

AK LEGISLATURE SPECIAL COMMITTEE FILES SCOMM 147 3194₅₈

unique hydrology. The spring run off carries down hill what ever the upper watershed has to offer, if health threatening chemicals are amongst the ingredients, then too we will see the after affects in our diets. Picture yourself down stream of a sewer lagoon. I apologize for the graphic. For generations the native people have used the land. Not until the western civilizations came to stay do we see the beginning of scars on our land, all under the auspices of progress, Mineral and Hydro-carbon are not progress and they only line the pockets of large scale companies. Remember we must all do what ever we can to save this big village we call earth. So again I support saving our fragile waters in Bristol Bay. I support House Bill 134. Thank you for your time and have a safe journey home.

Proposed Amendment to HB 134

In Sec. 2, within the new AS 16.10.015, add a new subsection (b)(5) to read:

(5) otherwise permitted uses occurring on lands owned by corporations organized pursuant to 43 U.S.C 1601 et seq. (Alaska Native Claims Settlement Act) or on restricted Native allotment or restricted Native townsite land.

RALPH ANDERSEN

Shelley Woods

2695 English 102

March 16, 2007

Essay 3 Final Draft

Pebble Mine Opposition

The untouched environment of Bristol Bay in southwest Alaska will be put in jeopardy by the mining company Northern Dynasty if a proposal for the Pebble Mine is accepted. They will mine for gold, copper and molybdenum by using cyanide and other toxins to extract these precious metals from the earth at the cost of the environment of this area. In order to prevent irreversible damage to the environment and renewable natural resources in Bristol Bay the State of Alaska and its residents ought to oppose the Pebble Mine.

Bristol Bay is located in Southwest Alaska and provides areas that are prime habitat for many big game animals, marine life and migratory birds. The lifeblood of the Bristol Bay region is the yearly migration of five Pacific salmon species. The residents depend on the salmon for subsistence use, tourist income and commercial fishing. About 50 million salmon swim into Bristol Bay to spawn in the area's pristine lakes and rivers. The map below shows the proposed mine site in red and the network of streams, lakes and rivers that are downstream from the proposed site ("Alaska's Pebble Gold Mine" 18). The Newhalen River, Lake Iliamna, the Koktuli River, the Mulchatna River, the Nushagak River, to name a few, will be affected along with countless streams and ponds which salmon use for spawning and the small salmon need to feed and grow.



Every living thing in the region, including humans, could be harmed if this mine proposal is approved. Northern Dynasty is a Canadian mining scout company that puts forth the mine proposals. This company goes into areas and searches for products to be mined. They drill cores, take samples and determine how much precious metal is available. If it is a good prospect that can be sold, the company puts forth a proposal to the owner of the land. In this case the State of Alaska owns the land that the proposal is aimed at and they have the power to make the decision as to whether mining in this area will occur or not ("Alaska's Pebble Gold Mine" 20).

The current proposal outlines the method Northern Dynasty, or the company that buys the rights to mine here, will use as the heap-leach cyanide process. This is a crude and inexpensive process which is piling soil and rock and using cyanide to leach the gold from the pile. The

byproducts of the leaching process will be held in a small lake near the mine site and neutralized ("Alaska's Pebble Gold Mine" 20).

In cold climates cyanide is not always able to be neutralized as is proposed. This would lead to an environmental disaster if the water from this small lake would leak out into the water table. An owner of a lodge on the Nushagak River depends on tourists that are willing to spend \$6000 or more for a week of fishing in the Bristol Bay region. People come out to this area because it is remote and pristine (Palmer 67). Any leakage of toxic byproducts would lead to an economic disaster for the entire region.

Since salmon is a key part of the culture of the native people and a major food source, there is a great amount of opposition in the communities surrounding the proposed mine area. The first village downstream from the proposed mine site is New Stuyahok (pronounced stew-yah-hawk). This village has been active in the opposition of the mine site. The president of the village tribal council, Lucy Weedman, made the following statement, "I hope it (Pebble Mine) never goes through, because our way of life will change. Everybody on this river, we're subsistence users, and rely on our rivers and habitat. It's not possible at all for that mine to be built without contaminating our river. I've not heard of a mine that could be built without contaminating the habitat." (Clymer A3).

Not only is salmon a major food source for local residents but it provides a multi-million dollar market. The Pebble Mine is said to have a lifespan of 40 to 60 years, producing \$10 billion in gold alone (Palmer 67). This might seem like a lot of money, but considering how much income is spread across the entire region and it's thousand or so residents, the cost of salmon and other natural renewable resources outweighs a few billion dollars. This provides the State the option to choose quick money or to keep the Bristol Bay environment and economy safe.

