancy between predictions and reality. The Bristol Bay Fisheries Reserve is too critical a resource to risk on the imperfect science of mine water quality prediction.

Thank you again for the opportunity to comment.

Sincerely,



Michael McCarthy

**BLACKBIRD CREEK
IS UNSAFE FOR
DRINKING WATER**





Louie Flora

From: Izetta Chambers [izetta@naknefish.com]
Sent: Wednesday, February 28, 2007 5:38 AM
To: Rep. Craig Johnson; Rep. Carl Gatto; Rep. Paul Seaton
Subject: support HB 134

Dear Representatives:

I am writing to express my support for HB 134, a Bill to Protect Wild Salmon in Bristol Bay. I am a resident of Naknek and a member of a fishing family. My family has fished the waters of Bristol Bay for centuries and they continue to do so.

I have heard the argument that if we don't allow the Pebble Mine to be permitted that the State may be liable for the amounts that Northern Dynasty has invested thus far. This argument just doesn't hold water. As a law student I have had the opportunity to take Public Land and Mining Law and there are plenty of examples of mining proposals that have not been permitted. Only the grant of a permit allows the mining company the right to mine, and they are not entitled to anything prior to that. Don't be fooled by ND spokesmen, because they are full of half-truths and outright lies. I've seen it first-hand. They came to village meetings in Naknek and told the people that they were going to use "organic soap" to extract the minerals. It was not until we heard through the media that they had "not ruled out" the use of cyanide at the mine.

What about the investments that Bristol Bay residents have in the fisheries? We are Alaska residents and our investments should be given more weight than some foreign mining company. This may seem like small potatoes compared to Northern Dynasty's investment, but it is everything to our working families. In my family alone, we probably have millions at stake in boats, permits, fishing site leases, nets, crew quarters, anchors, etc.

We need to protect our salmon fisheries from the threat of this and future mines, and HB 134 does just that. It will ensure Bristol Bay's prominent position as a source of pure, natural wild Alaskan salmon. Additionally, our people depend on the subsistence resources that our pure waters afford. If we are forced to pay for food that we would otherwise get through traditional means (subsistence), this would greatly increase the already high cost of living in the Bristol Bay region.

If we don't have the salmon, Naknek will simply cease to exist and our fishing families will be forced to move. It is our sole resource. Please vote in favor of HB 134 and protect our precious wild Bristol Bay salmon.

Thank you,

Izetta Chambers
Naknek resident

From: Bobby Andrew [mailto:bandrew@nushtel.com]
Sent: Wednesday, February 28, 2007 1:00 AM
To: Adam Berg
Cc: Big Brother
Subject: Please provide to House Special Committee on Fisheries

Representative Seaton, Chair

Representatives Harris, Johansen, LeDoux, Wilson, Edgmon and Holmes

On behalf of the Board of Directors of Nunamta Aulukestai "Caretakers of our Lands" Luki Akelkok, Sr., President of this organization and I would like to thank Representatives Edgmon, Ramras, Dahlstrom, Gara, and Kerttula for introducing House Bill No. 134.

This very important bill will protect the fisheries for many years to come which has been in existence for over 100 plus years. Not only the fisheries but the waters that are currently clean are used by people of the region, animals and mostly the fish who begin and end their life cycle in these waters. These rivers, streams and lakes provide nourishment to animals and subsistence users. Others who use these waters for sports fishing and recreational visitors also benefit.

The Legislators in 1972 had a good foresight to recognize the need to protect the rivers, streams, and lakes and the protection needs to be extended in perpetuity for our future generation's enjoyment and well being.

Once these waters are contaminated it will take many years to get back to its original state and the future generations will have to work hard attempting to clean the environment.

Please do pass and advocate to the rest of the Legislators to act and pass this very important bill.

Thank You,

Bobby Andrew
P.O. Box 98
Dillingham, Alaska 99576
PHONE: 907-842-5983
FAX: 907-842-2057
E-MAIL: bandrew@nushtel.com

Luki Akelkok, Sr.
Ekwok, Alaska 99580
PHONE: 907-464-3317
FAX: 907-464-3305
E-MAIL: luki2akelkok@yahoo.com

Louie Flora

From: geodox [geodox@gci.net]
Sent: Sunday, February 25, 2007 4:57 PM
To: Rep. Paul Seaton
Subject: HB 134
Follow Up Flag: Follow up
Flag Status: Blue

I urge you to strongly support the CS for HB 134. Save the Bristol Bay Salmon fishery. Sincerely, George Doxtator

2/25/2007

HB 134



Good morning and thank you for hearing my testimony, I am Nanci Morris Lyon, owner and operator of Katmai Fishing Adventures, a commercial sport fishing operation, vice chair of the Bristol Bay regional subsistence advisory council, board member of the Bristol Bay Chamber of commerce, Board member of the South West Alaska Conservation Coalition, local King Salmon resident, subsistence user and concerned citizen. I would like to speak on my own behalf in favor of the Wild Salmon Protection Act.

The Wild Salmon Protection Act would protect Alaska's greatest fishery resources by prohibiting the withdrawal, obstruction, pumping, or pollution of surface water in any Bristol Bay drainages that support our numerous, pristine, trophy fisheries. These fisheries have become known world wide for the legendary sport fish opportunities they offer to residents and visitors a like. The recent study funded by Trout Unlimited showed that our recreational and commercial fisheries have a multimillion dollar value. That value is a sustainable resource value, something that I like to call the gift that keeps on giving. The information it contained even surprised most of us locals. Quite frankly I'm not sure we were giving enough value to our fishery before this study was published.

This legislation also prohibits the destruction of salmon habitat, creates a fining schedule for violating these protections, and protects existing water uses including the historic uses we have enjoyed for more years than we can count. I think that it will be a positive step in the right direction to insure that anybody coming into our back yard to remove a non-sustainable resource, be held accountable. Most of the resource development I have heard about plans to leave very little in the area to support us financially after they leave or with promises of the ability to feed our families in future years. Because of that I find it extremely important that we offer protection to the resources that have been our past, present and I hope will be our future, the out standing fisheries and clean environment.

I would like to add that it is not my purpose nor do I believe that it is this Bill's purpose to preclude development in Bristol Bay. We need economic development and help for our villages on the Alaska Peninsula. I firmly believe that the purpose of this bill is to create standards of protection for the fisheries and environment in Bristol Bay! Something that has

been recognized in the past and I feel that it is again warranted the highest priority to ensure future use of our precious resources.

There is currently tremendous growth in the Bristol Bay commercial sport fishery. We are seeing more Native Corporations and area Villages taking advantage of the opportunities available from owning and operating lodges to offering support services for visitors to our area. Our local Southwest Alaska Vocational and Educational Center here in King Salmon in conjunction with UAF just completed freshwater and saltwater Coast Guard Licensing Classes. They had 10 students in the Freshwater class of which 7 were Alaskan Natives. They have held these courses successfully for the past several years. In addition, last year they offered a class on sport fish guiding, graduating a total of 10 students of which over half were Alaskan natives. These classes were all fully funded from BBEDC, a TRIO grant and UAF itself, so the cost was not a factor. My operation hired one of last year's graduates and we were looking for 2 others, but none of the students were available, they all had commitments. The class is scheduled to be held again this year and we will again be looking for graduates. I know this isn't the forum for job search, but I listened on Wednesday and heard about several locals who couldn't find work in the sport fish industry, I encourage them to send us a resume, we love hiring local and are always looking for more Alaskans to add to our staff.

The sport fish and commercial fish industries have worked hard, for decades on bringing a message about Bristol Bay, a message that not only states that we have the largest abundance and size of fresh water fish and salmon available on earth, we also have the most pristine, crystal clear, clean water and environment available. Users of our precious resource all across the globe, give our markets sustainability because of the pure environment we can and do guarantee. Once again testimony to the gift that keeps on giving.

In closing I feel, The wild Salmon Protection Act, along with the Jay Hammond State Game Refuge bill will offer immeasurable help to the fisheries by enhancing the pure, pristine, contaminant free image of Wild Bristol Bay and will help to protect our renewable resources far into the future by ensuring that habitat protection standards are carefully designed and implemented.

Again, I thank you for this opportunity to testify and I urge you on behalf of my home, my business, my family and protection of my way of life to pass House Bill 134.

Louie Flora

From: Kelly Burnett
Sent: Monday, March 12, 2007 4:10 PM
To: Louie Flora
Subject: FW: notes on HB 134

Got another one!

From: Pam Brodie [mailto:pbrodie@gci.net]
Sent: Monday, March 12, 2007 1:37 PM
To: Kelly Burnett
Subject: Re: notes on HB 134

Kelly, here it is, to the best of my reconstruction efforts. -- Pam

Testimony in support of House Bill 134

by Pamela Brodie March 2, 2007

Thank you Mr. Chairman, and members of the Committee.

I am Pamela Brodie. I live in Homer. I am a partner in a small family construction company. I am not a commercial fisherman, and my livelihood does not directly depend on the health of the Bristol Bay drainage, although I do eat a lot of salmon. Nonetheless, I am here to support House Bill 134 because protection of Bristol Bay drainage is essential to the well being of so many other Alaskans and, I think, to the rest of the country and the world, as the source of the world's largest remaining wild salmon run.

This area now faces unprecedented levels of industrial development, offering short term gain and long term pain. Meanwhile, Alaska's regulatory protection of salmon streams has been weakened. Alaskans need the Legislature to act to safeguard the health of our salmon streams, especially those that feed Bristol Bay.

Earlier this morning someone testified that gold and copper are to be found in almost everything we use. This is very very far from being accurate. Over the course of history, vast numbers of people have died because of the pursuit of gold, most of them indigenous people of the American continents. Yet there is actually very little practical need for gold. Most of what has already been dug out of the ground is kept in vaults, and it is more than adequate to fill any real needs for this resource. Copper is another matter. Copper is necessary to modern life (although certainly not in everything we use). We do use copper when we build houses, but I am happy to say that we use much less per house than we used to, thanks to the development of such synthetic products as pex, ABS and PVC. Substitutes, technological advances, conservation and recycling can make up for much of the demand. The demand for copper is not nearly a sufficient reason to endanger Bristol Bay salmon runs by allowing pollution or excessive withdrawal of the pure waters of its salmon streams. Please pass HB 134. Thank you.

[Chairman Seaton asked whether, as a builder, I was opposed all development in the Bristol Bay drainage. I replied as follows:]

I do not oppose all development in the Bristol Bay drainage. I support strong protection of salmon habitat, and habitat for other fish and wildlife in the area. I do not ask or expect that HB 134 be passed without any changes whatsoever. In fact, I particularly support the approach taken in Senate Bill 67 by Senator Gary Stevens.

----- Original Message -----

From: Kelly Burnett

To: Pam Brodie

Sent: Monday, March 12, 2007 11:11 AM

Subject: RE: notes on HB 134

Thank you so much. I'll look forward to getting whatever you can provide.

Kelly Burnett
Secretary
House Special Committee on Fisheries
Alaska State Legislature
Juneau, Alaska

From: Pam Brodie [mailto:pbrodie@gci.net]

Sent: Monday, March 12, 2007 9:57 AM

To: Kelly Burnett

Subject: notes on HB 134

Kelly Burnett: Yes, I found my scratchings. I'll type them up and send them later today. You caught me just in time before heading to dump to recycle! -- Pam Brodie

Louie Flora

From: Shawn Dochtermann [drdrmann@hotmail.com]
Sent: Monday, March 12, 2007 3:27 PM
To: Rep. Paul Seaton; Rep. Bryce Edgmon; Rep. Lindsey Holmes; Rep. Kyle Johansen; Rep. Craig Johnson; Rep. Gabrielle LeDoux; Rep. Peggy Wilson
Cc: Sen. Gary Stevens; governor@gov.state.ak.us
Subject: HB 134 necessary provision for future processing interests in CS

March 11, 2007

Honorable Representatives Seaton, Edgmon, Holmes, Johansen, Johnson, LeDoux and Wilson of the House Special Committee on Fisheries,

My name is Shawn Dochtermann and I live in Kodiak. I'm a commercial fisherman that has spent the last 30 years fishing for salmon, crab, cod, and pollock from the Gulf of Alaska to the Western Aleutians. I depend on the Bristol Bay region for about 75-90% of my annual income. I have fished Bristol Bay for over 20 years for salmon and presently own my own vessel and driftpermit. I've been involved in fishery policy advocacy for the past 2 years, and have sought the best solutions for the protection of coastal communities and it's fishermen.

I'm writing to the committee to request a necessary provision be included in the final CS for HB 134. I'm for HB134, as the Bristol Bay watershed, fish, game, fauna, and it's residents need the protections from any future mine that would probably wreck Alaska's name for it pristine wilderness and wild fresh seafood products.

My concern is with water rights for future processing interests that may want to start up to process Bristol Bay salmon. I sit on the board of Alaska Independent Fishermen's Marketing Association (AIFMA) and many of the member of our organization think that a fishermen's co-op will be the necessary future for Bristol Bay fishers. This bill, as it reads, leaves no room for future processing abilities. It will be necessary to have a provision that allows for new processors water rights in the future, otherwise the ability to improve economic condition would be greatly diminished.

I'm making a special trip to Juneau just to work on HB134. I'll be in town March 26th and 27th and would like to have scheduled meetings with all members of the committee. Please respond to me by email or I will be available by phone at 253-905-8777 cell.

I appreciate the committees concerns with the protection of water, habitat and salmon in Bristol Bay. I look forward to helping resolve the issue of future water rights for those that may help promote the building blocks for economic stability in the region.

Sincerely,

Shawn C. Dochtermann
F/V Isanotski
PO Box 3886
Kodiak, AK 99615

Louie Flora

From: RAdki1841@aol.com
Sent: Monday, March 12, 2007 4:28 PM
To: Rep. Carl Gatto; Rep. Paul Seaton; Rep. Craig Johnson
Cc: TomA1841@aol.com
Subject: I support HB 134

RE: HB 134: The Alaska Wild Salmon Protection Act

I strongly urge you to **support HB 134**, and protect wild salmon throughout the Bristol Bay watershed, including the five major river systems that flow into Bristol Bay, home to the world's largest sockeye salmon runs,

Rep. Bryce Edgmon (D-Dillingham) bill would add common sense safeguards to legislation championed 35 years ago by Alaska's late Governor Jay Hammond during his time in the Alaska State Senate. The Wild Salmon Protection Act would protect Alaska's greatest salmon fishery by prohibiting the withdrawal, obstruction, pumping or pollution of surface or subsurface water in any Bristol Bay drainages that support salmon. The legislation also prohibits the destruction of salmon habitat, creates a fining schedule for violating these protections, and protects existing water uses authorized prior to the passage of the bill.

In commenting on the Bill, Representative Edgmon noted, *"As a legislator, Jay Hammond saw fit to add protections to this valuable area in 1972 before allowing oil exploration. HB 134 adds protections to the same area at a time when mining on a massive scale is being proposed. If mining is to eventually take place in our watershed, I want to make sure that our clear-running salmon streams and rivers are not put at risk."*

The pristine lakes and rivers that empty into Bristol Bay support world-renowned spawning and harvesting of all five species of Pacific salmon -- king, sockeye, silver, chum, and pink -- as well as rainbow trout, arctic char, grayling, northern pike, lake trout and Dolly Varden. Beluga whales and Orcas (killer whales) can be seen following the salmon runs. The area is home to caribou, moose, bear, and walrus, as well as small game such as beaver, porcupine, otter, and fox, and varied waterfowl.

I urge you to be a good steward of the Alaska land and wildlife -- and **support HB 134**.

Thank you.

Respectfully,
Rosemary C. Adkisson
1841 Country Club Drive
High Point, NC 27262

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3/12/07

To: Kelly Burnett (House Fisheries Committee)



**MARINE SAFETY INSTRUCTOR-EMT-METT INSTRUCTOR- EMT-IVACLS/PALS-
AHA CPR INSTRUCTOR-EMP FIRST AID INSTRUCTOR-ONGUARD FIRE ATTACK
INSTRUCTOR- MEDEVAC ESCORT INSTRUCTOR**

RON BOWERS
P.O. BOX 6
DILLINGHAM, ALASKA 99576
907-842-4186
Email: ronmarieiris@yahoo.com

CELL# (907) 439-3711

TO: House Fisheries Committee

REF: HB#134

Friday March 2, 2007

Good morning Bryce and other members of the Fisheries Resource Committee, thank you for permitting more testimony on HB#134. I have been an Alaskan resident since 1979 and have lived in Bristol Bay or on the Alaska Peninsula since 1983. My wife and daughter are lifelong residents of this region. My wife setnetted commercially for Salmon many years in Ekuk and South Naknek. My daughter spent many Summers in fish camp and has worked on fisheries research projects both along the Nushagak and around Lake Clark. While I no longer consider myself a commercial fisherman, I have fished for Halibut and Salmon in Port Graham, Chignik and Dillingham quite a few years ago.

As a family we participate almost year round in subsistence activities and benefit from what God has blessed our Bristol Bay region with. From hunting Moose/Caribou/Ducks to berry picking, to catching our share of Salmon/smelts and Halibut. We fully support efforts to protect our region's natural resources.

But we are not in favor of HB# 134. We realize that many of our region's residents are being forced to leave the land they love for less costly urban areas in our state such as Anchorage and the Mat-Su Valley. While these communities offer much, they are a long way from the subsistence resources and rural lifestyle we so dearly cherish. The main reason residents are being forced to leave our region, is for an honest job. House Bill #134 will only serve to decrease economic opportunities for our residents and cause more to have to move out.

March 5, 2007

To: Committee on House Bill 134

Mr. Chairman and Members of the Committee:

Today, I had missed my opportunity to participate with my commentary; regarding the above reference bill: HB 134. And for the record; providing my commentary on my own behalf and my name is: John D. Nelson Jr. from the Village of Kokhanok, Alaska, located on the south; southeast shores of Iliamna Lake with a population of approximately 150; with a student enrollment of 49, consisting both high school and elementary.

I have been an avid commercial fisherman, at Bristol Bay and still continue to do so today; as well, as an avid subsistence user. And I am in support of this HB 134; because it will protect the river and drainage systems of the Bristol Bay region and most importantly; the Iliamna Lake; which produces, as we all know, the Kvichak bound fish returning to Bristol Bay to spawn at the headwaters; which is a part of; Iliamna Lake.

Iliamna Lake plays an important and integral role; for the return of the Bristol Bay sockeye, as well, as other areas of the Bristol Bay rivers and streams and with it; produces; natural renewable resource; which is the Bristol Bay sockeye. Also, in addition; it plays another important and integral role of the Bristol Bay region; subsistence; of which; we all villages of Bristol Bay, as well, as the state; depend on for the livelihood of its inhabitants. Subsistence plays an important role to our culture and tradition; of which, we inhabitants of the area, has survived; since its inception and still continues to do so today. And relating to subsistence; pristine clear crystal clear waters from the mountainous streams; plays in integral part of the eco-system, as well, as our community for utilization of drinking and cooking for human consumption.

In addition; I have participated with this conference; and numerous times; it is noted; that it will provide jobs and opportunities. There is an alternative: Bristol Bay region; comprises of 32-34 villages and each village has a corporation; under ANILCA and with these villages; there needs to be an initiative to work together as a region; to produce opportunities. Reason, why I include this; is that our Regional Corporation who is Bristol Bay Native Corporation, is earning millions of dollars annually, which produces a dividend for me, as a shareholder. If we can work together for the common region; certainly we can achieve an opportunity for work for us; as well, as working with it. Eco-tourism is on the rise; Sport fishing opportunities; Recreational opportunities; river rafting; sight seeing by boating and hiking of important and new areas; recreational hunting; investing in good business practices that provide opportunities; such as the stock market; portfolios and good business incentives and opportunities. And the time is now; to plan; instead of taking the easy way in. A good business plan by its people will work and if we can compromise by coming together; it can work.

Thank you for your opportunity for me to participate.

*Thank you John Nelson
Kokhanok*

Louie Flora

From: LEO LAURIE LANTZ [lanl1965@msn.com]
Sent: Thursday, March 08, 2007 7:29 PM
To: Rep. Paul Seaton
Subject: HB 134

Dear Mr. Seaton,

I am writing to implore you to support HB 134, a bill which would protect the Bristol Bay watershed from the massive damage that any proposed mining would surely do. This area is one of the last great unspoiled fisheries and is a national treasure in need of protection. Like Teddy Roosevelt did with great foresight a century ago you can do the same by protecting Bristol Bay for the long term, just as Pres. T. Roosevelt did with the first of the national parks in the lower 48 states.

I have traveled to Alaska and plan to do so again to fish this area with my sons but if the current proposals allow massive mining this area will be lost forever. You need look no farther than the problems in the lower 48 states where heavy metal pollution from mining slag has contaminated surface and ground water, decimating fisheries and drinking water almost 100% of the time.

Don't let this happen in Alaska-the last Great Place on earth!

Sincerely,
l.james lantz
2915 maple st.
fargo,nd 58102-1720
17012322723

Gina M. Pope
PO Box 1235
12 East Street
Dillingham Ak 99576
(907)842-4138
bsgmp@uaf.edu

March 2nd, 2007

Chairman Seaton and Committee members,

I am here to speak in favor of House Bill 134 and the revisions/amendments and sponsors of the bill.

I've grown up in the Iliamna/Lake Clark area, specifically Pope-Vannoy Landing in the Intricate Bay area between Pedro Bay and Kokhanok Bay. Pope-Vannoy Landing borders Alaska Peninsula Corporation Land and sits a mile and a half away from Copper River, a world class trophy rainbow river prized by fly fishermen. My mother owns a Native Allotment of 160 acres between Copper River and Pope-Vannoy Landing.

The last census counted about 7,520 people in the Bristol Bay region (according to a report by the Alaska Department of Fish and Game). If you count the people who visit as fishing/hunting clients or as summer visitors, my guess is that the population may rise to approximately 10,000 – 15,000 over the months of June, July, and August. I would guess it does not rise cumulatively much above that.

In addition to the current scant population I have listened to the radio news and determined that if a community rises in residency to over 6,000 people, that community may lose subsistence priority. Right now our communities are much below that figure, but large-scale development in the

future looms (Think of what 60,00 people injected into the region would do to the social structure).

By supporting this bill, people are asking that some assurance be made that changes will not wipe our region of the salmon that it has taken eons to establish. Social changes of population increase are one thing, but we all seem to have agreed to sustain the salmon.

I am surprised that the public support of HB 134 is not unanimous. What will our region look like 60 years from now if we protect the river systems? What if we don't allow obstructions and pollution to the lakes and drainages? Will we suffer economically because we kept our renewable resource in a natural, wild state?

Besides eating salmon for subsistence, I have gained meaningful employment because of the valuable sport fishing area we have right next to the water bodies. My first job at age 16 was at a lodge near my home. My six older brothers and sisters, all of Alaska Native descent, worked there before me. I earned enough tips and wages at the lodge to buy lumber and build a house by the age of 17. I did not feel like I was living in poverty, nor do I today.

The label of poverty is put on us not by ourselves but is a label designed to further ideas of those who overlook cultural richness and understand not the value put on an untainted food source. Even berries benefit from the nutrients which are present because of salmon returns.

I really truly thank each of you for your hard work and endurance and hope you each have a good day today.

LIO Dillingham

ATTN: REP. PAUL SEITON, CHAIRMAN

From: Jacquelyn Wilson [quenluk@yahoo.com]
Sent: Friday, March 02, 2007 10:42 AM
To: LIO Dillingham
Subject: POM from Quenluk

I am Quenluk, English name Jacquelyn Stor Wilson. I am a teacher at Dillingham. I love my culture, traditions, and lifestyle as a first Alaskan. It has been interesting to see changes in Alaska from territorial days to statehood. Since European contact, first Alaskan cultures were looked down on. Educational system worked at throwing away my culture and language. I fought my way through school and discrimination. I love my culture too much.

Culture and environment go hand in hand. My husband Verner Stor 11 and I are commerical and subsistence fishermen, as so many Native people in Bristol Bay. Please protect our lifestyle and enviroment by passing HB 134. I plead to this committee and legislature to do what is right for Bristol Bay Natives and the rest of Alaska. We are the last frontier, so let us work on preserving the cultures and environment. Thank you for your attention.

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842 - 1052

Box 905

2847 Squaw Creek Rd

Louie Flora

From: Rep. Paul Seaton
Sent: Friday, March 02, 2007 1:02 PM
To: louie.flora@legis.state.ak.us
Subject: FW: Suppoprt for Bristol Bay Refuge and Jay Hammond State Game Refuge

From: Nell Gustafson [mailto:starfish@xyz.net]
Sent: Friday, March 02, 2007 6:30 AM
To: Sen. Gary Stevens; Rep. Paul Seaton
Subject: Suppoprt for Bristol Bay Refuge and Jay Hammond State Game Refuge

Senator Stevens and Representative Seaton,

Thank you Senator Stevens for sponsoring the Jay Hammond Game Refuge Bill. I think it is a good idea! Please keep in the water quality protection necessary to insure that this area is protected for generations to come.

I strongly support giving Bristol Bay the protection of it's current high water quality that allows it to have the world's largest sockeye salmon run in the world and world class sport's fishing. That is their true proven gold reserve with fisheries that have sustained the area for years. To allow pollution of the important resource is short sighted. Representative Bryce Edgmon's Bill 134 deserves your suport.

Sincerely Richard L. Gustafson

**Alaska State Legislature – House bill 134 Testimony
March 2, 2007**

My name is Thomas Pebler. I am a concerned Alaskan.

It is not unreasonable that Alaska would take measure to protect its world class fisheries and renowned water quality.

It is most reasonable that those who would develop Alaska's mineral wealth afford the effort to maintain these standards for the sake of mutual prosperity.

We have heard the claims that mining operations and world class fisheries can functionally coexist. There should be no hesitation but, only encouragement at the suggestion that we take serious precaution.

I offer my support to Representative Edgmon's House Bill 134.

Thank you very much for your attention.

A handwritten signature in black ink, appearing to read 'Thomas Pebler', with a stylized, flowing script.

Thomas Pebler
1903 Stonegate Circle
Anchorage, AK 99515



Dear Mr. Paul Seaton,

We strongly support bill HB 134: "The Alaska Wild Salmon Protection Act" and our purpose for writing you, is to explain how crucial it is for you to support this bill as well!

We make our livelihood working at a fishing lodge on the beautiful Alagnak river, which flows into the Bristol Bay drainage. (See picture of part of the river above.) Living on the Alagnak four months of the year, we experience first-hand and understand how important the health of Bristol Bay is for the millions of wild salmon and other marine life that habituates this fragile ecosystem. Even if we were not directly

dependent on the fantastic salmon runs of Bristol Bay, we would still strongly support this bill, since the health of the Bristol Bay environment affect the whole state of Alaska, and even greater; the world! Being the host of the world's largest wild salmon runs, the Bristol Bay salmon does not only generate hundreds of million dollars and thousands of jobs to the state of Alaska and its population, but it also affects the wellbeing of the world's salmon and other fish species that come here to spawn.

In supporting this act, you will prohibit diverting, damming, or polluting ANY surface or subsurface water in any of the Bristol Bay drainages that support salmon. When you support this act you will also legislate the prohibition of destroying salmon habitats, protecting existing water uses which was authorized prior to this bill, and authorize a fining schedule if anyone should violate these protections.

We urge you, Mr. Senator to understand
the importance in keeping the waters of Bristol
Bay clean & protecting the world famous
Bristol Bay wild salmon by supporting
bill HB 134: "The Alaska Wild Salmon
Protection Act"!

Respectfully Yours,

Therese J. J. J.

Kevin Bonasera

alaska.kevin@gmail.com

Good Morning Mr. Chairman, Committee members,
CS for House Bill 134.....in which I support...strongly.

My name is Bruce Johnson from Dillingham.

I represent myself, and all the people in Bristol Bay that are opposed to the development of Pebble Mine.

I live along the Nushagak river system in Bristol Bay. I support House Bill 134 because it is geared towards protecting our water shed in the two river systems, the Nushagak & the Kvichak rivers, and all the waters in the region.

To me, no fine to any company who pollutes these rivers is big enough to punish them in regards to the potential damage that could and will happen once the Pebble Mine is developed and built. Any mining development in this region where the proposed mine is to be built, has a definite possibility of altering our pristine waterways in the whole Bristol Bay region. The rivers that are going to be effected, feed the entire regions caribou and moose populations with water to drink and rear their young. The rivers would also be polluted to the point of not being able to sustain our rich salmon stocks that are born in these rivers and lakes in this region. They cannot be replaced, once they are killed off by the pollution this proposed mine development.

The residents and people of Montana state have a tv commercial out, that is a direct reflection of the damage already done there. The people on this commercial talk about how the mining company talk about & even promise not to damage the waters there, or the environment, and they do the exact opposite. Damage and destruction there have occurred and they are saying, "That the people of Alaska ought not make the same mistake we did by allowing this mine to be developed here. They made promises and broke them. Our lands and waters are polluted and dead." To me, that is a prime example of these mining companies doing what they want, taking the resource from the land, polluting it, then leaving. The profits these companies would make are NOT going to spent on rebuilding any of the damaged lands they pollute and destroy. Of course their putting a few people to work is good in this economically depressed region, but at the cost of our subsistence lifestyle, and our commercial & sports fisheries that thrive here annually.

The subsistence fisheries and sports fisheries are at stake here. I have commercially fished in the Nushagak river since I was a young child. That would be gone. I have lived off of subsistence foods for most of my adult life, that would be gone too. My children and their children will not have the opportunity that I have, to live the subsistence way of life because of polluted rivers and poisoned lands, that the proposed Pebble Mine will do to our lands and river systems. They plan to take the natural rich resources, minerals and precious metals, and leave! They (mining companies) have that reputation of doing just that, time after time.

I cannot believe the State of Alaska and the legislators that support these mining companies, have actually gone this far and gave the Northern Dynasty mining company the rights and subsurface rights to our rich resource to begin with! That is appalling! That is going against all the tribal councils in the state, and it's people.

So with me, any House Bill that has the necessary language in it to protecting our waterways in the Bristol Bay region, is strongly supported.

Despite our economically depressed region, any development of a mine so close to draining into these two river systems, that would provide just a few jobs temporarily, is most definitely is not the answer. Certainly not at the cost of so many people's livelihoods, subsistence lifestyles, and generations to come will see what our elected State Officials have done to it's people. That is not favorable to the many generations of people to come, that will see what they have to live with after it is all over, dead rivers and lakes polluted, and no subsistence foods to live off of. The land and it's subsistence foods provide well for me and my family. This land and it's animals are my REFRIDGERATOR, so to speak. My grand parents, my children have lived this way for many, many generations. That would be gone!

This would take away, from so many people, the rich natural resources we have in this region.

Northern Dynasty mines does not have plans to support generations to come with subsistence foods, and jobs related to the fishing industry, both sports and commercial. They plan to taker our resources, and leave us with the mess of polluted waters, and lands created by their mining operations that will make them, as a company, rich in resource & precious metals and minerals.

Look at the other mines that were created around the U.S., are they in good condition? No ! Their lands are polluted and dead...leaving it's residents in despair. That is what is going to happen here.

I strongly support this HouseBill 134. I commend Representative Paul Seaton and Representative Bryce Edgemon for putting this important legislation out on the table for everyone to have input on.....thank you.

Bruce E. Johnson *Bruce E. Johnson* 2/28/07
Dillingham/Bristol Bay resident.
Commercial & Sports fisherman.
Subsistence user..(lifetime)

PO Box 1331
Petersburg, AK 99833
March 2, 2007

Alaska State Legislature
House Fisheries Committee
Juneau, AK 99801-1182

RE: House Bill 134

Dear House Fisheries Committee:

We are both Bristol Bay Resident Salmon Driftnet Permit Holders and are in support of HB 134: Protection Of Salmon Spawning Water. We urge you to pass this bill out of committee and do not let it die. Our family has been fishing the Bay since 1990 and we have invested in Bay permits with an eye to the future. Although we are attending college at Western Washington State University in Bellingham we intend to return to the State to continue to fish commercially as a livelihood. The negative impacts of large scale development projects in Bristol Bay will be felt statewide not just in the Bay region.

We understand that the bill pertains to the five Bristol Bay drainages, specifically the Nushagak, Kvichak, Egegik, Ugashik, and Naknek Rivers. It would prohibit "withdrawal, obstruction, diversion injection, pollution, or pumping, either temporarily or permanently, any subsurface or surface water in drainages supporting salmon or any water hydrologically interrelated or connected to those drainages; or altering, destroying, displacing, relocating, channeling, damming, converting to dry land, or otherwise adversely affect any portion of a river, stream, lake, bog, tributary, or any other water body, including the beds of water bodies, in drainages supporting salmon" and would levy a fine schedule for violation. We also understand that exceptions would be made for preexisting uses such as for drinking water, municipal uses etc.

The provisions outlined in the bill are not extraordinary or unreasonable. Some slight tweaking may in order to allow DNR to issue permits for normal uses similar to the exceptions mentioned above but not if the intent of the bill is negated. If an industry, whether it be the Pebble Mine or any other industry, claims that adoption of the bill would prevent development, then obviously that industry does not have the best of intentions for the salmon habitat in Bristol Bay from the get-go. In our minds such opposition amounts to an outright admission that industry fully intends to degrade the fishery with impunity.

As you are probably aware, many Bay fishermen lost their vessels and permits in recent years due to record low prices and the inability to make their payments. Bristol Bay however is now on the verge of a total recovery from the recent market lows. If Bristol Bay salmon habitat were degraded there would likely be a total collapse of the industry not temporarily as from low prices but permanently. Fish prices can be restored,

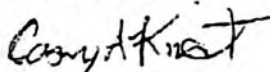
habitat cannot.

Even the restoration of fish prices is largely dependent on the integrity of the habitat. Recent increases in the price of salmon are largely attributable to marketing that emphasizes the purity of Alaskan wild salmon. Pollution and degradation of the waters in which these salmon breed could largely negate the benefits of such marketing. Fish prices, and subsequently the subsistence of Bristol Bay fishermen, hinges on the integrity of the salmon habitat.

It is no secret that the Murkowski administration stacked the regulatory process in favor of the mining industry via several premeditated steps such as transferring the ADFG Habitat Division to DNR, dismantling ACMP, eliminating the Office of Governmental Coordination and other major steps as outlined in Lance Trasky's¹ *"The Myth of the Rigorous Permitting Process"*. It is also clear that ADF&G does not have, nor will it have any time in the near future, the expertise to evaluate the effects of the world's largest open pit mine. Whether or not this bill passes the State should show a realm commitment to habitat protection by reversing Murkowski's actions and further beefing up scientific expertise within the various Departments concerned with permitting.

Finally, according to the U.S. EPA's Abandoned Mine Land Team², the cost of remediation of mine sites on the National Priorities List (NPL) in the United States is on the order of \$20 billion. There is no doubt that that reclamation will be required following any development like that proposed for the Pebble Mine. The long-term costs are not worth the short-term benefits.

Thank you,



Casey A Knight
FV Starship



Kyle J. Knight
FV Starship

¹ Lance Trasky Testimony before Alaska Board of Fish, *"The Myth of the Rigorous Permitting Process"*, Dec. 4, 2006.

² Ann S. Maest Buka Environmental, Boulder, Colorado & James R. Kuipers Kuipers & Associates Butte, Montana, *"Predicting Water Quality at Hardrock Mines Methods and Models, Uncertainties, and State-of-the-Art"*, 2005.

From: Marjorie & Dan Dunaway [mwdnt@nushtel.com]
Sent: Monday, March 05, 2007 10:00 PM
To: Sen. Lyman Hoffman; Rep. Mary Nelson; Rep. Mike Hawker; Rep. Bryce Edgmon; Rep. Gabrielle LeDoux; Rep. Jay Ramras; Rep. Les Gara; Rep. Paul Seaton; Rep. Ralph Samuels
Subject: I support HB 134

I am in full support of HB 134 and its intent.

I am a retired Fisheries Biologist with over half of my 24 + year career spent in Bristol Bay. We must do everything possible to protect and assure the long term viability of the wild fish populations of Bristol Bay - and all the rest of Alaska for that matter.

During my career I had occasion to correspond with biologists from the Pacific Northwest. The declines of many of those great salmon runs were not due only to mis management or over fishing. It was directly related to the degradation and loss of spawning and rearing habitat.

I often thought how fortunate I was to have a healthy habitat backing up the fish populations I researched and managed. I knew that the unpolluted, unaltered habitat assured the fish populations could withstand allocation arguments, moderate management mistakes or natural environmental changes. Pollute and degrade that habitat and we lose the resiliency of the systems to rebound.

Please add HB 134 to Alaska law to more fully protect Bristol Bay fish habitat.

Bristol Bay means natural wild salmon to the world. It means many of the best natural wild recreational fisheries in the world. That translates to renewable clean dollars for all Alaska for the future - for as long as we maintain it.

For those of us who live here, healthy natural fish populations mean food on our tables, continuing treasured traditions, life styles and a sustainable long term economy.

Please support HB 134. Please share with any other Legislators as you see fit.

Thank you

Dan Dunaway
PO Box 1490
Dillingham, Alaska 99576

907-842-2636

Louie Flora

From: Rep. Paul Seaton
Sent: Monday, February 26, 2007 8:22 AM
To: louie.flora@legis.state.ak.us
Subject: FW: SB134

-----Original Message-----

From: Rocky Harrison [mailto:rockyh5@hotmail.com]
Sent: Sunday, February 25, 2007 8:21 PM
To: Rep. Paul Seaton
Subject: SB134

Dear Representative Seaton,

I am a resident of the Bristol Bay region and I am very concerned about the possible impact from the proposed Pebble Mine. My family and I make our living in this region and depend on the natural recourses, including the salmon fishery, to do so. We are strongly in support of the proposed SB134 and very much hope you will support this bill and help to protect our valued, sustainable natural recourses.
Thanks you for your time.

Sincerely,
Rochelle Harrison

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Louie Flora

From: Rep. Paul Seaton
Sent: Monday, February 26, 2007 8:22 AM
To: louie.flora@legis.state.ak.us
Subject: FW: HB 134

From: Yvonne Cole [mailto:YvonneC@ppsf.com]
Sent: Monday, February 26, 2007 7:54 AM
To: Rep. Paul Seaton
Subject: HB 134

February 26, 2007

Dear Representative,

Please support HB 134, "The Alaska Wild Salmon Protection Act". We must do anything and everything necessary to protect this immense renewable resource. I have worked in the commercial fishing industry for 16 years now and have an idea of the immensity of the impact of any damage to this resource on my Alaskan friends and co-workers. Please do everything necessary to protect this resource – a true jewel for Alaska.

Sincerely,
Yvonne Cole

February 26, 2007

In Support of HB 134

The possibility of an open pit mine near Lake Illiama has the potential of causing an ecological catastrophe for all of Bristol Bay. For hundreds upon hundreds of years, Native Alaskans have lived on the banks of rivers that flow into Bristol Bay. Many of these rivers have head waters that flow through the area, where Northern Dynasty proposes the largest open pit mine on our continent. The ever present possibility of toxic chemicals leaching into this water system is very real.

If this Northern Dynasty Open Pitt Mine is allowed, the negative impact on the Salmon Industry of Bristol Bay would very likely worsen with each passing year. The Salmon runs of Bristol Bay are a sustainable resource, but only if the overall eco-system of the entire area are protected. I fear that once any part of this eco-system is altered, it will have a direct negative impact on the entire eco-system of Bristol Bay.

There is an increasing demand on the World Market for the high quality Salmon caught and processed in Bristol Bay. This provides employment to thousands of Alaskans and jobs in the industry across the globe.

I want to share a few fish facts taken from the article "Wild Alaska Seafood" by Wesley Loy published in the Alaska Airline Magazine, November 2005 issue (pgs. 25-40).

- Commercial Operations Harvested 5.4 million pounds of fish and shell fish worth \$1.2 billion at the dock. (Loy pg. 31)
- The fishing industry generates more than \$53 million in revenue for the state each year. (Loy pg. 31)
- The fishing industry is Alaska's largest privet-sector employer, employing more than 30,000 people a year full-time or seasonal. (Loy, pg 31)

In the fall of 2006 Washington State Health Department recommended consuming only one serving per week of Salmon caught in Washington's Puget Sound, due to the high level of Toxic Chemicals found in the fish. It would be a tragedy to see the same thing happen to the pristine waters of Bristol Bay.

I am asking you to support HB 134 to protect this wonderful sustainable resource for the State of Alaska.

Daniel C. Thomas
Dannyt01@msn.com
509-607-1737

Louie Flora

From: Daniel Schrock [des73@yahoo.com]
Sent: Monday, February 26, 2007 12:33 PM
To: Rep. Paul Seaton
Subject: HB 134

Dear Representative Paul Seaton:

My name is Dan Schrock and I am a proud Alaskan with great respect for our world-class fisheries. This of course includes the greatest sockeye run in the world that occurs each year in Bristol Bay. Simply put, I am writing to champion House Bill 134. The language and scope of the bill is vital to protecting Alaska's greatest resource... its fisheries and the many Alaskans who make their living off of this great renewable resource.

I believe the time is at hand to establish regulations and safeguards to ensure our greatest resource is protected from activities that would endanger the waters of the Bristol Bay area. As a former resident of Montana, I know what the nation's largest superfund site looks like(the Berkley copper mine pit in Butte, MT) and I hope that the regulations the legislature establishes will protect the wildness and uniqueness of the watersheds in Bristol Bay from mines and other known polluters. I thank you for your consideration and time regarding my beliefs in regards to HB 134. The time is at hand to stand up for our state and what makes it Alaska.

Respectfully,
Dan Schrock

Louie Flora

From: Tina Seaton [pseaton@gci.net]
Sent: Monday, February 26, 2007 6:11 PM
To: Rep. Paul Seaton
Subject: *****SPAM***** Bears and clean water

Roger and Denice Clyne [rdclyne@xyz.net]

Dear Paul,

Like many of your constituents, we are very concerned about the contamination of the Bristol Bay headwaters that will undoubtedly occur if the Pebble Mine is allowed to contaminate the environment as mines from Pitcher, OK to Kellogg, ID have and ALWAYS leaving "locals" to suffer the consequences of their self serving interests and the tax payers to clean up the mess. I am neither a charter nor commercial fisherman since I suffer from "terminal seasickness" but our salmon streams are far too valuable to allow them to be destroyed as has been the case for many streams for more than a century across the West. Also, when the minerals of Pebble Mine area are owned by the citizens of Alaska, why are they literally being given away for less than 3 cents on the dollar as we are told? You and the legislature MUST pass legislation that will provide certainty that this mine will do no damage to that pristine area as well as insuring that the state receives a FAIR return for its resources.

In regard to HB 127, we feel that pure economics mandate that the McNeil bears be protected from hunting in this area if for no other reason than sheer economics since the data that I have seen indicates that far more revenue is generated by bear watchers than from the few macho hunters who are only after a trophy for their wall. This from a hunter your age who has hunted big game for 50+ years! There are many reasons including the bears' habituation to humans that seems to make it unreasonable to allow them to be shot, especially since their numbers are down in recent years, since there are so many other places in the state where bears can be hunted that are truly wild and fearful of humans.

Your serious attention to these issues will be greatly appreciated and hopefully you will be able to help pass measures that are in the best interest of the state and your constituents rather than special interests which has far too often been the case in the past.

Yours truly,

Roger and Denice Clyne

Homer

Paul Seaton
Alaskan Representative

Greetings from homer alaska;

I hope your year has started out well.

I am writing to express my interest to protect the Bristol Bay Watershed.

I feel I have been blessed to have been given the basic skills of fly-fishing;
it would be hard to put into words the true joy of being in a remote stream
and maybe even catching a fish.

I have worked in Bristol Bay and would hate to see it torn apart.

Not just for it's worldclass fisheries, but also for its incredible beauty which
can bring calm and contenment to anyone who is fortunate to travel to such
a special place.

please consider and support the cs for HB 134

this will make bristol bay available for future generation for fishing and wilderness
adventure. thats important for me as well as the state;

thank you for your time and consideration,

sincerely;

thomas f. meyers

thomas@yahoo.com
907 321 1050

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Louie Flora

From: Gina M. Pope [bsgmp@UAF.EDU]
Sent: Tuesday, February 27, 2007 10:40 AM
To: Rep. Paul Seaton
Subject: Support for HB 134 from subsistence resident

Support for HB 134

My name is Gina Marie Pope, and I have spent 33 years in the Bristol Bay Region. 27 of those years as a resident in five Iliamna/Lake Clark communities including Nondalton, Pope-Vannoy Landing, and Kokhanok. I am a lifelong Alaskan-born resident, age 41.

I support HB 134, a bill that would serve to protect the subsistence use of the varied and essential wildlife which give this unusual and beautiful place its uniqueness.

The Intricate Bay area is home to me and many others. The area sets the stage for the food we have lived on. We have relied on these sources to support the abundance of plants and animals and have trusted without question the purity of the freshwater in the lakes. We have used the fish scraps to fertilize our vegetable gardens. We soak out our salt fish in the streams. We trade our locally gathered foods for other uniquely prepared foods that are not local to our area, such as roe on kelp, smelt, and nudlvi (freeze-dried red salmon).

Freshwater streams support highly edible plants, birds, and fish. Every summer the yearly migration of smolt herald the arrival of species such as the arctic tern and Franklin's gull, both of which nest on the many small rocky islands of Lake Iliamna and its surrounding beaches. Three species of swallows show up on almost the same day that the mosquito larvae hatch.

As the salmon return, activity intensifies. Fledgling shorebirds eat freshwater shrimp, minature sculpin, lamprey, water boatmen, fresh water snails and a myriad of winged insects which live underwater for all or most of their short and productive lives. We of course do not eat all these aforementioned species, but they play an essential part in supporting the plant and animal foods we do eat.

Many species are here only because of the healthy condition of the environment. Certain species are extremely sensitive to even the slightest changes in nutrients and sedimentation. Changes in water quality and stream hydrology can critically endanger supportive species in a heartbeat, and can cause lasting misfortune. Here I would also mention the berry-pickers realm of the tundra, another productive environment full of vitamins, highly susceptible to pollutants as well.

According to the University of Alaska's Environment and Natural Resources Institute, "It is generally understood that human health and welfare are directly tied to our water resources and environmental quality."

If HB 134 becomes law, these resources that rely on healthy streams and water become protected for the foreseeable future, and the bill sets a precedent of responsibility to the land which enriches life for all those who pass through it, both animal and man. Thank you for considering my comments.

Sincerely,
Gina M. Pope
PO Box 1235
Dillingham AK 99576
(907) 842-4138

From: tibayan [tibayan@gci.net]
Sent: Friday, February 23, 2007 4:21 PM
To: Rep. Paul Seaton
Follow Up Flag: Follow up
Flag Status: Blue

DEAR SIR,
I EMAIL YOU TO EXPRESS MY SUPPORT FOR HOUSE BILL 134- A BILL TO PROTECT OUR WILD SALMON.
I ENJOY FISHING AND THE GREAT ALASKA OUTDOORS. I ALWAYS MENTION TO FRIENDS AND RELATIVES FROM THE LOWER 48 AND PEOPLE FROM OTHER COUNTRIES I HAVE VISITED HOW WONDERFUL OUR NATURAL RESOURCES ARE... PLEASE, PLEASE HELP PROTECT THEM.
YOURS SINCERELY,
FERNANDO N. TIBAYAN, MD

From: leigh pinkston [leighpinkston@hotmail.com]
Int: Friday, February 23, 2007 11:09 PM
To: Paul_Seaton@legis.state.ak.us; Carl_Gatto@legis.state.ak.us;
Craig_Johnson@legis.state.ak.us
Subject: CS for HB 134

Follow Up Flag: Follow up
Flag Status: Red

Dear Sirs,

Please consider CS for HB 134 in a positive light and support it to the fullest. It would be a shame not to reach out and protect a state as well as a national treasure for all generations.

Leigh Pinkston
525 W 3rd ave #507
Anchorage AK 99501

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From: Flavio Cardoso [fhcardoso81@hotmail.com]
Sent: Saturday, February 24, 2007 2:43 PM
To: Rep. Paul Seaton
Subject: HB 134 protect our renewable resource

Representative Paul Seaton,

My name is Flavio Henrique Cardoso and I am an Bristol Bay drift gillnet boat owner and Alaskan fisherman. There is great speculation as to how the proposed Pebble Mine would affect the Bristol Bay fishery, the largest spawning grounds for salmon in the world. Previous legislation during the 1970's set a precedent that focused on protecting one of our most valuable resources; fishing. The idea of protecting a resource that is guaranteed forever, if we take care of the renewable resource, is one that the previous generations believed was a necessity for the good of all Alaskans. In recent times our society has switched its focus from preserving our resource for the good of our world as a whole, to the monetarily driven view that we can make a profit, regardless of how we affect our environment. We are not here on this earth only for ourselves, but must also protect the future of our children and all those who come after us. I ask you to consider the truthful choice in regards to the protection act concerning not only Bristol Bay, but all of our watersheds. The future of our world depends on the actions that we as human beings first, and political or financial individuals second, make today. My concern is that if we allow for the degregation of our prestine watersheds, it will set a precedent for our children to disrespect the very earth that sustains our people and our lives. I am originally from Brasil and have lived in Alaska since I was 9 years old. I consider myself an Alaskan at heart, for the simple fact that we as a people have always acted kindly to one another; we as a state have protected our environment and realize that we depend on this land for our very futures. My culture and the Alaskan culture are one in the same in this aspect. So I ask you and challenge you to make a truthful decision regarding our future, not based on monetary value but value for the future human value of life. Thank you for your time and consideration.

Sincerely,
Flavio Henrique Cardoso
P.O.Box 111354
Anchorage, AK 99511

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From: Rep. Paul Seaton
Sent: Tuesday, February 20, 2007 2:26 PM
To: louie.flora@legis.state.ak.us
Subject: FW: Fisheries legislation

From: Tyler Dann [mailto:tylerdann@gmail.com]
Sent: Thursday, February 15, 2007 2:27 PM
To: Sen. Gene Theriault; Sen. Gary Stevens; Sen. Hollis French; Sen. Lyda Green; Rep. John Harris; Rep. Ralph Samuels; Rep. Beth Kerttula; Rep. Les Gara; Rep. Richard Foster; Rep. Andrea Doll; Rep. Bryce Edgmon; Rep. Lindsey Holmes; Rep. Woodie Salmon; Rep. Paul Seaton; Rep. Kyle Johansen; Rep. Craig Johnson; Rep. Gabrielle LeDoux; Rep. Peggy Wilson
Subject: Fisheries legislation

Good afternoon legislators,

My name is Tyler Dann and I'm writing to express my opinions regarding fisheries in our state and your influence on some fisheries-specific legislation. My opinions are mine and don't represent those of anyone else.

I am interested in fisheries issues for a few reasons. I was born in Nome and moved to the westside of Anchorage when I was six. My family commercial fished off the beach south of South Naknek in the mid-80's to early 90's. I worked for a summer at a sport fishing lodge in the Bristol Bay area before spending four as a seasonal fish technician with our ADF&G. I'm now working towards a masters in fisheries science here in Juneau and intend to pursue a career as a biologist, most likely with the state. I'd like to be involved with the management of healthy salmon fisheries.

My life history is irrelevant except for describing the nature of my interest and my "hold" on a "stake." I understand how important our subsistence, commercial and sport fisheries are, and how our renewable fisheries resources are to the ecology of Alaska. There's many arguments to be made for protecting our fisheries but we are all busy so here are three.

1. Our fish resources are an invaluable component to the economy, culture and health of Alaska and Alaskans.

The preliminary 2006 estimate of the total exvessel value of our salmon harvest is 308 million dollars with an expected increase in catch for 2007 (Eggers, 2007). Subsistence fisheries don't fit into economic models as well but are incredibly important in many parts of the state. Beyond economics, these resources have been a keystone component to our society, notably helping to spur statehood, and will likely continue to play such a role in our state's culture.

2. These resources are renewable and future Alaskans will depend on them when non-renewable resources are gone.

In contrast to many extractive industries commercial fisheries pay their fair share. Through borough fish taxes (most notable in the Aleutians East, Bristol Bay, Lake and Pen boroughs and communities in that

region) commercial fisheries contribute directly to local economies. Commercial fisheries employ a vastly greater number of people than most non-renewable extractive industries, whose income ripples out into the rest of society. Managed wisely these positive influences can continue to provide for the Alaskan economy and culture.

3. Alaska has the opportunity to get it right.

Due to our relatively nascent state, we have excellent habitat resources. These benefits aren't calculated into many economic models, but the quality and quantity of our habitat is incredible when compared to down south. Being a salmon researcher that's my focus and Lower 48 freshwater habitat just can't compare with Alaska's. There is a gargantuan industry of restoration down there while we have the world's largest run of salmon. While the diversity of their populations dwindles our abundance of healthy, genetically diverse populations will only become more important.

We have the opportunity to get it right and provide for the future of this resource and future Alaskans. Our leaders can make that future more certain.

So I support the following bills and thank you for taking my opinions into consideration when they come before you.

I support House Bill 41, which seeks to restore the Habitat Division to the ADF&G.

I support House Bill 74, which seeks to tidy up loopholes in the definition of spawning habitat in regards to mixing zone permitting. I was surprised to be the only person testifying in person, what was everyone else doing there? Being my first time testifying, and with a time crunch, I got a bit nervous, but I hope you understood my position.

I support House Bill 134, which seeks to protect habitat in Bristol Bay.

I support Senate Bill 67 which would create a game refuge in honor of Jay Hammond. This area is incredibly important not only for sockeye and other salmon, but the Mulchatna caribou herd which was recently described as a declining population, prompting the Board of Game to restrict hunting regulations.

Sincerely,
Tyler Dann

--
Tyler Dann
PO Box 211576
Auke Bay, AK 99821
(907) 230-3964
tylerdann@gmail.com

From: Sonny Petersen [sonny@katmailand.com]
Sent: Thursday, February 22, 2007 4:57 PM
To: Rep. Paul Seaton
Subject: HB 134

February 22, 2007

Rep Paul Seaton
State Capitol, Rm 102
Juneau AK 99801-1182

Dear Representative Seaton,

This letter is to express my support for HB 134, "The Alaska Wild Salmon Protection Act". We all know that this bill is intended to protect the Bristol Bay fisheries from the Pebble Mine.

I am no fan of Pebble Mine, but I am no bunny-hugger either. If it were oil development at the pebble site, I would welcome it as a project worth the risk. With oil, pollution only happens if the valuable product itself is spilled by accident. Open pit mines create pollution as an inevitable byproduct that must be forever contained. This is a significant difference.

If Northern dynasty says they promise "no net loss of fish", then why do they oppose HB 134? You just have to wonder.

I will support Pebble when it can be developed without a polluted tailings pond that will inevitably leak into the watersheds. In order to do this, the tailings would have to be disposed of elsewhere, very expensive. This will probably never happen. Let's pass HB 134.

Raymond F. Petersen

From: Rep. Paul Seaton
Sent: Tuesday, February 20, 2007 2:02 PM
To: louie.flora@legis.state.ak.us
Subject: FW: Support for the Wild Salmon Protection Act

-----Original Message-----

From: Mark Luttrell [mailto:prufrock@arctic.net]
Sent: Friday, February 16, 2007 11:01 AM
To: Rep. Craig Johnson; Rep. Paul Seaton; Rep. Carl Gatto
Subject: Support for the Wild Salmon Protection Act

Representatives Seaton, Johnson and Gatto:

I fully support HB 134.

Here's why:

Salmon is a healthy alternative to store-bought red meat.
Subsistence users and their lifestyle depend on it.
Bristol Bay fisheries depend on it. The fishery is already suffering plus is threatened by oil and gas development.
Mining proposals in the area present the largest threat to a single ecosystem ever considered in Alaska.
Big Mine and big industry in general has a horrible track record.
There is zero reason to think they won't rape ruin and run.
Finally, protect the ecosystem for its own sake, regardless of how it benefits us.

Thank you

Mark Luttrell
Seward

From: Doralee Stancil [doralee@skywagons.com]
Sent: Monday, February 19, 2007 1:21 PM
To: Rep. Craig Johnson; Rep. Carl Gatto; Rep. Paul Seaton
Subject: Bill HB 134

Rep. Bryce Edgmon (D-Dillingham) introduced a Bill to Protect Wild Salmon in Bristol Bay. This bill, HB 134: "The Alaska Wild Salmon Protection Act," protects wild salmon throughout the Bristol Bay watershed, including the five major river systems that flow into Bristol Bay, home to the world's largest sockeye salmon runs. Edgmon's bill would add common sense safeguards to legislation championed 35 years ago by Alaska's late Governor Jay Hammond during his time in the Alaska State Senate.

The Wild Salmon Protection Act would protect Alaska's greatest salmon fishery by prohibiting the withdrawal, obstruction, pumping or pollution of surface or subsurface water in any Bristol Bay drainages that support salmon. The legislation also prohibits the destruction of salmon habitat, creates a fining schedule for violating these protections, and protects existing water uses authorized prior to the passage of the bill.

Commenting on the Bill, Representative Edgmon noted, "As a legislator, Jay Hammond saw fit to add protections to this valuable area in 1972 before allowing oil exploration. HB 134 adds protections to the same area at a time when mining on a massive scale is being proposed. If mining is to eventually take place in our watershed, I want to make sure that our clear-running salmon streams and rivers are not put at risk."

My husband and I live in Eagle River and have a wilderness cabin out at Lake Clark. PLEASE PASS HB 134!

We are very concerned that any mining done does not affect our wild salmon, trout and therefore all other wildlife in the Bristol Bay Area.

Sincerely, Doralee A. Stancil

From: MSandberg@aol.com
Sent: Friday, February 16, 2007 4:13 PM
To: Rep. Paul Seaton; Rep. Carl Gatto; Rep. Craig Johnson
Subject: Support for HB 134

Dear Rep. Seaton, Gatto, and Johnson:

I urge you to support HB 134 to protect one of the most important natural resource industries Alaska has--wild salmon. The commercial fishery and sports fishery of the Bristol Bay region is critical to the economic health of the state.

The salmon, as you know, drive the ecosystem, and without the healthy stock, the entire ecosystem will fail.
Kate Sandberg, Girdwood

From: Jce&Berda's [joeberda@gci.net]
Sent: Thursday, February 15, 2007 9:03 PM
To: Rep. Paul Seaton
Subject: HB 134

Please support HB 134 to protect Bristol Bay watershed now! It is important for my families life, we live and fish there every year! NO PEBBLE MINE EVER!
Thank you for hearing our voices,
Roberta Webb

February 16, 2007

Dear Representative Paul Seaton,

Subject: HB 134

I would like to express my strong support for HB 134: "The Alaska Wild Salmon Protection Act". The Bristol Bay Watershed; a renewable, healthy, and clean economic engine deserves our strongest protections. This common sense Legislation is a necessary safeguard that will protect the Bristol Bay watershed and all those who depend on the Greatest Fishery in the World.

Respectfully,

Dennis D Gann

To: Rep Paul Seaton
Rep. Craig Johnson
Rep. Carl Gatto

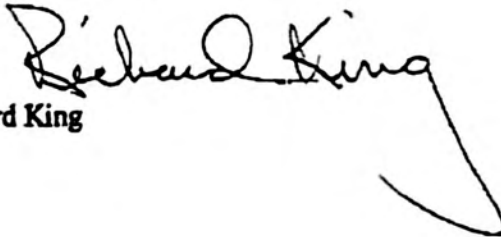
From: Richard King

Date: February 22, 2007

Dear Sirs

My name is Richard King I live on the Nushagak River. I would appreciate it if you would support HB 134. Allot of people who live in the bush rely on fish just to live. I support you in your effort on 134. Please stay the course and don't listen to an education that says we can pollute our watershed. It takes men & woman of character to stand up and be counted.

Sincerely

A handwritten signature in cursive script that reads "Richard King". The signature is written in dark ink and has a long, sweeping tail that extends downwards and to the right.

Richard King

From: Rep. Paul Seaton
Sent: Wednesday, February 21, 2007 8:01 AM
To: louie.flora@legis.state.ak.us
Subject: FW: HB 134

From: Brenton Alexander [mailto:bjalexanderak@yahoo.com]
Sent: Tuesday, February 20, 2007 8:49 PM
To: Rep. Paul Seaton
Subject: HB 134

The Honorable Paul Seaton:

My name is Brenton Alexander. I am a 29 year resident of Alaska, I have a B.S. in Civil Engineering from Stanford University, and I work on environmental remediation projects throughout the state. I am writing to express my full support for HB 134. I believe the passage of this bill is crucial to ensuring the continued protection of the Bristol Bay anadromous fisheries resource in the face of the growing Alaska hard rock mining industry. We Alaskans would be naive to simply rely on the purported goodwill of the mining industry to protect our wild salmon. It is an economic reality, that there is practically no incentive for the mining industry to avoid significant and irreparable harm to the Bristol Bay watershed, in light of potentially billions of dollars of profit they stand to extract from Alaska lands. We must implement strict parameters on industry practices that are backed by significant punitive measures to ensure that harming wild salmon is not an acceptable, affordable cost of conducting mining operations in Bristol Bay. HB 134 is to the benefit of all Alaskans, and I urge you to promote its passage.

Thank you,
Brenton J. Alexander
22747 McManus Dr.
Chugiak, AK 99567
688-2271

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To: Rep Paul Seaton
Rep. Craig Johnson
Rep. Carl Gatto

From: Joshua King

Date: February 22, 2007

Dear Sirs

My name is Joshua King I live on the Nushagak River. I hunt and fish on the Koktuli River, I would appreciate it if you would support HB 134. Allot of people who live in the bush rely on fish like me. I support you in your effort on 134. Please pass 134 I am 11 years old. I have two sisters that are older then me I have one younger brother and sister. Zecharia is two and Quinn is 6 months old. If they turn this area into a mining district what will we do for food. Please pass 134

Joshua King *Joshua King*

From: Cody McCanna [cmccanna@swrds.org]
Sent: Friday, February 16, 2007 8:09 AM
To: Rep. Paul Seaton
Subject: HB 134

Dear Mr. Seaton,

I live in Southwest Alaska in the small village of Koliganek. I personally use the Nushagak River, Mulchatna River, Nuyakuk River and various creeks in the Bristol Bay area for fishing and hunting. Call it subsistence if you'd like, but I simply call it my lifestyle.

The five species of Pacific salmon that use the Bristol Bay watershed are the most important resource in our area. Not only are they the number one commercial industry. These salmon support the entire ecosystem as a keystone species.

In short, please consider HB 134. Bristol Bay salmon spawning beds need to be protected and the only way to protect them is to ensure high water quality in the area.

Thank you for your time,

Cody S. McCanna

From: Dale [dalegus@earthlink.net]
Int: Friday, February 16, 2007 2:21 AM
To: Rep. Paul Seaton
Subject: HB 134

Dear Representative Seaton,

I am a resident of Minnesota and have traveled many times to the Bristol Bay watershed to fish for the awesome sockeye and king salmon in that area. I have been following the mining issues in this area and agree with the provisions of HB 134 as a means to protect that Alaskan asset.

Protecting the unique wildness and preserving the existing pristine habitat is truly worth fighting for. I encourage you to support HB 134 to protect what will continue to bring me to Alaska. The tourism dollars will continue to come to Alaska long after the dollars from minerals have dried up.

Dale A. Gustafson
1845 Wisconsin Ave N
Golden Valley, MN 55427
dalegus@earthlink.net

From: charles gregory [visionati@ca.rr.com]
Sent: Friday, February 16, 2007 8:05 AM
To: Rep. Paul Seaton
Subject: Yes on HB 1134!!!

Dear Representative Seaton:

Support This bill, HB 134: "The Alaska Wild Salmon Protection Act,"
This bill protects wild salmon throughout the Bristol Bay watershed, including
the five major river systems that flow into Bristol Bay, which is home to the world's
largest sockeye salmon runs. The rest of the country needs and is watching this closely,
Help secure a future for this great asset of Alaska.

Thank You,
Charles Gregory

From: kimbrough mauney [kimbroughred@yahoo.com]
Sent: Friday, February 16, 2007 11:51 AM
To: Rep. Carl Gatto; Rep. Paul Seaton; Rep. Craig Johnson
Subject: Support HB 134 please!

Hello Representatives,

I lived in Anchorage from December 2004 to August 2006. I am away now for graduate school, but plan on returning to Alaska within 2 years to work and live. My partner, who fishes commercially out of Pilot Point, joins me in encouraging you to support the passage of HB 134. This is necessary now perhaps more than ever to protect the resources of the Bristol Bay watershed. Please do not let such an opportunity to protect and conserve fall by the wayside. Vote in support of this bill please.

Thank you very much, Kimbrough Mauney

Any questions? Get answers on any topic at [Yahoo! Answers](#). Try it now.

From: Ruben Guetschow [guetschow@gmail.com]
Sent: Friday, February 16, 2007 11:31 AM
To: Rep. Paul Seaton
Subject: HB 134

Representative Seaton,

I am writing to express my strong support for HB 134. Having spent most of my life in Alaska and working in the restaurant industry in Homer, I have developed the strongest appreciation for wild Alaskan salmon, which are today facing a grave threat from mining.

Sincerely,
Ruben Guetschow

From: John Conner [oldbuffalo@etcmail.com]
Sent: Monday, February 19, 2007 4:39 AM
To: Rep. Paul Seaton
Subject: Support HB134

Rep Seaton--I'm writing to urge you to SUPPORT HB134.

The potential for disaster to Bristol Bay and it's fisheries and watershed (and the Alaskans who depend on it for a living and recreation) is just TOO GREAT. When added to the damage to the land and wildlife at and around the mine siite, this is just simply too much. There is nothing worth the damage and risk the mine would create. This should be a NO BRAINER. Please SUPPORT HB134.

John R. Conner, Palmer, AK

From: Leah Elwell [conserve@fedflyfishers.org]
Sent: Friday, February 23, 2007 2:30 PM
To: Rep. Paul Seaton
Subject: letter supporting wild salmon legislation

Please find below a letter supporting wild salmon legislation.

Leah C. Elwell
Conservation Coordinator
Federation of Fly Fishers
215 East Lewis St.
Livingston, MT 59047
406-222-9369 X102
406-222-5823 fax
conserve@fedflyfishers.org



FEDERATION OF FLY FISHERS™
Conserving – Restoring – Educating Through Fly Fishing

215 East Lewis Street
Livingston, MT 59047
(406) 222-9369
(406) 222-5823 fax

February 23, 2007

Rep. Paul Seaton
Fisheries Chair
State Capitol, Rm 102
Juneau, AK 99801-1182

Dear Representative Seaton

The Federation of Fly Fishers is a national organization, which represents conservation interests of thousands of fly fishers nationwide. In addition to our members in Alaska, our constituents recognize and appreciate the significant value of wild fish and preserving their legacy. Additionally, the Federation of Fly Fishers has a long history of working with diverse groups to achieve conservation goals that benefit wildlife. On behalf of our members, the Federation of Fly Fishers is pleased to support HB 134, a Bill to protect Wild Salmon in Bristol Bay.

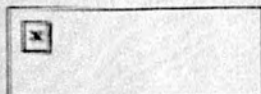
The Wild Salmon Protection Act would protect Alaska's greatest salmon fishery by prohibiting the withdrawal, obstruction, pumping or pollution of surface or subsurface water in any Bristol Bay drainages that support salmon. The legislation also prohibits the destruction of salmon habitat, creates a fining schedule for violating these protections, and protects existing water uses authorized prior to the passage of the bill.

The Federation of Fly Fishers has been a vocal advocate for protecting the Bristol Bay area and the

irreplaceable wild salmon fisheries of Alaska. We believe the protection of wild salmon will benefit not only the legacy of salmon, but the economy of Alaska.

Thank you for your support of fisheries conservation.

Sincerely,



R.P. VanGytenbeek
CEO/President
Federation of Fly Fishers

LAW OFFICES OF BRUCE F. STANFORD, LLC

**Signature Building
745 West Fourth Avenue, Suite 230
Anchorage, Alaska 99501
United States of America
Tel. (907) 272-4114 Fax (907) 272-4116
stanlaw@alaska.net**

February 16, 2007

Rep. Paul Seaton
Fisheries Chair
State Capitol, Rm 102
Juneau, AK 99801-1182

Re: HB NO. 134: "An Act relating to conservation and protection of wild salmon production in drainages affecting the Bristol Bay Fisheries Reserve; and providing for an effective date"

Dear Representative Paul Seaton:

My name is Bruce F. Stanford and I vigorously support HB NO. 134 to protect the Bristol Bay drainage from harm due to the proposed Pebble Mine. I cannot think of a more asinine project than the Pebble Mine. We all have a duty to protect our natural resources, the Bristol Bay sockeye salmon fishery is a world class resource. I fished in Bristol Bay for over 20 seasons. My children Jay and Lauren still commercial fish with their mother in Naknek and spend time with Bella out at Lake Clark. I had the privilege to hunt and fish in the proposed site for the Jay S. Hammond reserve. I recall Jay took my father and I out some years ago on a caribou hunt nearly right smack dab in the area where the proposed mine is supposed to be excavated. I believe that HB No. 134 will aid in the protection of the region. I RESPECTFULLY REQUEST YOUR SUPPORT FOR THIS LEGISLATION NOW. Thank you.

Regards,

LAW OFFICES OF BRUCE F. STANFORD

By:


Bruce F. Stanford

Ben Nygren's testimony on HB 134, 3/5/07

My name is Ben Nygren, and I am here representing myself. I support the aim of HB 134, which is the protection of the waters which nourish Bristol Bay's prodigious and lucrative salmon runs. These local salmon populations are a renewable economic and cultural treasure. Industrial scale removal of water from the streams in which this treasured resource rears would be just like sucking part of the air out of someone's home.

I was reared in Portland, Oregon, a short distance from the mighty Columbia River. This river was formerly home to one of the world's greatest salmon populations. Careless development has slashed this stock to a shadow of its former self. Billions of dollars have been spent to restore the Columbia watershed's salmon to their pre-development levels, with the successful outcome still far from certain. With wild salmon taking hits all over the world, what a great feeling it is that our Bristol Bay stocks are still in relative good health.

If the waters of our salmon streams are diverted for the purposes of extracting, transporting or storing sulfide bearing mineral ore, there would be in my opinion an unacceptable risk that these once pristine waters would come back to haunt us in the form of sulfuric acid, dissolved heavy metals and other toxins.

I don't see this bill as favoring one industry over another. When an industry pollutes, or otherwise damages our environment, without incurring a cost, that industry is not paying the full true cost for their activities. If denying mining companies these salmon bearing waters for their industrial use adds to their cost of doing business, then that added cost is only bringing them closer to paying the true overall cost for their activities.

My family has a heritage in the mining industry. My father and two generations before him worked part of most of their lives in the Montana mining industry. I am not opposed to mining and recognize its importance in our world. The headwaters of Bristol Bay's important salmon streams are however the wrong place for industrial scale mining.

Illustrations of environmental detriment incurred elsewhere in our country, which may be analogous to future industry caused problems in the Bristol Bay watershed include:

- 1) The Berkley pit in Butte, Montana. This now closed open pit copper mine is over one mile in diameter and 1800 feet deep. After mining operations ceased, it filled with toxic stew of arsenic and heavy metals so thick that the water itself is mined, and is now the nation's largest body of contaminated water. Though ARCO, the sites owners, deny this poses any risk to human or wildlife health, a 1995 incident where 342 snow geese died after landing on the site may lead one to question ARCO's credibility when speaking to their sites safety. The estimated total cost for cleanup and control at the pit is \$110 million.
- 2) On June 5, 1976 an earthen dam, the Teton Dam, in Idaho failed spectacularly. Downstream communities were severely damaged, and the government was liable for \$322 million dollars in claims. A few hours of advanced warning afforded many the chance to flee to safety, but 11 lives were still lost.

Thank you for the opportunity to testify.

Post-it Fax Note	7671	Date	3/5/07	# of pages	2
To	Rep. Paul Seaton	From	Mike McCarthy		
Co./Dept.	Chair - Fisheries	Co.			
Phone #	465-2689	Phone #	235-5597		
Fax #	465-3472	Fax #	11		

P.O. Box 957
Homer, AK 99603
March 2, 2007

Representative Paul Seaton, Chair Fisheries Committee
State Capitol, Juneau, AK 9980-1182

Re: House Bill 134

Dear Representative Seaton and Committee Members:

I am in support of the intent of HB134, providing some modifications be made to allow for limited development under more stringent standards than are presently in place. Thank you for hearing my testimony today.

I reside in Homer and have been an Alaskan resident since 1987. My background includes being a retired Registered Geologist, (Oregon # 611), with experience in exploration hard rock mining of gold, silver, copper, lead, zinc and barite deposits as well as environmental geology. I have done geologic work in Alaska, Arizona, Idaho, Montana, Nevada and Oregon.

It is gratifying that HB 134 is a bipartisan effort because it will take the best efforts of all minds, not just those of Democrats or Republicans to resolve this issue in a manner that best protects Alaska's future. My focus is a pragmatic one. The passage of this good idea made into law would save much calamity, litigation and money. HB 134 can be likened to an insurance policy. We don't plan on a fire or a car accident but just in case we buy insurance protection. It is there in case something happens.

What could happen in the Bristol Bay watershed without the safe guards of HB 134? Perhaps another Butte, Montana Berkeley Pit one of America's largest Superfund clean up sites. Originally a series of underground mines that began in the 1870's and ran until 1972 when underground mining was no longer economically feasible, the workings included 42 miles of vertical shafts and 2,700 miles of other passageways. The pit first operated in 1955 and closed in 1982 after approximately 1 billion tons of material was mined. The pit measures 1.5 miles east to west, 1 mile north to south and is approximately 1,780 feet deep. The pit is presently flooded to a depth of 900 feet and contains 30 billion gallons of water with a pH of 2.5. There is an inflow into the pit of both surface and ground water that measures approximately 5,000 gallons per minute or 7.2 million gallons per day.

This 30 billion gallons of highly acidic water contains high concentrations of arsenic, copper, cadmium, cobalt, iron, manganese zinc and sulfate. In 1995 a large flock of migrating snow geese landed on the Berkeley Pit and were killed, most likely by the high concentration of acid. There were 342 carcasses recovered. Their livers and kidneys had bloated and many had an eroded esophagus. (wikipedia/Berkeley Pit). These contaminated mine waters require constant costly mitigation efforts to protect the areas' surface and ground water supplies.

I have personal knowledge of two additional contaminated mine areas that merit consideration. The first is Cobalt, Idaho which I last visited in 2005. The mine waters flowing out of the abandoned mine adits are thick with brown ooze which coats everything it contacts including the ground and rocks adjacent to the stream bed of Black Bird Creek. Approximately three miles down stream from the nearest adit is a warning sign posted next to the creek. The sign reads, "BLACKBIRD CREEK IS UNSAFE FOR DRINKING WATER". It should be noted that the water in the creek here is no longer the ugly brown ooze but yet is still unsafe. I have attached photos of this because they have reference value for the next area, the South Fork of the Coeur d'Alene River by Kellogg, Idaho.

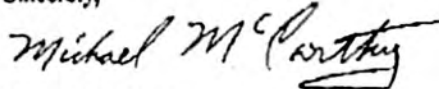
It was 1955 when I first saw this river which is approximately the same width as the Kasilof River where the Sterling Highway crosses it, or about 150 feet wide. The South Fork of the Coeur d'Alene River was very nearly the same color and clarity as Blackbird Creek only it was 15 times wider. More than fifty years later this river and the Coeur d'Alene mining district are another Superfund clean up site. The same potential for contaminated mine water run off exists for the Bristol Bay Fisheries Reserve unless the safeguards of HB 134 are enacted.

The 1872 mining law as it currently exists contains no protections from mining pollution; it gives preferential treatment to mining over other land uses; it grants special tax breaks to the mining industry and it allows the sale of public lands for less than \$5.00 an acre. Perhaps HB134 could be modified to incorporate some features of the Federal Mineral Development Act of 2005. This Act was not passed into law but it was designed to help protect water resources. Please contact Montana Environmental Information Center for details, phone (406) 443-2520 or meic@meic.org

I am faxing a 2006 report titled: Predicting Water Quality Problems At Hard rock Mines by Ann Maest, PhD and Jim Kuipers, P.E. This report shows that a review of 104 Environmental Impact Statements for 71 major hard rock mines in the United States produced a startling finding. The reports for these mines were evaluated for predictions related to surface water, ground water, and mine drainage quality during and after mining. These predictions were then compared with actual water quality conditions during and after mining. A shocking 76% of mines polluted groundwater or surface water severely enough to exceed water quality standards. Of the sites that did develop acid drainage, 89% predicted that they would not. In short there is a universal vast discrepancy between predictions and reality. The Bristol Bay Fisheries Reserve is too critical a resource to risk on the imperfect science of mine water quality prediction.

Thank you again for the opportunity to comment.

Sincerely,



Michael McCarthy



Lake and Peninsula Borough

P.O. Box 495
King Salmon, Alaska 99613

Telephone: (907) 246-3421
Fax: (907) 246-6602



April 2, 2007

The Honorable Representative Paul Seaton
State Capitol, Room 102
Juneau, AK 99811-1182

Dear Representative Seaton:

I am writing you about HB 134, the proposed Bristol Bay Fisheries Reserve. A reading of the bill shows a number of significant concerns, and I would like take this opportunity to describe them.

Concerns Outlined by Bristol Bay Native Corporation. Jason C. Metrokin, a Director of the Bristol Bay Native Corporation, outlined the Corporation's concerns with the bill. The Borough concurs with the concerns expressed by BBNC, but would add the additional concerns expressed below.

An Admission that Environmental Protection and Economic Opportunity cannot Co-exist.

We are concerned about the philosophy that environmental protection and economic opportunity cannot co-exist. The Lake and Peninsula Borough Assembly has previously stated by resolution that with appropriate regulation and permitting by federal, state, and local governments, we can find ways to develop our region and still maintain the resources we rely on. The Assembly has further stated that if a "project is not shown to adequately protect Borough fisheries, water quality, natural resources, and social and cultural values, we will oppose it." The proposed fisheries reserve takes a different approach: it prohibits any activity — no matter how well planned and environmentally compatible — that does not fall on a pre-determined list of legislatively approved uses.

Such an approach is an admission that nothing outside of the approved list in the bill can be environmentally appropriate. It is an admission that economic development and environmental protection cannot mutually co-exist. We disagree.

The Bill Treats Identical Activities Differently. Two activities that have an identical impact on the environment are treated differently under the bill. Impacts that support a use that are not included on the legislatively approved list are prohibited. Identical impacts that support a use on the list are allowed.

For example, a community dock in the river that requires minor alteration of the bed of the river is apparently allowed; the same dock for a lodge is prohibited. A simple powerline that requires a minor amount of wetland fill is prohibited if it goes to a small dwelling to be used for a business. If it is used for a municipal use, it is allowed. Indeed, the number of comparisons of this type is close to endless.

If an activity's impacts cannot protect our environment, it should be prohibited. If it can protect the environment, it should be allowed. It is inappropriate to treat similar impacts differently, independent on their environmental impact or public need.

If the Permitting Process is Broken, We Should Fix it — not

pre-empt it. The bill would effectively prohibit agencies from issuing authorizations for activities not on the legislative "approved" list. Below is a *partial* list of agencies and permits that the bill would pre-empt for activities not on the legislative "approved" list.

- Alaska Water Use Act. DNR's temporary water use permit and water right.
- Clean Water Act — Section 404. Corps of Engineers "wetlands permit."
- Clean Water Act — Section 402. EPA water discharge permit (eliminated in most cases).
- Clean Water Act — Section 402. EPA Stormwater discharge permit.
- Clean Water Act — Other Sections. EPA underground injection permit.
- Clean Water Act — Other Sections. EPA Stormwater discharge permit.
- Alaska 401 Certifications. DEC certification of federal Clean Water Act Permit (eliminated in most cases).
- Alaska Solid Waste Permit. DEC permit for solid waste (eliminated in many instances, such as tailings, because it typically requires discharge or alteration of hydrology).
- Alaska Dam Safety Statutes — DNR certificate to build or operate a dam.
- Fish Habitat Permit — DNR permit activities affecting fish habitat of anadromous fish streams.
- Fish Passage Permit — DNR permit for activities affecting passage for non-anadromous fish.

If these permit process are inadequate to protect our resources for activities outside the "approved list", we should amend the processes — not pre-empt them by legislative fiat. If these processes are *not* adequate for some activities, we see no reason why they *are* adequate for energy projects, seafood processing, or other activities on the legislative list. In general, if there is a problem with Alaska's permitting processes, we should fix the problem — not pre-empt it. And especially not pre-empt it for some uses but not others.

It makes Some of Our Citizens into Criminals. There are many of our citizens who operate businesses and activities within the Borough that probably do not have all of their authorizations up to date. For example, a brief review of fishing lodges shows that many lack the required water rights. If this bill passes, the owners would be liable for fines up to \$1 million per day. And they would have no opportunity to get the authorizations they lack — even if their business created no significant environmental impact.

The Death of Our Villages. To prohibit agency permitting for anything not on some list we think of today could eliminate the possibility of economic activity on federal, state, and private lands tomorrow. Our citizens are industrious, creative, and innovative. If we set the rules, we can determine methods of creating lives for ourselves in a manner that protects the environment. I fear that eliminating the economic opportunities for our citizens will lead to eventual elimination of our villages, as well.

Our communities desire to be vibrant producers for the State and not condemned to perpetual poverty by carte blanche application of a mindset that basically concedes that humankind is not intelligent enough to engineer ironclad solutions to whatever thorny problems face us.

The communities in the Borough are losing population. The Lake and Peninsula communities lost 13% of its population between 2000 and 2004. Our 2000 population was over 1,800 people. Four years later it was less than 1,600. This is a big change for our small communities. Our communities need economic development opportunities. There is no question that we must develop those opportunities in a way that protects the environment. However, limiting economic development only to a list approved by today's legislature is not the answer.

I hope this information is helpful. After explanation and discussion, we may find that some of the concerns are unwarranted. It is also possible that we may identify others. One important way to do so is to ensure that our citizens get a fair opportunity to participate. For that reason, I would request that if this bill is advanced for further hearing, that you ask the committee to hold hearings in each of the affected villages. Clearly our future is at stake, and we need to be heard. In any case, we look forward to continued discussion with you about the proposal.

Thank you for your consideration.

Sincerely,

A handwritten signature in dark ink, appearing to read "Glen Alsworth". The signature is fluid and cursive, with a large, stylized initial "G" and "A".

Glen Alsworth
Mayor

Written Testimony for House Special Committee on Fisheries

Prepared and given by Jason Metrokin on behalf of Bristol Bay Native Corporation and Board of Directors

Re: HB 134 - "An Act relating to conservation and protection of wild salmon production in drainages affecting the Bristol Bay Fisheries Reserve; and providing for an effective date."

Mr. Chairman and Committee Members:

My name is Jason Metrokin. I am a shareholder and Board Member of BBNC. I am speaking today on behalf of Bristol Bay Native Corporation's Board of Directors and our shareholders.

We disagree with the blanket legislation outlined in HB-134 because it impedes economic and community development.

First, let me clarify that we do not question the need to protect our valuable fish. Wild salmon is the past, present, and future of our Bristol Bay resources. We support the preservation and protection of our region's cultural and commercial mainstay.

But, BBNC believes that carefully considered development can take place in our region without threatening our fish. In fact, many communities in Bristol Bay are relying on development projects:

- to enhance existing infrastructure,
- create diverse business opportunities,
- help lower energy costs,
- improve transportation,
- and allow for safe and healthy livelihoods.

The nature of HB-134 could make these necessary community projects cost-prohibitive, if not legally impossible. We strongly feel that planned and future development in our region should not be at the mercy of legislation designed to single-out one controversial project.

BBNC requests the authors of HB-134 to consider the far-reaching impact of their work and the multitudes of people and communities it has the potential to affect. We suggest that the authors go back to the drawing board and be surgical with their intentions.

I appreciate the opportunity to speak on behalf of Bristol Bay Native Corporation.

From: Larry Johnson [akgift@yahoo.com]
To: Monday, March 05, 2007 9:36 PM
Louie Flora
Subject: HB 134

Good Evening Louie,

I hope Paul is successful in getting the issues separated in this bill.
I think That the Pebble mine project should stand or fall based on it's own merits, taking into account the best interest of the entire State.

Thanks,
Larry Johnson
Seward

Need Mail bonding?

Go to the Yahoo! Mail Q&A for great tips from Yahoo! Answers users.
<http://answers.yahoo.com/dir/?link=list&sid=396546091>

From: Scott Adams [showmethethefish@yahoo.com]
Sent: Thursday, February 15, 2007 10:49 PM
To: Rep. Paul Seaton
Subject: Pebble Mine & Halibut Limit

Hello To All That Represent the People Of Alaska,

I think that passing of a bill and making a special refuge in order to stop the process towards deciding whether or not to open the area to mining, is wrong. This would be a blow to the economy of the stagger Kenai Peninsula and the State of Alaska. I would think that the state could down size the area to where it would be backed by both sides. Most of our fine state is tied up in Federal or State lands, Parks and the likes! And our economy is mostly driven by one resource, it's time to change that and develop more jobs and build more infrastructures.

The halibut limit of one fish by emergency order by AK. F&G for June 15-30 & no crew fish should be rescinded. This will have a major economic effect on the Kenai Peninsula with booking for charters being canceled, as with hotels, B&B's, spending towards restaurants, fishing gear shop, etc will be down. The real problem is the by catch of 14+ million lbs. caught and throw back over the side, mostly dead, by the dragging industry.

I've seen it 1st hand, of what they can do, I've fished for over twenty years and have been on the receiving end of the draggers, telling us to move or lose your gear. Only to come back to the fish the ground weeks later on the location the dragger's dragged, to find nothing there! Their the real problem and the ones to blame.

Scott Adams

Need a quick answer? Get one in minutes from people who know.
Ask your question on www.Answers.yahoo.com

*City of Egegik
P.O. Box 189
Egegik, AK 99579
Phone (907) 233-2400
Fax (907) 233-2231*

Position Statement of the Egegik City Council Regarding HB 134 and SB 67

The Egegik City Council held a regularly scheduled meeting on February 15, 2007 and at that meeting the council members unanimously agreed to the following position statement.

Egegik, as well as our region, depends on the commercial harvest of salmon as a major portion of our economic base. The downturn in the salmon prices over the last several years, along with smaller runs in some years, has resulted in an increasing hardship on local residents to pay the rising cost of fuel, utilities, groceries, etc.. The lower earnings and higher costs of living have forced many residents to leave their homes and move to the more urban areas to find jobs.

For the last three years we have barely met the State's requirement of a minimum of 10 students in our school in order to receive State funding for the school and to keep it open. The next year appears like it will be a significant challenge as well. Should the school close, Egegik would no longer be a desirable community for parents to raise their children and would very likely join other Bristol Bay Communities facing extinction in the largest salmon producing region in the world.

As we struggle to survive, and continue to reside in the place that has been our home for generations, we are looking for other means to maintain our style of life and to grow and thrive once again.

We see hope on the horizon with mining and gas exploration in our region as a major opportunity. We support responsible, ecologically sound, economic development for our region and believe that HB 134 and SB 67 are nothing more than a short sighted attempt to block this development. We, the undersigned members of the Egegik City Council, do hereby **strongly oppose** HB 134 and SB 67 and we object to using the good name of Governor Hammond to try and achieve this objective.

Not Available for Signing
Richard E. Deigh, Mayor

Myra J. Olsen, Deputy Mayor

Not Available for Signing
Gerald Alto, Council Member

Charles Abalama, Council Member

Darrel Bakk, Council Member

Kevin Deigh, Council Member

Henry Olsen, Council Member

February 28, 2007

The Honorable Paul Seaton
Chairman, Special Committee on Fisheries
Alaska State Legislature
State Capitol
Juneau, Alaska 99811

Dear Chairman Seaton:

SUBJECT: Testimony on HB 134

Mr. Chairman and Members of the Fisheries Committee – thank you for giving me the opportunity to testify on this legislation. My name is Gail Phillips. I am a former legislator and Speaker of the House. I am testifying on my own behalf and as the Vice Chairman of a private non-profit organization called “Truth About Pebble”. My testimony will strongly oppose the passage of any version of this bill.

In fact, I think this bill should be renamed from “An act relating to conservation and protection of wild salmon production.....” to a more honest assessment, which would be “the illegal takings of any and all future economic and resource development for the entire Bristol Bay region”.

You have previously heard credible opposing testimony to this unprecedented and transparent withdrawal of over 22 million acres of mineral-productive lands in Southwest Alaska; lands that were specifically identified for mineral development when the State made its land selection.

I am not going to repeat the facts that have previously been presented to you in opposition of this bill; I am, however, going to focus my testimony on three major issues: (1) a blatantly onerous attempt to circumvent Alaska’s legally-established permitting process; (2) the “takings” issue that will result in major lawsuits against the State of Alaska if these lands are withdrawn and restricted; and (3) the constitutional mandates regarding the development of our natural resources for the benefit of all Alaskans.

#1 – Circumvention of the State’s Permitting Process

Alaska is one of the richest resource states in the Union, with many types and vast amounts of natural resources available for development. We have been diligent in our efforts to create comprehensive permitting policies that now insure the safe and profitable development of our resources. As you are all aware, laws pertaining to Alaska’s permitting process are continually updated and refined as new technologies become available.

When I was the Speaker of the House, revising and updating our well-established permitting policies was a high priority. We did not do this in a vacuum – all of these policy refinements were accomplished in an open public process. The best scientific advice was applied, while conforming to State and Federal guidelines and the adamant direction of the people of Alaska to “DO THINGS RIGHT”.

As a result of Alaska’s on-going permitting process, and thanks to many of you for your efforts in this regard, we now have major resource development projects throughout the State that are the most environmentally safe in the Nation.

This blatant attempt to circumvent our permitting process, especially on lands that have been previously identified for mineral and resource development, is egregious and completely contrary to our State’s fairness doctrine.

#2 – The “Takings” Issue:

This bill would specifically stop all mineral development. Yet, at this time we all know that there is a mineral prospect in the area that has the potential to exceed \$200,000,000,000 (billion) in mined product. Geologic exploration and results show this prospect to be one of the largest in the world. If this bill should pass and the millions of acres withdrawn from future mineral development, “takings” lawsuits will be inevitable. We don’t have enough money in the State, including all the assets of our Permanent Fund, to cover the potential amounts of payments that will follow. This one issue alone could easily bankrupt the State of Alaska.

#3 – Constitutional Mandate to Develop our Resources:

Each of you, as I did when I served in the Legislature, took an oath of office to uphold the Constitution of our State. Article VIII – Natural Resources – of our Constitution is very clear about the policy of the State to encourage the development of its resources for maximum public use (Section 2) and that no exclusive right or special privilege of fishery shall be created or authorized in the natural waters of the State (Section 15) and that all laws and regulations governing the use or disposal of our natural resources shall apply equally to all persons (Section 17). I think that an attempt to approve any version of this onerous legislation will put each of you in direct conflict with your promise to uphold the constitution.

Again, I thank you for the opportunity to share my opinion on this legislation. I would be glad to answer any questions you may have.

Thank you.

Gail Phillips
1241 W. 27th, #736
Anchorage, Alaska 99503
277-4867

02/24/2007

The Honorable Paul Seaton
Alaska State House of Representatives
State Capitol Room 102
Juneau, Alaska 99801-1182

George Hornberger
P.O. Box 113
Iliamna, AK 99606-0113
hornberger@starband.net

Dear Representative Seaton,

I am writing in regard to the Pebble Mine prospect in the Iliamna area and also the massive game refuge and fish reserve that is being proposed for the same area. (HB 134 & SB 67)

I have spent the last 44 years of my life in Southwest Alaska between Naknek, Iliamna, Newhalen and Lake Clark.

Over the years I have made my living working for Alaska Dept. of Fish and Game, Fish and Wildlife Protection, trapping, commercial fishing, logging, cutting lumber, commercial flying (for the last 20 years) and several other occupations. I am the President of the Lake and Peninsula School Board and am a member of the Newhalen City Council.

I have chosen to live in the Iliamna / Newhalen area because I love the area and it is a wonderful place to raise children. Also my wife was born and raised here.

Having lived in this area for a good portion of my life, having raised a family here and having a very well rounded resume of work experience I believe gives me a unique and objective perspective in considering the Pebble Mine prospect.

There seems to be a major amount of controversy in Alaska these days over the Pebble Mine Prospect. I hope you noticed I called it a prospect and nothing else. It seems there are a lot of people who are turning Pebble into a mine and it is nowhere near that at this time. It is a prospect and nothing more.

Northern Dynasty spent 21 million dollars in 2006 on environmental studies. Since 2002 they have spent close to 50 million dollars just on environmental studies. These studies involve more than 50 independent consulting firms, with more than 500 people having worked on this project since 2004.

I would be surprised if anything in this great state has seen this amount of study since the Trans-Alaska Pipeline.

From the Pebble Mine Prospect to Iniskin Bay and the shores of lower Cook Inlet there is a no more intensely studied piece of real estate than this anywhere in Southwest Alaska and quite possibly the entire state. There isn't a bird, mouse, fish, plant, insect or body of water that hasn't been analyzed, categorized and scrutinized.

Northern Dynasty is employing some of the best mining and resource development scientists and consulting firms in the world, and close to 75 percent of the 33 to 36 firms are Alaskan.

Northern Dynasty has, as far as I am concerned has done a wonderful job of employing local people from all over the area. I have flown people from as far as Togiak, Twin Hills, New Stuyahok, Dillingham, Koliganik, Ekwok, Aleknagik and all the villages in the Iliamna Lake area to work here in Iliamna for Northern Dynasty.

The prosperity that has come to this area from the mineral exploration is exciting and everyone is excited about things to come yet.

Now we have Bob Gillam and all his hired guns, Renewable Resources Coalition, Bristol Bay Alliance etc. all doing their level best to throw any and all barriers in the way of NDM to keep anything from ever happening here.

I wonder if somehow some of these people don't have ulterior motives in their haste to condemn Northern Dynasty and the Pebble Prospect.

Bob Gillam has his huge lodge at the end of Keys Point. He brings in all his big money clients to play on Lake Clark and the surrounding area. They have big jet boats, jet skis, and float planes. Bob has a huge dock that I think is an eyesore in the waters of Lake Clark. I might add that either HB134 or SB67 (Bob Gillam is supporting both) I can't remember which one, will forbid building a dock like Bob Gillam's. Mr. Gillam is what I call a typical environmentalist. He built his cabin in the woods last year.

Brian Kraft of Bristol Bay Alliance. I know Brian personally. What is his motive? Brian has his huge lodge on the Kvichak River. He makes money bringing in high paying guests to go flying in his floatplanes (which are very noisy). They race jet boats up and down the rivers and streams (which tear up the salmon beds) When Brian is done for the summer he locks up his big fancy lodge and leaves.

I doubt if Mr. Kraft or Mr. Gillam has ever thought of doing an environmental study of what their jet boats do to the rivers, how much pollution they pump into our pristine waters. How much their noisy airplanes annoy the local people when we have to hear them take off at 6 in the morning to take their rich fishermen out to go fishing.

I really wonder why these people don't want any development in this area. Could it be because they don't want anyone else here in the way of their lodges? I don't believe they are only interested in environment. They don't even live here. All they do is come out here, take advantage of the local resources then leave. What have they invested in the local economy?

Northern Dynasty employs local people almost year around. I believe most of the people employed out here had only a month off between December and January. This is something that Bob Gillam, Brian Kraft, and the Renewable Resources Coalition do not do and I have not heard their plan (and I certainly hope they have one) for employing all the local people whom they would like to put on the unemployment roster.

We cannot continue to be entitlement villages forever. We have a project here that has the potential to bring industry and infrastructure to the Iliamna Lake area and beyond. People are working. This means they are not on welfare or unemployment.

To work for Northern Dynasty a person must pass a drug test. This means that anyone who is working is not doing drugs. This project is not only bringing prosperity to the people out here, it is also cleaning up the villages.

I have lived here for a long time. In the last few years I have seen local people go from wondering how they are going to pay for their winter heating fuel to being proud that they have a good job and can afford to not only pay for the fuel but afford to go to the State Fair too. This prosperity is not from Bob Gillam, the Bristol Bay Alliance or the Renewable Resources Coalition.

No one who lives and works here is willing to "give the farm" away to Northern Dynasty. We all recognize that there is a lot at stake here. We all eat salmon. We all hunt caribou and moose. We all live a subsistence lifestyle. We do want to give Northern Dynasty the chance to finish their exploration and start the permitting process.

The Pebble land was open for mineral exploration and if it is shut down now the State will be sending a loud message to all mineral exploration companies that it is not a friendly place for mineral exploration. This state was virtually founded on the backs of miners and the mining industry. Is this the kind of message we want to send out to the world?

Commercial fishing is not a way to make a year around living anymore and unfortunately a lot of people out here sold their permits so that makes NDM even more of an attractive employer.

I think it is interesting that a lot of the people who are heading up the opposition to Pebble are not from the Iliamna Lake area. They are from elsewhere and make their money elsewhere. We live here. We pay the incredible prices for fuel and gas. Stove oil is \$5.05 per gallon. Gasoline is \$5.34 per gallon. Electricity is 48 cents a KWH. If you want to build a house you can double the price you would pay in Anchorage because of airfreight prices.

I am not a politician, so perhaps I am not reading HB 64 and SB 167, as I should and understanding it, as I should. Perhaps there is something I am missing. What I don't think I am missing is the fact that they both stink and are designed to put Northern Dynasty out of business as far as Pebble is concerned.

If the Pebble Prospect is brought to production it has the potential to bring in affordable power and cheaper gas and oil. It has the potential to improve our schools and villages through taxes. It will

offer good jobs to local people, even more jobs than there are now. It will mean a road to the coast where we could have barge and ferry service.

I guess the point of this whole letter is that we have something happening here that is pulling this area out of the gutter and bringing jobs and hope to the local people from all over Southwest Alaska.

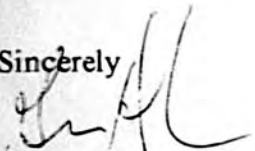
If the politicians, Bob Gilliam's, Renewable Resources Coalition people, Bristol Bay Alliance, etc can shut this down just because they don't like it, then I hope they have an alternate plan for this area that will continue to put people to work. If not, then they better bring their checkbooks when all the work is gone and people are on unemployment again.

I would like to end by stressing again that no one is in favor of just signing this whole project over to Northern Dynasty and telling them to have a good time with the land. We must make sure that all permitting follows the letter of the law. BUT if they can satisfy all the requirements and get all the permits then lets make Pebble a model for mines to follow.

I cannot support SB67, which would create the Jay Hammond Wildlife Refuge. Even the name of this is designed to play with people's emotions.

I knew Gov. Jay Hammond personally. Bella Hammond was my teacher in second grade. I used to work for Gov. Hammond at Lake Clark. He was a great man and Bella is a fine person and I respect her as much as anyone I have ever respected. I agree that there could be better places for a mine. But this is what we have, the United States and Alaska need the mineral resources and Southwest Alaska has everything to gain if this is done properly and to the letter of the law.

Sincerely



George Hornberger

CC: All State Senators
All State Representatives
Senator Ted Stevens
Representative Don Young
Senator Lisa Murkowski
Lt. Governor Sean Parnell

From: Eddie Angasan [eddie@bristolbay.com]
Sent: Wednesday, February 28, 2007 6:29 PM
To: Rep. Paul Seaton
Subject: SB 67 & HB 134

Dear Representative Seaton ,

As a resident and a commercial salmon fisherman in the Bristol Bay region, I want to express my opposition to any plans to develop a fish refuge in the region (Senate Bill 67 and House Bill 134). We are already surrounded by enough refuges, reserves, State and National Parks.

Those of us who live here see the need to keep our options open to future economic development - whether it's the Pebble project, oil & gas development or any other economic opportunities that this fish refuge might preclude. We can no longer afford to be the play ground for the rich who come here to play or for the special interest groups that want to involve themselves in our lives. We can no longer allow them to dictate to us what is in our best interests.

There is no group more concerned about the protection of our fish and wildlife resources than those of us who live here. But we also know that Alaska has a system in place for ensuring environmental protection that has a proven track record.

Too often, policy makers can be convinced to rush to make a decision for the sake of satisfying political promises made to special interest groups or to the wealthy that made campaign contributions. I want to assure you that many of us that live in this region recognize the long-term impacts of pushing ahead with this fish refuge proposal at the expense of important future economic opportunities and that of our grand kids future to be able to provide for themselves. For those that want to stop development within our region of the state, what solutions do they have to provide economic diversity and security for us. The answer is nothing !!

The late Governor Hammond has passed on, don't bury our chances of economic diversity and security with him all because someone said that this is what he wanted. I heard him say many things but nothing about making a fish refuge in Bristol Bay. People are trying to romanticize and twist his words. He was all for economic development. Infact in the early 60's as our State Representative he was successful in getting a resolution passed in the State legislature to develop a road from the Bristol Bay Borough thru the Katmai National Park to a ferry terminal on the salt water side to promote economic development and to reduce the cost of living to the region. As shown here:

<http://www.nps.gov/archive/katm/adhi/adhi4a.htm>

We still need a road, railroad or a dirt path to Anchorage, Interior Railbelt or to a ferry terminal to promote economic opportunities and to reduce the cost of living to the region. Forgive me, but this is what the our State Legislature should be working on not trying to find

ways to stop economic development from occurring with in Bristol Bay. We still need ground transportation.

We live in a cash economy, we need more than just the ability to pick some berries and put some fish in the freezer. Please don't allow this legislation to be adopted, don't take away my grand kids opportunity to provide for themselves by having economic diversity and security with in Bristol Bay.

Take care and be safe,

Mark E. Angasan

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Alaska State Legislature

Please enter into the record my testimony to the HFSH
committee name
committee on HB 134, dated 02/28/07
bill/subject

I am opposed to the passage of House Bill 134, an Act which extends the 1972 Bristol Bay Fisheries Reserve to the river systems, ground water, aquifer and all drainage systems that connect to the surface water of Bristol Bay.

This Act, to take effect immediately, inappropriately usurps future energy development in an area that was specifically selected for its significant mineral potential, by literally turning off the tap.

This Act will make a blanket moratorium on nearly all future industrial, commercial or infrastructure development, including the proposed Pebble Mine project.

This Act denies those that live in the Lake and Peninsula Borough, an area with some of the highest unemployment rates in the State, opportunities to learn new skills and trades, gain improved medical care and increased educational opportunities.

What this Act does achieve is to add fuel to the fire that allows policy-making decisions be made based on emotional outbreak and knee-jerk reactions instead of from data and sound research found from the rigor of technical and environmental studies.

We must not be afraid to look for Alaska's future. To summarize, I would like to quote my good friend, David Gottstein, who noted the area that will be impacted by House Bill 134, has "too much potential to just reject out of hand. We all need to know the truth."

I respectfully request that House Bill 134 be rejected.

Signed: Sharon E. Anderson
Testifier

Representing (Optional)
PO Box 200187 9840 Hillside Dr, Anch, AK 99520
Address
(907) 272-2608
Phone No.

TESTIMONY ON HB 134

My name is Roger C. Burggraf and reside at 830 Sheep Creek Rd, Fairbanks, Alaska.

I have lived and worked in Alaska since 1953. I majored in Wildlife Management and Conservation in college and worked for the US Fish & Wildlife Service for 3 seasons in Alaska as a stream guard and Fisheries aide. I was working for the USFWS the last year fish traps were allowed to operate and monitored their activities. I saw how Alaskans interests were being exploited by outside interests.

I am opposed to HB 134. Putting another layer of bureaucratic red tape on management of the land would serve as another disincentive for the mining and mineral exploration industry. The State of Alaska will not be allowed to promote the responsible development of other high value resources on its land.

The land encompassed by the so-called proposed Bristol Bay Fisheries Reserve was originally selected by the State for its high mineral potential.

The Pebble project has the possibility of becoming a World Class mining operation, if permitted, and would provide millions of dollars in revenues to the State of Alaska. It would provide for thousands of high paying jobs for Alaskans (especially local people who live in an economically depressed area). Spin off benefits to local communities in the form of small businesses in support of the industry and growing communities would flourish. There is no base for that now.

Under the constitution of Alaska you as Legislators have an obligation to see to it that Alaskans get the maximum benefit from the lands it selected from the Federal Government. The passage of this bill would send a strong negative message to the mining industry ^{and other resource development industries doing business in Alaska} thereby discouraging many potential investors.

I see HB 134, ^{an Act relating to conservation + protection of wild salmon production in drainage areas} the Bristol Bay Fisheries Reserve, is nothing more than an effort to subvert the existing permitting process. The permitting process is thorough and time-tested to be state-of-the-art in determining whether a mine can be developed and operated in an environmentally sound manner. However, lodges in the area would be allowed to continue operations in their exclusive playground for the rich and influential and be undisturbed. This is very discriminatory.

The future of Alaska is dependent on the responsible development of our natural resources - petroleum, gas, minerals, timber and fisheries. All effort should be made to facilitate that development for the betterment of Alaskans in accordance with our Constitutional mandate: "It is the policy of the State to encourage the settlement of its land and the development of its resources by making them available for maximum use consistent with the public interest." A balanced approach is imperative for the benefit of all, not just a few influential special interest persons and groups at the expense of the general population.

Chairman Seaton and Committee members,

Thank you for the opportunity to speak to you concerning House Bill 134.

My name is Kevin Jensen and I was born, raised and currently reside in Pedro Bay, an Athabascan village on the northeast shore of Lake Iliamna.

I am opposed to HB 134 because I don't want to live in a refuge. I don't want to worry about whether or not my dragging a couple of trees in place over a stream so that I can hunt on the other side is going to earn me a fine or jail time. I don't want my heritage and cultural rights to subsist as my forefathers did to be stomped on by a group of people intent on using any and all means at their disposal to fight a process that has not even begun. With or without the mine, we as a tribal people manage our resources better than anyone who has attempted to do so, and this is an historical fact.

Our tribe is preparing to begin a waterfront project that we have been in need of for quite some time. We are also trying to finish our new landfill, which will require a bridge to reach the site. However, I have to ask myself whether or not these projects will ever reach fruition under this bill. Our children explore our lands on foot and by all terrain

vehicle, is this the use of these ATVs going to be a point of contention? If I read this bill right, then yes they will, and that's not something I can agree with.

To use our lands and waters as a fulcrum to leverage this body to pass laws that will forever change the way we live is just wrong. I want to live on our ancestral lands the way we always have, without "outside" entities changing our lives without so much as a by your leave. I don't believe this bill was created so much to protect our waters and fish as it was to shortsightedly tilt at a windmill that hasn't even been built.

I implore you to oppose HB 134, not just for my tribe, but for our descendants.

Thank you for your time.

A handwritten signature in black ink, appearing to read "Ken Jern". The signature is fluid and cursive, with a large loop at the end.

My name is Eva Nielsen-King And I am here representing myself as a commercial fisherman, a resident of South Naknek, and the South Naknek Village Council. I ask that these comments be entered into the record.

House bill 134 introduced by Rep. Edgmon and The Jay Hammond State Game Refuge Proposal By Senator Gary Stevens (both separate bills) are as restrictive as all National Parks and Wildlife Refuges in Bristol Bay. Currently the Bristol Bay region acre for acre is more impacted by National Parks and Wildlife refuges than any other region in Alaska. In fact the Bristol Bay region has the second largest state park in the United States.

Either of the two bills considered will in fact stop any development in our region. It is as anti-development as one could ever be. Village and Regional Corporations will not be able to develop and more importantly villages such as South Naknek will be choked from developing any needed infrastructure in the future. These bills, no matter how you read them, are a classic example of a taking by our government, of our rights and development potential. Remember you cannot restrict or take away our rights and privileges from village and regional corporations including our village communities without legal consideration. If you do, it is a taking and the State will find itself in court – without question.

We feel it is a sorry state of affairs when some politicians introduce legislation like this to pay off political debts to their donors and for special interest groups.

Where in the world is our Alaskan spirit? Anymore it seems it doesn't matter if you're a Democrat or a Republican – both parties are acting like the old Democrats, which is anti-development and anti-work. If you choke our village and region from development you better be prepared to provide a lot of welfare checks.

Indeed we are commercial fishermen. However, as resident fishermen are a minority.

For your information our village has lost two-thirds of our population and our village school is closed.

Because of our commercial fishing situation, a lack of catch coupled with low fish prices has forced many of our people to move to look for employment. Gone are the days where we as commercial fishermen can make a decent annual living from it. Our only hope is what Northern Dynasty is offering – with out diversifying our economic base more and more villagers will move out. We are wondering why our State government want to take this potential economic benefit away. If you are not going to permit any mining what exactly do you have that can replace investments by private enterprises? You say you are only applying better safeguards to protect our resources by this legislation. Current environmental protection laws and regulations have enough restrictions to protect the environment, although laws and regulations lack enforcement.

By the way, do salmon processing plants both shore based and off shore, including fishing boats get a free pass to pollute our waters? We know some fish companies oppose the Pebble Project because of “environmental issues”, however isn’t this the pot calling the kettle black?

The fishing industry has been polluting our country for about 100 years or so, and our waters – where is the state’s oversight? Why not come and dig some holes around current and old cannery sites. Come and take a look at our beaches after a fishing season. Why isn’t the State of Alaska concerned about these polluters?

Do some get “free passes” and others have to be as clean as the driven snow?

How about local employment? The fishing industry has had over 100 years to employ our people. How many have they provided year around jobs to (for resident and other Alaskans)?

Northern Dynasty has employed more of our people in the last couple of years than the fishing industry has in over a hundred years. There is something wrong with this picture. Can you give us and our region some needed support? Where are you when we need you?

We feel you don't actually care about better safeguards, but rather to stop development PERIOD. Why not be honest with us with your true intentions – that this is paying your political debts, providing for special interest groups; sport fishing lodge owners, sports outfitters, sports fishermen, etc. And killing any development opportunities – why not be honest?