Another aspect of the mine that could wreak havoc on wildlife is a 100 mile road that will span between the more developed area of Alaska and the proposed Pebble Mine site. This highway will carry supplies, workers and the resulting gold, copper and molybdenum from the region to larger ports so it can be exported and processed. This road runs right through the range of the Mulchatna caribou herd whose numbers range from 85,000 to 120,000 ("Alaska's Pebble Mine" 21). A major road in the range of a herd this size has the potential to block access to important food sources and birthing areas. This could decimate an important piece in the food chain and a staple food for the natives.

On top of environmental effects, an influx in residents due to a mine would create a repeat of the gold rush. The environment was put on a back burner so that people from the west coast states could come in and pan for gold and sell it, only to leave Alaska with their gold money. Also, highly populated urban areas such as Juneau, Anchorage and Fairbanks were created because of the Yukon gold rush (Heacox 22). A large urban city could spring up in Bristol Bay and it would negatively affect the culture of the natives, the economy, which is based on natural resources, and the fragile environment which was not made to withstand thousands of humans and our wastes.

Increasing the population of the area, introducing toxins, building roads through "the last frontier" and wreaking havoc on natural areas is being actively sought after by Northern Dynasty. The company states, in support of the mine, that environmentally sound practices are being put to practice. Bruce Jenkins, the chief operating officer for Northern Dynasty, is surprised that the project is being opposed. He stated that the project can be completed with success without risk to the salmon and the environment. Northern Dynasty will also do everything in their power to clean up the environment if damage was done or if a spill was to

happen. Furthermore, the project will bring much needed jobs and money to a region that is supported by government funding (Clymer A3). Commercial salmon fishing does not bring in as much profit as it did in the past. A fisherman gets around 50 cents per pound for sockeye salmon and the cost of fuel is around five dollars per gallon. This uneven balance of income and expenses can be outweighed by a world class mine which produces jobs and a steady income. Money is hard to argue with and that is why this is such a hot issue in Alaska, and around the country.

Following suit, Alaskans can combat this proposed mine as the Mexican National Ecology Institute did. This institute acts in a similar fashion as the Environmental Protection Agency in the United States. The institute is given the responsibility to control the natural areas of the country and make sure all endangered species and keystone species are not being harmed. A proposition was rejected that would expand a salt mine in the Baja region. This proposal would have made Mexico one of the largest exporters of salt in the world. The Ecological Institute rejected the proposal because the area that the salt mine would have expanded to is the most pristine of only four bays used by California gray whales breed and give birth before heading back to Alaska (Darling 13). Alaskans can follow suit, ignoring economic growth and taking into account the importance of a pristine environment.

Like Mexico has done, the State of Alaska can create a nature reserve to recognize the importance of the lakes, streams and rivers used by salmon and other fish species, caribou, moose, and many other animals that are important to the ecology of the Bristol Bay area. This would give the Environmental Protection Agency the ability to come in and protect this fragile environment if it were to be threatened by mining or any other harmful activities.

Not only is the environment in danger, the native people of the region who depend on salmon as a food source is at risk. A group called the International Indian Treaty Council recognized that mining puts Alaskans at risk and they filed a complaint to the United Nations Special Rapporteur on the Right to Food. This complaint was created to combat mines, similar to the Pebble Mine, that produce harmful levels of toxins in foods that are necessary for native people to survive. This is interpreted as a human rights violation which requires action by the U.N. (Salamando 26).

If the Pebble Mine proposition is accepted by the State of Alaska there are several things that Alaskans in opposition to the mine can do. There is an environment and people that have co-existed for thousands of years without interruption and money should not put this harmony in jeopardy. Basic human rights are on the line, along with an economy based on the cultivation of salmon and a natural area that is pristine. The State of Alaska has a moral obligation to the environment and the natives of the area to take a stance of opposition to the Pebble Mine to save a culture, an economy and pristine environmental areas. The Bristol Bay area cannot be destroyed for any price.

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To: Whom it concern's

Subject: Wind blown micro-fine toxic dust's from the Pebble Mine project and other open-pit mine's within the State of Alaska

Very little has been said and almost never even mentioned about the micro-fine toxic dust particle's that will be wind-blown out of the Pebble mine project and all other open-pit mine's anywhere within the State of Alaska. Yet, these very fine particle's of toxic dust can, over time, be very deadly to all of the fish and game subsistence resource's within the area of the mine and beyond.

This toxic dust will be mostly caused by the super-heavy equipment driving over the toxic gravel's within that open-pit mine. Once these super-fine dust particle's are "kicked-up" into the air column, the prevailing wind's will scatter it far and wide. The strength of those wind's will determine just how far that dust is spread.

It is physically impossible to contain all of that wind borne toxic dust blowing out of the open-pit area. Not 24/7 x 52 week's x 30 year's. There is absolutely no way to contain all of those toxic material's once it get's into the air column.

With strong west wind's, it would pollute Iliamna lake itself. Strong north wind's will push that toxic cloud south toward's the Kvichak river. Strong east wind's will push those toxic material's into the Koktuli and Mulchatna river drainage's. South wind's will push that stuff north toward's Nondalton and the Six mile lake area. This area is at time's, subject too the wind's from the tail-end of typhoon's. These wind's can reach the 70 to 80 MPH range.