Jay Hammond was a fine person. However, another refuge will not provide a viable living for us who live in villages. People from our village are a proud people who want benefits of a more diversified economy. Therefore, I am opposed to Senate Bill 67 which provides for the Hammond Game Refuge in the Bristol Bay Headwaters and House Bill 134 which expands the Bristol Bay Fisheries Reserve.

Ralph Angasan Sr.
Pres. APC

Honorable Members of the House of Representatives

I am here on behalf of Alaska Peninsula Corporation. APC owns about 400,000 acres of land in and around three of the major rivers that are the subject of HB 134. Our holdings include about 180,000 acres of land in the Iliamna Lake area, about 140,000 acres of land along the Naknek River, and about 90,000 acres of land adjacent to the Ugashik system, including Port Heiden. APC has over 600 shareholders with 5,000 years of history in those Bristol Bay drainages. We oppose HB 134.

We want our children's children to continue to live and work at home, in Bristol Bay. HB 134 would strip any economic or social reason for any of us to remain. It proposes, with no basis in science, no objective findings whatsoever, to create a virtual monopoly for the preexisting lodges and fish processors, and to foreclose any new industry, whether it be mining or oil development, or alternative power that is water-dependent.

Because the bill allows for only existing permits, it effectively blocks any future economic growth. Communities along the Nushigak would be prohibited from any extraordinary growth or needs for water or discharges because the bill freezes community needs at "existing and ordinary present and future needs." Naknek, King Salmon and South Naknek cannot grow. The exploration now occurring with 2 miles of the Naknek River for geothermal sources would likely come to a grinding halt.

HB 134 would fine my corporation up to \$ 1,000,000 a DAY if we filled in a bog. It would fine my few shareholders who could still eke out a living in their communities for riding their four wheelers over the bogs of our lands in the summer, for causing adverse affect—like tire tracks. But, with fish prices at 60 cents a pound, and fuel at over \$ 5.00 a gallon, and electricity at 40 cents a kilowatt hour, and no new opportunities, perhaps there won't be much 4 wheeler traffic. Bristol Bay is already in severe economic crisis. It is rapidly losing population. Increasing the pressure on us will only increase the outward migration and depression in the region.

HB 134 will increase outward migration. Because, under HB 134, there won't be any new economic opportunities. Only uses presently authorized, approved and permitted at the time of the bill. The few remaining salmon processors are covered. That is probably why fish processors donated to the campaign of the sponsor of HB 134. But maybe my great grandchildren do not want to gut fish in order to eke out a living.

Perhaps they can go to work at a silk-stocking fishing lodge for peanuts. That is perhaps why lodge owners donated to the sponsor of the bill. But lodge owners' responsibilities are only to their families, nor are their families struggling to make ends meet as the community they live in dwindles, its schools closed for lack of population.. I have over 600 shareholders' futures to worry about. And they can't all work for a few lodges, even if they wanted to.

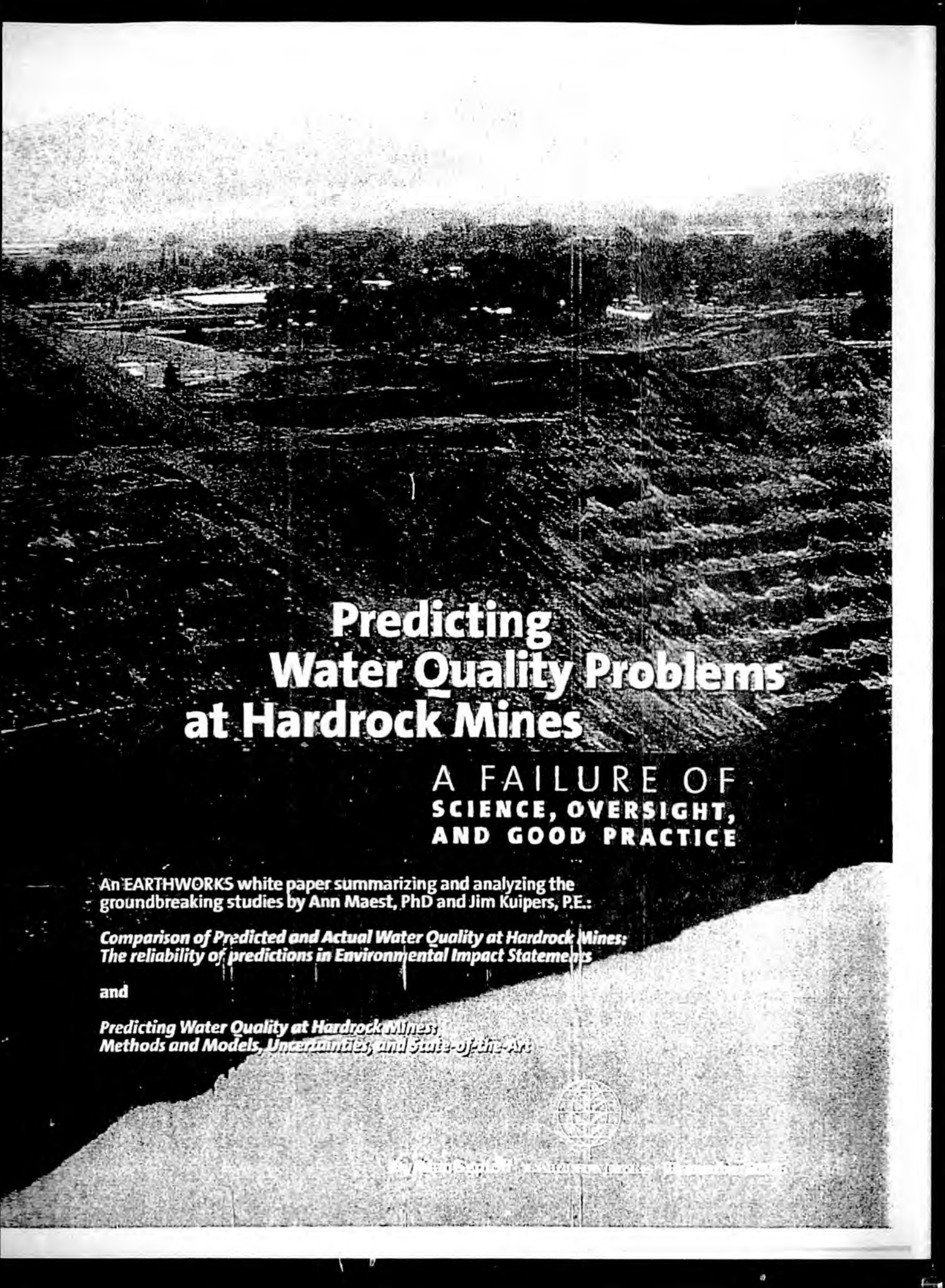
The sponsor of this bill is in the hands of the rich and powerful who want to convert Bristol Bay into their colony, and keep it there. Fish rich and people poor. That is not my vision, and it is not the vision of my people. We can preserve our salmon fishery and still diversify. Without HB 134.

HB 134, in fact, is not the vision of the Framers of the Alaska Constitution. The Framers guaranteed us the right of water appropriation, regardless of the watershed, and prohibited laws that divest us of the use of waters, our interests in the lands and the right to earn a living on our own.

HB 134 goes too far. Every stream, every bog, every aquifer, every swamp and lake that is in any way interrelated to or connected with the Nushigak, Ugashik, Egegik, Naknek or Kvichak Rivers is off limits under HB 134. Any use other than for drinking water is prohibited unless it is already permitted. What about the future?

The vision contained in HB 134 is the vision of the processors to pay 60 cents/lb for fish and send the profits to Japan. It is the vision of Anchorage and Seattle lodge owners and money managers to charge thousands of dollars a week for 16 weeks a summer for outsiders to stay at their lodges, and take it all home. Their vision is to fine some Native kid on a 4 wheeler who goes through a blueberry bog that is connected in some unknown way to the Kvichak, thousands of dollars a day in fines. Or to fine APC \$ 1,000,000 a day if it has the audacity to provide for a new industry. That is no vision of the future. That is colonialism, and colonialism should have ended in the 19th century. It is up to you to end it now.

Thank you.



Predicting Water Quality Problems at Hardrock Mines

A FAILURE OF SCIENCE, OVERSIGHT, AND GOOD PRACTICE

An EARTHWORKS white paper summarizing and analyzing the groundbreaking studies by Ann Maest, PhD and Jim Kuipers, P.E.:

*Comparison of Predicted and Actual Water Quality at Hardrock Mines:
The reliability of predictions in Environmental Impact Statements*

and

*Predicting Water Quality at Hardrock Mines:
Methods and Models, Uncertainties, and State-of-the-Art*



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Introduction

A failure of science, oversight and good practice

This paper is a summary, written for the layperson, of the findings of a two-year research study on the accuracy of water quality predictions at hardrock mines. The study, conducted by Jim Kuipers and Ann Maest¹, brings to light a decades-long failure by government regulators, industry, and consultants to recognize and correct deficient procedures and methods for predicting contamination of water at hardrock mines.

Kuipers and Maest have discovered that, in practice, there is a failure to compare predictions made before the mines are permitted with the actual results. The predictive modeling results are not adjusted to account for real-life failures—this, despite the fact that at the vast majority of mines, problems were worse than predicted. Establishment of credibility in modeling requires that the predictions be tested, and then the models adjusted based on the results. This process appears broken when it comes to predicting the impact of mines on water quality for mine permits.

To permit mines, federal law² requires regulators to apply scientific approaches to predict the environmental impacts of the mine proposal—including surface water and groundwater quality impacts. The accuracy of these water quality predictions is of significant public concern. Mining's impacts on water quality may affect municipal, agricultural, and rural water supplies; important commercial, subsistence and sports fisheries; wildlife populations; tourism; and recreation. One of the reports from the study, *Comparison of Predicted and Actual Water Quality at Hardrock Mines (Comparison Report)*, asks a basic question that government regulators, industry officials and consultants should have asked long ago:

Do predicted water quality impacts match reality?

The answer, in short, is **no**. The *Comparison Report* reveals:

- 100 percent of mines predicted compliance with water quality standards before operations began (assuming pre-operations water quality was in compliance).
- 76 percent of mines studied in detail exceeded water quality standards due to mining activity.
- Mitigation³ measures predicted to prevent water quality exceedances⁴ failed at 64 percent of the mines studied in detail.

Along with more analysis of this question, the *Comparison Report* and the companion report on methods and models used to predict water quality (*Methods and Models Report*), also seek to answer the necessary follow-up questions:

- In cases where predicted water quality impacts fail to match reality, why do they fail?

- Do certain types of mines fail more often than others?
- What can be done to address current failures and prevent future failures?

The Kuipers-Maest reports were prepared for a professional audience. The purpose of this paper is to translate and summarize the main findings of their research (for the layperson and the interested public), and to offer common sense recommendations based on those findings with an eye toward protecting natural resources and public health.

The Context

Why this research was necessary

The Environmental and Public Costs of Faulty Predictions

The failure to accurately predict and manage water quality impacts can result in significant negative impacts on clean water and steep taxpayer liabilities for the costs of cleanup. Consider one often-cited example—the Summitville gold mine in Colorado. Water pollution at this mine has cost American taxpayers more than \$200 million in cleanup costs. The majority of that money has been spent mitigating acid drainage and cyanide releases that were not predicted during the permitting process. When pollution spilled from a containment pond, 18 miles of the Alamosa River were effectively killed—impacting not only the aquatic life in the river, but also the adjacent farms and ranches that relied upon the Alamosa for irrigation and livestock watering.

While it may be argued that Summitville is one of the worst-case examples, problems abound. According to the U.S. EPA's Abandoned Mine Land Team, the cost of mine cleanup at sites on the National Priorities List (i.e., Superfund sites, like Summitville) in the United States is \$20 billion—almost 3 times the EPA's FY 2007 budget request. Long term water treatment and management is often the single most significant cost associated with mine cleanup.

In fact, there is an increasing number of mine sites throughout the U.S. that will require water treatment in *perpetuity*. In the arid west, these types of long-term impacts place a tremendous burden on downstream communities who must deal with the consequences of failed predictions. For example, government regulators have determined that the Zortman Landusky mine, located near the Fort Belknap Reservation in Montana, will continue to generate acid mine drainage for thousands of years. As a result, the Fort Belknap Tribes are faced with a continual threat to important tribal water resources, and the state of Montana will be spending tens of millions in public funds for long-term water treatment.⁵

Do Predicted Water Quality Impacts Match Reality?

As indicated above, the answer is usually no — particularly when high risk mines, such as those with close proximity to water resources, are considered.

Sampled Mines

To arrive at this answer the authors initially reviewed 104 Environmental Impact Statements (EISs) and Environmental Assessments (EAs) for 71 major hardrock mines in the United States.⁷ The mines covered all important mineral sectors (gold, silver, copper, platinum group metals, molybdenum, lead, and zinc) and ten mining states (Alaska, Arizona, California, Idaho, Montana, New Mexico, Nevada, South Dakota, Utah, and Wisconsin).

A representative subset of 25 case study mines was then selected to evaluate the accuracy of the water quality predictions. Environmental impact reports for these mines were evaluated for predictions related to surface water, groundwater, and mine drainage quality during and after mining. These predictions were then compared with actual water quality conditions during and after mining.

Potential & Predicted Water Quality

The authors discovered a two-tiered system for water quality predictions, one-tier of which was based not on sound science, but on unsupported "good faith" projections.

The two tiers of "predictions" made about water quality in environmental assessments are referred to by the authors as "potential" and "predicted" water quality:

- **Potential** water quality is the expected water quality conditions in the absence of mitigation efforts by the operator.
- **Predicted** water quality takes the effect of mitigating measures into account. It is what mine operators forecast actual water quality will be during and after operations.

All the environmental reviews analyzed in the *Comparison Report* predict acceptable water quality after mitigation at mines where water quality standards were met before mining began. If this prediction were not made, the regulatory agency would not be able to approve the mine.

However, inadequate information was provided to demonstrate how the mitigation measures would actually prevent water quality impacts. Therefore, regulators were generally accepting the final water quality predictions on "faith."

Major Findings: Chronic Underestimates of Water Quality Problems

Prediction vs. Reality: Overall Water Quality Impacts to Ground and Surface Water

Of the 25 mines sampled:

- 76% of mines polluted groundwater or surface water severely enough to exceed water quality standards.
- 60% of mines polluted surface water severely enough to exceed water quality standards.
- At least 13 mines (52%) polluted groundwater severely enough to exceed water quality standards.

Predictions vs. Reality: the Failure of Mitigation

In the cases where water quality standards were exceeded, in some cases the mine proponent anticipated the potential for pollution and prepared mitigation strategies (e.g. a mine waste dump lined with plastic to prevent acid drainage leaching into groundwater). Predictions of the efficacy of mitigation were no more reliable than overall predictions of water quality:

- 73% of mines exceeded surface water quality standards despite predicting that mitigation would result in compliance. The other 4 mines didn't predict the need for mitigation.
- 77% of mines that exceeded groundwater quality standards predicted that mitigation would result in compliance. The other 3 mines didn't predict the need for mitigation.

Predictions vs. Reality: Mines near Water with Elevated Acid Drainage or Contaminant Leaching Potential are High Risk

Some mine projects are so high risk that water quality exceedances are a near certainty: those mines that are both near groundwater or surface water resources, and possess an elevated potential for acid drainage or contaminant leaching.

- 85% of the mines near surface water with elevated potential for acid drainage or contaminant leaching exceeded water quality standards
- 93% of the mines near groundwater with elevated potential for acid drainage or contaminant leaching exceeded water quality standards.
- Of the sites that did develop acid drainage, 89% predicted that they would not.

Water Quality Pollutants

Of the 19 mines that exceeded water quality standards, the pollutants that exceeded standards were as follows

- Toxic heavy metals such as lead, mercury, cadmium, copper, nickel or zinc exceeded standards at 63% of mines.

In order to ensure clean water and protect taxpayers from liability for cleanup costs it is important to understand the frequency and magnitude of failures in predicting water quality impacts. Consider that at most major mines, operators are required to post financial assurances prior to operating. This is the good news. These assurances are supposed to guarantee that, should the mine operator go bankrupt, the mine site will be reclaimed at no cost to the taxpayer. However, the bad news is that these financial assurances are based upon expected reclamation costs and expected reclamation costs are based in large part upon water quality predictions.

Previous research by Jim Kuipers demonstrates that taxpayers are potentially liable for up to \$20.4 billion⁶ in financial assurance shortfalls at existing mine sites (in addition to the \$20 billion for Superfund sites) – due in large part to inaccurate water quality predictions.

A Growing Problem

Without correction, the environmental and financial impacts of faulty predictions could grow. Recent increases in metals prices have triggered an increase in the number of new mines being proposed in the United States. According to the Bureau of Land Management, new mining claims filed in 2006 are on track to more than quadruple since metals prices began their precipitous rise in 2002.

In the United States alone there are approximately 180 large hardrock mines – in nearly all regions of the country – that are in various stages of permitting, development, operation or reclamation and closure. In order to better protect important water resources and reduce future economic liability, improvements must be made in the prediction and prevention of impacts to water quality at these sites. On the positive side, the increase in metals prices has resulted in fewer bankruptcies in the sector—and it is bankruptcies that trigger the use of reclamation bonds for mine site reclamation and water treatment. This may provide regulators and industry officials with a window of opportunity to solve the underlying problems with water quality prediction.

Unprecedented Research: the absence of previous studies and the data gap

When they began their research, the authors expected to incorporate data from some mines where government officials had already completed a comparison of predicted and actual water quality impacts. However, they were unable to find comparisons of water quality predictions and actual water quality impacts of mines.

The authors found that no single repository exists for the Environmental Impact Statements (EISs) currently mandated under federal law. EISs contain the water quality predictions analyzed in the study. In some cases, local

federal offices that processed the studies did not have copies of them. Furthermore, in many cases, the authors were forced to submit Freedom of Information Act requests and pay fees to obtain copies of these studies. Similarly, water quality from mines was inordinately difficult to obtain and in most cases required personal visits to agencies and long hours sorting through paper files.

Taken together, the absence of previously published research and the difficulty in gathering information is evidence of a data gap that surprised the authors and may help explain the previous lack of a comprehensive study of this nature.

It is important to note that the predictions data were available – no matter how difficult to obtain – only because the National Environmental Policy Act (NEPA) requires it. Without NEPA, this study would have been impossible to conduct.

A Tool for Many Audiences

While the research focuses on the underlying scientific and engineering processes that form the basis of water quality predictions, its recommendations are intended for use by many audiences to increase the effectiveness of future mine water quality predictions – directly and indirectly:

- This study should be useful to the scientific and engineering communities for suggesting ways to better characterize risks to water quality and to better apply mitigation methods to minimize or prevent potential impacts.
- The regulatory community can look to these reports, especially *Methods and Models*, for recommendations on how to fundamentally improve the permitting process to ensure a more accurate analysis of potential mining impacts. The inherent uncertainty in water quality predictions and mitigation failures should be conservatively viewed in order to ensure mine permitting decisions that are more protective of human health and the environment. The integrity of the mine permitting process is dependent on the use of accurate methods and models.
- This report can be utilized by the mining industry to improve current practices and more accurately predict consequences and ameliorate potential effects.
- It can be utilized by the insurance and investment industry as a tool to better understand the potential risks and costs associated with mining, and as a basis to reassess risks at current mines.
- And finally, it can be utilized by the interested public to more effectively advocate for water quality protections in the permitting process and to advocate in the public arena for legislative and regulatory changes that better protect water resources.

- Arsenic and sulfate exceeded standards at 58% of mines.
- Cyanide exceeded standards at 53% of mines.

Why Do Predictions Fail?

In order to evaluate water quality impacts during the permitting process, government regulators rely on water quality predictions created by hydrologists and geochemists and mining engineers using computer models and other types of field or laboratory studies. Those predictions are only as good as the science upon which the models/tools are based, and the site characterization information supplied to those models. So when water quality predictions fail to predict water quality for mining operations, they fail for two general reasons:

1. the science of mine water quality prediction is imperfect
2. the science of mine water quality prediction is imperfectly applied at mine sites

The Imperfect Science of Mine Water Quality Prediction

The complexity of pollutants' interaction and movement in groundwater and surface water systems at mines is difficult to recreate in a model. This is addressed in detail in the companion report by Maest & Kuipers titled *Predicting Water Quality at Hardrock Mines: Methods and Models, Uncertainties, and State-of-the-Art*.

According to *Methods and Models*, factors that complicate the prediction of water quality at mine sites range in scale from small to large. On a small scale, for example, it is not well known how minerals react in complex systems. On a large scale, geology, climate, methods of mining and mineral processing, and mine waste management approaches vary among and within mine operations. These large scale variations limit the degree to which information from one site can be applied to another.

Also, extrapolation from the laboratory to the mine must address complicating factors such as environmental conditions, water and gas transport, differences in particle size, and how these variables affect drainage quality over periods of decades or centuries. However, there is virtually no available field information describing the effect of these variables over extended periods of time. The lack of this field information introduces significant additional uncertainty into predictions.

Just as weather cannot be accurately predicted beyond a certain point because weather models and their inputs are not perfect, the transport of pollutants through complex geological and hydrological systems over the longer term, which can range from five years to tens of thousands of years is similarly difficult to predict.

One of the study's most significant findings, however, is where the practice of predicting weather and the practice of predicting water quality at mining operations part ways. Weather models are consistently reevaluated based on a comparison of predictions with actual weather conditions that occur subsequently.

Not so with the models used for predicting water quality at mining operations. The very fact that the study is unprecedented shows that *professionals who predict mine water quality do not revisit their predictions, and neither do the regulators responsible for ensuring the accuracy of those predictions*. The models used for the predictions cannot be improved if their failures and successes are not evaluated. Where predictions of water quality at mining sites are concerned, the scientific process is broken.

Imperfect Science, Imperfectly Applied

A mine water quality prediction model can only reach its potential at any individual mine site if that site is correctly characterized (in terms of its hydrology and geochemistry) to the extent possible. According to Maest and Kuipers, that potential is not being reached.

There are two types of characterization failures described in the *Comparison Report*: hydrologic (related to water flow at a mine site) and geochemical (the chemistry, geology and mineralogy of the materials/minerals that comprise the mine site).

The *Comparison Report* documents that six of the 25 case study mines were inadequately characterized hydrologically, and that eleven of the case study sites were inadequately characterized geochemically.

Another example of "imperfect science, imperfectly applied" is the bias of mine water quality predictions made by consultants hired by the prospective mine operator. This problem is implied by the number of site characterization failures, and by the failure to check the results of past mine water quality predictions.

Regulatory agencies, both federal and state, allow the mining company to select and directly pay consultants to predict mine water quality impacts, and to review and comment on (or even reject) those predictions, prior to release to the agency. It is an understatement to say that consultants heavily influence mine water quality predictions.

Unfortunately, given the client/customer relationship between prospective mine operators and their consultants, consultants are rewarded for having favorable predictions. On the other hand a prediction of poor water quality will usually delay a permit, which increases the permitting costs. While exceptions exist, consultants that predict poor water quality often are not rehired. This perverse incentive is contrary to the spirit of unbiased science, and contrary to the public interest.

Preventing Future Failures (and Addressing Current Failures)

Recommendations

Both the *Comparisons* and the *Methods and Models Reports* reveal that the prediction of future mine water quality is an uncertain business. And given the difficulty in modeling natural systems, even if all the recommendations included here and in the Kuipers-Maest research are implemented, mine water quality prediction will always be an uncertain business. However, there is considerable room for improvement.

Just as weather prediction has improved over time, so can mine water quality prediction — if regulators and professionals in the sector learn from past predictions and improve characterization efforts.

With that in mind, the following recommendations are intended to help improve mine water quality predictions today and in the future.

Addressing the Consequences of the Existing Prediction Process

Assess existing mines. If the results of the *Comparison Report* are extrapolated to all operating major mines, water quality standards would be exceeded at roughly 75% of all mines in the United States. Regulators should, in a public process, canvass all permitted mines to:

- determine which mines are exceeding water quality standards,
- evaluate how surrounding communities and the environment are being affected, and what cleanup steps are necessary,
- revisit the original predictions, and
- reassess the adequacy of the financial assurances provided by mine operators to guarantee mine cleanup and long-term water treatment.

Incorporate uncertainty into permitting process. Regulators should take a suitably precautionary approach to the mine permitting process, and require that mine design, mitigation and financial assurance calculations prepare for reasonable worst-case rather than best-case scenarios.

Better screen high-risk mines. Regulators must demonstrate concrete improvement in the accuracy of mine water quality predictions and mitigation efforts. For example, additional regulatory scrutiny should be given to the highest risk proposals such as those mines near water resources and with elevated acid drainage or contaminant leaching potential. In cases where the risks are too high, regulators should not permit mines. It should be noted

that this recommendation is supported by the *Comparison Report* which demonstrates that 93 % of such mines near groundwater, and 85% near surface water, exceeded water quality standards.

Some major mining companies are realizing that the life-cycle costs need to be clearly evaluated, including the costs of *perpetual maintenance and water treatment after mine closure*. While some leaders in the industry are using life-cycle cost estimates, this is still not a uniform industry standard, and regulators ultimately must make the determination for many mine proposals.

Inform the public about the uncertainty of water quality prediction. As part of the mine permitting process, regulators should inform the public of the history of the accuracy of mine water quality predictions so they can better determine the risk involved in a mine proposal.

Improving Future Mine Water Quality Predictions

Ease access to predictions and results. Information regarding pre-mining, mining and post-mining water quality should be publicly available online, along with the associated mine water quality predictions made during the permitting process. This will facilitate a more informed mine permit process for regulators and the public.

Review original predictions as water quality develops during mining. Mine operations should be regularly assessed to determine if they are departing from mine water quality predictions. This will allow regulators and mine operators to take early action when mine water quality begins to depart from the predicted.

Consult past predictions at other mines. When permitting a mine, regulators should be required to seek similar mines, or similar aspects of different mines, and determine what predictions were made and what water quality actually occurred. These mine analogs should be publicly disclosed.

Require improved characterization of mine sites. This recommendation is covered in much greater detail in the *Methods and Models Report*. In summary, regulators should require better information about the mine site — before, during and after operations.

Require more research on the effectiveness of mine water quality mitigation. The *Comparison Report* found that where predictions of good mine water quality were predicated upon the mine operator using mitigation strategies, mine water quality usually exceeded water quality standards. More research is needed to determine how and why these mitigation efforts fail, and how to improve them.

Change the procedure for selecting consultants to avoid the present conflict of interests. Agencies should independently select and pay the consultants to conduct the

studies. This will limit the ability of a mining proponent to influence the outcome of the predictions. The mine proponent can comment on the study, similar to public interest organizations, but they should not be able to exert sufficient influence to bias the outcome.

Increase government expertise. Many state and federal agencies are not sufficiently funded to employ staff with the technical expertise to provide appropriate analysis and oversight of the mine permitting process. Increased funding should be incorporated into agency budgets to ensure that technical expertise is available for permit review.

Endnotes

1. Jim Kuipers, PE, is a mining engineer with Kuipers & Associates in Butte, Montana, and Ann Maest, PhD, is an environmental geochemist with Buka Environmental in Boulder, Colorado.
2. The National Environmental Policy Act requires a science-based review of mine proposals when federally-owned land is affected, or when a federal permit is required (e.g. the Clean Water Act requires a permit when a mine discharges into waters of the United States). Many states have similar laws, based on NEPA, that apply to mine proposals even when federal land is not involved.
3. Mitigation is the effort by a mine operator to prevent or reduce pollution. For example, some mine waste (e.g., tailings impoundments) is underlain by thick plastic to prevent contaminants from moving into nearby water resources.
4. In this paper, an "exceedance" is the presence of a pollutant in concentrations higher than a water quality standard. This is different from a water quality "violation," which is a breach in the terms of a water quality permit. A water quality permit, although based on standards, may allow exceedances under some conditions. A mine operator is legally liable for a water quality violation.
5. Mitchell, Larry D., a staff paper prepared for the Environmental Quality Council, "Zortman and Landusky Mines: HJ 43 Water Quality Impacts, October 2004.
6. Kuipers, J, 2003, Putting a Price on Pollution: Financial Assurance for Mine Reclamation and Closure. This report was funded by Mineral Policy Center.
7. Many mines have multiple EISs or EIAs for different eras of mining.

Revised Final Report

**Economics of Wild Salmon Watersheds:
Bristol Bay, Alaska**

February 2007

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Executive Summary

This report provides estimates of the economic values associated with sustainable use of wild salmon ecosystem resources, primarily fisheries and wildlife, of the major watersheds of the Bristol Bay, Alaska region. Both regional economic significance and social benefit-cost accounting frameworks are utilized. This study reviews and summarizes existing economic research on the key sectors in this area and reports findings based on original survey data on expenditures, net benefits, attitudes, and motivations of the angler population.

The major components of the total value of the Bristol Bay area watersheds include subsistence use, commercial fishing, sportfishing and other recreation, and the preservation values (or indirect values) held by users and the U.S. resident population. The overall objectives of this proposed work are to estimate the share of the total regional economy (expenditures, income and jobs) that is dependent on these essentially pristine wild salmon ecosystems, and to provide a preliminary but relatively comprehensive estimate of the total economic value (from a benefit-cost perspective) that could be at risk from extractive resource development in the region.

The rivers that flow into the Bristol Bay comprise some of the last great wild salmon ecosystems in North America (Figure 1). The Kvichak River system supports the world's largest run of sockeye salmon. While these are primarily sockeye systems, all five species of Pacific salmon are abundant, and the rich salmon-based ecology also supports many other species, including Alaska brown bears and healthy populations of rainbow trout. The Naknek, Nushagak, Kvichak, Igushik, Egegik, Ugashik, and Togiak watersheds are all relatively pristine with very few roads or extractive resource development. Additionally, these watersheds include several very large and pristine lakes, including Lake Iliamna and Lake Becherof. Lake Iliamna is one of only two lakes in the world that supports a resident population of freshwater seals (the other is Lake Baikal in Russia). The existing mainstays of the economy in this region are all wilderness-compatible and sustainable in the long run: subsistence use, commercial fishing, and wilderness sportfishing. The commercial fishing is largely in the salt water outside of the rivers themselves and is closely managed for sustainability. The subsistence, sportfish and other recreation sectors are relatively low impact (primarily personal use and catch and release fishing, respectively). Additionally, there are nationally-important public lands in the headwaters, including Lake Clark National Park and Preserve, Katmai National Park and Preserve, Togiak National Wildlife Refuge, and Wood-Tikchick State Park (the largest state park in the U.S.).

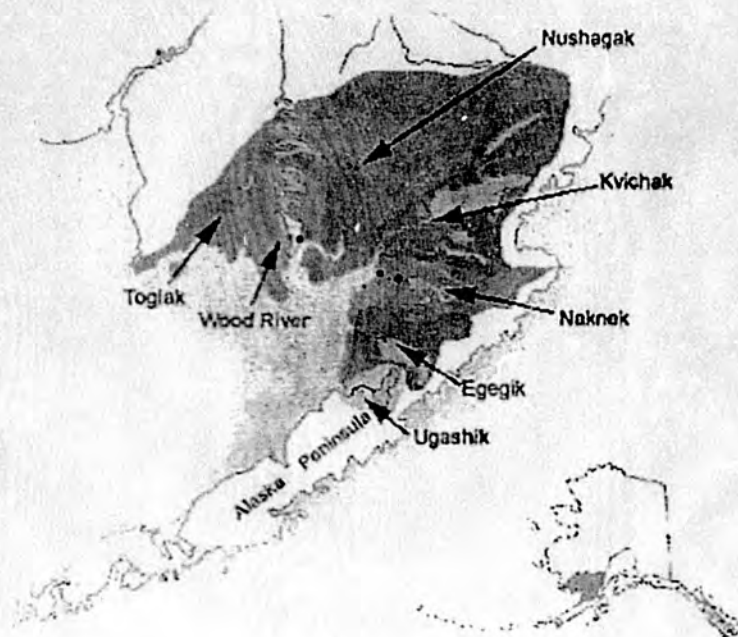


Figure 1. Map of Bristol Bay Study Area

A complete economic analysis would be conducted in several phases. The current study focuses on: 1) an overview of values based on existing data and previous studies, 2) original data collection focused on the sportfish sector, including angler surveys, and 3) estimation of both the regional economic significance (focusing on jobs and income) of these ecosystems using an existing regional economic model, as well as total value in a social benefit-cost framework. The objective is to provide a preliminary but relatively comprehensive estimate of the range of fishery-related values in this region (Figure 1).

This summary provides a brief characterization of each of the major sectors, followed by the primary economic findings.

The Bristol Bay economy is a mixed cash-subsistence economy. The primary features of these socio-economic systems include use of a relatively large number of wild resources (on the order of 70 to 80 specific resources in this area), a community-wide seasonal round of activities based on the availability of wild resources, a domestic mode of production (households and close kin), frequent and large scale noncommercial distribution and exchange of wild resources, traditional systems of land use and occupancy based on customary use by kin groups and communities, and a mixed economy relying on cash and subsistence activities (Wolfe and Ellanna, 1983; Wolfe et al. 1984). The heart of this cash-subsistence economy is the resident population of 7,611 individuals (in the year 2000) located in 25 communities (Table 1) spread across this primarily un-roaded area (Figure 2). Archeological evidence indicates that Bristol Bay has been continuously inhabited by humans at least since the end of the last major glacial period about 10,000 years ago. Three primary indigenous cultures are represented here:

Aleuts, Yupik Eskimos, and the Dena'ina Athapaskan Indians. The share of the population that is Alaska Native is relatively high at 70 percent, compared to Alaska as a whole, with 16 percent.

Table 1. Bristol Bay Area Communities, Populations, and Subsistence Harvest

Bristol Bay Area Community /year of harvest data	Population (2000 census)	Per Capita Harvest	Total Annual Harvest	% Native Population
Aleknagik 1989	221	379	54,079	81.9%
Clark's Point 1989	75	363	20,325	90.7%
Dillingham 1984	2,466	242	494,486	52.6%
Egegik 1984	116	384	37,450	57.8%
Ekwok 1987	130	797	85,260	91.5%
Igiugig 1992	53	725	33,915	71.7%
Iliamna 2004	102	508	51,816	50.0%
King Salmon 1983	442	220	81,261	29.0%
Kokhanok 1992	174	1,013	175,639	86.8%
Koliganek 1987	182	830	154,705	87.4%
Levelock 1992	122	884	97,677	89.3%
Manokotak 1985	399	384	118,337	94.7%
Naknek 1983	678	188	72,110	45.3%
New Stuyahok 1987	471	700	247,494	92.8%
Newhalen 2004	160	692	110,720	85.0%
Nondalton 2004	221	358	79,118	89.1%
Pedro Bay 2004	50	306	15,300	40.0%
Pilot Point 1987	100	384	24,783	86.0%
Port Alsworth 2004	104	133	13,832	4.8%
Port Heiden 1987	119	408	41,985	65.6%
South Naknek 1992	137	297	39,893	83.9%
Ugashik 1987	11	814	8,144	72.7%
Togiak City	809	--	--	86.3%
Portage Creek	36	--	--	86.1%
Twin Hills	69	--	--	84.1%
Total communities	7,447	--	--	--
Unincorporated areas	164	--	--	--
Total (interpolated to include unincorporated areas)	7,611	315	2,397,970	69.6%

Sources: US Census Bureau (2000 census statistics), and ADF&G Division of Subsistence Community Profile Data Base. & Fall et al. 2006. Note: % native indicates those who classify themselves as Native only.

Wild renewable resources are important to the people of this region and many residents rely on wild fish, game and plants for food and other products for subsistence use. Total harvest for these 25 communities is on the order of 2.4 million pounds based largely on surveys undertaken in the late 1980's and early 1990's, as summarized in the Alaska Division of Subsistence community profile data base. A new round of surveys is now underway to update this data. Estimates for the 2004 study year (Fall et al. 2006) for five communities (Newhalen, Nondalton, Iliamna, Pedro Bay, and Port Alsworth) are included in the data presented in Table 1. Per capita harvests averaged about 315 pounds. Primary resources used include salmon, other freshwater fish, caribou, and moose. Subsistence use continues to be very important for communities of this region, based on

these recent surveys, and participation in subsistence activity, including harvesting, processing, giving and receiving is quite high. Compared to other regions of Alaska, the Bristol Bay area has some characteristic features, including the great time depth of its cultural traditions, its high reliance on fish and game, the domination of the region's market economy by the commercial salmon fishery, and the extensive land areas used by the region's population for fishing, hunting, trapping and gathering. (Wright, Morris, and Schroeder, 1985).



Figure 2. Bristol Bay Area Location and Major Communities

The primary private source of cash employment for participants in Bristol Bay's mixed cash-subsistence economy is the commercial salmon fishery. The compressed timing of this fishery's harvesting activity makes it a good fit with subsistence in the overall Bristol Bay cash-subsistence economy. Many commercial fishing permit holders and crew members, as well as some employees in the processing sector, are residents of Bristol Bay's dominantly-native Alaskan villages. In 2004, there were 952 resident commercial fishing permit holders in the Bristol Bay study area, as well as 920 crew members. This is a significant share of the area's total adult population. An ADF&G summary of subsistence activity in Bristol Bay (Wright, Morris, and Schroeder 1985) noted that as of the mid-1980's traditional patterns of hunting, fishing, and gathering activities had for the most part been retained, along with accommodations to participate in the commercial fishery and other cash-generating activities. In the abstract to this 1985 paper, the authors

characterize the commercial salmon fishery as "a preferred source of cash income because of its many similarities to traditional hunting and fishing, and because it is a short, intense venture that causes little disruption in the traditional round of seasonal activities while offering the potential for earning sufficient income for an entire year." Commercial fishing is a form of self employment requiring many of the same skills, and allowing nearly the same freedom of choice as traditional subsistence hunting and fishing. (Wright, Morris, Schroeder 1985; p. 89).

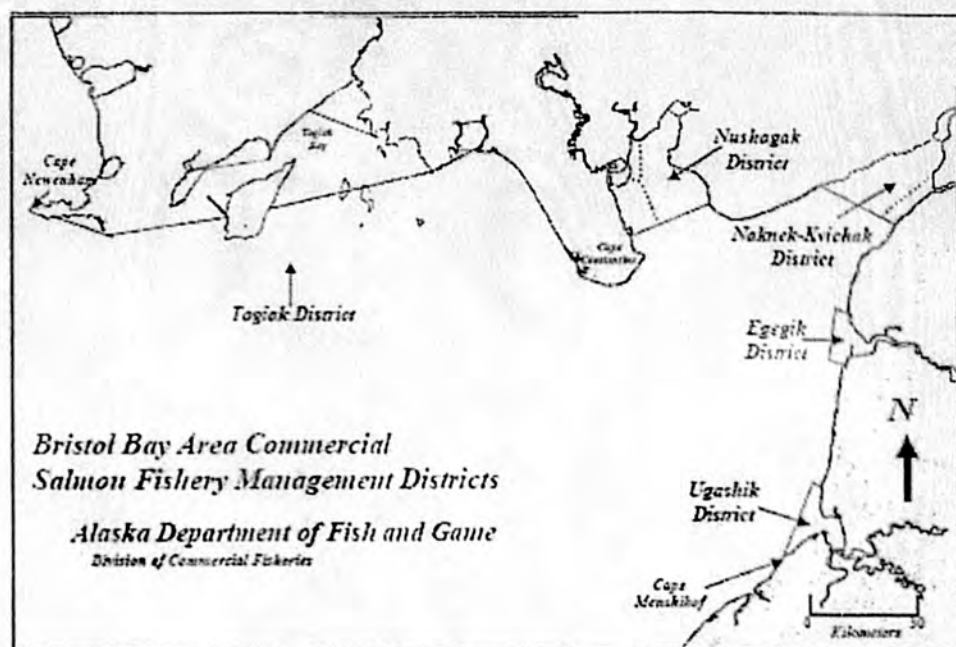


Figure 3. Bristol Bay Area Commercial Salmon Fishery Management Districts

The Bristol Bay commercial fisheries management area encompasses all coastal and inland waters east of a line from Cape Menikof to Cape Newenham (Figure 3). This area includes eight major river systems: Naknek, Kvichak, Egegik, Ugashik, Wood, Nushagak, Igushik and Togiak. Collectively these rivers support the largest commercial sockeye salmon fishery in the world (ADF&G, 2005). This is an interesting and unique fishery, both because of its scale and significance to the local economy, but also because it is one of the very few major commercial fisheries in the world that has been managed on a sustainable basis.

The five species of pacific salmon found in Bristol Bay are the focus of the major commercial fisheries. Sockeye salmon is the primary species harvested both in terms of pounds of fish and value. Annual commercial catches between 1984 and 2003 averaged nearly 24 million sockeye salmon, 69,000 chinook, 971,000 chum, 133,000 coho, and 593,000 (even year only) pink salmon (ADF&G, 2005). Prices for sockeye salmon are typically higher than for other salmon species, making the Bristol Bay fishery the most

valuable of Alaska's salmon fisheries (CFEC, 2004). Nearly one-third of all earnings from Alaska salmon fishing come from the Bristol Bay fishery (Table 2). This is also the largest Alaska fishery in terms of the number of permit holders. In 2004, there were 1,857 potentially active entry permits in the drift gillnet fishery and 992 in the set gillnet fishery (CFEC, 2004).

Table 2. Bristol Bay and Alaska Commercial Fishery Permits, Harvest, and Gross Earnings, 2002

Sector	# permit holders	# permits	Pounds	Gross earnings
Bristol Bay Salmon	2,850	2,276	165,582,203	\$94,571,755
Drift gillnet	1,862	1,447	135,549,944	\$77,243,936
Set gillnet	988	829	30,032,259	\$17,327,819
All Alaska Salmon	10,594	7,508	872,577,336	\$293,147,368
All Alaska Fisheries	14,318	13,463	3,842,853,863	\$990,099,365

Source: Derived from ADFG (2005)

The fishery is organized into five major districts (Figure 3) including Togiak, Nushagak, Naknek-Kvichak, Egegik, and Ugashik. Management is focused on discrete stocks with harvests directed at terminal areas at the mouths of the major river systems (ADF&G, 2005). The stocks are managed to achieve an escapement goal based on maximum sustained yield. The returning salmon are closely monitored and counted and the openings are adjusted on a daily basis to achieve desired escapement. Having the fisheries near the mouths of the rivers controls the harvest on each stock, which is a good strategy for protection of the discrete stocks and their genetic resources. The trade-off is that the fishery is more congested and less orderly, and the harvest is necessarily more of a short pulse fishery, with most activity in June and early July. This has implications for the economic value of the fish harvest, both through effects on the timing of supply, but also on the quality of the fish. Most fish are canned or frozen, rather than sold fresh. The fishery is quite cyclical in terms of run size and potential harvest. For example, harvests were as low as only several million fish in the early 1970's, but exceeded 45 million fish in the early 1990's. Prices have also varied quite dramatically historically. In real terms (constant 2005 dollars) prices peaked at \$3.15 per pound in 1989 and reached a recent historical low of about \$0.40 a pound in 2002. Prices are currently low because of competition with farmed salmon and other factors. For the period 1985 to 2005, total production value for processors averaged about \$288 million, with a low of \$95 million in 2002. Total production value in 2005 was \$225 million. According to the Commercial Fish Entry Commission (2004) the total salmon return to Bristol Bay is strongly influenced by sockeye returns to the Kvichak River, which is historically the largest salmon resource in the region, and perhaps the largest in the world. The sockeye return to the Kvichak is highly variable, and exhibits a pattern of oscillating cycles. In recent years the Kvichak sockeye return has been weaker, and the river has been classified as a "stock of management concern" by the Alaska Department of Fish and Game and the Alaska Board of Fisheries.

Next to commercial fishing and processing, recreational angling is the most important private economic sector in the Bristol Bay region. The 2005 Bristol Bay Angler Survey, which was undertaken for purposes of this report, confirmed that the fresh water rivers, streams, and lakes of the region are a recreational resource equal or superior in quality to other world renowned fisheries.

In their survey responses Bristol Bay anglers consistently emphasized the importance of Bristol Bay's un-crowded, remote, wild setting in their decisions to fish the area. Additionally, a significant proportion of respondents to the survey specifically traveled to the region to fish the world-class rainbow fisheries. These findings indicate that Bristol Bay sport fishing is a relatively unique market segment, paralleling the findings of Romberg (1999) that angler motivation and characteristics vary significantly across Alaska sport fisheries.

Recreational fishing use of the Bristol Bay region is roughly divided between 65% trips to the area by Alaska residents and 35% trips by nonresidents. These nonresidents (approximately 13,000 trips in 2005 (personal communication, ADF&G, 2006)) account for the large majority of total recreational fishing spending in the region. It is estimated that in 2005 approximately \$48 million was spent in Alaska by nonresidents specifically for the purpose of fishing in the Bristol Bay region. In total, it is estimated that \$61 million was spent in Alaska in 2005 on Bristol Bay fishing trips.

While sport fishing within the Bristol Bay region comprises the largest share of recreational use and associated visitor expenditures, several thousand trips to the region each year are also made for the primary purpose of sport hunting and wildlife viewing.

Table 3 through 8 detail the summary results of the analysis of economic values. Table 3 shows estimated direct expenditures in Alaska related to harvest or use of Bristol Bay area renewable resources. Total estimated direct expenditures (that drive the basic sector of the economy) were estimated to be \$324 million in 2005. The largest component is commercial fishing harvesting and processing. These estimates were obtained from the Alaska Department of Revenue and the Commercial Fishing Entry Commission. The range shown of low and high estimates reflects the cyclical nature of this sector, and is based on a 95 percent confidence interval for total earnings in this sector between 1985 and 2005. The next most significant component is sportfishing at \$61 million in 2005. This estimate is derived from original survey data as described below, and a 95 percent confidence interval for this 2005 estimate is relatively imprecisely estimated at zero to \$123.2 (this broad range reflects the statistical uncertainty within a number of estimated parameters used to estimate spending, including average spending per angler and average number of trips per year per angler). Sport hunting and wildlife viewing / tourism are less important economically. The wildlife viewing and tourism estimates are approximate, and reflect a small share of the visitation at Katmai National Park. Most of the visitation at Katmai is expected to be picked up in the sportfishing use estimates and is excluded here to avoid double-counting.

Table 3. Summary of Regional Economic Expenditures Based on Wild Salmon Ecosystem Services (Million 2005 \$)

Ecosystem Service	Estimated direct expenditures / sales per year	Low estimate	High estimate
Commercial fish wholesale value	\$226.0	\$226.0	\$346.0
Sport fisheries	\$61.2	0	\$123.2
Sport hunting	\$12.4	\$12.4	\$12.4
Wildlife viewing / tourism	\$17.1	\$17.1	\$17.1
Subsistence harvest expenditures	\$7.2	\$7.2	\$7.2
Total direct annual economic impact	\$323.90	\$262.70	\$505.90

Table 4 provides additional detail on recreation expenditures, including number of trips and spending by residence of the participants. A large share of sportfish expenditures, and hence of total recreation expenditures, is by nonresident anglers (\$48 of \$61 million). This reflects the high quality of this fishery, in that it is able to attract participants from a considerable distance in the lower 48 states as well as foreign countries.

Table 4. Total Estimated Recreational Direct Spending in Alaska Attributable to Bristol Bay Wild Salmon Ecosystems, 2005

Sector	Alaska Residents			Nonresidents	Total
	Local residents	Non-local residents	Total Alaska		
(A) TRIPS					
Sport fishing	19,488	4,450	23,938	12,966	60,842
Sport hunting	-	1,538	1,538	2,310	3,848
Wildlife viewing / tourism	-	1,000	1,000	9,000	10,000
Total	19,488	6,988	26,476	24,276	50,752
(B) SPENDING					
Sport fishing	\$6,606,432	\$6,397,747	\$13,004,179	\$48,207,588	\$61,211,767
Sport hunting	-	\$2,214,720	\$2,214,720	\$10,870,860	\$13,085,580
Wildlife viewing / tourism	-	\$970,010	\$970,010	\$16,168,280	\$17,138,290
Total	\$6,606,432	\$9,582,477.00	\$16,188,909	\$75,246,728.00	\$91,435,637.00

Table 5 summarizes the full time equivalent employment associated with the sectors of the Bristol Bay economy that are dependent on wild salmon ecosystems. A total of 5,540 full time equivalent jobs are supported, with an estimated 1,598 of these held by local residents of Bristol Bay, 1,829 by non-local Alaskans (for a total of 3,430 Alaska jobs) and 2,110 by nonresidents. Three-fourths of these jobs are in the commercial fish sector (4,239) and about one-fourth in recreation. A small number of jobs (49) are also shown for subsistence, based on expenditures made by subsistence participants for supplies and

equipment to support subsistence activity. However, this perspective on subsistence is somewhat misleading, as it is only from the cash side of the mixed cash-subsistence economy. The level of full-time equivalent subsistence jobs was estimated for a similar sized population of Bristol Bay residents by Goldsmith et al. (1998) at 762 jobs. This is based on the approximation that the average Alaska Native (3,048 in Goldsmith's population) participates in subsistence activities a total of three months a year, and that non-natives participate not at all. Unfortunately there is not much evidence to support or refute this estimate, but it does indicate the possible significance of subsistence employment from a broader perspective than that of just the cash economy as shown in Table 5.

Table 5. Total Full Time Equivalent (FTE) Employment in Alaska Dependent on Bristol Bay Wild Salmon Ecosystems, 2005

Sector	Alaska Residents			Nonresidents	Total FTE jobs
	Local residents	Non-local residents	Total Alaska		
Commercial fishing	689	667	1,357	1,172	2,529
Commercial processing	465	449	914	796	1,710
Sport fishing	288	435	723	123	846
Sport hunting	60	105	165	2	167
Wildlife viewing / tourism	82	139	222	17	239
Subsistence	14	34	49	0	49
Total FTE jobs	1598	1829	3,430	2,110	5,540

A related perspective is that angler effort in the sport fishery is on the order of 100,000 angler days (for example, 106,000 in the year 2000), mostly in the June-September period. From the theoretical economic "household production" perspective of anglers utilizing capital and labor resources to produce themselves a good outdoor experience, this is the equivalent of about 400 full time equivalent jobs. An interesting feature of the sportfish sector, and one that limits its economic impact relative to the commercial fishery, is that there is essentially no (or only a very limited) processing sector in this dominantly catch and release fishery.

The overall structure of the Bristol Bay economy is shown in Table 6. This estimate was derived by starting from the official employment data reported by the U.S. Bureau of Economic Analysis and the Alaska Department of Labor. These sources miss some of the wage and salary employment in the region as well as non local resident proprietors (self employed). Revised employment data developed for this study shows that the annual average employment in the Bristol Bay economy was 7,691 jobs in 2004. The private sector basic employment in this economy is currently almost totally dependent on Bristol Bay's wild salmon ecosystems with mining contributing a small amount. The only other basic driver is government employment (here including hospitals and other non profit enterprises which are publicly funded). As a share of all basic employment, the salmon ecosystem-dependent sectors account for 64 percent of all the basic employment that drives this cash economy. A good share of the non-basic employment is also derived

through induced and indirect effects (multiplier effect) from the ecosystem sectors as well. Furthermore, although government is here considered a BASIC sector activity because it brings money into the local economy, in the absence of the salmon ecosystem, regional population would surely be smaller and the government presence would also shrink.

Table 6. Structure of the Bristol Bay Economy, 2004

	ANNUAL AVERAGE	SUMMER (July)	WINTER (January)	SWING (Jan- July)
JOBS BY PLACE OF WORK	7,691	16,631	3,640	12,991
BASIC	6,251	15,028	2,304	12,724
Fish Harvesting	2,552	7,657	0	7,657
Fish Processing	1,150	4,193	200	3,993
Recreation	311	933	0	933
Government / Health	2,098	1,795	2,104	(309)
Mining	150	450	0	450
NON-BASIC	1,440	1,603	1,336	267
Construction	64	80	56	24
Trade/Transport/Leisure	642	765	580	185
Finance	127	118	116	2
Other Wage and Salary	180	213	157	56
Other Proprietors	427	427	427	0
JOBS BY PLACE OF RESIDENCE				
Local Resident	4,233	5,741	3,640	2,101
All Non Local	3,458	10,890	0	10,890

Table 6 also shows the extreme seasonal nature of this economy. From a winter low of 3,640 jobs, employment climbs by almost 13 thousand jobs to a total of 16,631 in summer. Since the total resident population (including children and the elderly) is only about 7,600 a large share of the seasonal increase must be filled by non local residents. The most seasonally stable component of the economy is government, which actually declines by about 300 jobs in summer, reflecting the academic year schedules of teachers. The winter employment pattern reveals the bare bones of the local cash economy, absent almost all of the cash employment jobs associated with fishing and recreation, except for about 200 jobs in commercial fish processing.

Subsistence users are not the only hunter-gatherers in this economy. Essentially the entire private economy is "following the game" (or, in this case, the fish), with many commercial fishers, processors, sport anglers, sport hunters and wildlife viewers coming from elsewhere in Alaska or the lower 48 to be part of this unique economy at the time that fish and game are available.

The estimated payroll associated with the salmon ecosystem-dependent jobs is shown in Table 7. The total is \$161 million in 2005, including \$46.8 million to Bristol Bay residents and a total of \$103.4 million to all Alaska residents.

Table 7. Total Alaska Payroll Associated with Use of Bristol Bay Wild Salmon Ecosystems, 2005 (Million 2005 dollars)

Payroll paid to:	Commercial fishing	Sport Fishing	Hunting	Other Recreation	Subsistence	Total
Local residents	\$34.554	\$8.180	\$1.536	\$2.015	\$0.525	\$46.810
Non-local residents	\$33.242	\$14.491	\$3.392	\$4.235	\$1.183	\$56.543
All Alaska Residents	\$67.796	\$22.671	\$4.929	\$6.250	\$1.707	\$103.353
Non Residents	\$52.694	\$4.303	\$0.087	\$0.597	\$0	\$57.681
TOTAL	\$120.490	\$26.974	\$5.016	\$6.847	\$1.707	\$161.034

The preceding discussion has focused on a regional economic accounting framework. Table 8 introduces the net economic value measures for evaluation of the renewable Bristol Bay resources. Commercial salmon fishery net economic values are derived by annualizing permit values, which are exchanged in an open market and reported by the Commercial Fish Entry Commission. These are on the order of \$51,200 for a drift gillnet permit in 2005 in total, but have been as high as \$200,000 as recently as 1993. Subsistence harvests are valued based on the willingness-to-pay revealed through tradeoffs of income and harvest in choice of residence location (Duffield 1997).

The sportfish net economic value is based on original data collected for purposes of this study, as reported below. These estimates are consistent with values from the extensive economic literature on the value of sportfishing trips. Sport hunting and wildlife viewing values are based on studies conducted about fifteen years ago in Alaska, and which need to be updated. Direct use values total from \$104 million to \$179 million.

A major unknown is the total value for existence and bequest (also called passive use values). Goldsmith et al. (1998) estimated the existence and bequest value for the federal wildlife refuges in Bristol Bay at \$2.3 to \$4.6 billion per year (1997 dollars). There is considerable uncertainty in these estimates, as indicated by the large range of values. Goldsmith's estimates for the federal wildlife refuges are based on the economics literature concerning what resident household populations in various areas (Alberta, Colorado) (Adamowicz et al. 1991; Walsh et al. 1984; Walsh et al. 1985) are willing to pay to protect substantial tracts of wilderness. Similar literature related to rare and endangered fisheries, including salmon, could also be appealed to here. It is possible that from a national perspective the Bristol Bay wild salmon ecosystems and the associated economic and cultural uses are sufficiently unique and important to be valued as highly as wilderness in other regions of the U.S. Goldsmith et al.'s (1998) estimates assume that a significant share of U.S. households (91 million such households) would be willing to pay on the order of \$25 to \$50 per year to protect the natural environment of the Bristol Bay federal wildlife refuges. The number of these households is based on a willingness to pay study (the specific methodology used was contingent valuation) conducted by the State of Alaska Trustees in the Exxon Valdez oil spill case (Carson et al. 1992). The

findings of this study were the basis for the \$1 billion settlement between the State and Exxon in this case. These methods are somewhat controversial among economists, but when certain guidelines are followed, such studies are recommended for use in natural resource damage regulations (for example, see Ward and Duffield 1992). They have also been upheld in court (Ohio v. United States Department of Interior, 880 F.2d 432-474 (D.C. Cir.1989)) and specifically endorsed by a NOAA-appointed blue ribbon panel (led by several Nobel laureates in economics) (Arrow et al. 1993).

Goldsmith's estimates for just the federal refuges may be indicative of the range of passive use values for the unprotected portions of the study area. However, there are several caveats to this interpretation. First, Goldsmith et al. estimates are not based on any actual surveys to calculate the contingent value specific to the resource at issue in Bristol Bay. Rather, they are based on inferences from other studies (benefits transfer method). Second, these other studies date from the 1980's and early 1990's and the implications of new literature and methods have not been examined. Additionally, the assumptions used to make the benefits transfer for the wildlife refuges may not be appropriate for the Bristol Bay study area. This is an area for future research.

Table 8. Summary of Bristol Bay Wild Salmon Ecosystem Services, Net Economic Value per Year (Million 2005 \$)

Ecosystem Service	Low estimate	High estimate
Commercial salmon fishery	\$9.4	\$18.8
Sport fishing	\$13.5	\$13.5
Sport hunting	\$1.8	\$1.8
Wildlife viewing / tourism	\$1.8	\$1.8
Subsistence harvest	\$77.8	\$143.1
Total Direct Use Value	\$104.30	\$179.00
Existence and Bequest Value	Not estimated	Not estimated

The estimates in Table 8 are for annual net economic values. Since these are values for renewable resource services that in principle should be available in perpetuity, it is of interest to also consider their present value (e.g. total discounted value of their use into the foreseeable future). Recent literature (EPA 2000; Weitzman 2001) provides some guidance on the use of social discount rates for long term (intergenerational) economic comparisons. A rate as low as 0.5% has been recommended by EPA (2000). Weitzman, based on an extensive survey of members of the American Economic Association, suggests a declining rate schedule, which may be on the order of 4 percent (real) in the near term and declining to near zero in the long term. He suggests a constant rate of 1.75% as an equivalent to his rate schedule. Applying this parameter to the net economic values shown in Table 8 results in a net present value of \$6.0 billion to \$10.2 billion for just the direct uses.

1.0 Introduction

This report provides information on the importance of wild fisheries and the natural environment in the Bristol Bay region to the economies of the Bristol Bay region, the State of Alaska and the U.S. as a whole.

1.1 Study Objectives

This report provides estimates of the economic values associated with sustainable use of wild salmon ecosystem resources, primarily fisheries and wildlife, of the major watersheds of the Bristol Bay, Alaska region. Both regional economic significance and social benefit-cost accounting frameworks are utilized. This study reviews and summarizes existing economic research on the key sectors in this area and reports on original survey data on expenditures, net benefits, attitudes and motivations of the angler population.

The major components of the total value of the Bristol Bay area wild salmon ecosystems include subsistence use, commercial fishing and processing, sportfishing, and the preservation values (or indirect values) held by users and the U.S. resident population. The overall objectives of this work are to estimate the share of the total regional economy (expenditures, income and jobs) that is dependent on these essentially pristine wild salmon ecosystems, and to provide a preliminary but relatively comprehensive estimate of the total economic value (from a benefit-cost perspective) associated with the ecosystem.

1.2 Definition of Study Area

The Bristol Bay region is located in southwestern Alaska. The area is very sparsely populated and the large majority of its population is comprised of Alaskan Natives (Table 9). The region, which includes Bristol Bay Borough, the Dillingham Census Area, and a large portion of Lake and Peninsula Borough contains a relatively small number of communities, the largest of which are shown in Figure 4. Although median household income varies among census areas within the region, outside of the relatively small Bristol Bay Borough, income is somewhat lower than for the state of Alaska as a whole. As noted, Alaskan Natives make up over two-thirds of the total population within the region as compared to approximately 16% for the entire state (Table 9)

Table 9. Demographic and Socioeconomic Characteristics of the Bristol Bay Region

<i>Area</i>	<i>Population 2004</i>	<i>Percent Alaska native</i>	<i>Percent 18 or over</i>	<i>Number of households</i>	<i>Median household income 1999</i>
Bristol Bay Borough	1,103	43.7%	68.7%	490	\$ 52,167
Dillingham Census Area	4,924	70.1%	61.9%	2,341	\$ 43,079
Lake & Peninsula Borough	1,584	73.5%	62.2%	588	\$ 36,442
Total Bristol Bay Region	7,611	67.0%	62.9%	3,419	\$ 43,015
State of Alaska	655,435	15.6%	69.6%	221,600	\$ 51,571

Source: US Census Quickfacts. Quickfacts.census.gov**Table 10. Bristol Bay Area Communities and Populations**

<i>Bristol Bay Area Community</i>	<i>Population (2000 census)</i>	<i>% Native Population</i>
Aleknagik	221	81.9%
Clark's Point	75	90.7%
Dillingham	2,466	52.6%
Egegik	116	57.8%
Ekwok	130	91.5%
Igiugig	53	71.7%
Iliamna	102	50.0%
King Salmon	442	29.0%
Kokhanok	174	86.8%
Koliganek	182	87.4%
Levelock	122	89.3%
Manokotak	399	94.7%
Naknek	678	45.3%
New Stuyahok	471	92.8%
Newhalen	160	85.0%
Nondalton	221	89.1%
Pedro Bay	50	40.0%
Pilot Point	100	86.0%
Port Alsworth	104	4.8%
Port Heiden	119	65.6%
South Naknek	137	83.9%
Ugashik	11	72.7%
Togiak City	809	86.3%
Portage Creek	36	86.1%
Twin Hills	69	84.1%



Figure 4. Bristol Bay Area Location and Major Communities

This study focuses on the economic contributions of the Bristol Bay ecosystem. The rivers that flow into the Bristol Bay comprise some of the last great wild salmon ecosystems in North America (Figure 5). All five species of Pacific salmon are abundant, and the rich salmon-based ecology also supports many other species, including healthy populations of rainbow trout. The Naknek, Nushagak-Mulchatna, and Kvichak-Lake Iliamna watersheds are relatively pristine with very little roading or extractive resource development. The existing mainstays of the economy in this region are all wilderness-compatible and sustainable in the long run: subsistence use, commercial fishing, and wilderness sportfishing. The commercial fishing is largely in the salt water outside of the rivers themselves and is closely managed for sustainability. The subsistence and sportfish sectors are relatively low impact (primarily personal use and catch and release fishing, respectively). Additionally, there are important public lands in the headwaters, including Lake Clark National Park and Preserve, Katmai National Park and Preserve, and Togiak National Wildlife Refuge.

The Bristol Bay area includes the political designations of Bristol Bay Borough, the Dillingham census area, and most of Lake and Peninsula Borough. The largest town in the area is Dillingham. In 2004 the Dillingham census area had an estimated population of 4,294 (US Census, Quick Facts).

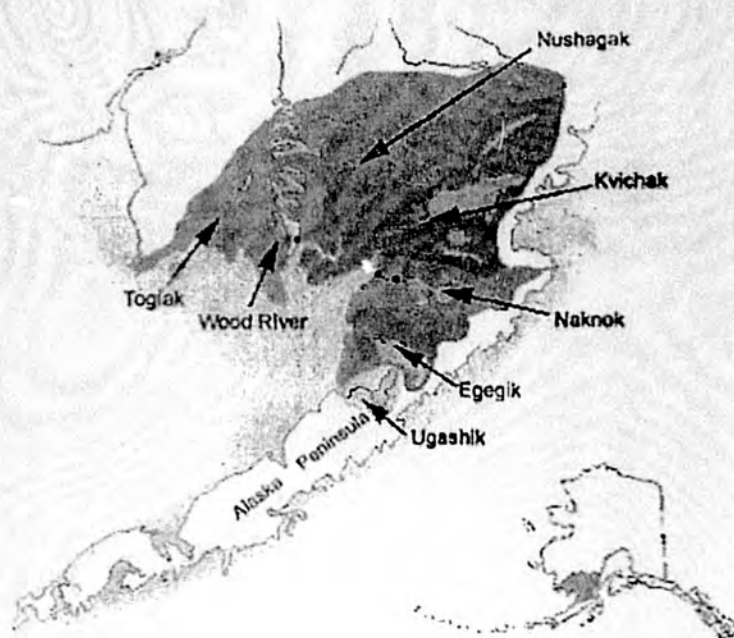


Figure 5. Map of Bristol Bay Study Area

1.3 Focus of Study-Economic Uses

The current research focuses on the ecosystem services provided by the Bristol Bay Region. These services are broad and substantial and include, but are not limited to commercial, aesthetic, recreational, cultural, natural history, wildlife and bird life, and ecosystem services.

A primary dichotomy of economic values is the division of values into those that are, or can be traded within existing economic markets, and those for which no developed market exists. Examples of resource services specific to the Bristol Bay region that are traded in markets are commercial fish harvests and guided fishing trips. While a number of services provided by the Bristol Bay natural resources can be classified as market services (with associated market-derived values), there are many services provided by this area that are classified as non-market services. These non-market resource services include noncommercial fishing, wildlife watching, subsistence harvests, protection of cultural sites, and aesthetic services.

A second dichotomy of resource services and associated values is that of direct use and passive use services and values. The most obvious type, direct use services, relates to direct onsite uses. The second type of resource services are so-called passive use services. These services have values that derive from a given resource and are not dependent on direct on-site use. Several of the possible motives for passive use values were first described by Weisbrod (1964) and Krutilla (1967), and include existence and bequest values. Existence values can derive from merely knowing that a given natural environment or population exists in a viable condition. For example, if there were a proposal to significantly alter the Bristol Bay natural ecosystem, many individuals could experience a real loss, even though they may have no expectation of ever personally visiting the area.

While use services may or may not have associated developed markets for them, passive use services are exclusively non-market services.

When passive use and use values are estimated together, the estimate is referred to as total valuation. This concept was first introduced by Randall and Stoll (1983) and has been further developed by Hoehn and Randall (1989).

The National Research Council in their 2005 publication, "Valuing Ecosystem Services: Toward Better Environmental Decision Making" provided an outline of ecosystem services. Table 11 provides an application of the NRC outline to Bristol Bay resources, and details examples of the ecosystem services, both use and passive use, that are produced by natural resources such as those found in the Bristol Bay region. Additionally, Figure 6 diagrams the flow of ecosystem services.

Table 11: Types of Ecosystem Services

<i>Use Values</i>		<i>Nonuse Values</i>
Direct	Indirect	Existence and Bequest Values
Commercial and recreational fishing	Nutrient retention and cycling	Cultural heritage
Aquaculture	Flood control	Resources for future generations
Transportation	Storm protection	Existence of charismatic species
Wild resources	Habitat function	Existence of wild places
Potable water	Shoreline and river bank stabilization	
Recreation		
Genetic material		
Scientific and educational opportunities		

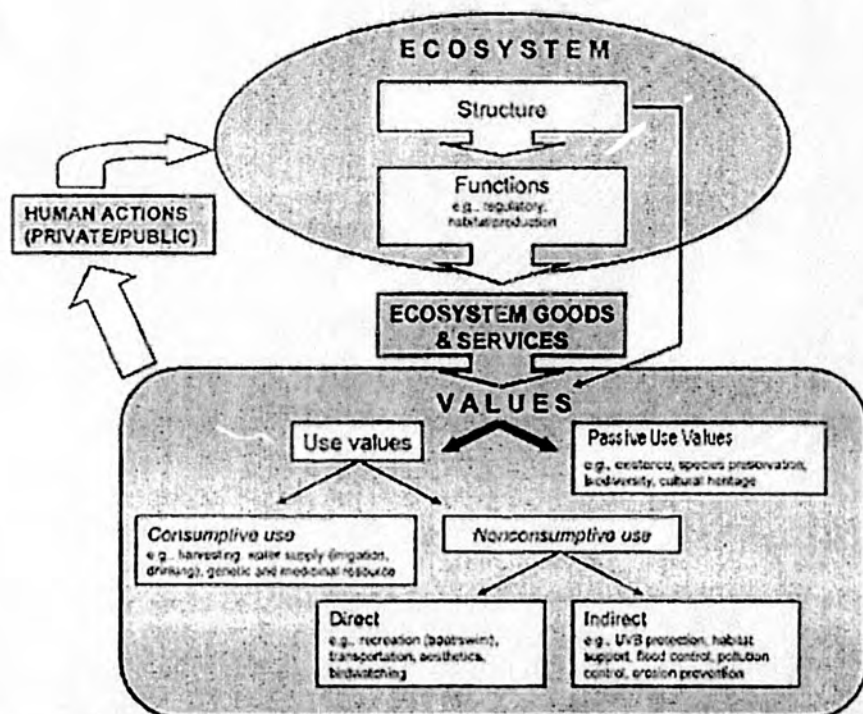


Figure 6. Flows of Ecosystem Services (Adapted from NRC 2005)

A comprehensive economic evaluation of these Bristol Bay wild salmon ecosystems needs to include two accounting frameworks. One is regional economics or economic significance, focused on identifying cash expenditures that drive income and job levels in the regional economy. The other is a net economic value framework that includes all potential costs and benefits from a broader social (usually national) perspective. The latter necessarily includes nonmarket and indirect benefits, such as the benefits anglers derive from their recreational activity, over and above their actual expenditure. Both perspectives are important for policy discussions and generally both accounting frameworks are utilized in evaluating public decisions, for example through the NEPA process (such as environmental impact statements) or in informing public opinion.

2.0 Methods

This section provides information on the statistical methods and modeling procedures utilized in the following analysis.

2.1 Sample Design Methods

The sample for the 2005 Alaska sportfish angler internet survey (and random mail survey) was designed as a random sample of a large share of Alaska Department of Fish and Game 2005 fishing license sales in South-central Alaska. The pool of possible license holders was sampled through a stratified random sample design to increase the probability of sampling freshwater anglers who had fished Bristol Bay streams or lakes in 2005. Respondents were weighted appropriately in analysis to reflect the actual distribution of license sales among the subset of South-central Alaska license vendors that were sampled.

In addition to population weighting, survey responses were also weighted to correct for potential non-response bias using methods developed by Kanninan, Chapman and Hanemann (1992).

The survey procedure followed a standard Dillman (2000) survey methodology using initial contact and repeat follow-ups. Further detail is presented below in Section 4. An example of the angler survey instrument is included as Attachment A.

All analysis and data manipulation was completed using SAS statistical software, and Microsoft Excel.

2.2 Net Economic Value Analysis Methods

The estimation of willingness to pay models described below (see Table 33) was derived using a maximum likelihood interval approach (Welsh and Poe 1998). Respondents were asked to choose the highest amount he or she was willing to pay from a list of possible amounts. It was inferred that the respondent's true willingness to pay was some amount located in the interval between the amount the respondent chose and the next highest amount presented. Let X_{il} be the maximum amount that the i th person would be willing to pay and X_{ih} be the lowest presented amount that person would not pay.

Given this, WTP must lie in the interval $[X_{il}, X_{ih}]$. If $F(X_i; \beta)$ is the statistical distribution function for WTP _{i} , with parameter vector β then the probability that WTP _{i}

lies between two given payment bid amounts is $F(X_{il}; \beta) - F(X_{il}; \beta)$ and the associated log-likelihood function is:

$$\ln(L) = \sum_{i=1}^n \ln [F(X_{il}; \beta) - F(X_{il}; \beta)]$$

The SAS statistical procedure LIFEREG was used to estimate the parametric model of willingness to pay based on the underlying payment card responses.

2.3 Regional Economic Modeling Methods

Calculations of the economic significance of the various uses of the Bristol Bay ecosystem were carried out using the ISER regional Input-Output Model (Goldsmith, 2000). This model has been specifically designed and constructed using Alaska data to calculate the employment, wage, value added, and sales effects on Alaska regional economies from different activities including commercial fishing, recreational spending, and household spending.

Dollars spent in the Bristol Bay region and elsewhere in Alaska by the commercial fishing sector, by recreational visitors, or by subsistence users are input into the model, and the indirect and induced effects of those expenditures are calculated. The indirect effect is the increase in jobs and wages that results from local businesses supplying goods and services to the commercial fishing businesses, visitors, or subsistence hunters. The induced effect is the increase in jobs and wages from consumer purchases by households working for these various businesses. The sum of these effects provides a measure of the importance of these activities to the economy of the region.

The model incorporates a number of structural features that account for unusual characteristics of the regional economies of Alaska. In particular it tracks the residence of workers in different industries and "leakages" of expenditures. Large shares of the workers in both the commercial fishing and recreation industries move into the Bristol Bay region during the summer but live either in other parts of Alaska or outside the state. The model divides the economic effect of the worker payroll between their place of work and their place of residence. Much of the spending by businesses and households in the Bristol Bay region occurs in other parts of Alaska or outside the state. The model tracks where this spending "hits the street" and its impact on jobs and wages is calculated at that location.

3.0 Data Collection

A major emphasis of this study was to update in part the previous data collection efforts that provide information on recreational angling in the Bristol Bay region (Ackley 1988, Romberg 1999). To this end, the current study designed and implemented a suite of surveys in the region. The three populations surveyed included licensed anglers, destination fishing lodge owners within Bristol Bay, and Bristol Bay fishing lodge clients.

Section 4 of this report details the design and implementation of the Bristol Bay angler survey. The main objectives of the survey were to measure angler expenditures, preferences and attitudes, net economic values, and demographic characteristics. The Bristol Bay angler survey was designed to collect a stratified random sample of anglers that would support extrapolation of the survey results to a good share of the population of licensed anglers in south central Alaska. The primary population sampled was anglers who had purchased a 2005 Alaska Sportfishing license. Table 12 shows the populations surveyed, and data collected. The primary survey sample used for analysis was the sample of 2,400 licensed anglers. These anglers were asked questions relating to their fishing trips, expenditures, opinions, and preferences.

A second sample of Bristol Bay fishing lodge owners was asked detailed questions regarding their lodge operations as well as financial information on payroll and other business expenditures.

Finally, a third population, a sample of Bristol Bay fishing lodge clients, was also contacted and surveyed on their fishing trips, expenditures, opinions, and preferences.

Table 12: Bristol Bay Surveys: Sample Frame and Design

<i>Population</i>	<i>Source/sample size</i>	<i>Data Collected</i>
Licensed Alaska Anglers	Alaska F&G License database – 2,400 anglers	Trip information Opinions and preferences Expenditures Net economic value estimates Preservation value estimates
Destination fishing lodge owners	Listing of major lodges in Bristol Bay – 45 Lodges	Services provided Rates and occupancy Business expenditure patterns
Bristol Bay Lodge clients	Lodge client information supplied by cooperating lodges (330 lodge clients)	Same as for licensed Alaska anglers

3.1 Survey and Sampling Design

The design of the 2005 Bristol Bay angler and lodge owners surveys followed the Dillman total design survey method (Dillman 2000). Table 13 details the methods employed in surveying the anglers and lodge owners.

Table 13: Bristol Bay Angler Survey and Sample Design

<i>Population</i>	<i>Subpopulation/ wave</i>	<i>Number of contacts</i>	<i>Survey method</i>	<i>Monetary incentive</i>
Licensed Alaska Anglers	Jan – July licenses	4 mail	Internet	932 of 1,400 (66%)
	Aug – Sept licenses	4 mail	Internet	1,000 of 1,000 (100%)
	Jan – July licenses	4 mail	Mail	none
Bristol Bay Lodge Owners	One sample of 46 lodges	2 mail 2 email	Mail	none
Bristol Bay Clients	One sample of 330 lodge clients	4 mail	Mail	none

A stratified sample of licensed anglers was drawn from a pool of 2005 Alaska sport-fishing licenses sold by four different groups of vendor locations in south-central Alaska: Bristol Bay, Anchorage, Matanuska/Susitna, and Kenai. The sampling was designed to increase the probability of sampling anglers who had fished in Bristol Bay in 2005, yet at the same time sampling the primary possible south-central Alaska license vendor locations for anglers likely to fish in Bristol Bay.

This sample was drawn in two stages. First a sample of 1,400 license-holders was drawn from the January-July license base. Because there is a lag in the development of the computer-based data base of license sales, a sample was drawn from this first pool of licenses as soon as available from Alaska Department of Fish and Game, in order to minimize potential recall bias. A second sample of 1,000 license holders from the license sale pool for August 1 to September 30 was drawn and surveyed subsequently. The stratified sampling design required that the survey results be weighted to reflect the entire license pool from which they were drawn.

The angler samples received four mail contacts asking potential respondents to participate in the 2005 Bristol Bay Angler Survey and directing them to a survey website at the University of Montana, Bureau of Business and Economic Research. Respondents were provided with unique passwords, giving them access to their survey. The mailings sent to potential respondents included: 1) initial contact letter, 2) reminder postcard, 3) 2nd reminder letter, and 4) 3rd reminder letter. To increase response rates and to test the

effect of an incentive, 932 (or two-thirds) of the 1,400 initial letters contained \$2 in cash as a token of appreciation for participation in the survey. Based on preliminary analysis of the response to the incentive, all 1,000 anglers in the second wave mailing received the \$2 incentive.

In addition to the sample of 2,400 licensed anglers asked to complete an internet survey, a smaller sample of 300 anglers from the January through July license pool received the same survey in a mail form. The purpose of this sub-sample was to test response rates across survey modes. This sub-sample also received four mail contacts, two of which included a printed survey instrument.

The lodge owner survey was sent to a sample of 46 Bristol Bay lodge owners. These lodges received an initial email notice of the mail survey, the mail survey packet, a reminder email notification, a second survey by mail, and a final email reminder. The lodge survey asked owners to supply detailed information on the operation of their lodges, including rates and occupancy for several years, capital expenditures in recent years, and detailed business expenses and payroll information for 2005 season. The data collected from the lodge owner sample was intended to provide a snapshot of the typical distribution of revenues from lodge operations within the Bristol Bay and Alaska economies.

The 2005 Bristol Bay lodge client survey was a sample of 330 anglers. This was a convenience sample (not a probability sample) in that a limited number of Bristol Bay lodges provided contact information for a sample of their client lists. This sub-sample also received four mail contacts including 1) an initial letter, 2) survey package, 3) reminder postcard, and 4) 2nd survey package. This survey provided additional information primarily on Kvichak River lodge client anglers.

3.1.1 Structure of Bristol Bay Angler Survey

The angler survey instrument was organized into four primary groupings of questions. Section I of the survey asked general questions about the angler's sport fishing level of experience and preferences in types of fishing and locations for fishing. Section II asked specifically about the number and location of 2005 Alaska fishing trips taken to Bristol Bay waters (mail surveys) and Bristol Bay plus other south central Alaska waters (internet survey). Section III narrowed the focus of the survey down to the most recent trip the respondent had taken to fish in south central Alaska. In this section respondents were asked detailed questions on the location, dates, cost and characteristics of this most recent Alaska fishing trip. In Section III anglers were also asked about fish species they targeted and caught on their trip, how they rated several aspects of their experience, and how the trip compared to other destinations they have fished in recent years. Section III also included a series of questions related to current policy issues on road building and development in Bristol Bay. The final section of the survey, Section IV, asked a series of questions on the demographic characteristics of the respondent.

3.1.2 Bristol Bay Angler Survey Sample Allocation Design

As noted above, the 2005 Bristol Bay Angler Survey was designed as a stratified sample of Alaska 2005 sportfish license holders. The strata were based on where anglers had purchased their licenses (specifically, four south central Alaska regions: Anchorage, the Kenai Peninsula, Matanuska/Susitna, and Bristol Bay (RST), and two different purchase periods: January-July and August-September). Some specific vendors within each location were excluded to increase the probability of sampling freshwater (not saltwater) anglers. The following series of tables (Table 14 through Table 19) provide detail on the size and distribution of the license population as well as that of the sample drawn for this survey. Additionally, information on the distribution of survey responses across the sample strata are supplied for both all survey respondents and for sub-samples of respondents supplying information on trips to the Bristol Bay area and the Kenai Peninsula.

Table 14 shows the distribution of the total population of 2005 sportfish licenses as supplied by Alaska Department of Fish and Game. The license pool was separated into two waves. Wave 1 included licenses sold between January 1 and July 31, 2005. Wave 2 included licenses sold between August 1 and September 30, 2005. Two waves were sampled in order to minimize recall bias among those respondents whose most recent trip might have been earlier in the fishing year.

Table 14. 2005 Actual ADF&G Sportfish License Sales

Wave 1 Actual License Pool	2005 ADF&G Sportfish Licenses sold			Distribution of License sales across sample populations		
SampleArea	RESIDENCY			RESIDENCY		
	NON	RES	Total	NON	RES	Total
Anchorage	32,050	54,624	86,674	15.1%	25.7%	40.7%
Kenai Peninsula	38,821	22,031	60,852	18.2%	10.4%	28.6%
MatSu/West Cook	8,851	18,908	27,759	4.2%	8.9%	13.0%
RST (Bristol Bay)	3,116	1,694	4,810	1.5%	0.8%	2.3%
Total	82,838	97,257	180,095	38.9%	45.7%	84.6%
Wave 2 Actual License Pool						
SampleArea	RESIDENCY			RESIDENCY		
	NON	RES	Total	NON	RES	Total
Anchorage	10,087	4,566	14,653	4.7%	2.1%	6.9%
Kenai Peninsula	10,414	1,485	11,899	4.9%	0.7%	5.6%
MatSu/West Cook	2,992	1,632	4,624	1.4%	0.8%	2.2%
RST (Bristol Bay)	1,251	257	1,508	0.6%	0.1%	0.7%
Total	24,744	7,940	32,684	11.6%	3.7%	15.4%

Overall, the license pools contained 180,095 anglers for the Wave 1 sample and 32,684 anglers in Wave 2. Table 14 also shows the proportional distribution of all licenses in the

pool across the 16 sample strata (2 waves x 2 residency classes x 4 sample areas). The sample distribution was designed to increase the probability of sampling Bristol Bay anglers, and to obtain approximately equal samples of nonresident anglers in wave 1 and wave 2.

Table 15 shows the actual distribution of randomly drawn licenses across the 16 sample strata. As in the previous table, this table also shows the proportional distribution of the license sample across the strata.

Table 15. Distribution of Sample of License Holders Drawn from ADF&G License Pool

Wave 1 Sample distribution	Licenses sampled from total pool			Distribution of License sample across sample populations		
	RESIDENCY			RESIDENCY		
SampleArea	NON	RES	Total	NON	RES	Total
Anchorage	83	164	247	3.5%	6.8%	10.3%
Kenai Peninsula	142	105	247	5.9%	4.4%	10.3%
MatSu/West Cook	71	176	247	3.0%	7.3%	10.3%
RST (Bristol Bay)	442	217	659	18.4%	9.0%	27.5%
Total	738	662	1,400	30.8%	27.6%	58.3%

Wave 2 Sample distribution	RESIDENCY			RESIDENCY		
	NON	RES	Total	NON	RES	Total
SampleArea						
Anchorage	116	59	175	4.8%	2.5%	7.3%
Kenai Peninsula	152	23	175	6.3%	1.0%	7.3%
MatSu/West Cook	108	67	175	4.5%	2.8%	7.3%
RST (Bristol Bay)	392	83	475	16.3%	3.5%	19.8%
Total	768	232	1,000	32.0%	9.7%	41.7%

Table 16 presents the ratios of the proportion of the entire sample in each strata to the proportion of the total license pool in each of the 16 strata. For comparison, a ratio of 1.0 in this table would indicate that the proportion of the sample in a stratum was exactly equal to the proportion of the total number of licenses in that stratum. Ratios of less than 1.0 indicate that the strata are under-sampled relative to the share of all licenses in those strata. Conversely, a ratio of over 1.0 indicates that a stratum is over-sampled relative to the entire population.

Table 16. Ratio of Sportfishing License Sample Sizes to Population Sizes

Wave 1	NON	RES
Anchorage	0.23	0.27
Kenai Peninsula	0.32	0.42
MatSu/West Cook	0.71	0.83
RST (Bristol Bay)	12.58	11.36
 Wave 2	 NON	 RES
Anchorage	1.02	1.15
Kenai Peninsula	1.29	1.37
MatSu/West Cook	3.20	3.64
RST (Bristol Bay)	27.78	28.63

Note: a ratio of less than one indicates the sample strata is under-sampled relative to the population size. A sample of over one indicates the strata is over-sampled relative to the population size.

Table 16 shows that for Wave 1 the RST (Bristol Bay) license sales are significantly over-sampled relative to the population of license sales. In this first wave licenses from the remaining three strata were under-sampled relative to the license population. In Wave 2 the Bristol Bay strata are also significantly over-sampled relative to the pool. This over-sampling of the Bristol Bay license sales was included in the sample design in order to maximize the probability that information on 2005 fishing trips to the Bristol Bay area would be included in the survey responses, and to balance the number of nonresident anglers between waves. Within purchase location and time of purchase strata, residents and nonresidents were sampled as the same proportion as the license population for that strata.

Table 17 shows the distribution of internet survey responses across the 16 sample strata. While this table shows a distribution of responses that is relatively representative of the distribution of the sample across the strata, Table 18 shows that the pattern changes dramatically when only responses containing information on trips to the Bristol Bay are included. Table 18 shows that 95% of survey responses in our sample that contained information on a Bristol Bay 2005 fishing trip were from licenses sold in the Bristol Bay area.

While this was expected, and was the basis of the sample design which significantly over-sampled the Bristol Bay license sales, the degree to which Bristol Bay trips would be under-represented in the non-Bristol Bay license strata was unexpected. While 70% of respondents who bought their licenses in the Bristol Bay area reported information on a Bristol Bay fishing trip, only 3.7% of those buying licenses in the other three areas reported on Bristol Bay trips. The response proportions shown in Table 17 and Table 18 suggest that had the sample design been random across all four license areas rather than stratified with over-sampling of the Bristol Bay area, the survey could have expected to only receive information on 30 to 35 Bristol Bay angling trips rather than the 301 trips reported in the final survey responses. The sampling achieved the appropriate balance of

nonresident Bristol Bay respondents between the early summer and late summer license pools.

Table 17. Distribution of all Survey Responses to Internet Survey

<i>Sample Area (License Purchase)</i>	<i>Wave 1 (Jan.-July licenses)</i>		<i>Wave 2 (Aug. - Sept. licenses)</i>	
	Residents	Nonresidents	Residents	Nonresidents
Anchorage	43	25	10	43
Kenai	32	57	8	66
Matanuska/Susitna	35	32	15	44
RST (Bristol Bay)	55	180	13	185
Total	165	294	46	338

The distribution of Bristol Bay trip responses in Table 18 is so completely dominated by licenses sold in the Bristol Bay region that the decision was made to limit analysis of Bristol Bay trip characteristics to responses from this major strata. The small number of observations from other license sales areas were excluded to eliminate the possibility of a grossly disproportional impact associated with one or two observations contained in heavily weighted strata.

Table 18. Distribution of Survey Responses with Information on a Bristol Bay Fishing Trip

<i>Sample Area (License Purchase)</i>	<i>Wave 1 (Jan.-July licenses)</i>		<i>Wave 2 (Aug. - Sept. licenses)</i>		<i>Sum</i>
	Residents	Nonresidents	Residents	Nonresidents	
Anchorage	3	1	1	1	6
Kenai	1	1	1	2	5
Matanuska/Susitna	1	1	0	2	4
RST (Bristol Bay)	45	121	10	125	301
Total	50	124	12	130	316

The only other south-central Alaska fishing destination that was reasonably well represented in the current trip responses was Kenai Peninsula. Table 19 shows the distribution of survey responses including information on trips to Kenai Peninsula waters. Consistent with the pattern shown in Table 18, the large majority of these Kenai area trips were from licenses sold in either the Kenai region or the nearby Anchorage area.

Table 19. Distribution of Survey Responses with Information on a Kenai Area Fishing Trip

<i>Sample Area</i>	<i>Wave 1 (Jan.-July licenses)</i>		<i>Wave 2 (Aug. - Sept. licenses)</i>	
	Residents	Nonresidents	Residents	Nonresidents
Anchorage	11	8	2	16
Kenai	20	31	2	39
Matanuska/Susitna	2	3	3	3
RST (Bristol Bay)	2	2	0	2
Total	35	44	7	60

4.0 Survey Response Rates and Weighting

The response rates detailed in Table 20 are final rates for all populations. Table 20 shows a breakout of response rates by survey type. All survey results specific to Bristol Bay fishing were derived from the sample responses associated with licenses bought in the Bristol Bay area. Therefore, individual responses from each of 4 strata (2 waves x 2 residency classes) were weighted to reflect the actual distribution of licenses sold among these 4 strata.

Table 20: Bristol Bay Survey Response Rates

<i>Population</i>	<i>Sample Size</i>	<i>Un-deliverables</i>	<i>Completed surveys</i>	<i>Response Rate</i>
Angler (License Holder) Internet Survey	2,400	143	843	37.4%
Resident	886	62	211	25.6%
Nonresident	1,514	81	632	44.1%
License holders (mail)	300	14	103	36%
Lodge owners	46	2	14	32%
Lodge clients	330	13	126	39.7%

Note: an additional 6 mail survey responses were received from the internet survey sample.

The response rates shown in Table 20, while somewhat lower than those generally experienced by the authors in survey research conducted in other states, are consistent with response rates from previous economic surveys of ADF&G fishing license holders (Duffield, Merritt and Neher, 2002). The overall internet response rate for this survey of about 37% (excluding undeliverable surveys) is nearly identical to overall response rates from an ADF&G-sponsored survey of grayling fishing (37%) and an ADF&G-sponsored survey of salmon fishing (39%). Additionally, the difference between resident and non-resident response rates in the current internet survey is consistent with response rates from a third ADF&G-sponsored survey of attitudes related to Alaska Rod and Reel fishing. This survey had a response rate for Alaska residents of 25% to 31% (depending on Alaska region sampled). The nonresident response rate for the rod and reel survey was 46%.

4.1 Results of Survey Incentive Experiment

As noted above, the anglers invited to participate in the internet-based survey were randomly placed into either a group receiving a \$2 cash incentive for participating, or a group receiving no incentive. These two treatments were included to 1) encourage increased participation by the 80% of anglers in our sample who received the incentive, and 2) to test the impact of the incentive on response rates. Table 21 shows the comparison of response rates between those anglers receiving the incentive and those not

receiving the incentive. For both the resident and non-resident samples the \$2 incentive had a positive impact on final response rates. Given the response rates shown in Table 21 and associated sample sizes, the difference between the two treatments (incentive and no incentive) is statistically significant at the 99% level of confidence for both the resident and non-resident samples.

Table 21. Comparison of Response Rates between those Respondents Receiving an Incentive Payment, and those receiving No Incentive

<i>Population</i>	<i>Received no incentive</i>	<i>Received \$2 incentive</i>	<i>Absolute change in Response Rate</i>
Residents	15.7% n=223	26.23% n=671	+10.53%
Non Residents	35.1% n=245	43.3% n=1,261	+8.2%

4.2 Sample Population and Non-response Weighting

One consequence of a stratified sampling plan with unequal sampling rates across strata is that it necessitates the weighting of individual responses to correct for over or under-sampling.

In addition to weighting so the sample reflected the actual population, responses were also weighted to correct for possible non-response bias. While the response rates to the survey were representative of rates from similar Alaska angling surveys, it is possible that non-respondents are significantly different in some characteristics from survey respondents. In order to test for and correct for any such non-response bias a comparison of respondents and the total sample of potential respondents was conducted using three variables available in the ADF&G database for all license holders: age, type of fishing license, and gender.

The differences between the survey respondents and the entire sample drawn are not large for the three variables examined. Respondents to the survey tended to be slightly older and more heavily dominated by males than did the entire license sample. However, only one of six comparisons of mean values for the three variables and 2 residency classes showed a statistically significant difference. Nonetheless, an analysis was undertaken to develop a respondent sample that was weighted to represent the same age, gender, and license type characteristics as the overall license sample. The approach used is based on methods developed by Kanninan, Chapman and Hanemann (1992).

As noted, information was available on three characteristics of the entire license sample: age, gender, and type of license purchased (length of license period). These three variables were transformed into dichotomous variables based on the individual

distributions of each variable for the entire sample. These three dichotomous variables were, in turn, combined into one variable with 8 levels (one for each of the 8 possible combinations of the three dichotomous variables). The number of observations at each of these levels was then compared between the survey respondents and the total license sample, and a set of 8 weights were computed to equalize the two. This process was undertaken for each population strata.

Table 22 details the impact of the non-response weighting procedure on each population strata. Comparison of the un-weighted respondents and the entire pool of 2,400 possible respondents showed only small differences. The only cells with differences between the entire pool and the survey respondents were the age variable for nonresident anglers. Nonresident respondents were significantly older on average than were the entire pool of nonresident anglers. Following the non-response weighting process, there were no statistically significant differences among the analysis variables.

Table 22. Nonresponse weighting results, by population strata

	<i>Un-weighted respondents</i>	<i>Entire sample</i>	<i>Weighted respondents</i>
Wave 1 - Nonresidents			
License type dummy	70.7%	66.7%	67.1%
Gender dummy	84.0%	82.8%	83.8%
Age	50.39	47.88	49.43
Sample size	294	738	294
Wave 1 - Residents			
License type dummy	97.6%	98.0%	99.0%
Gender dummy	67.9%	68.4%	66.7%
Age	40.88	39.40	39.30
Sample size	165	662	165
Wave 2 - Nonresidents			
License type dummy	69.2%	66.7%	67.7%
Gender dummy	81.1%	79.4%	80.5%
Age	50.85	48.96	49.44
Sample size	338	768	338
Wave 2 - Residents			
License type dummy	87.0%	90.1%	92.3%
Gender dummy	63.0%	62.5%	63.2%
Age	38.57	37.62	36.61
Sample size	46	232	46
Total sample size	843	2,400	843

Note: bolded entries indicate means are significantly different at the 95% level of confidence

5.0 Bristol Bay Sport Fishing

Section 5 of this report details the results from two surveys of Bristol Bay anglers: 1) results from the 843 anglers who responded to the Bristol Bay Region – 2005 angler internet survey administered by the University of Montana, Bureau of Business and Economic Research, and 2) the 126 responses from Bristol Bay remote lodge clients sampled using a repeat contact mail survey.

As noted in Section 4, these two surveys had overall 37% to 40% response rates. In general, nonresident anglers participated in the internet survey in higher proportions than did Alaska resident anglers (44% as compared to 26% response rates, respectively).

The following discussion of sport-fishing angler survey results is divided into two general sections. First is a detailed discussion of responses to the internet survey of a random sample of all licensed Alaska anglers. The second part contains a discussion of the results from the mail survey of 2005 Bristol Bay remote lodge clients. This survey sample provides an expanded view of angler and trip characteristics specific to trips to the Kvichak River, which for nonresident anglers is a primarily rainbow trout fishery destination.

The following discussion of the results from the 2005 Bristol Bay angler survey generally reflects the responses of those internet survey respondents who reported taking a fishing trip to the Bristol Bay Region in 2005, and answered questions about that trip to the Bristol Bay area. The exception to this presentation is in the case of estimation of the mean contribution to a Bristol Bay protection fund. In this case, all responses to the survey were included.

The results in this section are presented using several sub-sample breakouts. Comparisons of sub-samples are presented to highlight similarities as well as differences between sample groups. Primary sub-samples examined include nonresident anglers and Alaska residents, and non-local Alaska resident anglers. In some cases, nonresident anglers who reported staying at a remote Bristol Bay fishing lodge are highlighted for comparisons to other sub-samples. Some comparisons are also provided for fishing destinations, primarily the Kenai and Russian Rivers, on the Kenai Peninsula.

The analysis examines angler responses to a wide range of questions on their opinions, preferences, and experiences relating to fishing in the Bristol Bay area. While the pool of respondents for this survey was drawn from a large share of all south-central Alaska licensed anglers, only those anglers who reported taking a trip to fish the Bristol Bay area in 2005 were utilized in analysis of many questions relating specifically to Bristol Bay fishing. Because of this, the sample of Alaska resident responses is heavily dominated by responses from Alaskans living within the Bristol Bay region. A limitation of this study is that the sample under represents out-of-Bristol Bay Alaska residents.

5.1 Fishing Experience and Attitudes for Alaska Resident and Non-resident Anglers

The first section of the 2005 Bristol Bay angler survey asked respondents a series of questions pertaining to their fishing habits and preferences. Additionally, respondents were asked to rate the importance of certain fishing and site attributes in selecting where they sport-fished in Alaska. Table 23 shows results both for resident and nonresident Bristol Bay anglers (e.g. anglers whose "recent trip" was to Bristol Bay waters). Overall, about 85% of resident and non-resident respondents reported that they had been fishing for 10 years or more. Nonresidents were more likely to prefer fly fishing compared to residents (65% vs. 47%). About 28% of non-residents but only 5% of residents said that fishing was their favorite outdoor activity. Table 23 also shows a clear preference for stream fishing over lake fishing for nonresident anglers while local residents are more evenly divided in their preferences.

Table 23: Bristol Bay Angler Experience and Preferences

Question/statistic	Population	
	Non-residents	Alaska Residents
Percent who have fished for 10 years or more	85.0%	84.4%
Percent who prefer fly fishing	65.0%	46.5%
Percent who prefer stream fishing from bank or w/waders	64.7%	58.3%
Percent who prefer lake fishing	26.1%	59.4%
Percent who rate fishing as their favorite outdoor activity	28.0%	4.5%
Percent who rate their expertise as an angler as "advanced"	40.6%	34.0%
Sample Size	246	55

Table 24 reports summary results for residents and non-residents on the importance of different factors in their decisions of where to fish. Specifically, the questions asked:

"What factors are important to you in selecting where to sport fish in Alaska. For each characteristic below, please rate its importance from least important (1) to most important (5)."

Both resident and non-resident anglers rated the same five attributes as their top five in selecting an angling area. These attributes are "natural beauty of the area", "being in an area with few other anglers", "being in a wilderness setting", "chance to catch wild fish", and "opportunities to view wildlife." Both resident and non-resident anglers rated being in an area with few other anglers as a very important site attribute (85% and 87% respectively). Consistent with this, strong majorities of both resident and nonresident anglers also said fishing in remote, off-the-road locations was an important fishing location attribute (64% and 70%, respectively).

Table 24: Bristol Bay Angler Ratings of Importance of Selected Angling and Area Attributes.

Fishing experience attribute	Percent rating as "most important" (4 or 5)			
	Bristol Bay Anglers		Kenai Peninsula Anglers	
	Non-residents	Residents	Non-residents	Residents
Fishing easily accessible site near a road	4.5%	9.4%	36.6%	45.7%
Fishing in remote, off-the-road locations	70.2%	64.2%	29.9%	26.0%
Harvesting fish	21.4%	41.3%	29.7%	38.8%
Catching and releasing large numbers of fish	63.0%	28.7%	40.1%	9.4%
Chance to catch large or trophy-sized fish	72.2%	40.6%	60.9%	32.8%
Natural beauty of the area	89.6%	82.8%	84.4%	89.5%
Catching wild stock rainbows	55.5%	48.3%	20.7%	22.1%
Being in an area with few other anglers	87.0%	85.4%	71.7%	50.5%
Being in a wilderness setting	84.4%	89.5%	70.1%	61.1%
Chance to catch wild fish	85.3%	83.2%	69.7%	80.8%
Opportunities to view wildlife	87.5%	75.2%	76.8%	66.5%
Sample size	238	54	101	41

Table 24 also shows a comparison of responses from anglers fishing both Bristol Bay and those whose most recent trip was to fish the Kenai Peninsula. Generally those anglers fishing the Kenai were less concerned with issues of angler crowding and fishing remote roadless areas than were Bristol Bay anglers. These findings are consistent with the general finding from Romberg (1999), that there are different market segments of Alaskan sportfishing, and that different types of waters attract different types of anglers.

5.2 Bristol Bay Area Trip Characteristics and Angler Attitudes

Those survey respondents who reported taking a fishing trip to the Bristol Bay area in 2005 were asked a series of questions about that trip. Table 265 and Figure 7 show how survey respondents described the type of Bristol Bay angling trip they took. For non-resident anglers the most common trip type was staying at a remote lodge and flying or boating with a guide (35.2%). For resident anglers, the most common types of Bristol Bay fishing trips were accessing the area with their own plane or boat (49.9%), driving to area by motor vehicle (11.3%), and "other" type of trips (24%). Those who reported driving to access Bristol Bay fisheries were primarily residents and nonresidents staying in the King Salmon and Dillingham area, where a few local roads exist and provide some access to nearby fisheries.

Table 25. Bristol Bay Angler Distribution across Trip Types, by Residency

<i>Trip Type</i>	<i>Non-residents (%)</i>	<i>Alaska Residents (%)</i>
Stayed at a remote lodge and flew or boated with a guide to fishing sites most days	35.2	-
Stayed at a tent or cabin camp and fished waters accessible from this base camp	23.7	7.8
Hired other lodging in an area community and either fished on own or contracted for travel on a daily basis	6.4	4.2
Floated a section of river with a guided party	3.9	2.8
Hired a drop-off service and fished and camped on our own	4.3	2.2
Accessed the area with my own airplane or boat	8.3	49.9
Drove to the area by motor vehicle	4.3	11.3
Other	14.0	24.0
Sample Size	246	55

Note: sample size for resident sample is not large enough to divide into local and non-local sub-samples

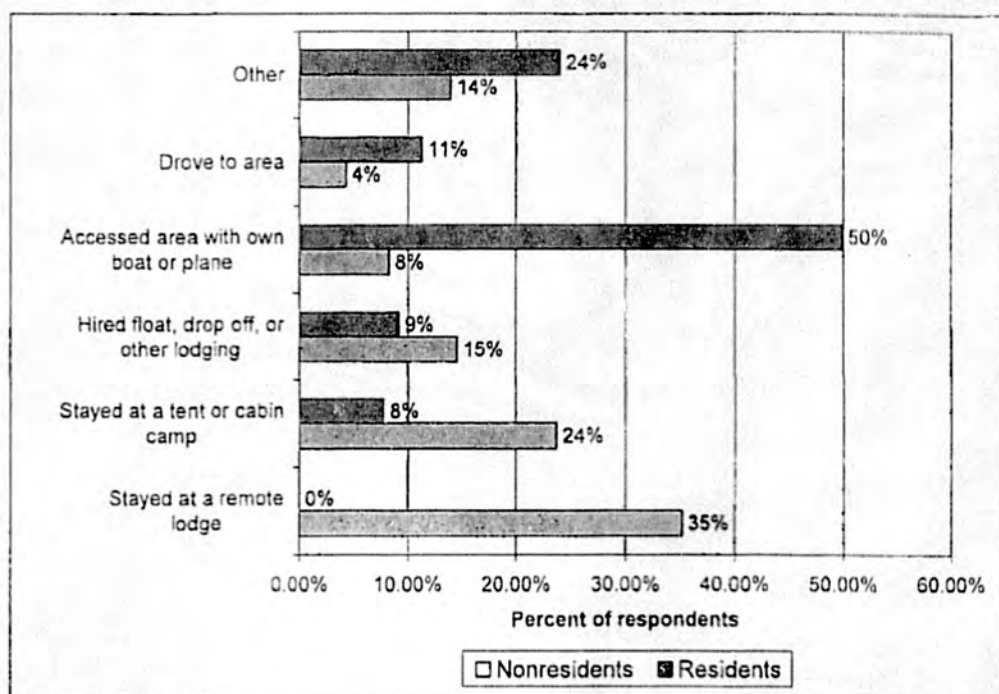


Figure 7. Comparison of Resident and Nonresident Bristol Bay Angler Trip Types

Respondents to the Bristol Bay survey were asked what the primary purpose of their trip to the Bristol Bay area was. While a majority of nonresidents (73%) reported fishing as their major purpose, only 30% of resident anglers reported fishing as the main purpose of their most recent Bristol Bay trip. Table 26 also shows that a much larger proportion of

non-residents (45%) than residents (11.4%) were on their first trip to their primary fishing destination.

Table 26: Bristol Bay Angler Trip Characteristics.

<i>Statistic</i>	<i>Nonresidents (sample size)</i>	<i>Residents</i>
Major purpose of trip was for fishing	72.7% (246)	29.5% (54)
Trip was first trip to primary destination	45.2% (245)	11.4% (48)

Survey respondents were asked what fish species they targeted on their most recent trip to Bristol Bay. Table 27 reports these results. Overall, king salmon and rainbow trout were the most frequently targeted species for both residents and non-residents. Among the two sub-populations, residents were most likely to say they would have taken their trip even if their primarily targeted species had not been available (67%). Conversely, 45% of non-resident anglers said they would have still made the trip absent their primarily targeted species. Overall, 28% of non-residents and 32% of residents reported catching a rainbow trout larger than 26 inches on their most recent Bristol Bay trip.

Anglers fishing the Kenai Peninsula more often targeted Sockeye, and were less likely to target, or catch large, rainbows.

Table 27: Bristol Bay Angler Survey, Targeted Species and Associated Trip Characteristics.

<i>Primary species targeted on trip / statistic</i>	<i>Bristol Bay Anglers</i>		<i>Kenai Anglers</i>	
	<i>Residents</i>	<i>Nonresidents</i>	<i>Residents</i>	<i>Nonresidents</i>
Rainbow Trout	31.3%	30.6%	12.2%	9.9%
King Salmon	29.8%	35.2%	14.6%	36.1%
Silver Salmon	16.5%	16.3%	25.3%	15.8%
Sockeye Salmon	0%	9.1%	45.4%	28.1%
Other Species	22.4%	8.8%	2.6%	10.1%
Would have still taken trip if primary species not available	66.9%	45.0%	55.6%	68.1%
% catching a rainbow larger than 26 inches	31.8%	28.4%	5.4%	10.6%
Sample size	48	235	38	94

Table 28 shows the same statistics presented in Table 27 for the subset of non-resident anglers who reported taking a trip to a remote fishing lodge in Bristol Bay. The primary difference between this subset of non-residents and all non-resident anglers is that remote

lodge clients are more likely to target rainbow trout and to have caught a rainbow over 26 inches.

Table 28. Bristol Bay Angler Survey, Targeted Species and Associated Trip Characteristics : Remote Lodge Sub-sample

<i>Primary species targeted on trip / statistic</i>	<i>Nonresident Remote Lodge Clients</i>
Rainbow Trout	38.9%
King Salmon	29.0%
Silver Salmon	22.6%
Sockeye Salmon	4.9%
Other Species	4.4%
Would have still taken trip if primary species not available	45.5%
% catching a rainbow larger than 26 inches	43.0%
Sample Size	103

Respondents to the Bristol Bay angler survey were presented with a series of statements regarding fishing conditions on their Bristol Bay area trip. They were asked to indicate their level of agreement or disagreement with each statement. *Table 29* shows the percent of residents and non-residents who either "agreed" or "strongly agreed" with each statement. Across all of the statements presented in the survey, majorities of both resident and non-resident respondents agreed with the positive statements about their fishing experience. The highest levels of agreement for both nonresidents and Alaska resident anglers were with the statements "there was a reasonable opportunity to catch fish", "there was minimal conflict with other anglers", and "fishing was in a wilderness setting."

Table 29: Bristol Bay Angler Rating of Selected Attributes of Fishing Trip

<i>Statement</i>	<i>% of respondents who either "agree" or "strongly agree"</i>	
	<i>Nonresidents</i>	<i>Local Residents</i>
Fishing conditions were un-crowded	87.2%	75.4%
There was a reasonable opportunity to catch fish	96.5%	93.0%
There was minimal conflict with other anglers	93.3%	90.7%
Fishing was in a wilderness setting	92.4%	95.0%
There was opportunity to catch trophy sized fish	81.4%	70.0%
There was opportunity to catch and release large # of fish	87.3%	76.6%
Sample Size	235	47

Table 30 and Figure 12 show the survey question results from Table 29 for three specific subgroups: 1) non-resident Bristol Bay lodge clients, 2) all non-resident Bristol Bay anglers, and 3) all non-resident anglers whose most recent trip was to a Kenai Peninsula destination. This comparison shows a clear trend across several statements. In general Bristol Bay lodge client anglers felt their fishing experience was less crowded, in a more wilderness setting, and more productive in terms of number and size of fish caught than did both the sample of all Bristol Bay non-residents, and the Kenai Peninsula non-resident anglers.

Table 30. Angler Rating of Selected Attributes of Fishing Trip: Selected Subsamples.

Statement	% of Nonresident respondents who either "agree" or "strongly agree"		
	Bristol Bay Lodge clients	All Bristol Bay Non-Res.	Kenai Non-Residents
Fishing conditions were un-crowded	92.8%	87.2%	59.9%
There was a reasonable opportunity to catch fish	98.6%	96.5%	89.0%
There was minimal conflict with other anglers	97.4%	93.3%	89.7%
Fishing was in a wilderness setting	98.6%	92.4%	57.8%
There was opportunity to catch trophy sized fish	89.5%	81.4%	55.6%
There was opportunity to catch and release large # of fish	94.0%	87.3%	51.0%
Sample Size	102	235	93

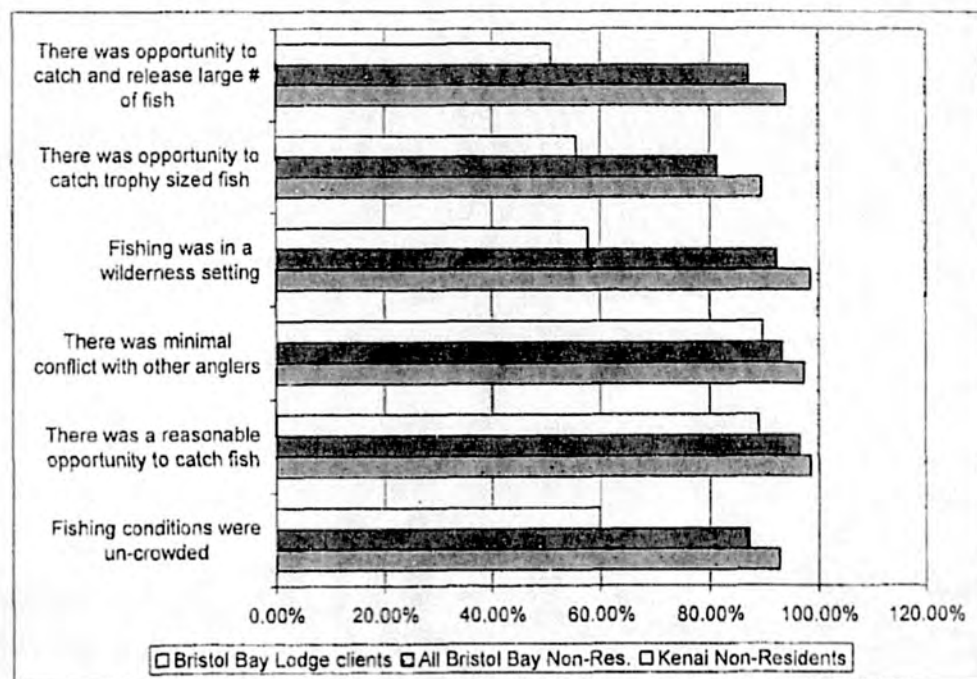


Figure 8. Bristol Bay and Kenai angler rating of selected fishing trip attributes.

The percent of Bristol Bay anglers who reported minimal conflict with other anglers shown in *Table 29* (between 91% and 93%) is confirmed by responses to a follow-up survey question that asked anglers to rate the level of crowding they experienced on their trip from 0 (not at all crowded) to 10 (extremely crowded). *Table 31* shows that a significant percentage of both resident and non-resident anglers rated crowding conditions on their trip as very low. This table also shows the survey crowding rating for the sample of trips taken to the Kenai Peninsula by nonresident anglers. This group showed a lower percentage of respondents who rated the level of crowding on their Kenai fishing trip as between 0 and 2 on the 10-point scale.

Table 31: Bristol Bay Angler Rating of Angler Crowding on Trip.

Most recent trip crowding rating	Bristol Bay Anglers		Kenai Anglers	
	Nonresidents	Residents	Nonresidents	Residents
0 – not at all crowded	34.4%	30.9%	15.3%	9.7%
1	12.5%	16.5%	8.7%	0
2	16.5%	8.6%	7.9%	4.8%
3	10.5%	14.6%	9.4%	6.9%
4	8.7%	3.0%	9.4%	3.0%
5 – moderately crowded	10.8%	16.2%	27.3%	38.1%
6	2.7%	3.8%	2.9%	3.0%
7	2.5%	3.8%	14.9%	13.9%
8	0.9%	2.8%	2.5%	8.8%
9	0.7%	0	1.7%	11.9%
10 – extremely crowded	0	0	0	0
Sample Size	235	44	89	36

5.3 Bristol Bay Angler Expenditures and Trip Value

Respondents to the 2005 Bristol Bay angler survey were asked a series of questions relating to the amount of money they spent on their fishing trips. They were also asked a question designed to measure the net economic value (or willingness to pay) for their trip over and above what they actually spent. The following three tables detail average spending by resident and non-resident anglers associated with their Bristol Bay area trips.

Table 32 shows the average total expenditures per trip for resident and nonresident and resident angler trips to Bristol Bay. As a point of comparison, estimates are also shown for trips to Kenai Peninsula freshwater sites. As would generally be expected, Alaska resident anglers spend much less than non-resident anglers on their trips to Bristol Bay fisheries. The table also shows average total expenditures for fishing trips to Kenai Peninsula waters. These trips follow a similar pattern to the Bristol Bay trips--residents spend much less than nonresidents on their trips. Among nonresident anglers, almost twice as much is spent on average to trips to the Bristol Bay region (\$3,969) compared to trips taken to the Kenai area (\$2,243).

Table 32. Comparison of Reported Average Trip Spending across Populations and Area

<i>Area</i>	<i>Nonresidents (sample size)</i>	<i>Alaska residents</i>
Bristol Bay	\$3,969 (203)	\$393 (27)
Kenai	\$2,243 (75)	\$457 (20)

Table 33 breaks out average expenditures by impact region and type of fishing trip for the nonresident angler sample. Where money is spent on a trip determines local economic impacts. For instance, a given amount of money spent within the very small Bristol Bay economy has a much greater relative impact on this area than the same amount of money spent in, for instance, Anchorage. Table 33 shows that the largest per-trip spending is made by nonresident anglers who stay at a remote lodge with daily guiding services (\$6,327/trip). This compares to the lowest spending levels per trip of about \$1,300 for driving to the fishing site, accessing the area with own plane or boat, and hiring a drop-off service and fishing or camping on own.

The first two rows of Table 33 show that a large portion of Alaska trip costs for remote lodge or tent or cabin camp trips is associated with the cost of a sport-fishing package or tour.

Table 33. Nonresident trips to Bristol Bay waters, mean expenditure per trip estimates by trip type

<i>Trip type</i>	<i>Total spending</i>	<i>Bristol Bay spending^a</i>	<i>Package sport- fishing trip spending</i>	<i>Sample size</i>
Stayed at a remote lodge and flew or boated with a guide to fishing sites most days	\$6,327	\$1,730	\$5,543	92
Stayed at a tent or cabin camp and fished waters accessible from this base camp	\$3,785	\$1,235	\$3,202	43
Hired other lodging in an area community and either fished on own or contracted for travel on a daily basis	\$2,406	\$1,655	\$2,345	18
Floated a section of river with a guided party	\$1,991	--	--	6
Hired a drop-off service and fished and camped on our own	\$1,379	\$1,042	--	10
Accessed the area with my own airplane or boat	\$1,308	\$1,175	0	9
Drove to the area by motor vehicle	\$1,323	\$967	--	5
Other	\$2,033	\$953	\$2,205	23

^a all spending in Bristol Bay except package sportfishing trip expenditures.

Note: cells with less than 5 observations are left blank. Category values are the average values for those respondents reporting an expense in that category. Bristol Bay spending and Package sport-fishing tour spending will not necessarily sum to Total spending due to varying sample sizes.

Table 34 details the distribution of Bristol Bay trip spending across expenditure categories. For non-residents visitors, the largest three spending categories within the Bristol Bay area were for commercial and air taxi service and for lodging or camping fees (totaling about 66% of all spending in Bristol Bay). For non-local Alaska residents the three largest categories of spending were "gas and other Alaska travel costs," camping fees, and commercial air travel (totaling about 58% of all Bristol Bay spending).

Table 34: Distribution of Trip Expenditures across Spending Categories, by Residency and Area

Expenditure category	<i>Nonresidents</i>		<i>non-local AK residents</i>
	In Bristol Bay	In rest of AK	In Bristol Bay
Commercial air travel	31.1%	51.9%	18.1%
Air taxi service	20.5%	1.3%	11.1%
Transportation by boat	0.0%	0.0%	0.0%
Boat or vehicle rental	5.3%	4.8%	7.5%
Gas or other travel costs in AK	4.1%	1.4%	16.3%
Lodging or camping fees	13.9%	11.9%	23.6%
Food or beverages	9.2%	19.3%	16.7%
Guide fees	6.2%	0.6%	0.0%
Fishing supplies	4.1%	5.2%	6.7%
Other non-fish package tours	0.1%	0.7%	0.0%
Other	5.4%	2.9%	0.0%
Total	100.0%	100.0%	100.0%

5.3.1 Aggregate Direct Sport fishing Expenditures in Bristol Bay

One of the major goals of this study was to estimate annual levels of spending in the Bristol Bay area that are attributable to freshwater sport fishing. In order to derive this estimate two primary pieces of information were needed: 1) the number of angler trips per year to the region by Alaska residents and nonresidents, and 2) the average spending per trip by resident and nonresident anglers. A trip is defined here as a roundtrip visit from home, and return. Estimates of the number of anglers who fished in the Bristol Bay region in 2005 were derived by ADF&G staff (Table 35). The average number of trips per angler, estimated from responses to the Bristol Bay angler survey, are also shown in Table 35. In total an estimated 37,000 fishing trips are taken annually to Bristol Bay freshwater fisheries. These trips are split between 13,000 nonresident trips, 19,000 Bristol Bay resident trips, and 4,500 trips by Alaskans living outside of the Bristol Bay area.

Table 35. Estimated 2005 Bristol Bay area angler trips, by Angler Residency

<i>Statistic</i>	<i>Nonresidents</i>	<i>Out-of-area AK residents</i>	<i>BB Residents</i>
Annual Anglers fishing Bristol Bay waters	10,044	3,017	1,614
Average trips per angler for 2005 (std.err.)	1.29 (0.71)	1.47 (0.40)	12.07 (12.98)
Estimated total trips (std.err.)	12,966 (7,121)	4,450 (1,211)	19,488 (20,950)

Table 36 presents the aggregation of total angler expenditures within the Bristol Bay region. This table shows average and aggregate estimated expenditures for three angler groups: 1) nonresident anglers, 2) local-area resident anglers (those who live in the Bristol Bay area), and 3) non-local resident anglers (those Alaska residents living outside of the Bristol Bay region). This table also shows average and total annual spending by nonresident anglers for package sportfishing trips in the Bristol Bay region.

Overall, the large majority of angler spending in the region is attributable to nonresident anglers. Additionally, the majority of nonresident spending is due to the purchase of sportfishing packages such as accommodation and angling at one of the areas remote fishing lodges. Estimates of variability in the estimates were derived for average expenditure levels, and total visitation estimates. It is estimated that annually Bristol Bay anglers spend approximately \$58 million within the Bristol Bay economy. Given the variability in the components of this estimate, the 95% confidence interval for Bristol Bay area spending by anglers from outside the area ranges from \$0 to \$123 million annually. The vast majority of this spending (approximately \$45 million annually) is spent by nonresident anglers.

Table 36. Estimated Aggregate Spending Associated with Sportfishing in the Bristol Bay Region

	<i>Nonresidents</i>		<i>out-of-area AK residents</i>	<i>BB Residents</i>	<i>Total</i>
	All Non Residents	Remote Lodge Increment			
Mean expenditures in Bristol Bay region	\$ 1,339	\$4,277	\$ 1,440	\$ 339	
Estimated trips 2004	12,966	6,431	4,450	19,488	36,904
Total Bristol Bay direct expenditures	\$ 17,360,898	\$ 27,526,683	\$ 6,407,597	\$ 6,611,878	\$ 57,907,057

Table 37 presents total estimated direct angler expenditures by residency, and location of spending. Again, among all direct spending related to Bristol Bay angling, the large majority is associated with nonresidents traveling to Alaska. Additionally, the large majority of this spending is reported to have occurred within the Bristol Bay economy.

Table 37. Bristol Bay Sportfishing: Aggregate in and out of Region and State Spending

<i>Population</i>	<i>In Bristol Bay Spending</i>		<i>In Alaska Spending</i>	
	Total spending in Bristol Bay	Total spending from outside Bristol Bay	Total in-state spending	Spending from outside Alaska
NONRESIDENT Base trip spending	\$ 17,360,898	\$ 17,360,898	\$ 12,628,058	\$ 19,628,058
NONRESIDENT Sportfish package spending	\$ 27,526,683	\$ 27,526,683	\$ 27,526,683	\$ 27,526,683
NONRESIDENT TOTAL	\$ 44,887,582	\$ 44,887,582	\$ 47,154,741	\$ 47,154,741
RESIDENTS				
OUT-OF-BB RESIDENT base trip spending	\$ 6,407,597	\$ 6,407,597	\$ 6,407,597	\$ -
BB RESIDENT base trip spending	\$ 6,611,878	\$ -	\$ 6,611,878	\$ -
ALASKA RESIDENT TOTAL	\$ 13,019,475	\$ 6,407,597	\$ 13,019,475	\$ -
TOTAL	\$ 57,907,057	\$ 51,295,178	\$ 60,174,216	\$ 47,154,741

5.3.2 Estimation of Net Willingness to Pay for Bristol Bay Fishing Trips

A measure of the net economic value of sport fishing trips is the amount anglers are willing to pay over and above the costs of their trips. This willingness to pay is also referred to as net economic benefit. There is a large economics literature on estimating sport fishing net economic benefits (Rosenberger and Loomis 2001). The method for estimating these benefits here is contingent valuation using the so called "payment card" question format.

Following questions on their trip expenditures, survey respondents were asked whether they felt their trip was worth more than the amount they actually spent. Those who answered "yes" were then asked, "What is the largest increase over and above your actual costs that you would have paid to be able to fish your primary destination?" Respondents were presented with a series of dollar amounts ranging from \$10 to \$2,000. Table 38

shows the percentage of both resident and nonresident Bristol Bay anglers who responded that they would have paid the various additional amounts to take their Bristol Bay fishing trip.

Table 38. Responses to Current Trip Net Economic Value Question

	<i>NONRESIDENTS</i>	<i>RESIDENTS</i>
	Percent	Percent
Willing to Pay More	63.0%	73.3%
\$ 10	1.1%	0%
\$ 25	0.3%	2.1%
\$ 50	0.2%	3.6%
\$ 100	6.2%	16.5%
\$ 250	16.2%	20.5%
\$ 500	15.9%	7.5%
\$ 750	2.5%	3.6%
\$ 1,000	9.1%	0%
\$ 1,500	3.7%	0%
\$ 2,000	2.3%	3.6%
Other amount	4.3%	15.7%
Sample Size	204	38

The estimates of willingness to pay models based on the Table 38 data were developed using a maximum likelihood interval approach (Welsh and Poe 1998). As noted, respondents were asked to choose the highest amount he or she was willing to pay from a list of possible amounts. It was inferred that the respondent's true willingness to pay was some amount located in the interval between the amount the respondent chose and the next highest amount presented. The SAS statistical procedure LIFEREG was used to estimate the parametric model of willingness to pay based on the underlying payment card responses.

Table 39 shows the estimated parametric willingness to pay for trips to Bristol Bay fisheries. Nonresident anglers state their trip was worth approximately \$450 more, on average, than they actually paid. Resident Bristol Bay anglers stated they were willing on average to pay an additional \$320 for their most recent trip. These estimates are similar to other estimates for Alaska sport fishing (Duffield et al. 2002; Jones and Stokes 1987).

Table 39: Estimated Mean Willingness to Pay for Anglers' Recent Trip to Bristol Bay

<i>Statistic</i>	<i>Non-residents</i>	<i>Residents</i>
Estimated mean willingness to pay in addition to trip costs for those willing to pay more	\$722.18	\$437.05
Percent of respondents willing to pay more for their trip	63.0%	73.3%
Net willingness to pay for Bristol Bay fishing trips for all anglers	\$454.90	\$320.45
Sample Size	204	38

The net economic value per trip estimates shown in Table 39 were calculated from the results of a bivariate statistical model of the payment card response data using a variant of survival analysis to examine censored interval data. The chi-square test of significance for the key parameters from these models show the estimated coefficients to be statistically significant.

As a check on the bivariate willingness to pay modeling results shown above, a multivariate model of the payment card data was also done. This model included a number of explanatory variables in addition to the different payment levels. Table 40 shows the results of a multivariate model of current trip willingness to pay for nonresidents fishing in the Bristol Bay area. The model's explanatory variables are all statistically significant at least at the 90% level of confidence, and most variables are significant at the 99% level. The model was specified with a normal distribution.

The signs of the explanatory variables in the following multivariate model of willingness to pay are generally consistent with *a priori* expectations. The sign on the income variable is positive, indicating that as income rises, so does willingness to pay. Other variables with positive coefficients are variables indicating 1) the angler caught a rainbow trout over 26 inches on their trip, 2) the angler's trip was un-crowded, 3) the angler rates fishing as their favorite outdoor activity, 4) the angler prefers fly-fishing when fishing in Alaska, and 5) the main purpose of the respondent's most recent trip was for fishing. The remaining variables had negative coefficients, indicating that a "yes" response for those bivariate variables is associated with a decrease in willingness to pay for the angler's most recent Alaska fishing trip. These results indicate the pattern of responses is consistent with what would be predicted by economic theory.

Table 40. Multivariate explanatory model of willingness to pay for nonresident Bristol Bay fishing trips

<i>Parameter</i>	<i>Estimate</i>	<i>Chi-Square</i>
Intercept	-297.6	21.34***
Income (\$1,000)	0.47	3.09*
Lodge client (1=yes, 0=no)	-404.7	62.62***
Caught large rainbow (1=yes, 0=no)	220.3	19.97***
Targeted rainbows (1=yes, 0=no)	-254.4	28.14***
Fishing uncrowded (1=yes, 0=no)	412.8	78.53***
Advanced angler (1=yes, 0=no)	-90.7	4.83**
Fishing favorite activity (1=yes, 0=no)	190.5	17.82***
Prefers flyfishing (1=yes, 0=no)	249.1	28.39***
First trip to area (1=yes, 0=no)	-235.4	30.98***
Main purpose of trip fishing (1=yes, 0=no)	349.2	44.43***
Scale parameter	791.9	--
Sample size	167	

Note: * = significant at 90% level of confidence; ** = 95%; *** = 99%.

5.4 Package Fishing Trip Characteristics

Section 4 detailed estimated total annual angler spending associated with Bristol Bay angling. A large majority of this estimated spending is made by nonresident anglers (approximately 80%). Additionally, nearly half of all estimated annual Bristol Bay freshwater angler expenditures is spent on nonresident purchases of sportfishing package trips. Because of the relative importance of this sector, this section focuses on that substantial market segment of the Bristol Bay sport fishing sector.

Figure 9 presents information on the sub-sample of non-resident trips to Bristol Bay that include a stay at a remote lodge that provided guided fly-out or boat fishing services. Figure 9 shows the distribution of nights spent at the lodge. The most common trip length was seven nights (37%), followed by six nights (24%) and greater than seven nights (14%). A total of 75% of nonresident lodge stays were at least six nights long.

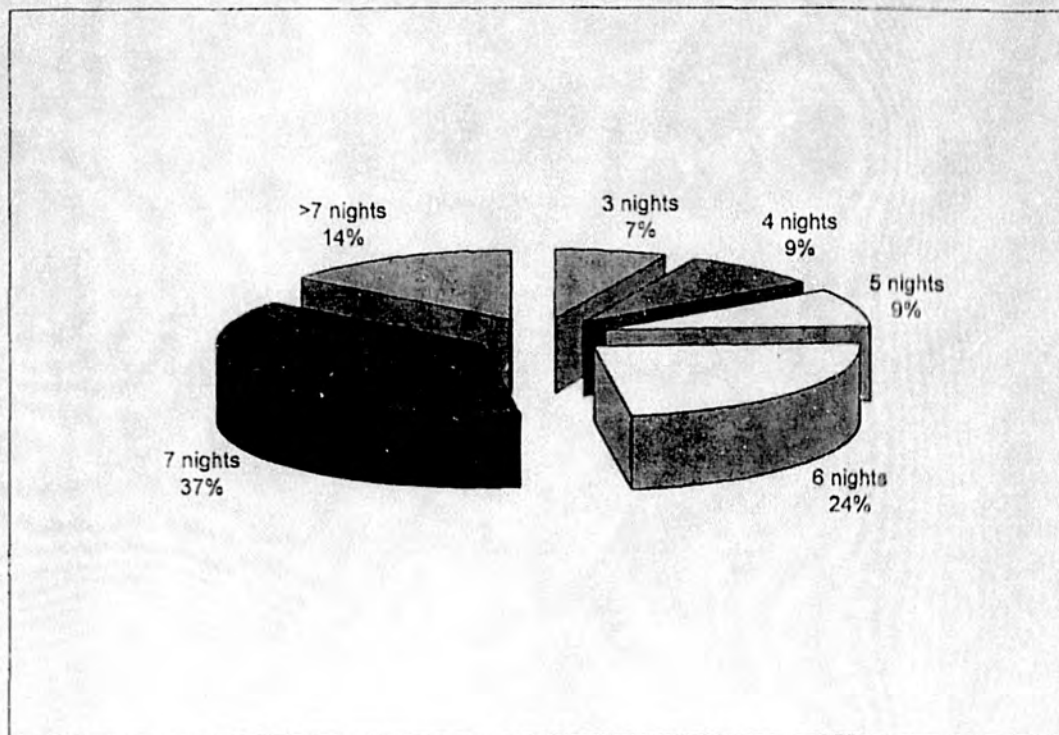


Figure 9. Distribution of Trip Length, Bristol Bay Package Fishing Trips

Respondents who had purchased a "package" sportfishing trip to Bristol Bay were asked what services were included in their package price. Figure 10 details the percentage of respondents who indicated each type of service that was included in their package price.

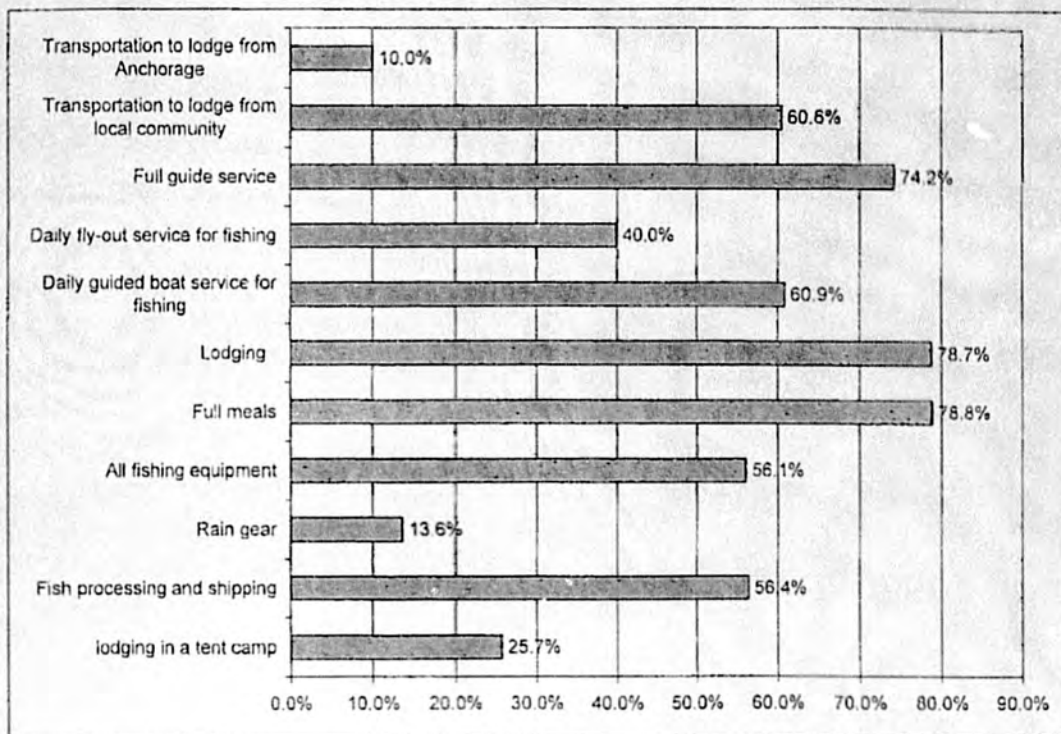


Figure 10. Bristol Bay Package Fishing Trips, Services Provided

5.4.1 Estimated Explanatory Model of Sportfishing Package Expenditures

In order to further examine which of the sportfishing package services listed by survey respondents were most important in determining the price of the fishing package, a multivariate model regressing price on a series of services offered was constructed. The estimated model (linear specification) is shown in Table 41. Consistent with expectations, the most significant variable in the model was the use of daily fly-out service from the lodge for fishing. Package tours including daily fly-out service on average cost \$3,005 more than those not offering this service. Additionally, those packages supplying all fishing equipment were significantly more expensive than those not supplying this equipment. Finally, the model predicts that the package price increases by \$465 dollars for every additional night's stay included in the package.

Table 41. Explanatory model of reported sportfishing package trip prices: nonresident Bristol Bay anglers

<i>Parameter / Statistic</i>	<i>Coefficient</i>	<i>Standard Error</i>	<i>T-statistic</i>
Intercept	-228	1,612	-0.14
Daily fly-out services	3,005	721	4.17***
All fishing equipment	1,221	725	1.68*
Number of nights	465	258	1.80**
Adjusted R-square		0.357	
Sample Size		75	

Note: * = significant at 90% level of confidence; ** = 95%; *** = 99%.

5.5 Bristol Bay Development Issues and Resource Values

Table 29 and Table 30, above, indicate that anglers experience the Bristol Bay area as an uncrowded, wilderness setting, with seasonally good fishing for large rainbows. Questions in the survey on crowding were followed by a set of policy questions directly addressing potential development within the area that could impact access (and thus crowding and size and abundance of rainbows) and the pristine, undeveloped nature of the region.

Respondents were first asked the following question:

Fishing in the Bristol Bay region is currently generally characterized by a wilderness setting, relatively un-crowded fishing, and good opportunities to catch large rainbow trout. Suppose that good road access was developed from Anchorage to Bristol Bay by ferry from Homer across Cook Inlet and then along a corridor including the Newhalen River, Lake Illiamna, the Kvichak River, and the lower Nushagak River to Dillingham, King Salmon, and Aleknagik. How do you anticipate this would affect your future sportfishing, if at all?

Figure 11 shows responses to this question about the impact of hypothetical Bristol Bay road access for survey respondents who reported fishing a Bristol Bay water. The largest category of respondents (both resident and non-resident) indicated a road would not impact their sport fishing. Conversely, the smallest category of responses for both samples indicated they would fish more often in the Bristol Bay area, given road access. However, the final 2 categories of responses combined indicate that 45.4% of non-residents and 30.5% of residents feel that the road access would cause them to either stop fishing in the Bristol Bay area (and fish other areas of Alaska) or stop fishing in Alaska entirely.

In contrast to these responses of anglers who had recently fished Bristol Bay waters, those survey respondents who reported taking their most recent trip to a Southcentral Alaska water outside of Bristol Bay (for example, the Kenai R.) seemed more favorable

to fishing Bristol Bay waters were road access improved. While nonresident anglers in this group were still on balance less likely to fish in Bristol Bay with improved road access (12% would take more trips and 29.4% would take fewer trips), Alaska resident anglers were much more favorable to improved access. Among this group of resident anglers who reported fishing streams outside of Bristol Bay, 50.4% said they would take more trips to Bristol Bay with improved road access while 13.5% said they would take fewer trips.

Interpretation of the long run implications of possible Bristol Bay road development for use and demand is complex. Improved access would tend to increase congestion on Bristol Bay waters and impact the current high quality of the fishing experience. Determining the net impact of any such changes on angler use and expenditures would require further research.

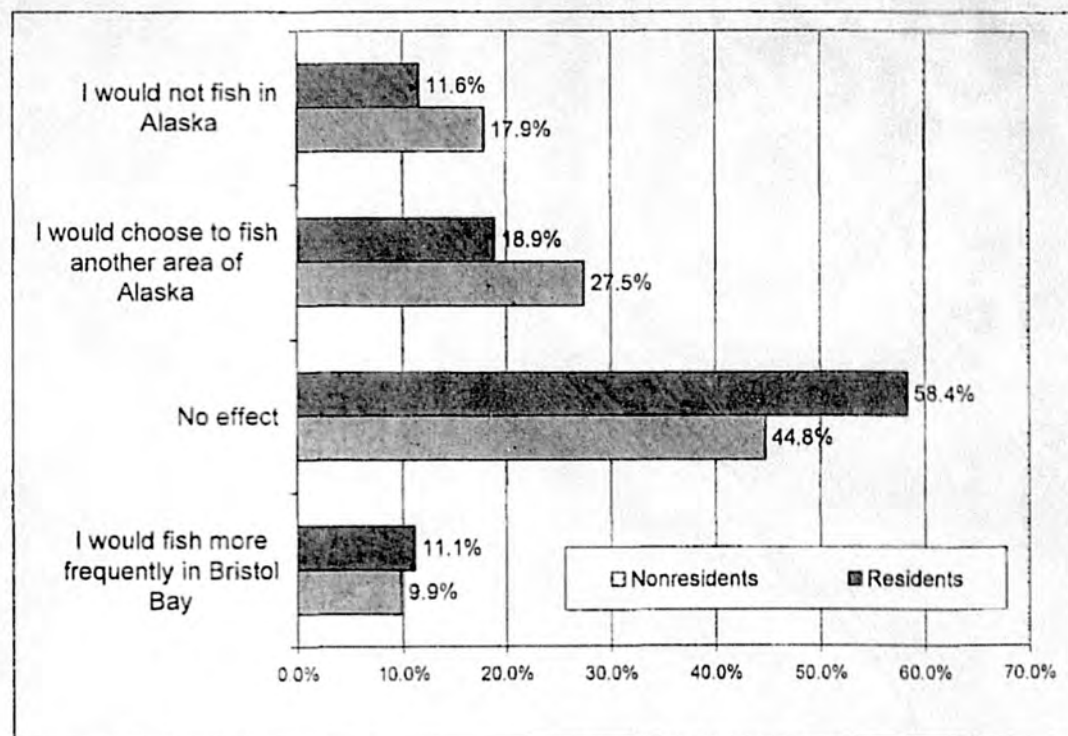


Figure 11. Bristol Bay Angler Responses to Impact of Bristol Bay Road Access on Sportfishing.

Figure 12 shows the percentage of resident and non-resident anglers who reported fishing Bristol Bay waters who favor, oppose, or were not sure of their position on the development of future possible road access to Bristol Bay (as outlined in the question above). Non-resident anglers show a very strong opposition to road access with 68.6% opposing, 14.8% favoring, and 16.5% not sure. Alaska resident anglers are more divided, but still primarily in opposition to road access with 57.2% opposing, 34.8% favoring, and 8.0% not sure.

Again, those anglers who reported fishing waters outside of Bristol Bay were more supportive of road development than those anglers who most recently fished Bristol Bay waters. Among nonresident anglers who reported fishing a South-central Alaska water outside of Bristol Bay, a plurality still opposed the road (24.3% favor, 43.4% oppose, 32.3% not sure). Among residents, however, a majority (52.3%) favored road development while 26.9% opposed it and 20.2% were not sure.

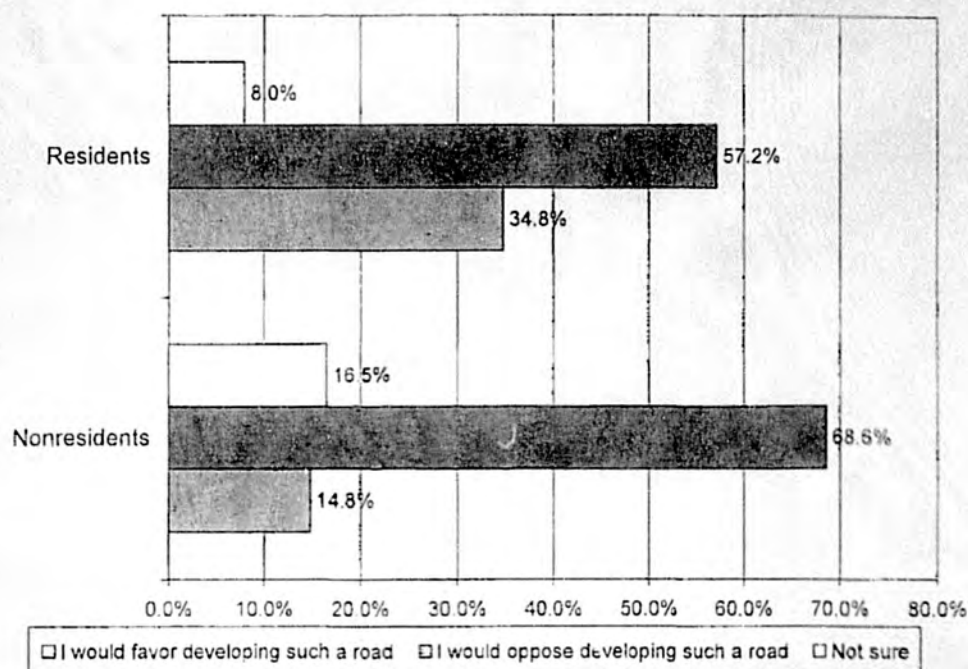


Figure 12. Bristol Bay Angler Support and Opposition to Bristol Bay Road Access

Table 42 presents the information contained in the preceding figures and adds the results for the sub-sample of nonresident Bristol Bay anglers who stayed at remote lodges on their recent trip. This last group of lodge clients is more likely than the entire group of nonresident anglers to both oppose road development in the region, and to say they would fish other areas in the event of the proposed development. Table 42 also includes sample sizes and estimated 95% confidence intervals for the estimates. The sample of Alaska residents who fished Bristol Bay is relatively small, and this is reflected in the relatively larger confidence interval around the estimates.

Table 42. Comparison of responses to Bristol Bay road development policy questions: Bristol Bay angler residents, non-residents, and non-resident lodge clients

<i>Question/statistic</i>	<i>Alaska Residents (95% C.I.)</i>	<i>Nonresidents (95% C.I.)</i>	<i>Nonresident lodge clients (95% C.I.)</i>
% who would not fish Bristol Bay area if good road access were developed in the area	30.5% (+/- 13.0%)	45.4% (+/- 6.4%)	58.8% (+/- 9.6%)
% who oppose developing road access in Bristol Bay area	57.2% (+/- 14.0%)	68.6% (+/- 5.9%)	76.8% (+/- 8.2%)
Sample Size	48	234	101

5.6 Bristol Bay Angler Survey Demographic Characteristics

A final section of the 2005 Bristol Bay angler survey asked respondents a series of demographic questions. Table 43 and Table 44 show selected statistics from this section of the survey. The survey indicates that most Bristol Bay anglers are males, at 90% for non-residents and 71% for residents. Survey responses indicated that nonresidents on average had higher incomes and were more likely to be college graduates, compared to residents. Overall, 20% of non-residents but only 4% of residents reported incomes over \$200,000. Differences between resident and non-resident anglers were also seen in level of respondent education. Proportionally, twice as many non-residents as residents reported they had at least a college degree (66.4% v. 32.7%).

Table 43: Socioeconomic Characteristics of Bristol Bay Anglers, by Residency.

<i>Statistic</i>	<i>Non-residents</i>	<i>Residents</i>
Median Age	49	42
Percent Male	89.5%	70.6%
Percent college graduates	66.4%	32.7%
Percent employed full time	63.1%	77.3%

Table 44. Bristol Bay Angler Household Income Levels, by Residency

<i>Household Income</i>	<i>Non-residents</i>	<i>Residents</i>
Less than \$24,999	9.5%	4.5%
\$25,000 to \$49,999	17.2%	19.6%
\$50,000 to \$74,999	15.9%	24.6%
\$75,000 to \$99,999	12.1%	22.3%
\$100,000 to \$124,999	10.6%	10.5%
\$125,000 to \$149,999	6.6%	12.5%
\$150,000 to \$199,000	8.3%	2.1%
\$200,000 to \$299,999	7.4%	1.2%
Over \$300,000	12.5%	2.7%

5.7 Results of Mail Survey of Bristol Bay Remote Lodge Clients.

As noted in Section 3, above, one population surveyed for this study was 2005 clients of remote Bristol Bay lodges. This sample was largely a convenience sample, rather than a probability sample. Bristol Bay lodges were asked to randomly sample their 2005 client lists and provide that sample to the survey researchers. In actuality, the sample drawn consisted of a census of clients from one area lodge and random samples from 3 others. The resulting sample primarily included responses from anglers who had fished the Kvichak River, a largely rainbow trout fishery located downstream of the proposed area of mine development. As such, these survey responses highlight both similarities and some key differences between angling on the Kvichak and in other areas of Bristol Bay.

Table 45 presents a comparison of responses from two groups of 2005 Bristol Bay anglers who stayed at remote area lodges on their trips. The first group in the table is the sub-sample of internet survey respondents who reported both fishing Bristol Bay waters on their most recent trip, and reported staying at a remote area fishing lodge on that trip. The second is respondents to the mail survey of 2005 remote lodge clients.

A comparison of the responses from the two independent lodge client samples shows a significant degree of agreement across a wide range of survey question responses. Lodge clients from the two samples spent similar amounts of money on their trips and were demographically similar. The largest differences between the 2 groups shown in Table 45 are in regard to the percentage of respondents targeting rainbow trout on their recent trip, the percent who reported catching a rainbow 26 inches long or longer, and the percentage saying they would still have made their trip if their primarily targeted species had not been available. Additionally, smaller differences were also seen in the percent of respondents who said they would reduce their trips to Bristol Bay if road access to the area were improved, and the percent who oppose development of road access in the region.

Table 45. Comparison of Lodge Mail and Lodge Internet Sample Responses for Selected Survey Questions

<i>Survey question/statistic</i>	<i>Internet responses from sample of licensed anglers who visited remote lodges</i>	<i>Mail responses from Bristol Bay Remote Lodge Clients</i>
<u>(A) Demographic Comparisons</u>		
Median age	55	57
% employed full time	60.4%	60.0%
% male	86.7%	98.4%
% with over \$200,000 household income	38.4%	47.0%
<u>(B) Expenditure Comparisons</u>		
Average amount spent on package fishing tour	\$5,543	\$6,134
Average amount spent in Bristol Bay (besides package tour cost)	\$1,729	\$1,550
Average amount spent in rest of Alaska (besides package tour cost)	\$529	\$917
% saying that the trip was worth more than they had to pay for it	54.8%	54.5%
<u>(C) Trip Characteristic Comparisons</u>		
% agreeing that fishing conditions were uncrowded	92.8%	91.6%
% who primarily targeted rainbow trout	38.9%	72.3%
% who caught a rainbow over 26 inches	43.0%	75.4%
% who would have still made the trip if their primarily targeted species had not been available	45.5%	29.7%
<u>(D) Response to Policy Questions Comparisons</u>		
% who would reduce trips to Bristol Bay if improved road access were to be built	58.2%	66.1%
% who oppose development of road access	76.4%	88.0%

These specific differences across the two samples are consistent with what might be expected due to the composition of trips in the samples. Table 46 shows that while the responses from Bristol Bay lodge clients taken from the pool of 2005 fishing license holders show a distribution of trips across a number of major Bristol Bay drainages, the remote lodge client sample supplied by lodge owners is heavily dominated by anglers who took their trip to the Kvichak River drainage. This river is a renowned rainbow trout fishery (Gunn 2006), and the Kvichak is also located downstream of potential mine and road development in the region. It is logical, then that respondents within this heavily Kvichak River sample would be more likely to both target rainbows and catch large rainbows, and to have strong opinions on future development in the region.

Table 46. Comparison of Drainages/waters Fished: Internet vs. Mail Lodge Client Samples

<i>Drainage/water</i>	<i>Internet Lodge Client Sample</i>	<i>Mail Lodge Client Sample</i>
Naknek River Drainage	16.6%	0.9%
Nushagak-Mulchatna Drainage	23.3%	7.4%
Kvichak-Lake Iliamna	37.6%	90.7%
Other Bristol Bay	22.5%	0.9%
Kvichak River (specifically)	12.0%	88.0%

5.7.1 Bristol Bay Conservation Trust Fund Contribution Responses

The mail and web surveys of Bristol Bay lodge clients included a series of questions asking respondents how much they would be willing to contribute to a conservation trust fund designed to protect the area in its current pristine, primarily unroaded condition. The text of this question is as follows:

There is the potential for significant future extractive resource development and roading in the Bristol Bay area. For example, a large mine has been proposed in the headwaters of the Nushagak and Kvichak Rivers near Lake Iliamna, and a road has been proposed linking Anchorage and Bristol Bay.

Suppose that you had an opportunity to support a fund whose aim was to keep the main Bristol Bay drainages in their current relatively pristine and un-roaded condition. Assume that the successful development of such a fund would actually result in the protection of Bristol Bay from roading and extractive resource development.

As this survey is part of a research project, we are not asking you to make a donation. Nonetheless, we would like you to answer the following question as you would a solicitation for an actual donation. If you were asked today, how much would you be willing to donate, if anything, to keep the Bristol Bay region in its current relatively pristine and unroaded condition? (Please check one)

☐ \$25 ☐ \$50 ☐ \$100 ☐ \$250 ☐ \$500 ☐ \$1000 ☐ \$2000 \$_____ other

☐ I would choose to not make a donation at this time

A cash and contingent valuation experiment was undertaken to measure willingness to pay into this trust fund. The "payment card" format used in the question tends to be conservative and understates the true referendum values recommended by Arrow et al. (1993). Web survey participants in response to the contingent valuation question indicated an average willingness to pay of \$19.62 for Alaska residents and \$37.04 for nonresidents. For a sub-sample of nonresident Bristol Bay anglers who stayed at remote lodges, the average willingness to pay was \$156.50 per respondent. In general

the literature indicates these willingness to pay estimates are likely conservative for not mentioning a referendum, and for use of the "payment card" rather than a dichotomous choice format.

A small cash experiment was also conducted using just the nonresident lodge client anglers. This subsample was asked to make an actual contribution to the trust fund for protection of the Bristol Bay area. Average contributions to this survey were \$20.63. These results are not consistent with the literature in that the average cash donation is a small fraction of the contingent valuation response (Champ and Bishop 2006). This result may be due to "free riding" or the respondent unfamiliarity with the trust fund and its sponsors.

6.0 Commercial Fisheries

6.1 Introduction

This chapter provides an overview of the commercial fisheries sector in Bristol Bay. The focus is on identifying total earnings in the harvesting and processing sectors, and on providing the historical context for these estimates. Since commercial fishing is the largest commercial sector in the Bristol Bay economy, this data is an essential input for the regional economic modeling reported below. Information is also summarized on costs, and on the residence of commercial fishing permit holders and others employed in this sector.

This chapter draws on a number of recent studies including: the most recent annual fishery management report for Bristol Bay (Alaska Department of Fish and Game, 2005), the Bristol Bay Salmon Drift Gillnet Fishery Optimum Number Report (Commercial Fisheries Entry Commission, 2004), Projections of Future Bristol Bay Salmon Prices (Knapp 2004), and data available on the websites of the management agencies.

6.2 Overview of the Bristol Bay Fishery

The Bristol Bay commercial fisheries management area encompasses all coastal and inland waters east of a line from Cape Menshikof to Cape Newhenham (Figure 1). This area includes eight major river systems: Naknek, Kvichak, Egegik, Ugashik, Wood, Nushagak, Igushik and Togiak. Collectively these rivers support the largest commercial sockeye salmon fishery in the world (ADF&G, 2005). This is an interesting and unique fishery, both because of its scale and significance to the local economy, but also because it is one of the very few major commercial fisheries in the world that has been managed on a sustainable basis.

The five species of Pacific salmon found in Bristol Bay are the focus of the major commercial fisheries. Sockeye salmon are the primary species harvested both in terms of pounds of fish and value. Annual commercial catches between 1984 and 2003 averaged nearly 24 million sockeye salmon, 69,000 Chinook, 971,000 chum, 133,000 coho, and 593,000 (even year only) pink salmon (ADF&G, 2005). Prices for sockeye salmon are typically higher than for other salmon species, making the Bristol Bay fishery the most valuable of Alaska's salmon fisheries (CFEC, 2004). This is also the largest Alaska fishery in terms of the number of permit holders. In 2004, there were 1,857 potentially active entry permits in the drift gillnet fishery and 992 in the set gillnet fishery (CFEC, 2004). There is also a herring roe on kelp fishery. The focus in this chapter is on the salmon fishery, particularly sockeye, since this fishery is dependent on the same freshwater ecosystems as the sport and subsistence fisheries.

The fishery is organized into five major districts (Figure 13) including Togiak, Nushagak, Naknek-Kvichak, Eggevik, and Ugashik. Management is focused on discrete stocks with harvests directed at terminal areas at the mouths of the major river systems (ADF&G, 2005). The stocks are managed to achieve an escapement goal based on maximum sustained yield. The returning salmon are closely monitored and counted and the openings are adjusted on a daily basis to achieve desired escapement. Having the fisheries near the mouths of the rivers controls the harvest on each stock, which is a good strategy for protection of the discrete stocks and their genetic resources. The trade-off is that the fishery is more congested and less orderly, and the harvest is necessarily more of a short pulse fishery, with most activity in June and early July. This has implications for the economic value of the fish harvested, both through effects on the timing of supply, but also on the quality of the fish.

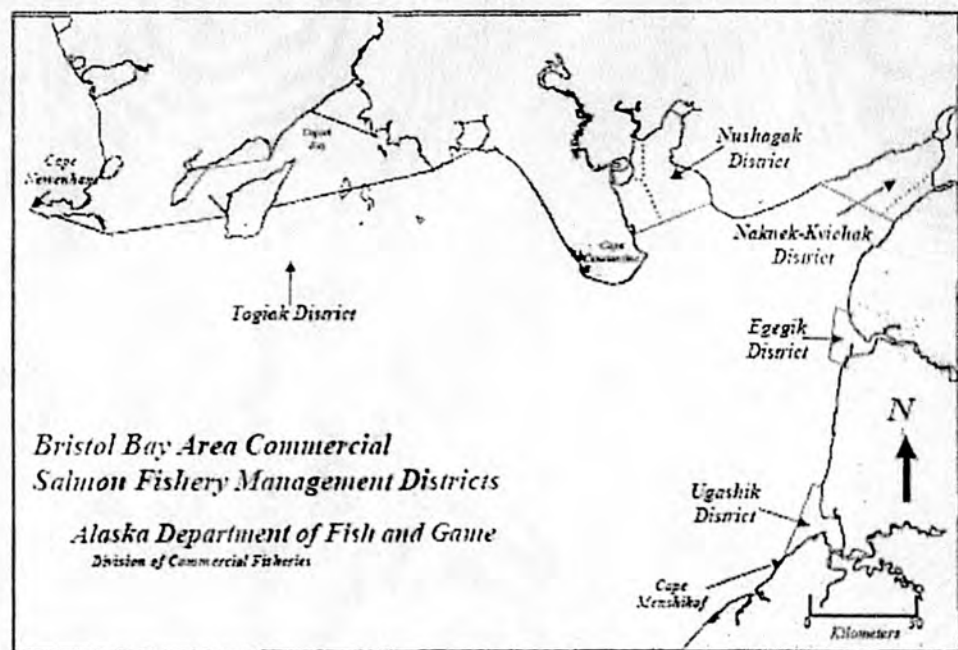


Figure 13. Bristol Bay Area Commercial Salmon Fishery Management Districts (ADF&G 2005)

The most lucrative market for salmon is as high quality fresh fillets or whole fish. For example, Copper River kings and sockeye are available early in the season and are relatively close to the U.S. domestic market. These fish can go for up to \$10 per pound wholesale in recent years. The Bristol Bay harvest comes on when there is already a glut in the market and prices may only average 50 cents a pound. Most Bristol Bay salmon are canned or frozen, as detailed below.

An interesting aspect of this fishery is that the compressed timing of the harvesting activity makes commercial fishing a good fit with subsistence in the overall Bristol Bay cash-subsistence economy. As detailed below, many commercial fishing permit holders and crew members, as well as some employees in the processing sector, are residents of

Bristol Bay's dominantly-native Alaskan villages. In 2004, there were 952 resident commercial fishing permit holders in the Bristol Bay study area, as well as 920 crew members. This is a significant share of the area's total adult population. An ADF&G summary of subsistence activity in Bristol Bay (Wright, Morris, and Schroeder 1985) noted that as of the mid-1980's traditional patterns of hunting, fishing, and gathering activities had for the most part been retained, along with accommodations to participate in the commercial fishery and other cash-generating activities. In the abstract to this 1985 paper, the authors characterize the commercial salmon fishery as "a preferred source of cash income because of its many similarities to traditional hunting and fishing, and because it is a short, intense venture that causes little disruption in the traditional round of seasonal activities while offering the potential for earning sufficient income for an entire year." Commercial fishing is a form of self employment requiring many of the same skills, and allowing nearly the same freedom of choice as traditional subsistence hunting and fishing. (Wright, Morris, Schroeder 1985; p. 89).

In 2002, Bristol Bay commercial salmon fishing accounted for about 19% of all Alaska salmon harvest, by weight, and nearly 32% of all Alaska salmon harvest by earnings (Table 47). Harvest by set gillnet accounts for approximately 18% of Bristol Bay commercial harvest while drift gillnet harvest accounts for 82% of salmon harvest. Among all 5 species of salmon, sockeye account for over 98% of the *ex vessel* value of salmon harvests in the Bristol Bay region (Table 48).

Table 47. Bristol Bay and Alaska Commercial Fishery Permits, Harvest, and Gross Earnings (2002)

<i>Sector</i>	<i># permit holders</i>	<i># permits</i>	<i>Pounds</i>	<i>Gross earnings</i>
Bristol Bay Salmon				
Drift gillnet	1,862	1,447	135,549,944	\$77,243,936
Set gillnet	988	829	30,032,259	\$17,327,819
All Bristol Salmon	2,850	2,276	165,582,203	\$94,571,755
All Alaska Salmon	10,594	7,508	872,577,336	\$293,147,368
All Alaska fisheries	14,318	13,463	3,842,853,863	\$990,099,365

Source: derived from ADFG (2005)

Table 48. Bristol Bay Salmon Harvest and Ex Vessel Value

<i>Species</i>	<i>Total Catch (lbs)</i>	<i>Mean Weight (lbs)</i>	<i>Mean Price (\$/lb)</i>	<i>Ex-vessel Value (\$)</i>
Sockeye	148,394,331	5.77	\$0.50	\$ 74,197,166
Chinook	1,707,696	15.35	\$0.38	\$ 648,924
Chum	4,932,731	6.57	\$0.09	\$ 443,946
Pink	212,527	4.07	\$0.05	\$ 10,626
Coho	473,380	6.84	\$0.34	\$ 160,949
Total	155,720,665			\$ 75,461,611

Source: derived from CFEC website data

In the following pages, Figure 14 through Figure 21 and Table 49 present time series data on harvest and *ex vessel* values for Bristol Bay salmon fishing. These graphs and tables illustrate the extreme variability in both harvest levels and prices paid to commercial fishermen over several decades.

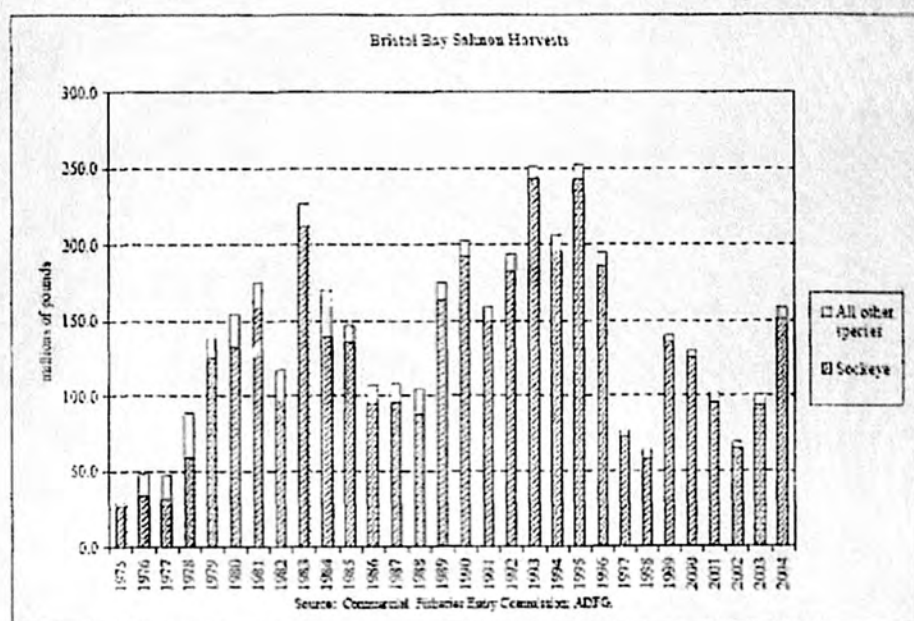


Figure 14. Time Series of Bristol Bay Salmon Harvest, pounds (Source: Knapp 2004).

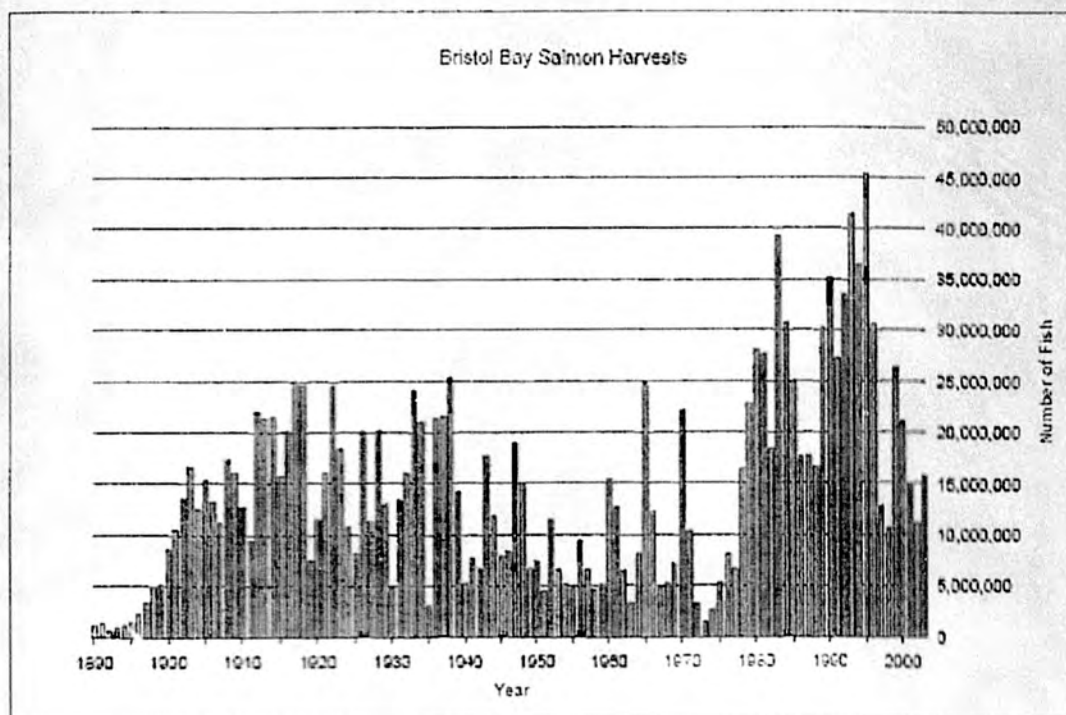


Figure 15. Time Series of Bristol Bay Salmon Harvest, Number of Fish (Source: Knapp 2004).

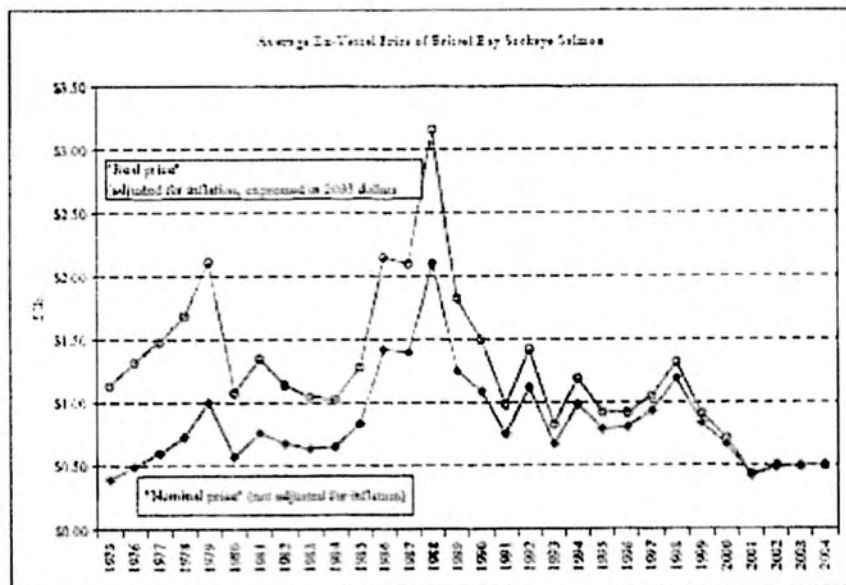


Figure 16. Time Series, Ex Vessel Price of Bristol Bay Sockeye Salmon (Source: Knapp 2004).

Table 49. Time Series Average Annual Ex Vessel Prices for Bristol Bay Salmon: Real and Nominal

Year	Sockeye		Chum		Coho		Chinook		Pink	
	Nominal Price	Real Price	Nominal Price	Real Price	Nominal Price	Real Price	Nominal Price	Real Price	Nominal Price	Real Price
1975	0.40	1.14	0.30	0.85	0.38	1.09	0.40	1.14	0.28	0.80
1976	0.50	1.32	0.32	0.85	0.42	1.11	0.49	1.30	0.31	0.82
1977	0.60	1.49	0.40	0.99	0.60	1.48	0.75	1.66	0.36	0.89
1978	0.73	1.69	0.40	0.93	0.77	1.79	0.72	1.67	0.33	0.76
1979	1.01	2.12	0.51	1.06	0.98	2.06	1.02	2.14	0.36	0.75
1980	0.57	1.08	0.34	0.65	0.56	1.06	1.01	1.92	0.25	0.48
1981	0.77	1.35	0.41	0.71	0.70	1.23	1.21	2.12	0.30	0.52
1982	0.69	1.14	0.35	0.59	0.75	1.25	1.22	2.04	0.22	0.37
1983	0.64	1.05	0.32	0.52	0.45	0.74	0.70	1.15	0.20	0.32
1984	0.66	1.04	0.30	0.48	0.76	1.20	1.03	1.63	0.23	0.36
1985	0.63	1.26	0.32	0.48	0.73	1.12	0.96	1.49	0.22	0.33
1986	1.42	2.15	0.31	0.47	0.68	1.02	1.00	1.51	0.15	0.22
1987	1.40	2.10	0.30	0.45	0.84	1.26	1.17	1.76	0.40	0.59
1988	2.10	3.15	0.47	0.70	1.38	2.06	1.11	1.66	0.35	0.53
1989	1.25	1.82	0.26	0.37	0.72	1.05	0.84	1.22	0.22	0.31
1990	1.09	1.50	0.27	0.37	0.78	1.06	0.93	1.28	0.32	0.44
1991	0.75	0.99	0.23	0.29	0.57	0.75	0.68	0.90	0.16	0.21
1992	1.12	1.42	0.27	0.34	0.60	0.76	0.94	1.19	0.14	0.18
1993	0.68	0.83	0.22	0.27	0.51	0.63	0.76	0.94	0.13	0.16
1994	0.99	1.20	0.22	0.26	0.66	0.80	0.64	0.77	0.12	0.15
1995	0.50	0.93	0.20	0.24	0.42	0.49	0.68	0.77	0.14	0.16
1996	0.61	0.92	0.11	0.12	0.31	0.35	0.51	0.58	0.05	0.06
1997	0.64	1.05	0.10	0.11	0.49	0.55	0.51	0.57	0.07	0.07
1998	1.21	1.34	0.09	0.10	0.44	0.48	0.62	0.69	0.08	0.09
1999	0.54	0.92	0.10	0.11	0.35	0.38	0.53	0.59	0.09	0.10
2000	0.67	0.72	0.09	0.09	0.35	0.37	0.46	0.49	0.08	0.08
2001	0.42	0.44	0.11	0.12	0.32	0.34	0.31	0.32	0.09	0.09
2002	0.49	0.50	0.09	0.09	0.31	0.32	0.33	0.34	0.06	0.06
2003	0.50	0.50	0.09	0.09	0.29	0.29	0.29	0.29	0.03	0.03

Note: Real prices were calculated using the Anchorage consumer price index.

Source: Knapp (2004).

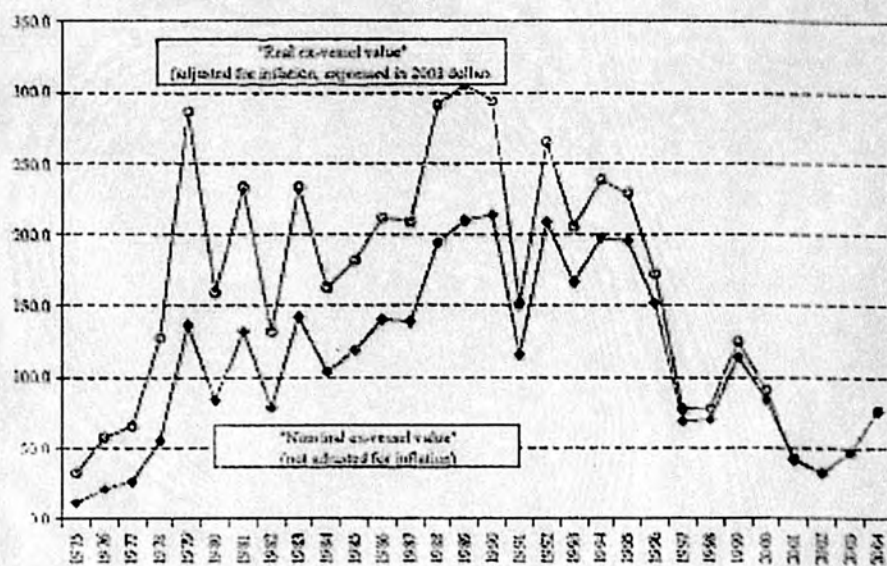


Figure 17. Time Series, Real and Nominal Ex Vessel Value. (Source: Knapp 2004)

Table 50. 2004 and 2005 Bristol Bay Harvest and Earnings

	# Permits fished	Pounds	Gross earnings	Derived \$/lb.
2004				
Drift gillnet	1,411	131,219,518	\$ 65,669,641	
Set gillnet	795	23,995,687	\$ 11,663,522	
Total	2,206	155,215,205	\$ 77,333,163	\$ 0.50
2005				
Drift gillnet	1,447	135,549,944	\$ 77,243,936	
Set gillnet	829	30,032,259	\$ 17,327,819	
Total	2,276	165,582,203	\$ 94,571,755	\$ 0.57

Derived from CFEC Website data.

Table 51. 1999-2003 Bristol Bay Drift Gillnet Earnings, Costs, and Net Returns.

Year	1999	2000	2001	2002	2003
Number of Permits Fished	1,847	1,823	1,566	1,184	1,424
Average lbs. per permit	\$1,430	\$7,405	\$1,491	45,751	55,089
Dockage ex vessel price \$/lb	10.84	10.67	\$0.42	\$0.49	\$0.50
Average permit value	\$69,700	\$60,500	\$14,700	\$19,700	\$29,300
Avg. gross earnings per permit	\$69,700	\$60,500	\$14,700	\$19,700	\$29,300
Minus Average Expenses					
Food	\$1,434	\$1,531	\$1,200	\$584	\$1,214
Fuel, oil, & lubricants	\$1,718	\$1,837	\$1,360	\$1,495	\$1,670
Crew shares (including skipper)	\$10,692	\$7,867	\$4,144	\$4,328	\$5,317
Maintenance (routine & unexpected)	\$2,392	\$5,895	\$2,130	\$1,876	\$2,549
Nets (changing, repair, and wear)	\$1,409	\$1,695	\$1,349	\$1,332	\$1,629
Miscellaneous gear & supplies	\$1,209	\$1,103	\$541	\$583	\$580
Rear license	\$1,771	\$1,217	\$617	\$692	\$745
Transportation	\$1,690	\$2,143	\$1,572	\$1,706	\$1,932
Moorage, storage, and haul-out	\$1,515	\$1,501	\$1,254	\$1,275	\$1,520
Insurance (P&I, hull, lay-up)	\$2,065	\$2,165	\$2,016	\$2,076	\$2,161
Administrative services	\$605	\$744	\$519	\$575	\$665
Annual permit fee	\$480	\$490	\$357	\$255	\$120
Annual vessel license fee	\$46	\$43	\$47	\$47	\$47
Property Tax	\$822	\$471	\$451	\$275	\$485
Depreciation	\$1,694	\$1,603	\$1,346	\$1,355	\$1,336
Avg. Returns to Labor, Management, and Investment	\$28,466	\$19,765	\$729	\$2,432	\$4,107
Minus Average Opportunity Costs					
Skipper Opportunity Cost	\$5,674	\$5,728	\$6,043	\$5,480	\$6,018
Vessel Opportunity Cost	\$5,152	\$5,657	\$5,719	\$1,426	\$5,987
Average Profits per permit	\$8,639	\$1,867	-\$4,033	-\$4,474	-\$7,908

Source: CFEC (2004).

Table 52 through Table 54 present the composition and trends of Bristol Bay salmon fishing permit ownership and harvest. The trend in Bristol Bay commercial salmon permit ownership between 1995 and 2004 is a slight movement from Alaska resident ownership of permits to nonresident ownership. The trend toward nonresident ownership is consistent for both drift and set gillnet permits.

Table 52. Bristol Bay Region Fishing Permits and Crew Members, 2005

	<i>Permit Holders</i>	<i>Crew Members</i>	<i>Permits fished</i>
(A) Census Area			
Bristol Bay Borough	187	175	
Dillingham Census Area	650	608	
<u>Lake & Penn. Borough</u>	<u>115</u>	<u>137</u>	
Total for Bristol Bay Residents	952	920	
(B) Total Permits by Alaskan Residency			
Drift gill net			
Alaska Residents	900		700
Nonresidents	959		747
Set gill net			
Alaska Residents	697		571
Nonresidents	291		258
Total Alaska Residents	1,597		1,271
Total Nonresidents	1,250		1,005

Source: Derived from CFEC website data

Table 53. Distribution of Commercial Fishing Permit Holders by Residency and 2005 Harvest and Earnings

<i>Residence</i>	<i>Permits</i>	<i>Permits fished</i>	<i>Total pounds</i>	<i>Estimated gross earnings</i>
(1) Bristol Bay Borough				
Drift gill net	60	52	4,833,791	\$ 2,814,821
Set gill net	116	112	4,413,494	\$ 2,566,112
Subtotal	176	164	9,247,285	\$ 5,380,933
(2) Dillingham C.A.				
Drift gill net	283	233	14,582,744	\$ 7,638,519
Set gill net	205	155	4,678,691	\$ 2,523,764
Subtotal	488	388	19,261,435	\$ 10,162,283
(3) Lake & Penn. Borough				
Drift gill net	68	56	3,740,545	\$ 1,912,675
Set gill net	48	34	777,362	\$ 387,096
Subtotal	116	90	4,517,907	\$ 2,299,771
(4) Total Bristol Bay	780	642	33,026,627	\$ 17,842,987
(5) Alaska Total				
Drift gill net	902	700	55,209,565	\$ 30,872,061
Set gill net	697	571	20,072,497	\$ 11,487,014
Subtotal	1,599	1,271	75,282,062	\$ 42,359,075
(6) Non-Bristol Bay resident	819	629	42,255,435	\$ 24,516,088
(7) Nonresident				
Drift gill net	960	747	80,234,379	\$ 46,371,874
Set gill net	291	258	9,959,762	\$ 5,840,805
Subtotal	1,251	1,005	90,194,141	\$ 52,212,679
(8) Total				
Drift gill net	1,862	1,447	135,443,944	\$ 77,243,935
Set gill net	988	829	30,032,259	\$ 17,327,819
Subtotal	2,850	2,276	165,476,203	\$ 94,571,754

Source: Derived from CFEC website data

Table 54. Comparison of 1995 and 2004 Permit Ownership

<i>Method/Residency</i>	<i>1995</i>		<i>2004</i>	
	Number	Percent	Number	Percent
Drift Gillnet				
Resident	910	50.2%	900	48.4%
Nonresident	903	49.8%	959	51.6%
	1813		1859	
Set Gillnet				
Resident	758	75.0%	697	70.5%
Nonresident	253	25.0%	291	29.5%
	1011		988	
Total				
Resident	1668	59.1%	1597	56.1%
Nonresident	1156	40.9%	1250	43.9%
	2824		2847	
Source: Derived from CFEC website data				

Table 55 and Table 56 (from the Commercial Fish Entry Commission website www.cfec.state.ak.us), detail recent trends in Bristol Bay salmon fishing permits, harvest, earnings, and average permit price. These tables show that market permit prices have dropped significantly in recent years off of highs seen in the early 1990's for both drift and set gillnet permits.

Table 55. Time Series, Bristol Bay Drift Gillnet Basic Information Table

UWBIIP-A State of Alaska 2006-04-21
Commercial Fisheries Entry Commission
Basic Information Table
S 03T SALMON, DRIFT GILLNET, BRISTOL BAY

Year	Residency	Permanent Permits Renewed	Interim Permits Issued	Total Permits Issued/ Renewed	Total Permits Fished	Total Pounds	Average Pounds	Total Gross Earnings	Average Gross Earnings	Average Permit Price
2005	Resident	900	2	902	700	55,209,555	78,871	\$30,372,061	\$44,103	
	Nonresident	959	1	960	747	80,340,379	107,551	\$45,371,874	\$62,077	
	Year Totals	1,859	3	1,862	1,447	135,549,934	93,677	\$77,243,935	\$53,382	\$51,200
2004	Resident	903	3	911	678	53,693,514	79,194	\$24,402,335	\$38,941	
	Nonresident	949	0	949	733	77,526,004	105,765	\$39,267,316	\$53,571	
	Year Totals	1,857	3	1,860	1,411	131,219,518	92,998	\$65,669,641	\$46,541	\$37,000
2003	Resident	923	6	929	697	34,749,009	49,855	\$16,613,775	\$23,836	
	Nonresident	933	1	939	727	43,712,491	60,127	\$21,385,643	\$29,416	
	Year Totals	1,861	7	1,868	1,424	78,461,500	55,099	\$37,999,418	\$26,685	\$39,300
2002	Resident	945	13	958	587	21,222,451	36,154	\$9,722,293	\$16,563	
	Nonresident	920	1	923	597	32,941,557	55,179	\$15,710,124	\$26,315	
	Year Totals	1,865	14	1,879	1,184	54,164,008	45,747	\$25,432,417	\$21,480	\$19,700
2001	Resident	935	19	954	791	34,352,452	44,108	\$13,672,961	\$17,266	
	Nonresident	926	3	931	775	45,692,324	58,945	\$18,741,854	\$24,183	
	Year Totals	1,861	24	1,885	1,566	79,044,776	51,491	\$32,414,815	\$20,999	\$34,700
2000	Resident	916	30	946	898	47,755,257	53,298	\$30,304,317	\$34,380	
	Nonresident	942	3	950	927	56,900,121	61,381	\$37,607,531	\$40,569	
	Year Totals	1,858	33	1,896	1,825	104,655,378	57,408	\$68,412,338	\$37,527	\$80,500
1999	Resident	901	41	942	907	52,023,153	57,557	\$42,292,171	\$46,629	
	Nonresident	949	12	961	940	61,530,424	65,458	\$50,568,777	\$53,824	
	Year Totals	1,850	53	1,903	1,847	113,553,577	61,480	\$92,860,948	\$50,296	\$89,700
1998	Resident	913	49	967	933	24,793,504	26,574	\$26,834,600	\$28,751	
	Nonresident	926	12	938	925	36,174,001	39,296	\$30,373,343	\$32,341	
	Year Totals	1,844	61	1,905	1,858	60,967,505	27,431	\$57,202,945	\$30,787	\$89,500
1997	Resident	912	58	970	943	26,172,310	30,936	\$25,937,929	\$27,506	
	Nonresident	920	13	933	932	33,414,608	35,853	\$30,753,137	\$32,997	
	Year Totals	1,832	71	1,903	1,875	62,586,918	33,380	\$56,691,067	\$30,235	\$153,800
1996	Resident	907	53	960	956	78,855,535	79,357	\$58,297,093	\$60,980	
	Nonresident	914	14	928	928	90,755,937	97,797	\$72,315,102	\$77,926	
	Year Totals	1,821	72	1,888	1,884	166,621,575	86,440	\$130,612,195	\$69,327	\$171,800
1995	Resident	910	62	972	966	96,920,656	100,332	\$74,515,323	\$77,138	
	Nonresident	903	13	916	916	121,081,051	132,185	\$95,514,076	\$104,273	
	Year Totals	1,813	75	1,888	1,882	218,001,707	115,535	\$170,029,398	\$90,345	\$195,000
1994	Resident	918	54	972	963	80,655,403	83,757	\$76,096,992	\$79,021	
	Nonresident	892	14	906	901	100,582,552	111,511	\$68,472,908	\$109,172	
	Year Totals	1,810	78	1,878	1,865	181,240,955	97,180	\$144,569,899	\$93,603	\$165,700
1993	Resident	913	69	987	975	103,711,446	106,371	\$68,437,365	\$70,193	
	Nonresident	857	16	903	900	114,425,840	127,144	\$75,938,013	\$85,487	
	Year Totals	1,805	85	1,890	1,875	218,141,286	116,342	\$144,375,378	\$77,524	\$199,600
1992	Resident	935	73	1,008	1,002	78,496,295	78,340	\$63,336,175	\$83,170	
	Nonresident	862	15	877	877	89,415,053	101,556	\$98,880,837	\$112,749	
	Year Totals	1,797	88	1,885	1,879	167,911,352	89,962	\$162,217,012	\$96,976	\$193,500
1991	Resident	951	73	1,028	1,019	67,230,487	65,977	\$48,048,820	\$47,153	
	Nonresident	842	14	856	854	89,547,736	81,438	\$51,161,568	\$59,932	

Source: CFEC website

Table 56. Time Series, Bristol Bay Set Gillnet Basic Information Table

WWWBIFP-A State of Alaska 2006-04-21
Commercial Fisheries Entry Commission
Basic Information Table
S 04T SALMON, SET GILLNET, BRISTOL BAY

Year	Residency	Permanent Permits Renewed	Interim Permits Issued	Total Permits Issued/ Renewed	Total Permits Fished	Total Pounds	Average Pounds	Total Gross Earnings	Average Gross Earnings	Average Permit Price
2005	Resident	697	0	697	571	36,073,497	35.153	\$11,467,014	\$20,117	
	Nonresident	291	0	291	258	9,959,762	38.604	\$5,840,805	\$22,639	
	Year Totals	988	0	988	829	46,033,259	36.227	\$17,327,819	\$20,602	\$15,160
2004	Resident	701	1	702	541	14,978,530	27.687	\$7,233,045	\$13,370	
	Nonresident	237	0	237	254	9,017,157	35.501	\$4,430,477	\$17,443	
	Year Totals	938	1	939	795	23,995,687	30.183	\$11,663,522	\$14,671	\$14,700
2003	Resident	713	1	714	531	15,097,184	28.432	\$7,418,731	\$13,971	
	Nonresident	237	0	237	230	6,078,944	26.430	\$1,997,778	\$13,034	
	Year Totals	950	1	951	761	21,176,128	27.827	\$10,416,508	\$13,688	\$12,500
2002	Resident	725	3	728	477	8,194,739	19.230	\$4,329,654	\$9,077	
	Nonresident	279	0	279	203	4,712,904	23.216	\$2,366,945	\$11,167	
	Year Totals	1,004	3	1,006	680	12,907,643	20.455	\$6,696,599	\$9,701	\$11,900
2001	Resident	725	3	730	596	15,434,265	26.316	\$6,373,300	\$10,693	
	Nonresident	230	0	230	235	5,117,859	21.804	\$2,117,802	\$9,363	
	Year Totals	1,005	3	1,010	834	20,552,124	24.943	\$8,491,102	\$10,131	\$35,300
2000	Resident	755	5	760	570	17,456,534	26.354	\$11,354,654	\$16,692	
	Nonresident	273	0	273	231	6,563,598	27.823	\$4,595,436	\$18,309	
	Year Totals	1,007	5	1,013	801	24,020,132	26.754	\$15,950,140	\$17,351	\$32,400
1999	Resident	749	3	754	584	18,443,524	27.257	\$15,134,273	\$22,112	
	Nonresident	255	1	260	241	7,758,043	32.183	\$6,396,839	\$26,543	
	Year Totals	1,008	4	1,014	825	26,396,567	26.540	\$21,521,112	\$23,266	\$31,350
1998	Resident	748	6	754	660	8,733,418	13.233	\$9,734,294	\$14,749	
	Nonresident	241	0	241	241	3,708,727	15.472	\$4,378,426	\$18,168	
	Year Totals	1,009	6	1,015	901	12,442,145	13.832	\$14,112,720	\$15,663	\$30,400
1997	Resident	750	7	757	685	9,159,469	13.371	\$8,218,755	\$11,995	
	Nonresident	263	0	263	236	4,469,856	18.940	\$4,093,604	\$17,346	
	Year Totals	1,012	7	1,019	921	13,629,325	14.798	\$12,312,359	\$13,348	\$39,000
1996	Resident	753	6	761	706	20,364,600	26.764	\$15,693,869	\$22,166	
	Nonresident	256	0	256	233	7,147,327	30.675	\$5,679,538	\$24,376	
	Year Totals	1,011	6	1,017	941	27,511,927	29.237	\$21,373,407	\$22,714	\$41,100
1995	Resident	758	5	763	726	24,343,741	33.435	\$18,773,038	\$25,787	
	Nonresident	253	0	253	219	8,126,351	36.184	\$7,170,146	\$30,001	
	Year Totals	1,011	5	1,019	945	32,470,092	34.412	\$25,943,184	\$26,829	\$42,200
1994	Resident	757	7	764	700	17,901,793	25.574	\$15,454,186	\$23,363	
	Nonresident	255	0	255	239	4,817,516	28.525	\$6,494,975	\$27,176	
	Year Totals	1,012	7	1,019	939	22,719,309	26.525	\$21,949,161	\$24,483	\$37,300
1993	Resident	750	5	759	722	21,695,472	31.711	\$15,234,434	\$21,100	
	Nonresident	254	0	254	243	9,721,434	40.048	\$6,513,826	\$26,806	
	Year Totals	1,014	5	1,023	965	31,416,906	33.812	\$21,748,260	\$22,557	\$49,100
1992	Resident	767	8	775	727	17,858,082	24.578	\$13,567,037	\$25,539	
	Nonresident	250	3	253	241	7,363,788	30.555	\$7,871,830	\$32,663	
	Year Totals	1,017	11	1,027	968	25,221,870	26.566	\$21,438,867	\$22,313	\$49,300
1991	Resident	757	6	763	715	16,532,201	23.122	\$11,971,954	\$16,744	
	Nonresident	245	4	249	235	5,381,825	23.029	\$4,337,474	\$18,457	

Source: CFEC website

Table 57 shows a listing of commercial salmon processors and buyers operating in the Bristol Bay region in 2004 (ADFG 2004). Production of salmon (processing, freezing, and canning) is a value added industry in the area. This production value is highly dependent on the harvest levels and associated harvest value (Figure 18). The composition of the salmon processing industry in the Bristol Bay region is also dependent on end-buyer demand for salmon.

Table 57. Commercial Salmon Processors and Buyers Operating in Bristol Bay, 2004

	Name of Operator/Buyer ^a	Base of Operations	District ^b	Method ^c	Export
1	Alaska Family Seafoods	Dillingham, AK	N	EF,F	AIR
2	Alaska General Seafoods	Kennore, WA	GD,K,E,U	C,EF,F	AIR
3	Aleutian Maid Processors, LLC	Egegik, AK	E	F	SEA,AIR
4	Alpine Cove, LLC	Kodiak, AK	E,N,U	F	SEA
5	Alyce C. Tedd	Montello, WI	N,O	F	SEA,AIR
6	Anthony Wood	King Salmon, AK	K	F	SEA
7	Banacore Inc.	Dillingham, AK	N	EF	AIR
8	Barbara J Hill	Nalaeck, AK	K	EF	N/A
9	Baywatch Seafoods, LLC	Woodinville, WA	K,E,U,N,T	EF,F	SEA,AIR
10	Coffee Point Seafoods of WA, LLC	S. Seattle, WA	E	F	SEA
11	CSP Seafoods	Wasilla, AK	T	F	
12	Dancing Salmon Company, LLC	Dillingham, AK	N	F,S	AIR
13	Diamond Lodge	King Salmon, AK	K	EF,F,S	AIR
14	Fisherman's Express, LLC	Anchorage, AK	N	F	AIR
15	Friedman Family Fisheries, Inc.	Baltimore, MD	N	F	SEA,AIR
16	Great Ruby Fish Company	Anchorage, AK	K	EF,F	AIR
17	Icelet Seafoods, Inc.	Seattle, WA	GD,K,E,U,N	C,F	SEA
18	Interior Alaska Fish Processors, Inc.	Fairbanks, AK	N	EF	AIR
19	Kim J. Hubert	Eagle River, AK	T	EF	N/A
20	Lady Marion Seafoods	Anchorage, AK	GD,E	EF,F	AIR
21	Libby Bro. Wild Alaskan Harvest	Anchorage, AK	N	EF,F	AIR
22	Leader Creek Fisheries, LLC	Seattle, WA	GD,K,E,U,N	EF,F	SEA,AIR
23	NorQuest Seafoods, Inc.	Seattle, WA	GD,K,E,U,N	F	SEA
24	Ocean Beauty Seafoods, Inc.	Seattle, WA	GD,K,E,U,N	C,EF,F	SEA,AIR
25	Pacman Fisheries/Bristol Gold, LLC	Nalaeck, AK	K	S,F	AIR
26	Pederson Point	Seattle, WA	K,E,U	F	SEA
27	Peter Pan Seafoods, Inc.	Seattle, WA	GD,K,E,U,N	C,EF,F	SEA,AIR
28	Snapac Products, Inc.	Seattle, WA	GD,K,E,U	F	SEA
29	Togak Fisheries	Seattle, WA	T	F	SEA
30	Trident Seafoods	Seattle, WA	GD,K,E,U,N	C,F	SEA,AIR
31	Ugashik Wild Salmon	Ugashik, AK	U	C,EF	AIR
32	Westward Seafoods, LLC	Seattle, WA	N,T	F	SEA
33	Wild Alaskan Seafood Co., LLC	Spokane, WA	N	F	SEA
34	Woodbine Alaska Fish Company	Rio Vista, CA	E,U,T	C,F	AIR
35	Yard Arm Knot Fisheries, LLC	Seattle, WA	GD,K,E,U	C,F	SEA

Canning=8; Freezing=29; Fresh=15; Curing=3; Air Export=21; Sea Export=19

^a Indicates operators with a processing facility in a district or operators from other areas buying fish and/or providing support service for fishers in districts away from the facility.

^b GD=General District; K=Nalaeck-Ketchikan; E=Egegik; U=Ugashik; N=Nashagak; T=Togak

^c Type of processing: C=canned; EF=export fresh; F=frozen; S=cured

^d Registered but did not operate.

Source: ADF&G (2005)

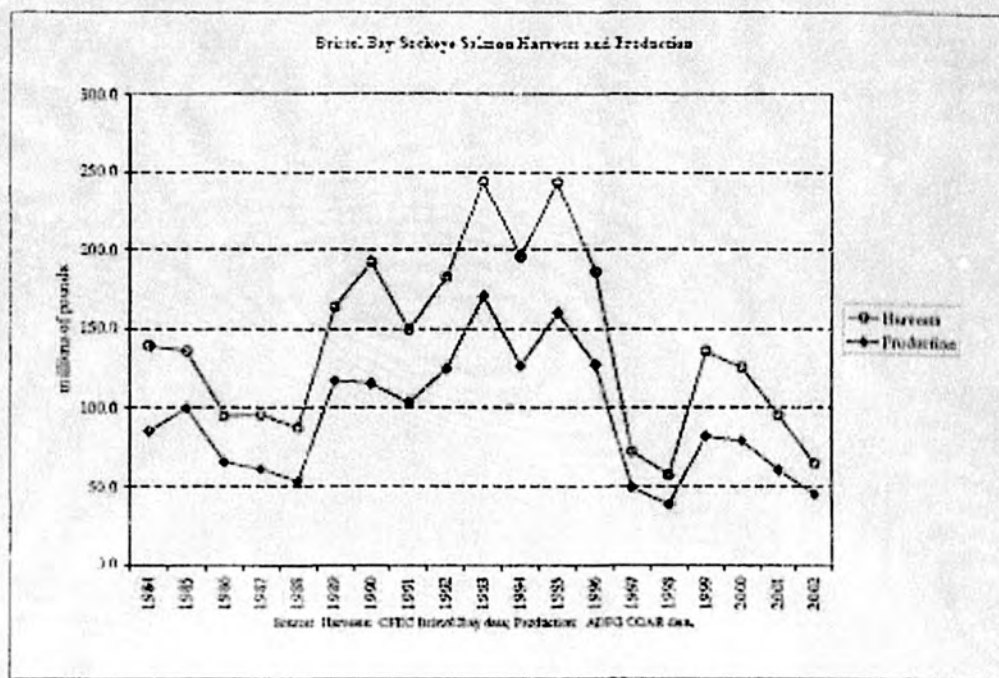


Figure 18. Time Series, Bristol Bay Sockeye Salmon Harvest and Production. (Source: Knapp 2004)

Table 58 shows that over the past 15 years the demand for U.S. sockeye salmon has changed dramatically. During the 1989-1994 period 80% of demand was for frozen sockeye for the Japanese market. By 2002 this market segment had dropped to 44% of demand for U.S. sockeye production. Between 1994 and 2002 other markets including markets for canned salmon, and other markets for frozen fish had replaced the Japanese frozen sockeye market.

Table 58. Changes in Estimated End-markets for United States Sockeye Salmon
(Source: Knapp 2004)

Estimated End-Markets for United States Sockeye Salmon			
Market	1984-94	1995-99	2000-03
U.S. canned market	9.5%	14.5%	26.5%
Other canned markets	3.7%	9.2%	13.1%
Japanese frozen market	50.1%	61.0%	43.7%
Other frozen markets	0.5%	11.2%	16.4%
Fresh markets	3.2%	4.2%	3.9%
Total	100.0%	100.0%	100.0%

Note: Percentages are those of estimated total production for the period.

Table 59 through Table 61 detail the final accounting of current and recent total Bristol Bay salmon processing output. Table 60 shows that in 2005 the total earnings from Bristol Bay salmon processing was \$225 million. The total earnings from salmon harvest in 2005 were approximately \$95 million. Table 61 shows the net weight, price, and wholesale value by end product for 2002-2005. Figure 19 shows the historical distribution for 1984-2002 by end product (frozen vs. canned). Clearly, both harvest and processing play important roles in the Bristol Bay economy, with one industry closely tied to and dependent on the other for economic success.

Table 59. 2005 Bristol Bay Salmon Fishery Processing and Gross Earnings

	Count	Price per unit	Gross Earnings (2005\$)
Sockeye			
Tall Cans (cases)	237,369	\$ 90.06	\$ 21,377,452
Halves (cases)	906,843	\$ 59.25	\$ 53,730,448
Fresh Headed & Gutted (lbs)	2,342,212	\$ 2.65	\$ 6,206,862
Frozen Headed & Gutted (lbs)	57,132,488	\$ 2.05	\$ 117,121,600
Frozen and fresh Fillet (lbs)	2,239,781	\$ 3.90	\$ 8,735,146
Roe (lbs)	3,609,918	\$ 3.55	\$ 12,815,209
Subtotal	66,468,611		219,986,717
Chinook			
Fresh Headed & Gutted (lbs)	315,414	\$ 4.36	\$ 1,375,205
Frozen Headed & Gutted (lbs)	493,726	\$ 2.57	\$ 1,268,876
Roe (lbs)	35,243	\$ 3.86	\$ 136,038
Subtotal	844,383		2,780,119
Chum			
Frozen Headed & Gutted (lbs)	4087138	\$ 0.72	\$ 2,942,739
Total			\$ 225,709,575

Source: Personal Communication, Alaska Department of Revenue, 2006.

Table 60. Comparison of Bristol Bay Harvest and Processing Total Earnings (2005)

<i>sector</i>	<i>Pounds</i>	<i>Earnings</i>
Harvest	165,582,203	\$ 94,571,755
Processing	114,665,676	\$ 225,709,575

Table 61. 2003-2005 Total Bristol Bay Fishery Salmon Production Value, by End-product Type

<i>Year</i>	<i>Type</i>	<i>Net Weight</i>	<i>Wholesale Value</i>	<i>\$/pound</i>
2002	Canned	22,097,595	55,275,886	\$2.50
2002	Fresh	212,571	327,357	\$1.54
2002	Frozen	22,686,595	39,698,079	\$1.75
2002	Other	Confidential	Confidential	Confidential
2003	Canned	21,936,035	51,488,596	\$2.35
2003	Fresh	1,129,280	1,531,488	\$1.36
2003	Frozen	34,296,062	55,823,648	\$1.63
2003	Other	1,575,092	7,086,321	\$4.50
2004	Canned	31,080,841	68,610,956	\$2.21
2004	Fresh	6,404,391	8,054,856	\$1.26
2004	Frozen	54,471,049	95,680,315	\$1.76
2004	Other	1,451,444	4,815,510	\$3.32
2005	Canned	30,567,479	75,107,900	\$2.46
2005	Fresh	2,342,212	6,206,862	\$2.65
2005	Frozen ¹	59,372,269	125,856,746	\$2.12
2005	Other	3,609,918	12,815,209	\$3.55

¹ indicates "frozen and fresh fillets". Fresh excludes "fresh filets" for 2005 data from Alaska Department of Revenue.

Source: Knapp (2004) and Alaska Department Of Revenue.

Figure 20 shows historical real prices per round pound for 1984 to 2004 for three different related markets for sockeye salmon: Bristol Bay ex vessel, Bristol Bay frozen production price, and Japan August wholesale price. The price differences are indicative of markups, and show how the relative shares of total value received by harvesters and processors has changed over time, and in response to rising or falling market price conditions.

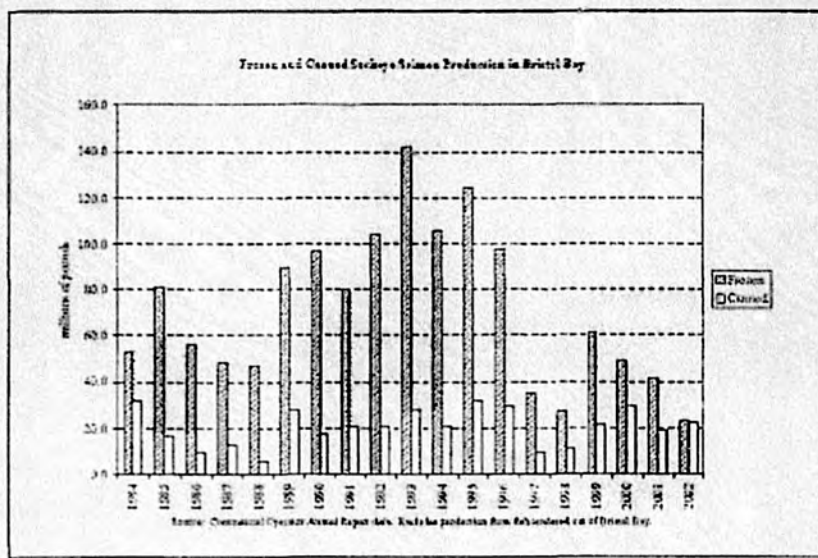


Figure 19. Time Series, Frozen and Canned Production of Bristol Bay Sockeye Salmon (Source: Knapp 2004)

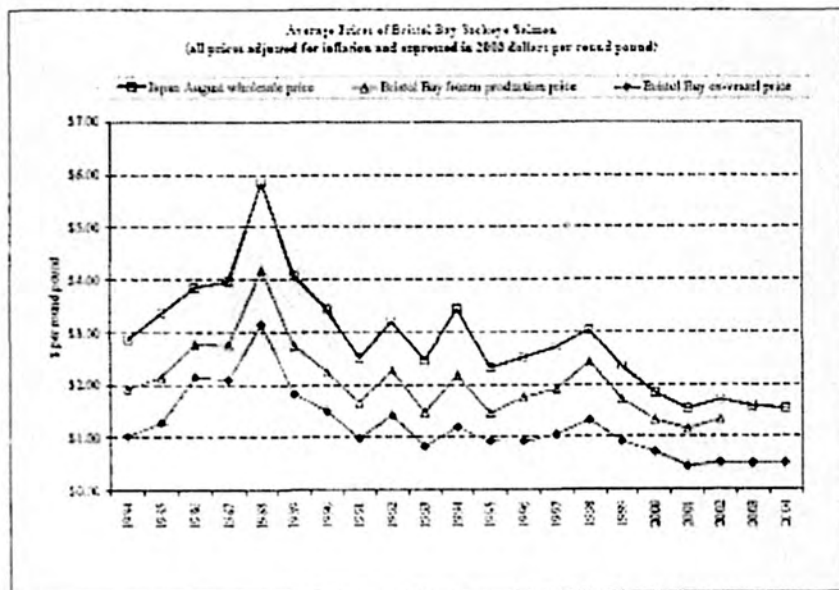


Figure 20. Time Series, Average Prices of Bristol Bay Sockeye Salmon. (Source: Knapp 2004)

7.0 Subsistence Harvest

The subsistence harvest within the Bristol Bay region generates regional economic impacts when Alaskan households spend money on subsistence-related supplies. Goldsmith (1998) estimated that Alaskan Native households that use Bristol Bay wildlife refuges for subsistence harvesting spend an average of \$2,300 per year on subsistence-related equipment to aid in their harvesting activities. Additionally, Goldsmith estimated that Non-Native households spend \$600 annually for this purpose. Correcting for inflation from 1998 to 2005 implies annual spending for subsistence harvest of about \$2,780 for Native households and \$725 for Non-Native households.

Figure 21 shows the general distribution of subsistence harvest by Bristol Bay residents. Overall, salmon make up the largest share of all harvest (on a basis of usable pounds), and accounts for over one-half of all harvest. Another nearly one third of harvest come from land mammals (31%), and non-salmon fish comprise another 10% of harvest.

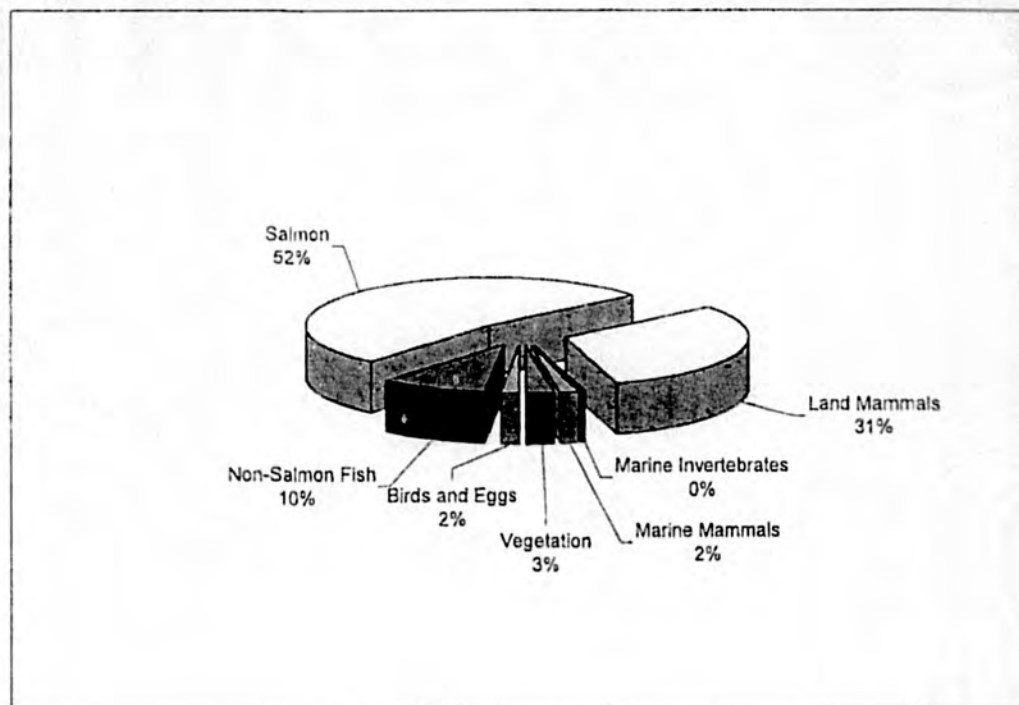


Figure 21. Distribution of Bristol Bay Subsistence Harvest

Table 62 shows average per capita and total estimated community subsistence harvest for the Bristol Bay communities. In total, individuals in these Bristol Bay communities harvest about 2.4 million pounds of subsistence harvest per year for an average of 315 pounds per person annually. Table 63 and Table 64 detail Bristol Bay area subsistence harvest by salmon species and location.

Table 62. ADF&G Division of Subsistence Average Per Capita Subsistence Harvest for Bristol Bay Communities

Bristol Bay Area Community /year of harvest data	Population (2000 census)	Per Capita Harvest	Total Annual Harvest	% Native Population
Aleknagik 1989	221	379	54,079	81.9%
Clark's Point 1989	75	363	20,325	90.7%
Dillingham 1984	2,466	242	494,486	52.6%
Egegik 1984	116	384	37,450	57.8%
Ekwok 1987	130	797	85,260	91.5%
Igiugig 1992	53	725	33,915	71.7%
Iliamna 2004	102	508	51,816	50.0%
King Salmon 1983	442	220	81,261	29.0%
Kokhanok 1992	174	1,013	175,639	86.8%
Koliganek 1987	182	830	154,705	87.4%
Levelock 1992	122	884	97,677	89.3%
Manokotak 1985	399	384	118,337	94.7%
Naknek 1983	678	188	72,110	45.3%
New Stuyahok 1987	471	700	247,494	92.8%
Newhalen 2004	160	692	110,720	85.0%
Nondalton 2004	221	358	79,118	89.1%
Pedro Bay 2004	50	306	15,300	40.0%
Pilot Point 1987	100	384	24,783	86.0%
Port Alsworth 2004	104	133	13,832	4.8%
Port Heiden 1987	119	408	41,985	65.6%
South Naknek 1992	137	297	39,893	83.9%
Ugashik 1987	11	814	8,144	72.7%
Togiak City	809	--	--	86.3%
Portage Creek	36	--	--	86.1%
Twin Hills	69	--	--	84.1%
Total communities	7,447	--	--	--
Unincorporated areas	164	--	--	--
Total (interpolated to include unincorporated areas)	7,611	315	2,397,970	69.6%

Table 63. Historical Subsistence Harvest for Bristol Bay, Alaska. (Knapp et al. 2004)

YEAR	PERMITS		ESTIMATED SALMON HARVEST					TOTAL
	ISSUED	RETURNED	CHINOOK	SOCKEYE	COHO	CHUM	PINK	
1983	829	674	13,268	143,630	7,477	11,646	1,073	177,104
1984	882	698	11,537	168,803	16,035	13,009	8,228	217,612
1985	1,015	808	9,737	142,755	8,122	5,776	825	167,216
1986	930	723	14,893	129,487	11,005	11,268	7,458	174,112
1987	896	886	14,424	135,782	8,854	5,161	673	167,894
1988	938	835	11,848	125,558	7,333	9,575	7,341	161,652
1989	955	831	9,678	125,243	12,069	7,283	801	155,074
1990	1,042	870	13,462	128,343	8,389	9,224	4,455	163,874
1991	1,194	1,045	15,245	137,837	14,024	6,574	572	174,261
1992	1,203	1,028	16,425	133,605	10,722	10,661	5,325	176,739
1993	1,206	1,005	20,527	134,050	8,915	6,539	1,051	171,082
1994	1,193	1,019	18,873	120,782	9,279	6,144	2,708	157,787
1995	1,119	990	15,921	107,717	7,423	4,566	691	136,319
1996	1,110	928	18,072	107,737	7,519	5,813	2,434	141,575
1997	1,166	1,051	19,074	118,250	6,196	2,962	674	147,156
1998	1,234	1,155	15,621	113,289	8,126	3,869	2,424	143,330
1999	1,219	1,157	13,009	122,281	6,143	3,653	420	145,508
2000	1,219	1,109	11,547	92,050	7,991	4,837	2,599	118,824
2001	1,226	1,137	14,412	92,041	8,406	4,158	830	119,856
2002	1,093	994	12,936	81,088	6,565	6,658	2,341	109,587
2003	1,182	1,058	21,231	95,690	7,816	5,868	1,052	131,657
1999-2003								
Average	1,188	1,091	14,627	96,630	7,384	4,995	1,452	125,088
1994-2003								
Average	1,176	1,060	16,070	105,093	7,546	4,833	1,619	135,161
All Years								
Average	1,093	951	14,845	121,715	8,972	7,050	2,571	155,153

SOURCE: Alaska Department of Fish and Game, Division of Subsistence, Alaska Subsistence Fisheries Database, Version 3.4

Table 64. Bristol Bay Subsistence Salmon Harvests by Location, 2003. (Knapp et al. 2004)

Area and River System	Permits Issued ¹	Estimated Number of Salmon Harvested ²					Total
		Sockeye	Chinook	Chum	Pink	Coho	
NAKNEK-KIVICHAK DISTRICT	489	61,443	1,221	259	198	812	63,934
Naknek River ³	318	22,948	1,080	233	195	672	25,129
Kivichak River/Wlamna Lake:	175	33,495	142	26	3	140	33,806
Alagnak (Branch) River	1	48	0	0	0	0	48
Igugig	5	1,053	1	0	0	1	1,055
Wlamna Lake	38	7,049	0	0	0	0	7,049
Kijk	1	80	0	0	0	0	80
Kokhanok	29	9,990	69	16	3	73	10,170
Kivichak River	7	755	0	0	0	0	755
Lake Clark: General	33	2,949	0	0	0	0	2,949
Lewislock	7	629	52	10	0	68	757
Newhalen River	27	7,934	0	0	0	0	7,934
Nondalton Village	6	1,938	0	0	0	0	1,938
Pedro Bay	10	2,144	0	0	0	0	2,144
Port Alsworth	4	464	0	0	0	0	464
Six Mile Lake	15	3,483	0	0	0	0	3,483
Naknek or Kivichak Unspecified	0	0	0	0	0	0	0
EGEGIK DISTRICT⁴	62	3,240	84	32	10	297	3,663
UGASHIK DISTRICT⁵	23	1,113	31	20	0	392	1,567
NUSHAGAK DISTRICT	527	25,491	18,686	5,064	403	5,432	55,076
Wood River ⁶	128	3,979	3,311	268	5	403	8,026
Lower Nushagak River ⁷	36	975	2,120	343	5	120	3,564
Upper Nushagak River ⁸	80	6,363	4,448	3,210	232	1,310	15,563
Dillingham Beaches ⁹	244	8,451	7,778	987	54	2,956	20,255
Nushagak Bay Commercial ¹⁰	59	1,665	572	210	68	539	3,155
Ugashik/Snake River	30	3,882	357	45	9	44	4,337
Nushagak, Site Unspecified	2	176	0	0	0	0	176
TOGIAK DISTRICT¹¹	92	4,403	1,208	483	451	583	7,428
TOTAL BRISTOL BAY	1,182	85,690	21,231	5,868	1,062	7,816	131,667

¹ Sum of sites may exceed district totals, and sum of districts may exceed area total, because permittees may use more than one site.

² Harvests are extrapolated for all permits issued, based on those returned and on the area fished as recorded on the permit. Due to rounding, the sum of columns and rows may not equal the estimated total. Of 1,182 permits issued for the management area, 1,058 were returned (89.5%).

³ Includes Mile 5 North, Naknek River General, Powerline-North, North and South Savonoski, South Naknek Beach, and Telephone Point-North.

⁴ Includes Egegik river and beach.

⁵ Includes Pilot Point and Ugashik.

⁶ Includes Dragage, Aleknagik, Muklung River, Red Bluff, and Upper and Lower Wood River General.

⁷ Includes Black Point, Grassy Island, and Lewis Point.

⁸ Includes Ekwok, Kokwak River, New Sluyahok, Kofiganek, Mulchatna River, and Portage Creek.

⁹ Includes Bradford Point, City Dock, Kanakanak, Scandinavia, Skinner, Snag Point, and Squaw Creek.

¹⁰ Includes Clark's Point, Eku, Etolin Point, Nushagak Point, Protection Point, and Queen's Slough.

¹¹ Includes Togiak village and Togiak River.

In 2000 the US Census reported an estimated 2,290 Native and 1,129 non-native households in the Bristol Bay Region (Bristol Bay Borough, Lake and Peninsula Borough, and Dillingham). Based on the Goldsmith (1998) estimate of direct expenditures related to subsistence harvest, this implies an annual direct subsistence-related expenditure of approximately \$7.2 million in the Bristol Bay region (Table 65).

Table 65. Estimated Total Annual Bristol Bay Area Subsistence-Related Expenditures

<i>Area</i>	<i>Population 2004</i>	<i>Percent Alaska native</i>	<i>Number of households</i>	<i>Number of Native Households</i>	<i>Number of non-native Households</i>
Bristol Bay Borough	1,103	43.7%	490	214	276
Dillingham Census Area	4,924	70.1%	2,341	1,641	700
Lake & Penninsula Borough	1,584	73.5%	588	432	156
Total Bristol Bay Region	7,611	67.0%	3,419	2,290	1,129
Annual Spending/ household				\$2,780	\$725
Total Estimated Subsistence Spending				\$6,366,487	\$ 818,450
Total				\$	7,184,937

8.0 Sport Hunting

In addition to sport fishing, sport hunting also plays a significant (but smaller) role in the local economy of the Bristol Bay region. While not a large share of the economy, sport hunting in the Bristol Bay area offers high quality hunting opportunities for highly valued species. Bristol Bay sport hunting provides hunting opportunities for caribou, moose, and brown bear, among other species. Table 66 shows reported hunter numbers for the most recently reported representative years for several species hunted in the region.

Table 66. ADF&G Reported Big Game Hunting in Bristol Bay and Alaska Peninsula Game Management Units

Most recent Big Game Hunting Estimates from ADF&G Wildlife Management Reports (Number of hunters)					
	Alaska Peninsula (GMU 9)		Bristol Bay (GMU 17)		
	Non-local Residents	NR	Non-local Residents	NR	
Moose	146	184	140	294	All hunters 2002
Caribou	23	0	1115	1439	All hunters 2003-04
Brown bear	90	319	24	74	most recent available 5-year average
	259	503	1279	1807	

The caribou estimate for GMU 17 is for the Mulchatna herd and extends beyond the GMU 17 borders

Shaded cells include both non-local residents and local residents

Sources: Alaska Wildlife Harvest Summary (2003-04); ASDF&G Species-specific Wildlife Management Reports

Table 67 outlines the estimation of total annual expenditures for big game hunting within the Bristol Bay region. These estimates are based on an assumption of one trip per hunter per year for a species, and utilizes estimates of hunter expenditures per trip developed by Miller and McCollum (1994) adjusted to 2005 price levels.

Table 67. Estimated annual big game hunting expenditures for Bristol Bay region

Statistic	Nonresidents	Non-local residents
Estimated trips	2,310	1,538
Expenditure per trip	\$4,706	\$972
Total estimated direct expenditure	\$10,870,860	\$1,494,936
Total	\$12,365,796	

In total, it is estimated that Bristol Bay area big game hunters living outside of the area spend about \$12.4 million per year in direct hunting-related expenditures. The expenditure estimate

above may include some caribou hunting of the Mulchatna herd outside of the closely defined Bristol Bay region game management units.

9.0 Wildlife Viewing / Tourism

Many of the sport fishing and sport hunting visitors to the Bristol Bay region also engage in other activities while there such as kayaking, canoeing, wildlife viewing or bird watching. However an estimated 10,000 visitors to the region come expressly to view wildlife or engage in other non-consumptive outdoor recreation activities.

The Bristol Bay region has a number of nationally recognized special management areas for wildlife. These include Katmai and Lake Clark National Parks, the Togiak and Becherof National Wildlife Refuges, and Wood-Tikchick State Park. The most accessible and popular destination for visitors interested in non-consumptive recreation activities is Katmai National Park, and in particular Brooks Camp on Naknek Lake which is world famous as a site for bear viewing. The camp accommodates both day and overnite visitors who are there to view the bears, as well as sport fishermen.

Information on the number of non-consumptive use visitors, their itineraries and activities while in the region, and their expenditures is extremely limited. Unlike sport fishing and sport hunting, no license is required for these other activities so there is no consistent and comprehensive record documenting these trips.

In particular, the visitation numbers collected by the park service in Katmai cannot be used as a guide to the number of non-consumptive recreational visitors to the region because they include sport fishermen as well as large numbers of visitors to the eastern portion of the park where the waters flow into Shelikof Strait and Cook Inlet.

Our estimate of non-consumptive recreational visitation is based on adjusted visitation data collected for Brooks Camp (available through 1999). Our estimate assumes that Brooks Camp receives most of the non-consumptive visits to the region and that about 1/3 of total visitors to Brooks Camp engage in sport fishing while in the region. Based on these assumptions, there are approximately 1,000 non-local Alaska residents and 9,000 nonresidents who visit the Bristol Bay region for wildlife viewing/tourism (and not to fish). Total expenditure for this group is estimated to be \$17,138,290, using expenditure data from McCollum and Miller (1994). This is an approximate estimate based on limited and outdated information, and is an area for further research.

10.0 Economic Significance

Economic significance is a measure of the number of jobs and the amount of income within a region that can be attributed to particular activities. It is the answer to the question of how many jobs, or what share of all the jobs, in a region exist due to that activity. In this section we report on the economic significance of the commercial salmon industry, recreational, and subsistence activities that occur in the Bristol Bay region. We show results for the local region and for the rest of Alaska. Economic effects occurring outside the state are not included. We also describe the overall structure of the economy of the Bristol Bay region.

10.1 Summary

We estimate that 5,490 annual average jobs in Alaska in 2005 were attributable to the wild salmon ecosystem in the Bristol Bay region. Slightly over 1/3 of these jobs were filled by non-residents. About equal shares of the jobs taken by Alaska residents went to residents of the Bristol Bay region and the rest of the state. At the peak of the summer season, there were 13,248 jobs in Alaska associated with the commercial salmon harvest (including processing) and providing services to recreational visitors and subsistence harvesters.

\$161 million in payroll was associated with these jobs. \$103 million of this payroll went to Alaska residents, with more than half going to Alaskans living in other locations outside the Bristol Bay region. \$58 million in payroll was collected by non-residents working seasonally in the commercial fishery or the recreation industry.

Table 68. Economic Significance of Bristol Bay Ecosystems

	TOTAL		RESIDENTS		NON-RESIDENTS
		TOTAL	LOCAL	NON-LOCAL	
DIRECT JOBS					
PEAK	13,248	4,513	2,161	2,352	8,735
ANNUAL AVG	3,230	1,120	528	592	2,110
MULTIPLIER JOBS	2,260	2,260	1,057	1,204	
TOTAL JOBS (ANN AVG)	5,490	3,380	1,585	1,795	2,110
DIRECT WAGES (\$000)	\$88,028	\$30,349	\$14,061	\$16,288	\$57,680
MULTIPLIER		\$73,005	\$32,750	\$40,256	
TOTAL	\$161,033	\$103,354	\$46,811	\$56,544	\$57,680

SOURCE: ISER.

NOTE: All direct jobs are in Bristol Bay region.

Multiplier jobs divided between Bristol Bay and Southcentral Alaska.

Multiplier jobs are all taken by residents of region where they occur.

Peak and annual average direct wages are equal.

This summary excludes subsistence and ecosystem management.

10.2 Regional Economic Overview

The economy of the Bristol Bay region depends on three main types of activities—publicly funded services (government plus non-profits), activities associated with the commercial exploitation of the natural resources of the region (commercial fishing and recreation), and subsistence. Public services and exploitation of natural resources are BASIC activities that bring money into the economy and provide the impetus for a modest level of support (NON-BASIC) activities—local businesses that sell goods and services to the commercial fishing sector, recreational service providers, government (including non-profits), and subsistence participants. Subsistence is a non-market activity but it does have an economic dimension. Residents commit significant economic resources to participate in subsistence and the products of subsistence activity have considerable economic value. Recently mining exploration has been an additional small source of basic employment.

Annual average employment in the region (the sum of the Bristol Bay Borough, Lake and Peninsula Borough, and Dillingham labor market areas) provides one way to measure the relative importance of government and resource exploitation to the regional economy. Of total basic jobs in 2004, 2,098 were directly dependent on government spending (federal, state, and local). Resource exploitation (commercial fishing and recreation) accounted for 4,013, or 64 percent of the total.

NON-BASIC jobs depend on the money that comes into the economy from BASIC activity. We have not assigned any particular percent of these NON-BASIC jobs to dependence on government or resource exploitation, and to do so would be difficult. The difficulty stems primarily from the fact that the number of government jobs is stable throughout the year, while resource exploitation jobs have an extremely seasonal pattern. The more stable government jobs, and payroll, are likely to support more NON-BASIC jobs in the region than their share of BASIC jobs.

One indicator of the importance of government money in the regional economy is the amount of federal spending in the region. In 2004 \$141 million in federal spending flowed into the three labor market areas of this region.

Table 69. Employment in the Bristol Bay Region, 2004

	<i>ANNUAL AVERAGE</i>	<i>SUMMER</i>	<i>WINTER</i>	<i>SWING (SUMMER MINUS WINTER)</i>
TOTAL JOBS BY PLACE OF WORK	7,691	16,631	3,640	12,991
BASIC	6,251	15,028	2,304	12,724
Fish Harvesting	2,552	7,657	0	7,657
Fish Processing	1,150	4,193	200	3,993
Recreation	311	933	0	933
Government + Health	2,098	1,795	2,104	-309
Mining	150	450	0	450
NON-BASIC	1,440	1,603	1,336	267
Construction	64	80	56	24
Trade/Transport/Leisure	642	765	580	185
Finance	127	118	116	2
Other Wage and Salary	180	213	157	56
Non-Basic Self Employed	427	427	427	0
JOBS BY PLACE OF RESIDENCE				
Local Resident	4,233	5,741	3,640	2,101
All Non Local	3,458	10,890	0	10,890

Source: ISER.

Table 70. Federal Spending in the Bristol Bay Region 2004 (\$000)

	<i>Bristol Bay</i>	<i>Dillingham</i>	<i>Lake & Pen</i>	<i>Total</i>
TOTAL	\$38,812	\$78,596	\$23,351	\$140,759
Retirement	\$4,734	\$10,667	\$2,890	\$18,291
Other direct to individuals	\$1,142	\$1,599	\$2,573	\$5,314
Direct to others	\$146	\$8,760	\$1,732	\$10,638
Grants	\$24,704	\$52,976	\$3,843	\$81,523
Medical Asst	\$19,813	\$25,867	\$0	\$45,680
Impact Aid	\$2,669	\$4,259	\$0	\$6,928
Other	\$2,222	\$22,850	\$3,843	\$28,915
Procurement	\$4,676	\$1,645	\$10,703	\$17,024
Wages	\$3,410	\$2,948	\$1,610	\$7,968

Source: US Department of Commerce, Consolidated Federal Funds Report.

The extreme seasonality of the market based economy is reflected in contrasting snapshots of employment in the region taken in the summer (July) and in the winter (January) of 2004, as well as the change or "swing" between the seasons. In the summer total employment peaked at 16,531, while in the winter it was 3,640. (These figures are derived from Alaska Department of Labor wage and salary employment data and US Department of Commerce self employment numbers. They have been augmented with independent information on the number of commercial fish harvesters, recreation industry workers, and mining exploration employees that are not reflected in the official statistics.) The "swing" between the seasons was 12,991. This is the increase in jobs in the summer over the winter.

The employment data shows that all the "swing" occurs in the jobs in the commercial fishery, the recreation sector, and mining. The number of government jobs actually falls, primarily due to schools closed for the summer. In both the winter and summer the number of NON BASIC jobs is modest, concentrated mostly in transportation, retail trade, and leisure services. In January there were 1,336 such jobs, increasing 267 to peak at 1,603 in July.

We assume that the winter jobs are taken by the 7,485 residents who live in the Bristol Bay region throughout the year (ADOL, 2005). But during the summer most of the "swing" jobs are taken by non-local residents—either Alaskans from other regions or workers from outside the state who come to Alaska for the summer to work in commercial fishing, recreation, or mining jobs.

One measure of the residency of workers in the region is reported each year by the Alaska Department of Revenue. For 2002 they found in a count of private sector wage and salary workers in the region that 33 percent were local residents, 16 percent were from elsewhere in Alaska, and 51 percent were from outside the state. Statewide seafood processing and visitor related businesses had some of the highest rates of non-resident employment of all sectors.

Table 71. Residence of Workers in the Bristol Bay Region, 2002

	<i>LOCAL</i>	<i>OTHER AK</i>	<i>OUTSIDE</i>	<i>TOTAL</i>
BRISTOL BAY				
State Govt	24	13	11	48
Local Govt	119	19	11	149
Private	322	306	1,308	1,936
Sum	465	338	1,330	2,133
DILLINGHAM				
State Govt	81	27	4	112
Local Govt	920	90	72	1,082
Private	1,036	295	385	1,716
Sum	2,037	412	461	2,910
LAKE AND PEN				
State Govt	6	6	2	14
Local Govt	514	130	60	704
Private	122	145	622	889
Sum	642	281	684	1,607
TOTAL PRIVATE	1,480	746	2,315	4,541
SHARE	33%	16%	51%	100%

Source: Alaska Department of Labor, Alaska Economic Trends, February 2004.

Note: This is a count of workers and not of FTE jobs or annual average jobs

Personal income in the region, measured for residents, was \$229 million in 2004, or \$30,105 per capita. Net earnings from labor was \$159 million, or 69 percent of total personal income.

Table 72. Personal Income in the Bristol Bay Region, 2004 (000\$)

	<i>Bristol Bay</i>	<i>Dillingham</i>	<i>Lake & Pen</i>	<i>Total</i>
Wages	\$46,766	\$79,794	\$17,628	\$144,188
+ Supplements to wages	\$14,995	\$22,093	\$5,764	\$42,852
+ Proprietor income	\$9,409	\$16,595	\$2,465	\$28,469
= Earnings by place of work	\$71,170	\$118,482	\$25,857	\$215,509
+ Contributions for government social insurance	-\$7,286	-\$10,880	-\$2,628	-\$20,794
+ Residence adjustment	-\$30,875	-\$3,794	-\$736	-\$35,405
= Net earnings by place of residence	\$33,009	\$103,808	\$22,493	\$159,310
+ Dividends	\$5,995	\$14,650	\$4,939	\$25,584
+ Transfers	\$8,782	\$26,484	\$9,059	\$44,325
= Personal Income	\$47,786	\$144,942	\$36,491	\$229,219
Population	1,093	4,938	1,583	7,614
Per Capita Income	\$43,720	\$29,352	\$23,052	\$30,105

Source: US Department of Commerce.

10.3 Commercial Fisheries

The commercial salmon fishery generates the largest share of the jobs and income associated with commercial resource exploitation in the Bristol Bay region, although the amount varies considerably from year to year with the size and value of the harvest. In 2005 the harvest was 166 million pounds with an ex vessel value of \$95 million. After processing the wholesale value of the 115 million pounds of product was \$226 million.

An estimated 1,485 local residents were joined by 6,167 seasonal workers from outside the region to participate in the harvest. About 4,000 non-local processing workers also came for the season. At the peak of the season 12,484 workers were directly employed in harvesting and processing the catch. Of these 4,177 were Alaska residents and 8,308 were from outside the state.

Spending in the region and the rest of the state by these workers—both residents and non-residents—as well as instate purchases by the harvesters and processors for fuel, supplies, equipment, and services, generated additional jobs in other sectors of the economy through the multiplier process. (We did not estimate employment associated with management of the fishery.) We estimate that 1,263 annual average jobs were created through this process, 651

locally and 612 in the rest of the state, in trade, services, finance and other support industries. (Jobs created outside the state are not included in these estimates.)

The 12,484 jobs during the summer peak is equivalent to 2,975 average annual jobs directly attributable to the commercial fishery. Adding the 1,263 jobs generated within Alaska by the multiplier results in total annual average jobs in Alaska attributable to the commercial fishery of 4,239.

Table 73. Economic Significance of Commercial Fishing—Harvest and Processing

	<i>TOTAL</i>		<i>RESIDENTS</i>		<i>NON-RESIDENTS</i>
		<i>TOTAL</i>	<i>LOCAL</i>	<i>NON-LOCAL</i>	
DIRECT JOBS					
PEAK	12,484	4,177	2,088	2,088	8,308
ANNUAL AVG	2,975	1,008	504	504	1,968
MULTIPLIER JOBS	1,263	1,263	651	612	
TOTAL JOBS (ANN AVG)	4,239	2,271	1,155	1,116	1,968
DIRECT WAGES (\$000)	\$79,119	\$26,427	\$13,213	\$13,213	\$52,693
MULTIPLIER	\$41,371	\$41,371	\$21,341	\$20,029	
TOTAL	\$120,490	\$67,797	\$34,555	\$33,243	\$52,693

SOURCE: ISER.

NOTE: All direct jobs are in Bristol Bay region.

Multiplier jobs divided between Bristol Bay and Southcentral Alaska.

Multiplier jobs are all taken by residents of region where they occur.

Peak and annual average direct wages are equal.

A similar analysis results in an estimate of an annual payroll associated with the commercial fishery of \$120 million.

10.4 Recreation: Total

In 2005 an estimated 50,752 recreational visitors to the Bristol Bay region spent about \$91 million on trip related expenditures in Alaska. Non-residents comprised nearly half of the total number of recreational visitors, 24,276 (48%), and accounted for the majority of spending at \$75 million (82%). Alaskans from outside the Bristol Bay region made 6,988 trips and local residents made 19,488 trips. Alaskans from outside the region spent \$10 million on their trips and local residents spent the smallest amount, \$7 million.

Most trips and spending were related to sport fishing, although both hunting and non-consumptive use trips (wildlife viewing, kayaking, bird watching, mountain climbing, hiking,

etc.) were also popular and accounted for significant spending. Many recreational visitors combined sport fishing with some non-consumptive use activities as well. We include those visitors in the sport fish category for this analysis.

The figures in the table include only expenditures directly related to trips--transportation, food, lodging, guiding services, supplies, licenses, etc. They exclude equipment purchases such as fishing rods, hunting rifles, boats, and kayaks that may have been purchased during the trip but that can be used for subsequent recreational or other kinds of trips. For most non-residents, all in-state travel expenditures are included, based on the assumption that the primary reason for the travel to Alaska is the visit to the Bristol Bay region. The expenditures related to travel to Alaska for non-residents are not included in the figures in the table, but we do include them in the economic significance calculations.

A portion of the non-resident visitor expenditures related to trips to the Bristol Bay region are made outside the region. We assume all these expenditures take place in South Central Alaska as the entry and exit point for non-residents.

Table 74 Recreational Trips and Expenditures in the Bristol Bay Region, 2005

	<i>LOCAL RESIDENT</i>	<i>NON-LOCAL RESIDENT</i>	<i>NON- RESIDENT</i>	<i>TOTAL</i>
TRIPS	19,488	6,988	24,276	50,752
SPORT FISH	19,488	4,450	12,966	36,904
SPORT HUNTING	0	1,538	2,310	3,848
WILDLIFE VIEWING/ TOURISM	0	1,000	9,000	10,000
SPENDING PER TRIP				
SPORT FISH	\$339	\$1,440	\$3,637	\$2,421
SPORT HUNTING		\$1,440	\$4,706	\$3,401
WILDLIFE VIEWING/ TOURISM		\$970	\$1,796	\$1,714
TOTAL SPENDING (000\$)	\$6,606.4	\$9,582.4	\$75,246.7	\$91,435.6
SPORT FISH	\$6,606.4	\$6,397.7	\$48,207.6	\$61,211.8
SPORT HUNTING		\$2,214.7	\$10,870.9	\$13,085.6
WILDLIFE VIEWING/ TOURISM		\$970.0	\$16,168.3	\$17,138.3

SOURCE: ISER.

Some visitors combine fishing with passive use activities. These visitors are included here in sportfishing.

Cost of travel to Alaska for non-residents not shown

Most recreational visits occur during the summer months creating a peak in economic activity that largely coincides with the peak created by the commercial fishery. The

recreational visitors outnumber workers in the commercial fishery, but their average length of stay in the region is much shorter. And unlike the workers in the commercial fishery, their presence is not directly counted as part of the employment in the region. The economic impact of these recreational visitors occurs primarily through their local purchases of goods and services and is captured in our calculations in the multiplier effect. The direct jobs, 1,570 at the peak, and 523 when converted to annual average jobs, are the workers that are clearly identifiable as providing services to recreational visitors, mostly guides and lodge employees. The workers in other sectors like transportation, lodging, food services, and retail trade, who are directly serving the visitor industry, are included in the multiplier numbers in this analysis. This definitional difference explains why the "multiplier" appears to be so much higher for recreational activity compared to commercial fishing. As with the commercial fishery (particularly processing), only a small portion of these jobs are filled by local residents. More than half are taken by non-residents.

Recreational visitor spending creates a large number of jobs indirectly (multiplier jobs), particularly in the transportation, accommodation, and trade sectors of the economy. A large share of these jobs are located outside the Bristol Bay region in South Central Alaska where most of the goods and services originate that are purchased by businesses and households in the Bristol Bay region. The jobs in these industries are much more likely to be filled by Alaska residents who live where they work, and they are also more likely to be year-round rather than seasonal jobs as well.

Total jobs (annual average) in Alaska traceable to recreational visits to the Bristol Bay region were 1,252 in 2005. Only 430 of those jobs were taken by local residents. The largest share was taken by other Alaskans, either because they moved into the region to fill a job during the summer season, or because the job attributable to recreation in the Bristol Bay region was located in South Central Alaska. A smaller share of total jobs, all within the Bristol Bay region, was taken by non-residents. (Some of the indirect jobs in transportation, trade, and accommodations were undoubtedly filled by non-residents rather than residents. We have no data at this time to quantify the number. The data for calculating the resident vs. non resident split of jobs in the recreation sector is sketchy. Limited aggregate data by industry is available, and some specific data on the residency of workers in certain segments of the recreation sector such as lodges and guiding services is available from limited surveys. For this reason the total employment and payroll numbers are more robust than their distribution by residence of the job holder. When making comparisons about worker residence between different types of activities, it is important to keep this limitation in mind.)

Because many of the goods and services consumed in Alaska are produced outside the state, the effects of recreational spending (similar to commercial fishing spending) spill over to the rest of the US. The share of the economic effects that occurs outside the state of Alaska is not included in this analysis.

Table 75. Economic Significance of All Recreational Trips

	TOTAL		RESIDENTS		NON-RESIDENTS
		TOTAL	LOCAL	NON-LOCAL	
DIRECT JOBS					
PEAK	764	336	73	264	427
ANNUAL AVG	255	112	24	88	142
MULTIPLIER JOBS	997	997	406	591	
TOTAL JOBS (ANN AVG)	1,252	1,109	430	679	142
DIRECT WAGES (\$000)	\$8,909	\$3,922	\$848	\$3,075	\$4,987
MULTIPLIER	\$29,927	\$29,927	\$10,884	\$19,044	
TOTAL	\$38,836	\$33,849	\$11,731	\$22,118	\$4,987

SOURCE: ISER.

NOTE: All direct jobs are in Bristol Bay region.

Multiplier jobs divided between Bristol Bay and Southcentral Alaska.

Multiplier jobs are all taken by residents of region where they occur.

Peak and annual average direct wages are equal.

The total payroll paid in Alaska that is traceable to recreational expenditures in the Bristol Bay region is \$39 million.

10.5 Recreation: Sport Fishing

Most of the expenditures for recreation in the Bristol Bay region are related to sport fishing, either as the only, or as the primary, activity of the visitor. \$48 million of the \$61 million total sport fishing expenditures are made by the one-third of sport fishermen who are non-residents (12,966). Non-residents are the more likely to stay at a lodge and employ the services of a guide. Alaska residents from outside the region made 4,450 trips and had expenditures of \$6 million. Local residents made 19,488 trips and had spending of \$7 million. We include local resident sport fishing trip spending in the calculation of economic significance to present a complete picture of the importance of sport fishing, even though this spending by local residents is not new money that comes into the economy. (In the absence of sport fishing opportunities locally, some of this spending could possibly shift outside the region.)

Table 76. Economic Significance of Sport Fishing

	TOTAL		RESIDENTS		NON-RESIDENTS
		TOTAL	LOCAL	NON-LOCAL	
DIRECT JOBS					
PEAK	657	288	62	226	369
ANNUAL AVG	219	96	21	75	123
MULTIPLIER JOBS	627	627	267	360	
TOTAL JOBS (ANN AVG)	846	723	288	435	123
DIRECT WAGES (\$000)	\$7,666	\$3,363	\$723	\$2,639	\$4,303
MULTIPLIER	\$19,308	\$19,308	\$7,456	\$11,852	
TOTAL	\$26,974	\$22,671	\$8,180	\$14,491	\$4,303

SOURCE: ISER.

NOTE: All direct jobs are in Bristol Bay region.

Multiplier jobs divided between Bristol Bay and Southcentral Alaska.

Multiplier jobs are all taken by residents of region where they occur.

Peak and annual average direct wages are equal.

Total jobs associated with the sport fishery were 846. The total payroll paid in Alaska that is traceable to sportfishing expenditures in the Bristol Bay region was \$27 million.

10.6 Recreation: Sport Hunting

Sport hunting accounts for a smaller share of total recreational visits but spending by hunters is still significant. All of the trips we include in this analysis originate outside the Bristol Bay region, either elsewhere in Alaska or outside the state. These trips from outside the region involve more travel costs and are more likely to use guiding services and other commercial facilities. Of the 167 total annual average jobs in Alaska attributable to sport hunting, most are taken by residents of the state with the majority outside the local region.

Table 77. Economic Significance of Sport Hunting

	TOTAL		RESIDENTS		NON-RESIDENTS
		TOTAL	LOCAL	NON-LOCAL	
DIRECT JOBS					
PEAK	14	6	1	5	7
ANNUAL AVG	5	2	0	2	2
MULTIPLIER JOBS	163	163	60	103	
TOTAL JOBS (ANN AVG)	167	165	60	105	2
DIRECT WAGES (\$000)	\$158	\$71	\$16	\$55	\$87
MULTIPLIER	\$4,857	\$4,857	\$1,521	\$3,337	
TOTAL	\$5,016	\$4,929	\$1,536	\$3,392	\$87

SOURCE: ISER.

NOTE: All direct jobs are in Bristol Bay region.

Multiplier jobs divided between Bristol Bay and Southcentral Alaska.

Multiplier jobs are all taken by residents of region where they occur.

Peak and annual average direct wages are equal.

The total payroll paid in Alaska that is traceable to sport hunting expenditures in the Bristol Bay region is \$5 million.

10.7 Recreation: Wildlife Viewing and Other Non-consumptive Uses

Although the majority of recreational visitors come to the Bristol Bay region to fish or hunt, many engage in other activities, and neither fish nor hunt. Most of these visitors come for wildlife viewing, and in particular to see the bears. The number of these visitors, their activities while in the region, and their expenditures are all difficult to trace because unlike sportfishing or hunting, no license is generally required for these activities. No consistent and comprehensive administrative mechanism currently exists to determine overall visitation in the region for these purposes. Some limited information is collected on visits to specific sites, but this does not capture information about activities or expenditures.

One recent study has estimated that Western Alaska receives 30,000 non-resident overnight visitors in a tourist season, with most coming to fish (McDowell, 2006). Using this information as a general guideline together with limited visitor information from the National Parks in the region as well as an earlier study of the National Wildlife Refuges in western Alaska (Goldsmith et al., 1998), we estimate that about 9,000 trips were made into the region for recreational purposes that did not include either fishing or hunting. Most of these

involved an at least one overnight in the region, but a portion were day trips from Anchorage for bear viewing. To be consistent with the expenditure data for sport fishing and hunting, we assume that the visit to the Bristol Bay region was the primary reason for their visit to Alaska for visitors who overnight in the region. For these visitors we include all their instate expenditures in the calculation of the economic significance of this activity. For visitors who do not overnight in the region, we include only the expenditures related to this "side trip" and exclude both their other instate expenditures and their expenditures to travel to Alaska.

We estimate 239 annual average jobs associated visits involving only non-consumptive wildlife viewing/tourism use to the Bristol Bay region and a payroll of \$7 million.

Table 78. Economic Significance of Non-consumptive Recreational Use Visits

	TOTAL		RESIDENTS		NON-RESIDENTS
		TOTAL	LOCAL	NON-LOCAL	
DIRECT JOBS					
PEAK	93	42	9	33	51
ANNUAL AVG	31	14	3	11	17
MULTIPLIER JOBS	208	208	79	128	
TOTAL JOBS (ANN AVG)	239	222	82	139	17
DIRECT WAGES (\$000)	\$1,085	\$488	\$108	\$380	\$597
MULTIPLIER	\$5,762	\$5,762	\$1,907	\$3,855	
TOTAL	\$6,847	\$6,250	\$2,015	\$4,235	\$597

SOURCE: ISER.

NOTE: All direct jobs are in Bristol Bay region.

Multiplier jobs divided between Bristol Bay and Southcentral Alaska.

Multiplier jobs are all taken by residents of region where they occur.

Peak and annual average direct wages are equal.

10.8 Subsistence

Subsistence is an important component of the regional economy dependent on the wild salmon ecosystem, but it is not part of the market economy. Consequently there is no direct measure of the labor effort (like employment) in pursuit of subsistence resources, and there is no market measure of the return to that labor (payroll). However we can quantify the link that exists between subsistence and the market economy based on the purchases of supplies and equipment that households make in support of their subsistence activities. Typically these purchases include boats, snowmachines, fuel, nets, traps, rifles, and a broad range of other items, some used exclusively for subsistence, and others used not only for subsistence, but for other purposes as well.

Information on the level of these purchases by households engaged in subsistence is nearly non-existent. We rely on a survey conducted by the North Slope Borough for an estimate of these expenditures, recognizing not only differences in the circumstances between these different parts of the state, but also how difficult it is to determine what household expenditures can appropriately be attributed to subsistence rather than other activities.

For simplicity we assume that every Native household in the region practices subsistence in one form or another, although not necessarily every year, and that none of the non-Native households practice subsistence.

Because of these very simple assumptions, our estimate of the economic significance of subsistence (significance here narrowly defined to mean only jobs and payroll in businesses that provide the supplies and equipment used in subsistence) is merely a rough approximation. It is quite small in comparison to commercial fishing and recreation spending, both in terms of market jobs and payroll generated. A large share of the jobs created by spending on inputs to subsistence related activities are in urban Alaska, a reflection of the limited capacity of the businesses in the communities within the region to supply the goods and services that residents purchase.

Table 79. Economic Significance of Subsistence

	<i>TOTAL</i>		<i>RESIDENTS</i>		<i>NON-RESIDENTS</i>
		<i>TOTAL</i>	<i>LOCAL</i>	<i>NON-LOCAL</i>	
DIRECT JOBS					
PEAK	0	0	0	0	0
ANNUAL AVG	0	0	0	0	0
MULTIPLIER JOBS	49	49	14	34	
TOTAL JOBS (ANN AVG)	49	49	14	34	0
DIRECT WAGES (\$000)	\$0	\$0	\$0	\$0	\$0
MULTIPLIER		\$1,707	\$525	\$1,183	
TOTAL	\$1,707	\$1,707	\$525	\$1,183	\$0

SOURCE: ISER.

NOTE: All direct jobs are in Bristol Bay region.

Multiplier jobs divided between Bristol Bay and Southcentral Alaska.

Multiplier jobs are all taken by residents of region where they occur.

Peak and annual average direct wages are equal.

11.0 Net Economic Values

As noted in Section 1, the second general accounting framework under which ecosystem services can be measured is the Net Economic Value framework. Net economic value is the value of a resource or activity that is over and above regular expenditures associated with engaging in a activity or visiting a resource area.

11.1 Commercial Fisheries

In addition to the regional economic impact of commercial fish harvest in the Bristol Bay, the commercial fishery has a net economic value related to the expected differences over time between the ex vessel revenues and the costs of participating in this fishery. One method for approximating this value is to look at the market prices for commercial fishing permits in the Bristol Bay. These market prices reflect the value that commercial operators place on their right to fish the region. There were 1,860 salmon drift net permits in the fishery in 2005, and the average market value for permits that changed hands was \$64,300, implying a total value to the fishery of \$119,600,000 in 2005. Historically, these permits have been much more valuable, on the order of \$250,000 each in the late 1980's. The decreased value of permits reflects in part the effect on farmed salmon on the market price for Bristol Bay salmon, which has dropped from over \$2.00 per pound to around \$0.50 per pound. Table 80 presents an approximation of total commercial permit values for Bristol Bay.

Table 80. Current Bristol Bay Salmon Fishing Permit Numbers and sale prices, 2005

<i>Permit type</i>	<i>Number of permits</i>	<i>Current market value</i>	<i>Total estimated value</i>
Salmon (Drift net)	1860	\$64,300	119,600,000
Salmon (Set net)	988	\$14,700	14,500,000
Total			134,100,000
Implied annual value (at 7% real discount rate)			\$9,387,000
(at 14% real discount rate)			\$18,774,000

Including salmon set nets, and based on current permit sales prices and numbers for salmon fishing permits in Bristol Bay, we estimate that the current net economic value of commercial salmon fishing in the Bay is approximately \$134 million, or an implied annualized value of between \$9.4 million using a real 7% amortization rate into perpetuity and \$18.8 million using a 14% discount rate.

11.2 Subsistence Harvest

The Alaska Department of Fish and Wildlife, Division of Subsistence reports that most rural families in Alaska depend on subsistence fishing and hunting. ADF&G surveys of rural communities find that from 92% to 100% of sampled households used fish, 79% to 92% used wildlife, 75% to 98% harvested fish, and 48% to 70% harvested wildlife. Because subsistence foods are widely shared, most residents of rural communities make use of subsistence foods during the course of the year. The subsistence food harvest in rural areas constitutes about 2% of the fish and game harvested annually in Alaska. Commercial fisheries harvest about 97% of the statewide harvest, while sport fishing and hunting take about 1%. Though relatively small in the statewide picture, subsistence fishing and hunting provide a major part of the food supply of rural Alaska (Subsistence in Alaska, a 2000 Update <http://www.subsistence.adfg.state.ak.us/download/subupd00.pdf>).

The Alaskan subsistence harvest is not traditionally valued in the marketplace. Duffield (1997) estimated the value per pound of Alaskan subsistence harvest through use of a cross-sectional hedonic model of community-specific harvest per capita and community per capita income levels. This model estimated the value of a pound of subsistence harvest (willingness to pay) at \$32.46. Adjusting this value to current (2005) values using Alaska statewide trends in per capita income yields an estimate of \$59.68 per pound in terms of current income and dollars. These models have not been estimated with current data. For this reason, a range of values is employed in this analysis utilizing the original \$32.46 per pound as a low-end estimate and the inflation adjusted \$59.68 per pound as a high-end estimate.

Table 81 shows the accounting of ADF&G Division of Subsistence estimates of total annual subsistence harvest in most communities in Bristol Bay. This total has been adjusted to include population in the region not included in the ADF&G subsistence harvest estimates. In total, we estimate that about 2.4 million usable pounds of subsistence harvest per year occur in the Bristol Bay region. Valued at an estimated range of \$32.46 to \$59.68 per pound, this harvest results in an estimated net economic value annually of subsistence harvest of between \$78 and \$143 million.

Table 81. Estimated Net Economic Annual Value of Bristol Bay Area Subsistence Harvest

<i>community name/statistic</i>	<i>Usable pounds of harvest</i>
Aleknagik 1989	54,079
Clark's Point 1989	20,325
Dillingham 1984	494,486
Egegik 1984	37,450
Ekwok 1987	85,260
Igiugig 1992	33,915
Iliamna 1991	51,816
King Salmon 1983	81,261
Kokhanok 1992	175,639
Koliganek 1987	154,705
Levelock 1992	97,677
Manokotak 1985	118,337
Naknek 1983	72,110
New Stuyahok 1987	247,494
Newhalen 1991	110,720
Nondalton 1983	79,118
Pedro Bay 1996	15,300
Pilot Point 1987	24,783
Port Alsworth 1983	13,832
Port Heiden 1987	41,985
South Naknek 1992	39,893
Ugashik 1987	8,144
Total ADF&G Pounds Harvest	2,058,329
Population adjustment	1,165
Total usable pounds	2,397,970
Value per pound	\$32.46 to \$59.68
Total annual subsistence value	\$77.8 million to \$143.1 million

11.3 Sport Fishing Net Economic Value

In addition to the direct expenditures that Bristol Bay area anglers make each year (reported in Section 4), there is substantial net economic value attached to the trips these anglers take to the region. The 2005 Bristol Bay angler survey asked respondents a series of questions relating to what they spent on their fishing trip, and how much, if any, more they would have been willing to spend to have the same experience. Respondents were presented with a set of amounts ranging from \$0 to \$2,000, and asked to mark the greatest additional increase in spending they would have made to take the same trip. Table 82 shows the mean willingness to pay estimate for the two groups. The net economic value from the survey data was estimated using an interval estimation model.

Based on an estimated annual use level of 12,966 trips for nonresidents, and 23,938 trips for Alaska residents, we estimate that the annual net economic value of fishing trips in the Bristol Bay region is approximately \$13.6 million.

Table 82. Estimated Willingness to Pay for Sportfishing Fishing in the Bristol Bay Region

	<i>Residents</i>	<i>Nonresidents</i>
Estimated mean net willingness to pay	\$ 320.45	\$ 454.90
Estimated number of trips/year	23,938	12,966
Total estimated Net Economic Value	\$7,670,932	\$5,898,233
Total annual value	\$13,569,165	

11.4 Sport Hunting Net Economic Value

As in the case of sport fishing, there is additional value associated with sport hunting, above what is actually spent on the activity. Table 83 details the estimation of annual net economic value of big game hunting in the Bristol Bay region. Table 83 utilizes ADF&G estimates of hunter numbers in the game management units associated with the Bristol Bay area, and on estimates of net willingness to pay per trip for hunting (from Miller and McCollum 1994, adjusted to current, 2005 dollars). It is estimated that nonresident net economic value of Bristol Bay hunting is approximately \$1.4 million annually. The annual net economic value of big game hunting in the Bristol Bay region for Alaska residents is estimated at about \$360,000. Therefore the total estimated net economic value of big game hunting in this region is \$1.8 million.

Table 83. Estimated annual big game hunting net economic value for Bristol Bay region

<i>Species / Statistic</i>	<i>Nonresidents</i>			<i>Non-local residents</i>		
	trips	Value/ trip	NEV	Trips	Value/ trip	NEV
Moose	478	\$529	\$283,000	286	\$244	\$70,000
Caribou	1439	\$583	\$839,000	1138	\$228	\$260,000
Brown bear	393	\$817	\$321,000	114	\$280	\$32,000
Total			\$1,443,000			\$362,000

11.5 Wildlife Viewing and Tourism Net Economic Value

The 1991 study by McCollum and Miller estimated the net economic value of wildlife watching trips in Alaska. These values adjusted to current dollars results in an estimated value per trip of \$181. Using the 10,000 visitor trips to the region we estimate an annual net economic value of wildlife watching of about \$1.8 million.

11.6 Existence Value

A major unknown is the total value for existence and bequest (also called passive use values). Goldsmith et al. (1998) estimated the existence and bequest value for the federal wildlife refuges in Bristol Bay at \$2.3 to \$4.6 billion per year (1997 dollars).

There is considerable uncertainty in these estimates, as indicated by the large range of values. Goldsmith's estimates for the federal wildlife refuges are based on the economics literature concerning what resident household populations in various areas (Alberta, Colorado) (Adamowicz et al. 1991; Walsh et al. 1984; Walsh et al. 1985) are willing to pay to protect substantial tracts of wilderness. Similar literature related to rare and endangered fisheries, including salmon, could also be appealed to here. It is possible that from a national perspective that the Bristol Bay wild salmon ecosystems and the associated economic and cultural uses are sufficiently unique and important to be valued as highly as wilderness in other regions of the U.S.

Goldsmith et al.'s (1998) estimates assume that a significant share of U.S. households (91 million such households) would be willing to pay on the order of \$25 to \$50 per year to protect the natural environment of the Bristol Bay federal wildlife refuges. The number of such households is based on a willingness to pay study (the specific methodology used was contingent valuation) conducted by the State of Alaska Trustees in the Exxon Valdez oil spill case (Carson et al. 1992). The findings of this study were the basis for the \$1 billion settlement between the State and Exxon in this case. These methods are somewhat controversial among economists, but when certain guidelines are followed, such studies are recommended for use in natural resource damage regulations (for example, see Ward and Duffield 1992). They have also been upheld in court (*Ohio v. United States Department of Interior*, 880 F.2d 432-474 (D.C. Cir. 1989) and specifically endorsed by a NOAA-appointed blue ribbon panel (led by several Nobel laureates in economics) (Arrow et al. 1993).

Goldsmith's estimates for just the federal refuges may be indicative of the range of passive use values for the unprotected portions of the study area. However, there are several caveats to this interpretation. First, Goldsmith et al. estimates are not based on any actual surveys to calculate the contingent value specific to the resource at issue in Bristol Bay. Rather, they are based on inferences from other studies (benefits transfer method). Second, these other studies date from the 1980's and early 1990's and the implications of new literature and methods have not been examined. Additionally, the assumptions used to make the benefits transfer for the wildlife refuges may not be appropriate for the Bristol Bay study area.

11.7 Total Net Economic Value and Present Value and Inter-temporal Issues

Table 84 shows the estimated annual net economic value associated with direct use of the natural resource services provided by the Bristol Bay ecosystem. Commercial salmon fishery net economic values are derived by annualizing permit values, which are exchanged in an open market and reported by the Commercial Fish Entry Commission. These are on the order of \$51,200 for a drift gillnet permit in 2005 in total, but have been as high as \$200,000 as recently as 1993. Subsistence harvests are valued based on the willingness-to-pay revealed through tradeoffs of income and harvest in choice of residence location (Duffield 1997).

Table 84: Summary of Bristol Bay Ecosystem Services, Net Economic Value per Year (Million 2005 \$)

Ecosystem Service	Low estimate, net economic value per year	High estimate, net economic value per year
Commercial salmon fishery	\$9.4	\$18.8
Subsistence harvest	\$77.8	\$143.1
Sport fisheries	\$13.5	\$13.5
Sport Hunting	\$1.8	\$1.8
Wildlife viewing / tourism	\$1.8	\$1.8
Total Direct Use Value	\$104.30	\$179.00
Existence and Bequest Value	Not estimated	Not estimated

Sportfisheries net economic values are based on original data collected for purposes of this study, as reported below. These estimates are consistent with values from the extensive economic literature on the value of sportfishing trips. Sport hunting and wildlife viewing values are based on studies conducted about fifteen years ago in Alaska, and which need to be updated. Direct use values total from \$104 million to \$179 million.

These are annual net economic values. Since these are values for renewable resource services that in principle should be available in perpetuity, it is of interest to also consider their present value (e.g. total discounted value of their use into the foreseeable future). Recent literature (EPA 2000; Weitzman 2001) provides some guidance on the use of social discount rates for long term (intergenerational) economic comparisons. Rates as low as 0.5% have been recommended by EPA (2000). Weitzman, based on an extensive survey of members of the American Economic Association, suggests a declining rate schedule, which may be on the order of 4 percent (real) in the near term and declining to near zero in the long term. He suggests a constant rate of 1.75% as an equivalent to his rate schedule. Applying this

parameter to the net economic values shown in Table 76 implies a net present value of \$6.0 billion to \$10.2 billion for the measured uses.

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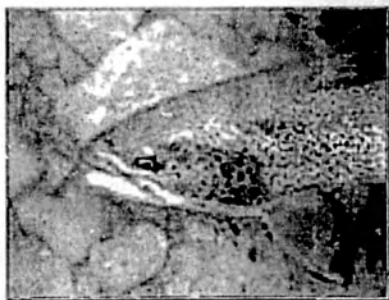
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Attachment A: Angler Survey Instrument

Bristol Bay Region

2005 Angler Survey



Bureau of Business and Economic Research
University of Montana

The purpose of this survey is to obtain information about angler use of the Bristol Bay Area. We anticipate that this information could have a significant impact on future management of these fisheries.

We are particularly interested in your use of wild stocks of rainbow trout and salmon, so several questions will be directed towards these species. We very much appreciate your participation in this survey, and hope you enjoy answering our questions and reflecting on your recent fishing experience.

Section I. General questions about your sport fishing.

1. How many years have you been sport fishing?
_____ years
2. About how many days per year do you spend sportfishing?
_____ days
3. How many days have you sportfished in Alaska so far in 2005?
_____ days fished in Alaska in 2005
4. How many separate trips from home did you take for the primary purpose of fishing Alaska freshwater sites so far this year?
_____ number of separate trips from home
5. Please check the types of fishing you most prefer when fishing in Alaska (check all that apply):
 - ☐ fly fishing
 - ☐ lure fishing
 - ☐ bait fishing
 - ☐ stream fishing from a bank or with waders
 - ☐ stream fishing from a boat
 - ☐ lake fishing from a shore or boat
 - ☐ salt water fishing from shore or boat
 - ☐ other (please specify) _____
6. How would you rate fishing as compared to your other outdoor recreation activities? (please check one)
 - ☐ It's my favorite outdoor recreation activity
 - ☐ It's one of my favorite outdoor recreation activities
 - ☐ It's just one of several outdoor recreation activities that I do
 - ☐ I prefer other outdoor recreation activities
7. Are you a member of a fishing club or an organization that supports fishery conservation?
 - ☐ Yes ☐ No
8. How would you rate your expertise as an angler? (please check one)
 - ☐ Beginner ☐ Intermediate ☐ Advanced ☐ Don't know

9. What factors are important to you in selecting where to sport fish in Alaska. For each characteristic below, please rate its importance (circle the number) from least important (1) to most important (5).

Fishing Experience	Importance				
	least				most
Fishing easily accessible site near a road	1	2	3	4	5
Fishing in remote, off-the-road locations	1	2	3	4	5
Harvesting fish	1	2	3	4	5
Catching and releasing large numbers of fish	1	2	3	4	5
Chance to catch large or trophy-sized fish	1	2	3	4	5
Natural beauty of the area	1	2	3	4	5
Catching wild stock rainbows	1	2	3	4	5
Being in an area with few other anglers	1	2	3	4	5
Being in a wilderness setting	1	2	3	4	5
Chance to catch wild fish	1	2	3	4	5
Opportunities to view wildlife	1	2	3	4	5

II. Where you have fished in Bristol Bay and Southcentral Alaska so far in 2005

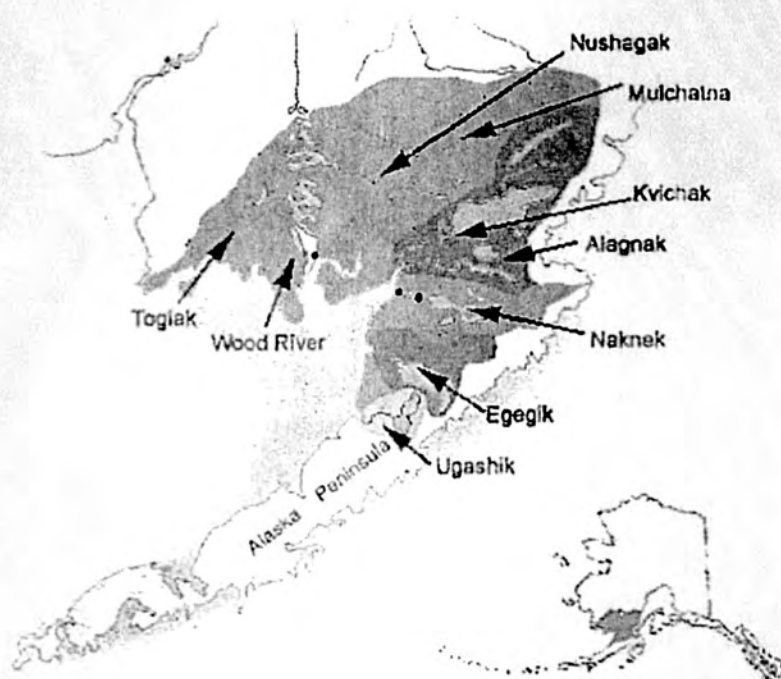
10. With reference to the map on the next page highlighting the Bristol Bay area, did you fish any freshwater sites in the Bristol Bay area in 2005?

☐ Yes ☐ No (If "NO" please skip to Question 39)

(IF YES) How many separate trips from home did you make to fish one or more specific sites in the Bristol Bay area so far in 2005?

_____ number of separate trips from home

BRISTOL BAY REGION



11. Which of the following specific Bristol Bay area freshwater fishing sites did you visit so far in 2005? Please check **yes** for each site and indicate how many days you fished, for at least part of a day, on each specific water you fished. (See map)

Fishing Site	"Yes" fished this year	Days fished on each water
Area A. Naknek River Drainage		
Naknek River	—	—
Brooks River	—	—
Brooks Lake	—	—
Other Freshwater (please list)	—	—
—		
Area B. Nushagak-Mulchatna Drainage		
Nushagak River	—	—
Wood River Lakes System	—	—
Mulchatna River	—	—
Other Freshwater (please list)	—	—
—		
Area C. Kvichak-Lake Iliamna		
Alagnak (Branch) River	—	—
Newhalen River	—	—
Kvichak River	—	—
Talarik Creek	—	—
Lake Clark Drainage	—	—
Other Freshwater (please list)	—	—
—		
Area D. Other Bristol Bay		
Togiak River	—	—
Egegik River	—	—
King Salmon River	—	—
Ugashik River	—	—
Other Freshwater (please list)	—	—
—		

Section III. In this section, we would like to ask you about your most recent fishing trip to the Bristol Bay area.

The rest of the questions in this section are about this most recent fishing trip from home to Bristol Bay.

12. What specific fishing site (river, lake, or drainage) did you spend most of your time at on this recent trip?

_____ name of fishing site

13. What was the approximate date of your most recent fishing trip to this specific fishing site? (please circle all the days of your most recent trip)

June						
S	M	T	W	T	F	S
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30		

July						
S	M	T	W	T	F	S
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
31						

August						
S	M	T	W	T	F	S
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31			

September						
S	M	T	W	T	F	S
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	

13a. If your trip was not in June through September, please indicate the beginning and end dates for your trip. _____ (Begin date) _____ (End date)

14. What was the major purpose of your trip to Alaska? (check one).

- 9 To fish
- 9 To hunt
- 9 For business
- 9 For general vacation
- 9 To visit friends and relatives
- 9 Other (please specify) _____

15. On your most recent trip to Bristol Bay how many days were spent:

In total? (e.g. round trip from home) _____ days
In the Bristol Bay area? _____ days
In Anchorage? _____ days
In the rest of Alaska? _____ days
Traveling to and from Alaska? _____ days

16. If you spent time in the rest of Alaska, what were your primary other destinations?

17. Was this trip your first fishing trip ever to the Bristol Bay?

9 Yes 9 No

↓
If NO, how many years have you been fishing this area? _____ years

18. What kind of fishing trip were you on? (please check one)

- 9 Stayed at a remote lodge and flew or boated with a guide to fishing sites most days
9 Stayed at a tent or cabin camp and fished waters accessible from this base camp
9 Hired other lodging in the area and contracted for fly-out or boat-out travel on a daily basis
9 Hired other lodging in an area community and fished on own
9 Floated a section of river with a guided party
9 Hired a drop-off service and fished and camped on our own
9 Accessed the area with my own airplane or boat
9 Other:(please describe) _____

19. If you stayed at a remote lodge or camp, how many nights were you there?

_____ number of nights stayed at remote lodge or camp

20. What was the actual physical location of the remote lodge or camp?

_____ nearest river, lake, drainage, or community

21. What was the name of the remote lodge or camp where you stayed?

_____ name of lodge or camp

Questions about your Trip Expenditures

22. If you were not already living in Alaska this past fishing season, which of the following modes of transportation did you use to come to Alaska? (Please check as many as apply).

- | | | |
|--|---|---|
| ☐ Commercial airplane | ☐ Cruise ship | ☐ Car, truck, RV |
| ☐ Private airplane | ☐ Private boat/Ferry | ☐ Other |

23. If you were not already living in Alaska this past fishing season, how much did you spend on transportation to and from Alaska on this recent trip? \$ _____

24. If you purchased a "packaged" sportfishing trip to the Bristol Bay area, what was the total price per person of the package? (Please enter the dollar amounts you paid for yourself below on this recent trip).

Package base price	\$ _____
Miscellaneous rental or services	\$ _____
Gratuities to staff	\$ _____

Total spent at remote sportfish lodge or camp: \$ _____

25. If you purchased a "packaged" sportfishing trip to the Bristol Bay area, what services were included in the base price at the remote lodge where you stayed? (check all that apply)

- ☐ Transportation to the lodge from Anchorage
- ☐ Transportation to the lodge from a local community (community?): _____
- ☐ Full guide services
- ☐ Daily flyout service to specific fishing sites
- ☐ Other level of flyout service to specific fishing sites (# of days _____)
- ☐ Daily guided boat access to specific fishing sites
- ☐ Lodging
- ☐ Full meals
- ☐ All fishing equipment
- ☐ Flies or other terminal tackle
- ☐ Rain gear
- ☐ Fish processing and shipping
- ☐ Lodging in a full service lodge
- ☐ Lodging in cabins
- ☐ Lodging in a tent camp
- ☐ Other (please list): _____

26. Please fill out the following table, listing all of your expenses which were Not included in the price of a package sportfishing trip. The expenditures should be only those spent while in Alaska. Approximately how much did you spend on:

Expenditures not included in the price of your package sportfishing trip	Spent in Bristol Bay	Spent in rest of Alaska
Commercial air travel	\$	\$
Air taxi service	\$	\$
Transportation by boat	\$	\$
Boat or vehicle rental	\$	\$
Gasoline or other travel costs within Alaska (not rentals)	\$	\$
Lodging or camping fees	\$	\$
Food and beverages	\$	\$
Guide fees	\$	\$
Fishing supplies (tackle, clothing, etc.)	\$	\$
Other non-fishing package tours (list)	\$	\$
Other (please specify)	\$	\$

27. Counting yourself, how many people were included on this total cost?
 _____ people

28. What is the total of all costs you incurred on the trip that are specifically attributable to travel to, and time spent, at your primary fishing destination area? (For example, this might include a package sportfishing trip, airfare or other expenses incurred specifically to include fishing in your trip itinerary)

\$ _____

The costs of visiting and recreating on Alaska's rivers and lakes change over time. For example, gas prices and other travel costs rise and fall

29. Was this trip to fish your primary destination area worth more to you than what you actually spent (for example, on a package sportfishing trip plus airfare or other expenses incurred specifically to include fishing in your trip itinerary)?

9 Yes

9 No

If YES, what is the largest increase over and above your actual costs that you would have paid to be able to fish your primary destination area? (please choose one)

☐ \$10☐ \$250 ☐ \$1,500

□ § 25

☐ \$500 ☐ \$2,000☐ \$50☐ \$750 ☐ Other \$☐ \$100 ☐ \$1,000

30. What is the most important reason for your answer to Question 29?

31. On a scale of 1 to 5 where 1 means "very uncertain" and 5 means "very certain," how certain are you that you would actually be willing to pay the additional costs you indicated in Question 29, to have included fishing at your primary destination in you trip itinerary? (please circle one number)

1 2 3 4 5
very uncertain very certain

Questions about Your Fishing Experience

32. What was the primary species of fish you intended to catch on this trip? (check one)

9 Rainbow Trout

9 Chum

9 King Salmon

9 Arctic Char

9 Silver Salmon

9 Steelhead

9 Sockeye Salmon

9 Arctic Grayling

9 Other

9 No specific species was targeted

33. Would you still have chosen to make this trip if, for some reason, the primary species of fish you intended to catch on this trip was unavailable?

☐ Yes ☐ No ☐ Don't know

34. Which of the following fish were you trying to catch on this trip? For each type of fish you targeted, please check the box that shows your evaluation of the quality of fishing for that type of fish.

Species	Targeted?			Excellent	Good	Fair	Poor
	Yes	No					
Rainbow Trout			Fishing was:				
King Salmon			Fishing was:				
Silver Salmon			Fishing was:				
Sockeye Salmon			Fishing was:				
Chum Salmon			Fishing was:				
Arctic Char			Fishing was:				
Steelhead			Fishing was:				
Arctic Grayling			Fishing was:				
Other			Fishing was:				

35. Did you catch any rainbow trout larger than 26 inches?

9 No 9 Yes

36. For each item below, please check the box that shows how strongly you agree or disagree with the following statements about the fishing you experienced on your recent trip.

Statement	Strongly Agree	Agree	Not Sure	Disagree	Strongly Disagree
Fishing conditions were uncrowded					
There was a reasonable opportunity to catch fish					
There was minimal conflict with other anglers					
Fishing was in a wilderness setting					
There was opportunity to catch trophy-sized fish					
There was opportunity to catch and release large numbers of fish					

37. In general, how crowded were your primary fisheries on this trip? (circle one number)

1	2	3	4	5	6	7	8	9	10
not at all crowded			moderately crowded				extremely crowded		

Questions about Other Areas You Fish

38. Please list the states, provinces, or countries where you have taken sport fishing trips in the last three years that you believe are roughly comparable to your recent trip to Bristol Bay. Please include information on the specific water fished and your target species.

Year	State/Prov./ Country	Name of Water	Target Species
2005			
2004			
2003			

39. How did these trips compare to your recent fishing trip to Bristol Bay? (please circle a category below for each year)

Year	Poorer than Bristol Bay	About the Same	Better than Bristol Bay
2005	☐	☐	☐
2004	☐	☐	☐
2003	☐	☐	☐

Questions about Management-related Issues

40. Fishing in the Bristol Bay region is currently generally characterized by a **wilderness setting, relatively un-crowded fishing, and good opportunities to catch large rainbow trout**. Thinking back on your recent 2005 fishing trip to Alaska, suppose that **good road access** was developed from **Anchorage to Bristol Bay** by ferry from Homer across Cook Inlet and then along a corridor including the Newhalen River, Lake Illiamna, the Kvichak River, and the lower Nushagak River to Dillingham, King Salmon and Aleknagik. How do you anticipate this would **affect your future sport fishing**, if at all? (Please mark one box)

- ☐ I would fish more frequently in Bristol Bay: _____ number of additional trips per year
- ☐ No effect
- ☐ I would choose to fish another area in Alaska (please list): _____
- ☐ I would not fish in Alaska

41. Would you generally favor or oppose developing good road access from Anchorage to Bristol Bay (including a ferry from Homer across Cook Inlet). Such a road would connect from a ferry terminal on Cook Inlet and then on to Lake Illiamna and on to King Salmon, Dillingham and Aleknagik. (Please check one)

- ☐ I would favor developing such a road
- ☐ I would oppose developing such a road
- ☐ Not sure

42. In various parts of the country, **funds have been set up** to conserve natural resources and wildlife habitat. The Nature Conservancy, Rocky Mountain Elk Foundation, and Trout Unlimited are examples of the types of groups that can do this. **How familiar are you** with these kinds of efforts?

- | | |
|---|---|
| ☐ Never heard of them | ☐ Know a fair amount about them |
| ☐ I have heard of them | ☐ I know a great deal about them |

43. There is the potential for significant future extractive resource development and roading in the Bristol Bay area. For example, **a large mine** has been proposed in the headwaters of the Nushagak and Kvichak Rivers near Lake Iliamna, and **a road** has been proposed linking Anchorage and Bristol Bay.

Suppose that you had an opportunity to support a fund whose aim was to **keep the main Bristol Bay drainages in their current relatively pristine and un-roaded condition**. Assume that the successful development of such a fund would actually result in the **protection of Bristol Bay from roading and extractive resource development**.

As this survey is part of a research project, we are not asking you to make a donation. Nonetheless, we would like you to answer the following question as you would a solicitation for an actual donation. Hypothetically, if your were asked today, how much would you be willing to donate, if anything, to keep the Bristol Bay region in its current relatively pristine and unroaded condition? (Please check one)

- ☐ \$10 ☐ \$25 ☐ \$50 ☐ \$100 ☐ \$250 ☐ \$500 ☐ \$1000 \$_____ other
- ☐ I would choose to not make a donation at this time

44. Could you please comment on the **main reason** you **would or would not support** such a fund?

45. On a scale of 1 to 5 where 1 means "very uncertain" and 5 means "very certain," how certain are you that you would pay the amount you checked in Question 42 to protect Bristol Bay from roading and extractive resource development? (please circle one number)

1 2 3 4 5
very uncertain very certain

IV. These last few questions will help us to compare respondents to the general population.

46. Where do you live? City: _____ State: _____ Zip: _____

Country (if not U.S.) _____

47. How old were you on your last birthday? _____

48. Are you: 9 male 9 female

49. What is the highest level of formal education you have completed? (Circle one)

- | | |
|---|--|
| ☐ Some grade school | ☐ Some college |
| ☐ Finished grade school | ☐ Finished college |
| ☐ Some high school | ☐ Some postgraduate work |
| ☐ Finished high school | ☐ Finished postgraduate |

50. During the fishing season this year, you were:

- | | |
|--|------------------------------------|
| ☐ Employed full time | ☐ Homemaker |
| ☐ Employed part time | ☐ Student |
| ☐ Unemployed | ☐ Other: _____ |
| ☐ Retired | |

51. Please check your household's expected income before taxes for 2005:

- | | |
|--|--|
| ☐ Less than \$24,999 | ☐ \$100,000 to \$149,999 |
| ☐ \$25,000 to \$49,999 | ☐ \$150,000 to \$199,999 |
| ☐ \$50,000 to \$74,999 | ☐ \$200,000 to \$299,999 |
| ☐ \$75,000 to \$99,999 | ☐ Over \$300,000 |
| ☐ \$100,000 to \$124,999 | |

Thanks for your time and assistance!

Is there anything else you'd like to tell us about your trip or how you feel your primary fishing destination area should be managed in the future?

LAW OFFICES

BIRCH, HORTON, BITTNER AND CHEROT

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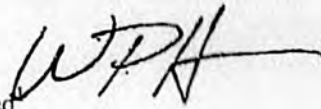
* D.C. BAR
** D.C. AND ALASKA BAR
- FLORIDA BAR
† MARYLAND BAR
‡ NEW YORK BAR
§ VIRGINIA BAR
ALL OTHERS ALASKA BAR

MEMORANDUM

TO: Robert Heyano, Art Nelson, Bonnie Williams
Alaska Board of Fisheries, Subcommittee on Bristol Bay Drainages

THROUGH: Jim Marcotte, ADF&G, Boards Support
VIA EMAIL: jim_marcotte@fishgame.state.ak.us

FROM: William P. Horn, counsel to Trout Unlimited
Geoffrey Y. Parker, counsel to Trout Unlimited
Roger Flynn, counsel to Trout Unlimited²



DATE: January 9, 2007

RE: Elevating Habitat Conservation Standards in the Bristol Bay Drainages

I. INTRODUCTION

Higher standards for conservation of fish and wildlife resources and related habitat in the Bristol Bay region may be recommended by the Alaska Board of Fisheries and established by the Alaska Legislature. These may be in the context of a fish and game refuge or other designation requiring that prospective large scale mining projects in the region be able to demonstrate and ensure a capability to conserve water quality, instream flows and protect fish, wildlife, habitat and public uses as a precondition for state permission to proceed.

We have reviewed applicable federal and Alaska law regarding "takings" (i.e., when government action substantially diminishes property rights triggering the payment of just compensation for the "taken" rights) to determine whether proposals to elevate conservation standards imposing new regulatory constraints would constitute a taking of mining claims in the

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region. Our conclusion is that raising conservation standards now would NOT be a taking of the very limited property interests attendant to such claims.

State and federal law are very clear on this issue. The Alaska Supreme Court has held expressly that a mining claim carries with it "no right to mine" and that mining is "always contingent on State permission to mine."³ Therefore, the State is free to impose new standards and reasonably withhold its permission (under elevated standards) to develop such claims if the applicant cannot satisfy the standards.

It is highly unlikely that any mining claim holders in the Bristol Bay region seeking to develop a large scale open pit or similar mine would be able to satisfy the myriad legal requirements to establish a taking in the event that, in the future, a claimant applies for permits that are substantially modified or reasonably denied on the basis of elevated conservation standards.

II. SUMMARY

We understand that your subcommittee will meet with Alaska Department of Natural Resources (DNR) staff on Thursday, January 11, 2007, concerning its large mine permitting process. We also appreciate that your committee will consider higher standards for habitat conservation, and identify options, including refuge status for the Nushagak and Kvichak drainages, where a proposed large mine, of an acid-generating sulfide deposit for copper and other metals (Pebble Mine), could harm fish, wildlife, their habitats, and the subsistence, commercial and recreational uses which depended upon them.

This memorandum gives examples of higher standards and examines two issues relevant to your meeting with DNR and your considerations:

(1) What forms of higher standards would be lawful and not constitute a "taking" of the mining claims; and

(2) What forms of strengthened public and other processes related to large-mine permitting in a refuge would not constitute a "taking."

NO TAKING OF A MINING CLAIM OCCURS when the state legislature adopts higher standards under (a) the state's police power to protect public health, safety, the environment, and other public interests, (b) its property power to manage its land, or (c) state constitutional mandates to conserve fish and wildlife.⁴ This is particularly true in the context of creating a

³ *Beluga Mining Company v. State Department of Natural Resources*, 973 P.2d 570 (Alaska 1999).

⁴ See Art. VIII, Alaska Constitution.

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refuge to accomplish these ends. In fact, other specially designated areas (e.g., the Tugidak Island Critical Habitat Area) contain prior mining claims subject to higher standards.

A mining claim is a very limited property interest. It amounts to a right of a claimant to be first in line against subsequent claimants. It does not create a right to mine or preempt the State legislature or state agencies from regulating use or development of the claim under the State's police power, property power, and mandates to conserve fish and wildlife.

As long as the State relies on such established authorities and purposes, the following examples of "higher standards" would not constitute a taking, and the State is free to enact all, or similar provisions, in legislation:

- (a) a "refuge" or similar designation where the legislation provides that the land shall be managed to protect (1) fish and wildlife habitats, and (2) public uses for commercial, subsistence and sport fishing, hunting and other such uses;⁵
- (b) a "compatibility test" that requires that mining be compatible with refuge purposes;
- (c) closure of refuge lands to new mining claims subject to valid existing rights;
- (d) a prohibition of mining methods of operations that use or generate toxics harmful to human health, safety, aquatic or terrestrial life, the environment and subsistence, commercial

⁵ In several respects, refuge or similar status would also affect a federal environmental impact statement (EIS) under the National Environmental Policy Act (NEPA) on a mine, in a manner favorable to conservation of fish, wildlife, habitats and public uses. In terms of environmental consequences, the EIS would have to address any inconsistency or conflict with state law creating the refuge. 40 CFR 1502.16 (2006); 40 CFR 1506.2(d). Federal consultation with ADF&G would occur earlier in the EIS process. 40 CFR 1501.2(d). Because ADF&G is the lead state agency managing state refuges (AS 16.20), it would have a stronger role in the EIS process. ADF&G would most likely be a "joint-lead agency" responsible with a federal lead agency for the preparation of an EIS. 40 CFR 1501.5. Refuge status would mean that ADF&G would have "jurisdiction by law" and elevate its role even as a "cooperating agency" in the EIS process, which would mean that ADF&G's expertise and environmental analysis would have to be used to the "maximum extent possible." 40 CFR 1501.6(a). Finally, even though an EIS would obviously be prepared for permits authorizing Pebble Mine, refuge status would be more likely to trigger a supplemental EIS on subsequent permit actions after the mine had been initially permitted. This is because refuge status affects the determination of whether an impact is "significant," which triggers an EIS. 40 CFR 1508.27. None of these effects on the NEPA process even trigger takings law, for reasons discussed herein.

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and recreational uses of water, fish, game and other natural resources, or that may cause a nuisance;

(e) a prohibition of storage or disposal of waste rock and tailings that may generate sulfuric acid, dissolved metals, chemicals, compounds or materials that may cause such harms;

(f) a prohibition of storage or disposal of overburden, waste rock, tailings, or other waste in waters or riparian areas, or within a reasonable distance (say 500 feet) of waters or riparian areas;

(g) a prohibition of withdrawal of surface or subsurface water that may adversely affect the spawning, incubation, migration, rearing, or propagation of fish, and a requirement that any water appropriated be replaced;

(h) a prohibition of discharge of water from any point source or nonpoint source that does not meet water quality standards required for fish;

(i) a requirement that dams, for tailings disposal or other similar purposes, be seated to bedrock and impermeable;

(j) a requirement that any open pit or block caving be isolated hydrologically;

(k) a requirement that roads, power, and other facilities be designed, located, constructed and maintained in perpetuity to the highest standards to conserve fish, wildlife, habitat and uses dependent on them, by the mining company at its sole expense; and

(l) a requirement that transportation of ore concentrate use all reasonable methods to eliminate any risk of harmful or toxic metallic dust.

With respect to the second question, takings are NOT EVEN AN ISSUE when the legislature amends the processes -- rather than the standards -- related to permitting mining within a refuge. For example, takings law is not triggered when the legislature --

(a) requires a refuge management plan that is adopted into regulation by the Joint Board of Fisheries and Game;

(b) strengthens the role of the public or other agencies in decision making;

(c) creates public notice requirements that do not exist today;

(d) requires that information used be of the highest scientific quality;

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- (e) strengthens standards for judicial review of permitting; or
- (f) requires particularized analysis of, for example, socio-economic impacts on subsistence, recreational and commercial uses of fish and game.

III. TAKINGS LAW

A. Introduction

Takings law arises from the Fifth Amendment to the U.S. Constitution and Article I, § 18 of the Alaska Constitution. Each provides that private property cannot be taken or damaged for public use or purposes without just compensation. Similarly, both the U.S. and Alaska Supreme Courts have recognized that overbroad government regulation that both substantially and inappropriately diminishes property rights, not limited interests, can be a taking.

The same case law prescribes the rigorous requirements which must be demonstrated by a claimant to establish successfully a takings claim. These matters are discussed in detail below.

Recently, the Legislative Affairs Agency addressed general aspects of takings law. The following is a more thorough outline of applicable takings law. Moreover, no draft legislation or specific proposal was in front of the agency, so it did not apply takings law to any specific proposals. This memorandum does so.

B. Constitutional Provisions

The "Takings" Clause of Fifth Amendment to the U.S. Constitution provides "nor shall private property be taken for public use, without just compensation." This limitation is imposed on the states, including Alaska, by the Fourteenth Amendment. *Chicago, B. & O.R. Co. v. Chicago*, 166 U.S. 226 (1897).

The Alaska Constitution contains a similar provision which specifies that "private property shall not be taken or damaged for public use without just compensation." Art. I, § 18.

C. Federal Law

The U.S. Supreme Court recognizes four kinds of takings: (1) "physical takings" where the property is physically appropriated by government for public use, such as where government takes private property for a highway; (2) a "total regulatory taking," such as where government eliminates all economically beneficial use of the land; (3) a "regulatory taking" such as where legislative or agency action to control land use "goes too far;" and (4) "land use exactum"

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takings, such as when government demands dedication of a conservation easement as a condition for approving a subdivision. *Lingle v. Chevron USA*, 544 U.S. 528 at 548 (2005).

Regulatory takings were first recognized in *Pennsylvania Coal Co. v. Mahon*, 260 U.S. 393 (1922), in a case substantially different from the situation at hand. At issue in that case was a privately owned, express right to remove subsurface coal in private land, where the right had been reserved by contract at the conveyance of the surface estate to a homeowner. No public land or mining claim was involved. Here, we have mere mining claims on public land that do not create any right to mine. Nevertheless, the Court concluded that a 1921 Pennsylvania law restricting the impact of coal mining on surface estates affected a taking of the specific, privately-owned coal rights. Justice Oliver Wendell Holmes penned the decision, including the famous line "if regulation goes too far, it will be recognized as a taking." *Id.* at 415. However, the decision also recognized that "Government hardly could go on if to some extent values incident to property could not be diminished without paying for every such change in the general law." *Id.* at 413; *see also Lingle* at 538.

Since *Mahon*, the Court has elaborated the particular and rigorous requirements that must be demonstrated to establish that a regulation has gone "too far":

- (1) The claimant must hold an established property right or a bona fide property interest that has been taken, but "a mere unilateral expectation or an abstract need is not a property interest entitled to protection." and such expectations or needs are not sufficient to support a takings claim. *Webbs Fabulous Pharmacies, Inc. v. Beckwith*, 449 U.S. 153, 161 (1980). *Penn Central Transp. Co. v. City of New York*, 438 U.S. 103, 125 (1978); *see also Seven Up Pete Venture v. State*, 114 P.3d 1009, 1019 (Montana 2005) citing *Lucas v. South Carolina Coastal Council*, 505 U.S. 1003 (1982).
- (2) The claim can arise only after a government has considered and acted to deny or amend a particular course of action or permit impacting property rights. *Palazzolo v. Rhode Island*, 533 U.S. 604 (2001); *United States v. Riverside Bayview Homes*, 474 U.S. 121, 127 (1985);
- (3) Per se rules are frowned upon and a regulatory takings analysis is a factual, ad hoc inquiry that focuses on three criteria –
 - (a) The economic impact on the property owner;
 - (b) The extent of interference with the reasonable investment backed expectations of the owner; and

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- (c) The character of the government action. *Penn Central* at 124; see also *Palazzolo* at 617.

Regarding the necessary property right, landowners, including mining claim holders, generally have no property interest or entitlement to a permit or approval for particular action: "A cognizable property interest exists [in prospective permit approval] only when the discretion of the issuing agency is so narrowly circumscribed that approval of a proper application is virtually assured." *Gardner v. Baltimore Mayor and City Council*, 969 F.2d 63, 68 (4th Cir. 1992). Similarly, unpatented federal mining claims, like the state claims at issue in *Beluga* (supra at 2), are only a limited property interest subject to substantial governmental regulatory control, and denial of mining approval is not a compensable property interest. *Reeves v. United States*, 54 Fed. Cl. 652, 672, 674 (2002).

Takings claims are also not ripe for judicial review until there has been governmental action which is a "final and authoritative determination of the type and intensity of development legally permitted on the subject property." *MacDonald, Sommen & Frates v. Yolo County*, 477 U.S. 340, 348 (1986). A court cannot determine whether a regulation has gone "too far" unless it knows how far the regulation goes. *Id.*

The heart of a takings analysis remains governed by the three *Penn Central* criteria that continue to serve as the Court's "principal guidelines" for regulatory takings. *Lingle* at 539. Each criterion has been addressed by subsequent decisions.

In terms of economic impact (the first criterion), the Court has held a taking occurred when an owner was denied ALL use of his property. *Lucas v. South Carolina Coastal Council*, 505 U.S. 1003 (1982). However, if permit restrictions allow some uses but not others, a taking is not likely. *Penn Central* at 137. In that case, building restrictions for historic preservation purposes were quite strict but it remained possible to engage in some forms of construction and building renovation consistent with the preservation standards. This meant the owner retained some rights to his property and no taking occurred. In *Riverside Bayview Homes*, reviewing a takings challenge to wetlands conservation rules, the Court opined that the possible availability of permits consistent with conservation standards would not constitute a taking: "a requirement that a person obtain a permit before engaging in a certain use of his or her property does not in itself 'take' the property in any sense; after all the very existence of a permit system implies that permission may be granted." *Id.* at 127. The Court declined to strike down the Federal wetlands regulatory program and ruled that its limitations on development did not constitute a taking.

Even very substantial reductions in property values (i.e., economic impacts) have been found not to be takings. *Penn Central* cited two cases that reduced values 75% and 87½% without being a taking. *Id.* at 131; *Euclid v. Ambler Realty Co.*, 272 U.S. 365 (1926); *Hadacheck v. Sebastian*, 239 U.S. 394 (1915).

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The character of the government action is another critical criterion. The Court's general proposition is that "State laws prohibiting contemplated uses of land have been held not to be takings when the prohibitions or restrictions are for promotion of health, safety, morals, and general welfare." *Penn Central* at 125. Government action found to protect against what it determines to be a significant threat to the common welfare "leans heavily against finding a taking." *Keystone Bituminous Coal Association v. DeBenedictis*, 480 U.S. 468, 485 (1987).

This is especially so when the restricted or prohibited activity might constitute a "nuisance."⁶ A nuisance is the use of property by the owner that adversely impacts his neighbors or the community. Under the common law, all property is held under an implied obligation that the owner's use of it shall not be injurious to the community. *Keystone* at 491 citing *Mugler v. Kansas*, 123 U.S. 623 (1887). Accordingly, the Court has a "long line . . . of cases sustaining against Due Process and Takings Clause challenges the State's use of its 'police powers' to enjoin a property owner from activities akin to public nuisances." *Lucas* at 1022 citing *Mugler*; see also *Hadacheck*; *Miller v. Schoene*, 276 U.S. 272 (1928); *Goldblatt v. Hempstead*, 369 U.S. 590 (1962). State action in the form of restrictions or prohibitions to restrain uses that are tantamount to a nuisance create circumstances in which the Court will "hesitate" to find a taking. *Keystone* at 491.

States are also permitted to impose restrictions on individual property owners, or a category of property owners, to protect other interests. In a noteworthy decision, the Court denied a taking claim by landowners ordered to cut down certain ornamental trees. The State of Virginia took the action to protect its apple industry as the ornamental trees were a possible source of a plant disease that could adversely impact apple orchards: "the State had not exceeded its constitutional powers by deciding upon the destruction of one class of property [without compensation] in order to save another, which in the judgment of the legislature, is of greater value to the public." *Penn Central* at 136 citing *Miller v. Schoene*.⁷ The same rationale would apply to State efforts to protect valuable commercial fishing, the recreation industry and subsistence from mining.

Lastly, governments retain authority and discretion to set new rules or limitations on land use without triggering takings: "even with respect to vested property rights, a legislature generally has the power to impose new regulatory constraints on the way in which those rights

⁶ Alaska law defines "nuisance" as a "substantial and unreasonable interference with the use and enjoyment of real property, including water." AS 09.45.255; *Parks Hiway Enterprises LLC v. CEM Leasing Inc.*, 995 P.2d 657 (Alaska 2000).

⁷ An old Nevada case upheld restrictions against non-miners to facilitate the mining industry because of the value of the mining industry to that State. *Dayton Gold & Silver Mining Company v. Seawell*, 11 Nev. 394 (1876).

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are used, or to condition their continued retention on performance of certain affirmative duties." *Reeves v. United States*, 54 Fed. Cl. 652, 672 (2004) citing *United States v. Locke*, 471 U.S. 84, 104 (1985). In *Reeves*, a mining company alleged that denial of its permit application to mine by the Bureau of Land Management under "non-impairment" rules, as well as designation of a National Monument that encompassed its valid mining claims, constituted a regulatory taking. The U.S. Court of Federal Claims rejected the claim.

D. Alaska Law

1. Introduction – Many features of Alaska law regarding takings mirror the U.S. Supreme Court precedents. However, the private property protection aspect of the State constitution is considered "broader" than that of the Fifth Amendment. *Anchorage v. Sandberg*, 861 P.2d 554, 557 (Alaska 1993).

Similar to federal case law, the Alaska Supreme Court also distinguishes between cases (a) where there has been a physical invasion of private property for public purposes or the destruction of all economic value and (b) regulatory takings where property rights are only diminished. *R & Y Inc. v. Municipality of Anchorage*, 34 P.3d 289, 296 (Alaska 2001).

Regulatory takings are subject to a four factor "*Sandberg*" analysis much like the *Penn Central* criterion:

- (a) Character of the government action;
- (b) Economic impact;
- (c) Interference with reasonable investment backed expectations; and
- (d) Legitimacy of the interest advanced by the regulation or land use decision. *Id.* at 557-558 citing *Penn Central*.

2. Mining Claims – The Alaska court has also specifically addressed the issue of State mining claims and takings. *Beluga v. State Department of Natural Resources*, 973 P.2d 570 (Alaska 1999). When the proponents of the major Beluga coal mine project failed to obtain permits to mine, they filed an unsuccessful takings claim against the Alaska Department of Natural Resources.

Factually, the Beluga mining claims were staked in 1983 and some mining permits were issued by the State in 1989. Other related permits were issued in 1990 but the final mining licenses were not timely issued, and "unable to mine its claims, Beluga abandoned them and sued the State for resulting economic losses." *Id.* at 572. The Court applied the *Sandberg*

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factors and rejected the claim: "The State deprived Beluga of no property right. Beluga had property rights in its claims, but it had NO RIGHT TO MINE; IT'S MINING 'RIGHTS' WERE PROSPECTIVE AND CONTINGENT..." (Emphasis added). *Id.* at 575.

Beluga also argued that it had invested millions of dollars toward developing its claims and these constituted reasonable investment backed expectations for which it should be compensated. This argument was also rejected: "Beluga's claims were always CONTINGENT on State permission to mine and assertion of adverse mining claims. Absent any demonstration to the contrary, we conclude that reasonable investors could have recognized that DNR might be delayed in granting Beluga permission to mine." (Emphasis added). *Id.* at 576.

Lastly, the mine proponents contended that they had a "contractual" right under State law and rules to mine their claims and a right to obtain the necessary permits. *Id.* at 578. This argument failed too as the Court held that Beluga had no right, contractual or otherwise, to "land use permits" and after reviewing State mining law the Court decided "no express or implied promise by the State could have created a contractual mining right." *Id.*

Although not an Alaska case, the Montana Supreme Court recently handed down a similar ruling. *Seven Up Pete Venture* (2005). The mining interests acquired State mining leases in 1986 estimated to contain 9 million ounces of gold and 20 million ounces of silver. *Id.* at 1013. The permit process commenced for mining and cyanide ore processing, and the mining company invested significant sums in permit applications and for preparation of an environmental impact statement. *Id.* at 1014-1015. During this process, Montana established new environmental standards and prohibited "open-pit mining for gold or silver using heap leaching or vat leaching with cyanide ore processing reagents." *Id.* at 1013.

When it became evident that the project could not proceed under the new standard, the mining company filed takings claims arguing (a) it had "property rights in 'the opportunity for a favorable ruling on its mining permit application'" and (b) the new ban on cyanide "preclude[d] the only economically viable" means of mining therefore affecting a total taking per *Lucas*. *Id.* at 1016.

Each of these claims was rejected. Addressing the first, the court held the "opportunity to seek a permit, which required convincing the State that this cyanide leaching project was appropriate DID NOT CONSTITUTE A PROPERTY RIGHT." (Emphasis added). *Id.* at 1019. Regarding the second, the court cited *Reeves* and *Locke* that the State had the right to "impose new regulatory constraints" and these new rules did not affect a taking. *Id.* at 1017.

3. Rights to Permits - Other cases have also addressed the purported rights or entitlements of applicants to obtain permits for land development activities. Even in situations in which a statute prescribes that a permit "shall" be issued if an application satisfies particular

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standards, a government is not stripped of its discretion and authority to determine if those standards have been satisfied. *Spinnell Homes, Inc. v. Municipality of Anchorage*, 78 P.3d 692, 697-698 (Alaska 2003). In such cases, a takings claim will be denied. Alaska law, in this regard, mirrors *Gardner* (4th Cir.) and Montana (*Seven Up Pete Venture*).

4. Character of Government Action – Like the U.S. Supreme Court, the Alaska Supreme Court has held that exercise of government authority for legitimate public purposes is unlikely to result in a taking. *Sandberg* at 558 citing *Penn Central*. It specifically noted that a “‘taking’ may more readily be found when the interference with property can be characterized as a physical invasion by government than when interference arises from some public program adjusting the benefits and burdens of economic life to promote the common good.” *Id.* citing *Penn Central* at 124.

In the environmental arena, statutes, ordinances or regulations which limit a landowner's use of his property are not a taking unless the owner has been deprived of ALL economically beneficial uses of his property. *Zerbetz v. Municipality of Anchorage*, 856 P.2d 777, 782 (Alaska 1993) citing *Lucas v. South Carolina Coastal Council*, 505 U.S. 1003 (1992). The *Zerbetz* Court held that a “conservation wetlands” designation imposed on private property was not a taking even though the designation elevated the standards for building permits. Despite the new standards, permits could still be secured by satisfying the requirements. *Id.* at 783; see also *Riverside Bayview Homes* at 127. The Court also noted that the trend in environmental law was to reject landowners' takings claims and to uphold such rules as a lawful exercise of police power. *Zerbetz* at 782.

5. Reasonable Investment Backed Expectations – This feature of the *Sandberg* analysis was specifically addressed in the *Beluga* case. However, the *Sandberg* decision reveals that the Alaska Supreme Court determined that it is not necessarily reasonable to invest millions of dollars in a project dependent on prospective government approval. *Sandberg* was an inverse condemnation claim by a housing developer seeking to recover monies it invested in a development plan that secured some initial, partial government approvals, but ultimately was abandoned by the government. Rejecting this claim, the Court held it would “have to conclude” that the initial, partial approvals “constituted some kind of ‘guarantee’ or ‘express promise’” that the government would follow through on the project and there was “absolutely no basis for such a conclusion.” *Id.* at 559. Pithily the Court noted the claimant “gambled” that necessary approvals would be secured and “they lost this gamble.” *Id.* at 560. Such “gambling” was held to not constitute a reasonable investment for which compensation was warranted under Alaska law. *Id.*

A reasonable investment backed expectation must also be more than a “unilateral expectation or an abstract need.” *State DNR v. Arctic Slope Reg. Corp.*, 834 P.2d 134, 140 (Alaska 1991) citing *Ruckelshaus v. Monsanto*, 467 U.S. 986 (1984). In this case, where neither

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State law or regulations provided a "guarantee" or "express promise" as claimants desired (i.e., to keep commercial information (property) secret), the claimants had no "reasonable" expectation that government would provide what they desired and could not assert a takings claim. *Id.*

6. Legitimate Government Interest – The Alaska Constitution addresses expressly fish, wildlife, land and water. Fish, wildlife and waters are reserved to the people for common use. (Art. VIII, § 3). Fish and wildlife are to be utilized, developed and maintained on the sustained yield basis. (Art. VIII, § 4). The legislature shall provide for the utilization, development and conservation of all natural resources belonging to the State, including lands and waters, for the maximum benefit of its people and is to provide for the administration of the state public domain. (Art. VIII, §§ 2, 6). The constitution authorizes limited entry fisheries for resource conservation and to prevent economic distress among fishermen. (Art. VIII, § 15). These provisions, in part, have been held to grant the State the right to direct the use of its natural resources including fish and game. *Herscher v. State, Dep't of Commerce*, 568 P.2d 996 (Alaska 1977).

Title 16 of the Alaska Statutes, the Fish and Game code, including state refuges, springs from the constitutional authority of Article VIII. For that matter, so does the Board's authority under AS 16.05.251(a)(1) to recommend that the legislature designate State refuges. Conservation of fish and wildlife and their habitat, salmon spawning and rearing habitats and opportunities for public uses for commercial, sport and subsistence fishing, hunting and other public uses "in a high quality environment" are among the purposes of these areas (e.g., 16.20.033(b)(1), (2)), and the use and disposition of other resources must be consistent or compatible with these purposes (e.g., 16.20.033(b)(3)). State action consistent with these authorities clearly would advance purposes of Article VIII. See *Arctic Slope Reg. Corp.* at 143. This case also refers to a variety of other legitimate government actions including public health, physical safety, financial safety and economic welfare. *Id.* The Sandberg opinion expressly cited this portion of the *Arctic Slope* ruling. *Id.* at 561.

IV. ANALYSIS AND APPLICATION OF TAKINGS LAW

The application of both Federal and Alaska takings law demonstrates that action by the Alaska Legislature to "impose new regulatory constraints" (*Reeves* at 672), such as those listed at the outset, on how mining development in the Bristol Bay drainages shall proceed would not constitute a taking of any cognizable property rights held by present mining claim holders. The Legislature is free to establish a refuge or other designation which elevates applicable fish, wildlife and habitat conservation standards in the Bristol Bay region or take other actions to establish more rigorous standards under which mine permit applications would be scrutinized. Such actions would not trigger a taking of mining claims or other interests requiring just

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compensation under either the Takings Clause of the Fifth Amendment or Article I, § 18 of the Alaska Constitution.

Analysis of each required element for a takings claims reveals that potential plaintiffs could not carry their legally mandated burdens if they challenged State action to elevate conservation standards in the Bristol Bay region:

A. No Cognizable Property Interest

A mining claim is a very limited INTEREST that carries with it no right to mine and takings doctrine is only implicated when the State deprives a person a property RIGHT. *Beluga; Reeves, Penn Central, see also Seven Up Pete Venture*. The State retains substantial discretion to review any future permit applications, that may or may not be filed, and the applicant has no property right to have those applications approved. *Spinnell; Gardner*. The so-called "right to mine" or the "opportunity for a favorable ruling on a mining permit application" are at best mere expectancies not protected by either constitutional provision. Federal mining law, upon which Alaska's mining laws are based, confirms that there is no compensable property right to develop mining claims free of government regulation. Alaskan mining law is based upon, and very similar to, federal mining law. *Trustees for Alaska v. State*, 736 P.2d 324 (Alaska 1987).

Similarly the U.S. Department of Interior, which is charged with administering the federal mining laws on western public lands, has repeatedly held that any property right in a mining claim against the government, is contingent upon compliance with all applicable state and federal environmental and other regulatory requirements. *Great Basin Mine Watch*, 146 IBLA 248, 256 (1998) (citing *Southwest Resource Council*, 94 Interior Dec. 56, 67 (1987)) (emphasis added). See also *Clouser v. Espy*, 42 F.3d 1522, 1530 (9th Cir. 1994).

As detailed herein on state lands, the State of Alaska, like the federal government on federal public lands, has broad authority to impose new and substantial regulatory constraints on mining operations conducted on mining claims. Compliance with these requirements, and the calculation of any costs to comply with these requirements, is a prerequisite to establishing any property right against the State. Thus, a mining claimant that is unable or unwilling to comply with these requirements, or that cannot profitably develop the claims due to the imposition of these compliance costs, does not have any property right against the government.

There is also no compensable property right to operate free of government controls on mining. As detailed herein, the State of Alaska has broad regulatory authority over mining. The State is free to impose existing, or enact new, restrictions on the ability of claimants to develop their mining claims. Because a mining claimant holds his claims pursuant to, and contingent upon, compliance with all state and federal restrictions, the denial of a mine proposal based on

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these restrictions does not implicate a compensable property interest. Again, directly analogous caselaw from the federal and state courts is instructive.

B. Character of Government Action

Even if it could be argued that a mining claimant has a compensable property right to mine (which is not the case), government regulatory authority over mining does not constitute a taking under Alaskan or federal law.

The State possesses wide latitude and discretion to take actions to protect and promote public health and safety and has more than ample authority to take additional steps to further ensure the conservation of valuable fish and wildlife resources like those found in the Bristol Bay region. First, mining can be a public nuisance by virtue of polluted effluent discharges, dewatering of streams, release of toxics, dust and particulates, and a variety of other actions that can produce "substantial and unreasonable interference" with the State's ability to enjoy the real property, including waters, it holds in trust for its citizens. As noted above, courts "lean heavily against a finding a taking" and are "hesitant" to do so when a State restricts property rights to prevent a nuisance. *Penn Central*, *Keystone*.

Second, the State is allowed to take action designed to protect activities and industries it deems important even if the action restricts other classes of property owners (i.e., mining claim holders in Bristol Bay). *Miller v. Schoene*. Here, multi-million dollar commercial, sport, and subsistence fisheries are sustained by the renewable salmon resources in Bristol Bay. The Alaska Legislature is within its rights to act to protect this vital industry even if it means new restrictions on the nascent mining industry in the region.

Third, the State, like the Federal government, is authorized to impose new regulatory constraints or create new land designations encompassing existing mining claims without triggering compensable takings. *See Reeves*. This has happened repeatedly in Alaska and not resulted in any successful takings claims (e.g., mining claims within Tudigak Island State Critical Habitat Area; U.S. Borax molybdenum claims included in Misty Fiords National Monument; Orange Hill patented copper claims included in Wrangells-St Elias National Park and Preserve, etc.).

C. Economic Impact

Elevating conservation standards in all or part of the Bristol Bay drainages will have not have any direct, tangible economic impact on present holders of mining claims in the region. As the claims carry no right to mine, and State permission to mine is a matter of discretion, any economic impacts are purely speculative and cannot rise to the level of a taking. Possible future permit applicants may well be able to satisfy the new standards, in some manner, and be granted

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permission to mine in some fashion. This possibility means that present claimants and prospective applicants would not suffer any appreciable immediate economic impact. *Riverside Homes*.

D. Reasonable Investment Backed Expectations

As a matter of fact, it is highly speculative (i.e., a "gamble") that the State authorities, under either present standards or elevated conservation standards, would permit an enormous open pit mine, massive tailings dams and toxic sediment dumps, water diversions and withdrawals, and all of the related infrastructure (i.e., roads, bridges, powerlines, port, housing, etc.) astride two major river systems that support the world's most productive and best managed salmon fishery. It is also wholly unknown, and speculative, if any prospective mining projects in the Bristol Bay region are economically viable independent of environmental or conservation standards. The Alaska Supreme Court, in its seminal *Sandberg* ruling, stated that investing money in enterprises dependent on speculative government approvals constitutes a "gamble". This kind of gamble is not a "reasonable" investment. When a property owner takes such a risk and loses the gamble, the State is under no obligation to compensate that owner for its loss. Similarly, in the *Beluga* case, the Court indicated that "reasonable investors" could recognize that permits to mine may not be forthcoming from the State.⁸ The existence of this fundamental contingency means that any such future investments in future permit applications and related enterprises would not be able to satisfy this critical requirement of takings law.

E. Legitimacy of the Interest Advanced by the Regulation or Land Use Decision

Conservation of fish, wildlife and related habitat is a completely legitimate interest to be advanced by State action. Authority for such action arises directly from the Alaska Constitution (Art. VIII), and the legislatively enacted Fish and Game Code (Title 16) conclusively establishes the legitimacy of state conservation interests as a matter of state law. The Court has found that a wide variety of actions are "legitimate," see *Arctic Slope* at 143, *Sandberg* at 558, and there is no doubt that constitutionally inspired conservation actions would totally satisfy the "legitimacy" requirement.

⁸ In this vein, the Memorandum of Understanding between Northern Dynasty and the Department of Natural Resources, by which Northern Dynasty reimburses state permitting costs, provides that Northern Dynasty expressly agrees that nothing in the agreement entitles Northern Dynasty to permits or favorable treatment at the time of permit application.

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F. Proposals to Improve Processes Related to Mining Permits Do Not Trigger a Takings Issue.

Proposals to improve the processes related to mining permits do not create higher conservation standards and never trigger a takings issue because mining claims are not directly affected.

For example, a draft Jay Hammond refuge bill would require ADF&G to prepare, in consultation with DNR, a refuge management plan that could be adopted into regulation by the Joint Board of Fisheries and Game. The regulations might affect the standards for permits, but the requiring plan does not.

The draft refuge bill also would strengthen the role of the public in decision making by creating a citizen advisory body. That strengthens the role of the public, compared to DNR decision-making, but does not directly affect any mining claims.

We understand that DNR is under no statutory requirement for public notice of permits under the Anadromous Fish Act, AS 41.14.870, or the Fishways Act, AS 41.14.840. A refuge bill could require public notice for any permits related to mining in the refuge.

Similarly, DNR has no applicable statutory requirement that information used in mine permitting be of the highest quality. A refuge bill could require as much.

Legislative enactment of a refuge bill also fits squarely within Alaska administrative law regarding subsequent agency action to grant or deny permits for a mine. Alaska courts apply four standards of review for agency decisions. *Kachemak Bay Watch, Inc., v. Dept. of Natural Resources* 935 P.2d 816 (Alaska 1997). (1) For questions of law not involving agency expertise, the courts apply the "substitution of judgment" standard because when no agency expertise is involved, the courts are more equipped than agencies to interpret law. *Handley v. State, Dep't of Revenue*, 838 P.2d 1231, 1233 (Alaska 1992); *Kjarstad v. State*, 703 P.2d 1167, 1170 (Alaska 1985). (2) For questions of law involving agency expertise, Alaska courts apply the "reasonable basis" test. *Rose v. Commercial Fisheries Entry Comm'n*, 647 P.2d 154, 161 (Alaska 1982). (3) The "reasonable and not arbitrary" standard is applied to administrative regulations. *Handley*, 838 P.2d at 1233. (4) The "substantial evidence" test is applied to questions of fact. *Id.*

Creating a Jay Hammond refuge administered, as refuges are, by ADF&G in some respects and by DNR in other respects, would strengthen the former's role in any permit process. However, the standards for judicial review would remain the same, and there would be no impact on due process afforded to a prospective permit applicant.

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Refuge or other legislation could also require that the best information as evidence be the basis of any permits issued for large-scale mining. Given that the Bristol Bay drainages are so important for so many reasons, we are persuaded that the Board of Fisheries should recommend to the legislature that a refuge bill requires that evidence necessary to support factual findings for mine permits within the refuge must be of the highest evidentiary standard -- i.e., the "clear and convincing evidence" standard.

Finally, the written comments of Trout Unlimited (TU) on Proposal 121 include a copy of *The Economics of Wild Salmon Watersheds, Bristol Bay, Alaska* (Duffield, et al. 2006) by the economic study by the University of Montana and the University of Alaska (ISER). It quantifies the economic production from the Bristol Bay watershed for commercial, subsistence and recreational use, but stops short of addressing how Pebble or other mines might impact socio-economically those uses. A refuge bill could require particularized analysis of such socio-economic impacts.

V. CIVIL AUTHORITY OF DNR VERSUS CRIMINAL AUTHORITY OF ADF&G

No discussion of elevated standards would be complete without recognizing that the importance of fish and game to Alaskans prompted Alaska's lawmakers to make violations of Title 16 (the Fish and Game Code) criminal, while nearly all violations of Titles 38 and 41 (DNR statutes) are civil (except for violations of the Fishways Act (AS 41.14.840) and the Anadromous Fish Act (AS 41.14.870)). The latter authorities were transferred from ADF&G to DNR by the elimination of the former ADF&G/Habitat Division, and which we appreciate the Board at Dillingham voted unanimously to transfer back to ADF&G.

If the Board's interest in elevating standards includes enforcement, as it should, then it makes sense to have criminal penalties under consideration.

In the context of large mine permitting, recent enforcement actions demonstrate this distinction between criminal and civil penalties. On December 21, 2006, EPA announced that Coeur Alaska, Inc. had agreed to pay penalties for Clean Water Act violations at the Kensington Mine -- a project now under construction per permits received through the same large mine permitting process now applicable in the Bristol Bay region.⁹

⁹ A recent, first-of-its-kind study, "Comparison of Predicted and Actual Water Quality at Hardrock Mines" (Maest, Kuipers, 2006) compares water quality predictions made at the time of permitting with outcomes at 25 representative large mines permitted in the United States during the last 30 years. The study concludes that the vast majority of large mines do not perform as predicted at the time of permitting. The full study, and a summary of it, are available at <http://www.mine-aid.org/>

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VI. CONCLUSION

Elevating conservation standards in the Bristol Bay region, as outlined in Part II, by means of the twelve examples of higher standards would not constitute a taking. First, a mining claim is a very limited property right, is not a right to mine (mining is always contingent on state permission), amounts to only a priority over subsequent claimants, and is not sufficient to support a takings claim. Second, all of the twelve examples rest upon the State's police power, property power and constitutional mandate to conserve fish and wildlife, and those powers and authorities can be exercised without creating any per se takings. Third, under the three-prong, federal-law analysis of "regulatory" takings and the similar four-prong, state-law analysis, none of the elevated standards, if incorporated into legislation, would constitute a taking of the mining claims in question. In fact, two of the examples (refuge purposes and the compatibility test) are in existing State refuge statutes and have never constituted a taking, even in areas where prior mining claims exist (e.g., Tugidak Island Critical Habitat Area). Furthermore, other examples (sealing of dams to bedrock, hydrological isolation, and replacement of water) have been suggested by DNR at public meetings on the subject of higher standards, and we agree with DNR that such standards would not constitute a taking. Fourth, and last, any legislation that strengthens the processes related to large-mine permitting, as also outlined in Part II by means of six examples, would not even raise the issue of takings.

It is a complete "red herring" to suggest that strengthened fishery conservation standards for the Bristol Bay region would cause a compensable taking of mining claims in that area.

ALASKA STATEWIDE PUBLIC OPINION RESEARCH SURVEY

February 12th to 20th, 2007

Sample size = 402; margin of error $\pm 4.89\%$

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Introduction and Methodology

This report presents an analysis of a survey of Alaskan statewide registered voters. The survey measured properties of Alaskan voters' demographics, behaviors and attitudes concerning the proposed Pebble Mine project.

Research typically involves estimating the characteristics of a designated population. Because of the costs of conducting a census of all items in a population and the adequacy of sample results, sample statistics were used to make statistical inferences concerning population parameters.

Four hundred and two (402) Alaskan registered voters were interviewed between February 12th and 20th, 2007. Interviewing was conducted by telephone on a random digit basis. That is, random numbers were computer generated for the last two digits of the suffix of each workable telephone prefix in Alaska. All Alaskan voters who are accessible by telephone had an equal chance of being interviewed.

This survey is a true random digit survey. Other research firms promote "supervoter" surveys. These surveys are not true surveys of voters or supervoters. Their sample does not include unlisted or underlisted registered voters and, therefore, cannot be generalized to voters or supervoters. They only are surveys of registered voters whose telephone numbers can be determined from a telephone directory. They save the researcher money, to the detriment of their clients' desire for accuracy.

Margin of error

At a 95% confidence level, the empirical proportions reported in the general population survey can be projected, within plus or minus 4.89%, to the entire Alaskan registered voter population. This means one can be 95% sure that the frequencies reported in the general population survey are within 4.89% of the true Alaskan registered voter population proportions.

The areas of Alaska surveyed for the general population survey were as follows:

THE FOLLOWING VARIABLE IS CALCULATED USING THE TELEPHONE PREFIX

AREAS OF ALASKA	FREQUENCY	PERCENT	MARGIN OF ERROR
Southeast.....	52.....	12.9%.....	+ 13.6 %
Valdez-Kenai-Matsu...	76.....	18.9%.....	+ 11.2 %
Anchorage.....	164.....	40.8%.....	+ 7.6 %
Greater Fairbanks....	52.....	12.9%.....	+ 13.6 %
Rural/Bush.....	58.....	14.4%.....	+ 12.9 %
TOTALS.....	402.....	100.0%.....	+ 4.89%

Margin of error

At a 95% confidence level, the empirical proportions reported in the general population survey can be projected, within plus or minus 4.89%, to the entire Alaskan registered voter population. This means one can be 95% sure that the frequencies reported in the general population survey are within 4.89% of the true Alaskan registered voter population proportions.

The questionnaire with results is as follows:

ALASKA STATEWIDE PUBLIC OPINION RESEARCH SURVEY

February 12th to 20th, 2007

Sample size = 402; margin of error $\pm$ 4.89%

Hello, I am _____ from Hellenthal and Associates. We are conducting an area-wide public opinion research survey. Your telephone number was randomly selected. The questions I need to ask will take only a few minutes. All of your responses will be completely confidential. (PAUSE AND PROCEED)

- S1. Is this telephone number _____? (IF NO, TERMINATE WITH, "I'm sorry, I dialed the wrong number.")
- S2. Am I talking to you at a place where you live?
- S3. Are you registered to vote in the State of Alaska?
IF YES, THEN PROCEED TO QUESTION #1
IF NO, THEN ASK...
Is there anyone home who is registered to vote in the State of Alaska?
IF YES THEN ASK...
May I speak with them?
IF NO, THEN ASK...
When will someone be home who is registered to vote?

THE FOLLOWING VARIABLE IS CALCULATED USING THE TELEPHONE PREFIX

AREAS OF ALASKA	FREQUENCY	PERCENT	MARGIN OF ERROR
Southeast.....	52.....	12.9%.....	+ 13.6%
Valdez-Kenai-Matsu...	76.....	18.9%.....	+ 11.2%
Anchorage.....	164.....	40.8%.....	+ 7.6%
Greater Fairbanks....	52.....	12.9%.....	+ 13.6%
Rural/Bush.....	58.....	14.4%.....	+ 12.9%
TOTALS.....	402.....	100.0%.....	+ 4.89%

1. I am going to read to you a list of names of organizations and public figures. Please tell me whether your feelings toward each of them are very positive, somewhat positive, somewhat negative, or very negative -- or if you don't know who he/she/it is. Are your feelings toward _____ (FILL IN ORGANIZATIONS & PUBLIC FIGURES) very positive, somewhat positive, somewhat negative, or very negative -- or don't you know who it/he/she is?

(IF POSITIVE OR NEGATIVE SAY, "Is that very positive/very negative or just somewhat positive/negative?")

(IF THEY ONLY RECOGNIZE NAME OR ARE TRULY UNABLE TO GIVE A POSITIVE OR NEGATIVE RECORD A "2" OR "NEUTRAL")

ORGS/FIGURES	4 VERY POSITIVE	3 SOMEWHAT POSITIVE	2 NEUTRAL	1 SOMEWHAT NEGATIVE	0 VERY NEGATIVE	WHO?	MEAN
Alaska Miners Association...	12.7%	23.6%	36.7%	5.8%	1.8%	19.4%	2.491
Trout Unlimited...	7.1%	18.3%	24.8%	3.5%	1.2%	45.1%	2.484
Renewable Resources Coalition...	5.8%	12.5%	31.1%	3.7%	0.7%	46.2%	2.352
The Bristol Bay Alliance.....	3.2%	9.8%	31.1%	1.8%	2.3%	51.8%	2.202
Rio Tinto.....	1.2%	1.0%	19.9%	2.3%	1.9%	73.6%	1.895
Northern Dynasty..	2.7%	9.7%	31.6%	11.7%	10.2%	34.1%	1.744
Pebble Mine.....	5.4%	16.1%	30.9%	16.3%	24.4%	7.0%	1.590
Alaska Legislature....	6.8%	38.0%	31.4%	17.3%	6.5%	0.0%	2.211
Sarah Palin.....	38.0%	35.0%	19.9%	5.0%	2.1%	0.0%	3.018
Ted Stevens.....	22.0%	33.5%	13.1%	19.1%	12.4%	0.0%	2.336
Lisa Murkowski...	14.8%	38.4%	18.4%	19.3%	9.0%	0.0%	2.308
Don Young.....	16.4%	31.2%	17.5%	14.1%	19.4%	1.4%	2.114

(ROTATE ORDER)

2. Have you heard of the proposed Pebble Gold Mine Project?

HEARD OF PEBBLE MINE	FREQUENCY	PERCENT
Yes.....	364.....	90.6%
No.....	38.....	9.4%

3. The proposed Pebble Mine would develop a gold and copper deposit at the headwaters of the Bristol Bay watershed near Lake Iliamna (ILL-EE-AM-NAH). The Pebble Mine is potentially one of the largest deposits of gold and copper in North America. Do you strongly favor, somewhat favor, somewhat oppose, or strongly oppose opening Pebble Mine Project to gold and copper mining?

PEBBLE MINE #1	FREQUENCY	PERCENT
4. Strongly favor.....	62.....	15.4%
3. Somewhat favor.....	101.....	25.1%
2. Neutral.....	42.....	10.3%
1. Somewhat oppose.....	77.....	19.1%
0. Strongly oppose.....	121.....	30.1%
(Mean = 1.766)		

4. The Bristol Bay watershed is the source of the world's greatest wild salmon fishery generating more than \$300 million dollars annually. A bill is now before the state legislature to protect this valuable natural resource and to prohibit the draining and destruction of salmon spawning streams for industrial purposes. Do you strongly favor, somewhat favor, somewhat oppose, or strongly oppose protecting Bristol Bay salmon spawning areas in this manner?

PROTECTING WATERSHED	FREQUENCY	PERCENT
4. Strongly favor.....	253.....	63.0%
3. Somewhat favor.....	81.....	20.2%
2. Neutral.....	23.....	5.6%
1. Somewhat oppose.....	20.....	5.0%
0. Strongly oppose.....	25.....	6.2%
(Mean = 3.289)		

5. Another proposal before the legislature would establish a game refuge in the watersheds that make up the headwaters of Bristol Bay. It would be named after the late Governor Jay Hammond and is supported by his widow Bella Hammond. Do you strongly favor, somewhat favor, somewhat oppose, or strongly oppose the creation of such a game refuge?

GAME REFUGE	FREQUENCY	PERCENT
4. Strongly favor.....	156.....	38.7%
3. Somewhat favor.....	113.....	28.2%
2. Neutral.....	41.....	10.1%
1. Somewhat oppose.....	51.....	12.6%
0. Strongly oppose.....	41.....	10.3%
(Mean = 2.724)		

10. Would you strongly favor, somewhat favor, somewhat oppose, or strongly oppose a statewide ballot initiative that would require large mines to pay 10% of their gross profit to the state? What about _____ (FILL IN 15%, 20%, 25%)?

	4	3	2	1	0	
TAX RATES	STRONGLY FAVOR	SOMEWHAT FAVOR	NEUTRAL	SOMEWHAT OPPOSE	VERY OPPOSE	MEAN
10%.....	45.4%	24.5%	9.8%	6.8%	13.6%	2.81
15%.....	38.0%	18.9%	11.2%	12.9%	19.0%	2.44
20%.....	36.8%	11.3%	12.9%	14.1%	24.8%	2.21
25%.....	38.0%	9.0%	12.7%	12.0%	28.3%	2.17

11. Would you strongly favor, somewhat favor, somewhat oppose, or strongly oppose 50% of the gross profit paid to the state by large mines going directly to the Permanent Fund?

50% PROFIT TO P.F.	FREQUENCY	PERCENT
4. Strongly favor.....	172	42.8%
3. Somewhat favor.....	64	16.0%
2. Neutral.....	36	9.0%
1. Somewhat oppose.....	44	11.0%
0. Strongly oppose.....	85	21.3%
(Mean = 2.480)		

12. Do you feel that the creation of one of the world's largest open pit mines at the headwaters of the Bristol Bay watershed is a very positive, somewhat positive, somewhat negative, or very negative development for Alaska?

WORLD'S LARGEST OPEN PIT MINE	FREQUENCY	PERCENT
4. Very positive.....	31	7.7%
3. Somewhat positive.....	62	15.5%
2. Neutral.....	31	7.6%
1. Somewhat negative.....	80	19.8%
0. Very negative.....	198	49.4%
(Mean = 1.124)		

13. Do you support a statewide ballot initiative to strengthen Alaska's clean water laws and enhance the safety of its earthen dams?

BALLOT INITIATIVE	FREQUENCY	PERCENT
Yes.....	326	81.2%
No.....	76	18.8%

14. If you had to choose between fish, wildlife and native habitat or gold and copper -- which natural resource would you choose -- would it be fish, wildlife and native habitat or gold and copper?

FISH OR GOLD	FREQUENCY	PERCENT
Fish, wildlife & native habitat....	353.....	87.9%
Gold and copper.....	49.....	12.1%
Don't know.....		0.0%

15. How would you rank the following Alaskan activities and natural resources as to their importance in promoting Alaska's heritage and legacy? Would you say _____ (FILL IN ACTIVITIES AND NATURAL RESOURCES) is very important, somewhat important, somewhat unimportant, or very unimportant in promoting Alaska's heritage and legacy?

	4 VERY IM- PORTANT	3 SOMEWHAT IM- PORTANT	2 NEUTRAL	1 SOMEWHAT UNIM- PORTANT	0 VERY UNIM- PORTANT	MEAN
ORGS/INDIVIDUALS						
Commercial Fishing.....	62.9%	31.1%	1.2%	2.7%	2.0%	3.50
Recreational Fishing.....	59.5%	31.3%	2.1%	4.1%	3.0%	3.40
Tourism.....	60.5%	29.2%	2.1%	4.5%	3.6%	3.39
Hunting.....	53.4%	36.6%	3.4%	4.1%	2.5%	3.34
Oil Development.....	41.0%	37.8%	5.0%	9.9%	6.3%	2.97
Mining.....	18.4%	47.7%	5.1%	15.5%	13.4%	2.42
	(ROTATE ORDER)					

16. Please let me ask again, the proposed Pebble Mine would develop a gold and copper deposit at the headwaters of the Bristol Bay watershed near Lake Iliamna (ILL-EE-AM-NAH). The Pebble Mine is potentially one of the largest deposits of gold and copper in North America. Do you strongly favor, somewhat favor, somewhat oppose, or strongly oppose opening Pebble Mine Project to gold and copper mining?

PEBBLE MINE #2	FREQUENCY	PERCENT
4. Strongly favor.....	40.....	9.9%
3. Somewhat favor.....	88.....	21.9%
2. Neutral.....	20.....	5.0%
1. Somewhat oppose.....	70.....	17.5%
0. Strongly oppose.....	184.....	45.8%
	(Mean = 1.327)	

The last few questions are being collected purely for statistical purposes.

17. When it comes to politics, do you consider yourself to be very liberal, somewhat liberal, somewhat conservative or very conservative?

IDEOLOGY OF RESPONDENT	FREQUENCY	PERCENT
1. Very liberal.....	26.....	6.5%
2. Somewhat liberal.....	133.....	33.0%
3. Moderate.....	43.....	10.6%
4. Somewhat conservative.....	153.....	38.1%
5. Very conservative.....	47.....	11.8%
(Mean = 3.157)		

18. Are you, or any person presently living in your household, a member of a labor union?

LABOR UNION HOUSEHOLD	FREQUENCY	PERCENT
Yes.....	109.....	27.1%
No.....	293.....	72.9%

19. How many total years of education have you completed? (FORMAL ATTENDANCE IN SCHOOL -- FIRST GRADE = 1; EIGHTH GRADE = 8; HIGH SCHOOL = 12; TRADE SCHOOL = 13; ASSOCIATE DEGREE - AA or AS = 14; COLLEGE GRADUATE - BA, AB, BS = 16; MASTERS DEGREE - MA, MS, MEng, MEd, MSW, MBA = 18; PROFESSIONAL OR DOCTORATE DEGREE - MD, DDS, DVM, LLB, JD, EdD, LAWYER, DOCTOR, PhD = 20)

EDUCATION	FREQUENCY	PERCENT
High school or less.....	84.....	20.8%
1-2 years College.....	108.....	26.9%
3-4 years College.....	109.....	27.1%
Post College.....	101.....	25.2%
(All Adult Mean = 15.022 years)		

20. How many years and months have you lived in Alaska?

ALASKA RESIDENCY	FREQUENCY	PERCENT
1993 to 2007.....	93.....	23.2%
1982 to 1992.....	66.....	16.4%
1973 to 1981.....	97.....	24.0%
Before 1973.....	146.....	36.4%
(All Adult Mean = 27.618 years)		
(All Adult Median = 17.928 years)		

21. In what year were you born? (COMPUTED TO AGE BY SUBTRACTING FROM 2007)

AGE OF RESPONDENT	FREQUENCY	PERCENT
18 to 30.....	50.....	12.4%
31 to 40.....	70.....	17.5%
41 to 50.....	129.....	32.0%
51 to 60.....	93.....	23.2%
61 or older.....	59.....	14.8%
(Mean = 47.140 years)		
(Median = 47.020 years)		

22. Are you married or single?

MARITAL STATUS	FREQUENCY	PERCENT
Married.....	260.....	64.7%
Single.....	142.....	35.3%

23. Which one of the following groups best describes you? (CHOOSE ONLY ONE)

ETHNICITY	FREQUENCY	PERCENT
White.....	322.....	80.2%
Alaska Native.....	49.....	12.2%
Black or African American.....	10.....	2.6%
American Indian.....	8.....	2.0%
Native Hawaiian or Other Pacific Islander.....	6.....	1.6%
Hispanic or Latino.....	4.....	0.9%
Asian.....	2.....	0.5%

24. GENDER (USUALLY DO NOT NEED TO ASK).....

GENDER	FREQUENCY	PERCENT
Male.....	201.....	50.0%
Female.....	201.....	50.0%

THE FOLLOWING VARIABLES ARE CALCULATED USING THE MARITAL AND GENDER VARIABLES

MARITAL BY GENDER	FREQUENCY	PERCENT
Married Males.....	130.....	32.3%
Married Females.....	130.....	32.3%
Single Males.....	71.....	17.7%
Single Females.....	71.....	17.7%

THIS COMPLETES THE SURVEY, THANK YOU FOR HELPING US -- GOODBYE