Tribal leader's from one village up north that is close to a open-pit mine, report that the ground water around that village is now too contaminated to drink. They have too haul all of their drinking water from a different water source that is over a mile away from that village.

The problem of wind-blown toxic dust must be addressed because, given enough time, it is just as deadly too our fish and game subsistence resource's as a toxic ground-water leak. A ground-water toxic leak is just faster in it's deadly effect's. Wind-blown toxic dust must be considered for every open-pit mine within the entire State of Alaska.

Sincerely,

Adolph J. Roehl, Sr.
Adolph J. Roehl, Sr.

Short Bio: Adolph Roehl, Sr. is a life-long resident of the Bristol Bay area. He has been involved with commercial salmon within Bristol Bay for almost 60 year's. Mr. Roehl is also a semi-retired electrician. He is a Member Chief of the Curyung Tribal Council and Vice-Chair of the Quayyassiq Walrus Commission. Mr. Roehl is also a member commissioner of the Bristol Bay Marine Mammal Commission.

Footnote: One Pebble mine project drill worker told a group of tribal leader's in Nondalton two year's ago, "that some of the test drill site's turned into artesian well's". TO MY KNOWLEDGE, no one has tested the water from those well's or even documented where it is flowing. Since the Pebble mine project started their test drilling, OUR CARIBOU HERD'S HAVE BEEN IN A VERY SHARP DECLINE. No one know's if possibly our caribou herd's have been drinking water from those well's.

**Public Testimony
House Bill 134
Dillingham, Alaska
September 26, 2007**

Thank you for this opportunity to speak to you and welcome to Dillingham. My name is Billy Maines. My mailing address is P.O. Box 297, Dillingham, Alaska 99576. I am here to speak to you in favor of and request your support for HB 134. I am here today to testify as an individual, as a concerned resident of Dillingham and Bristol Bay who is very worried about the health and future of our salmon and water purity.

We all know how big and diverse our great state is. Our state is divided by regions and each region of the state brings something different to the table. For example: The North Slope has its oil and gas; The Southeast has its timber and tourism; and Bristol Bay, well, we are known for FISH. Wherever you travel throughout the world and you mention you're from Bristol Bay, the response almost immediately is FISH.

I am here today to talk to you about concerns of my fish and water. When fish are born, a process starts – a process that tells and shows this fish where they come from, a place they will leave and they will return to. Encoding – geneses – whatever you want to label it – is the process that tells the fish this is where you come from and one day you will need to come back to and give birth to your offspring - to continue the cycle of life.

Our fish have been here long before my birth and hopefully they will be here long after my death. They have been providing for the residents of Alaska not to mention the world long before the need or desire to wear jewelry. Influences and/or introductions have an affect on the environment. If you look around the world you can see and hear about affects of some influence or introduction. "Global Warming" "Limiting the number of children or pets a person may have is an issue" "Farm fish versus Wild fish versus Organic" Some of these influences or introductions we have some control over, others we don't.

The State of Alaska has spent time and money promoting itself to entice folks to come and visit. The last Frontier, the abundant fish and wildlife, the rich cultures, clean and pristine air and water are just some of the reasons for visiting Alaska. In the same venue, Alaska and a number of individuals have spent time and money on promoting our Wild Salmon. I have come to believe that I as an individual may not have control over the world market price of our salmon, but as an individual I do have some control over the number of salmon I catch, how I care for them and how I use them. I also know I have this opportunity to voice my concerns over maintaining the current and future status and stature of our fish. FRESH, CLEAN,

WILD, PRISTINE – this is what our consumers expect and want. We are movers and shakers in a Global economy. Consumer expectations and perceptions are key to the success or failure of any consumable product. Mad Cow disease hurt the beef industry; Bird Flu makes people stop and think about chicken, pheasant, ducks, geese, etc; remember the on-going battle of farmed salmon versus wild salmon and now throw the organic label into the mix. Just for a second think about what would happen if there was the hint of a potential introduction or influence of a pollutant into the spawning and rearing waters of fish. If the fish were able to survive within those waters, would you consider eating them?

The Bristol Bay region is a free flowing water rich region, both above ground and under ground. This is evident just by seeing throughout our area the vast amount and varied amount of fish and wildlife we have. Water is the key to life. Our own bodies needs and is composed of 75% water. The Nushagak Mulchatna Watershed hosts the water needs and nutrients for the record returns of salmon in the Nushagak fishing district and the billion dollar industry of the Bering Sea. One of the primary sources of food for my family is the Chinook. Kings are now coming back to the Nushagak. I can not put into words or find the right adjectives that would fully describe to you my feelings or needs for that king salmon. It goes directly to the essence of life.

The Koktuli River is important to Northern Dynasty and their Pebble project. They have a water rights application on file. They propose to draw water from both the North and South Fork of the Koktuli. In many if not all their presentations concerning the Koktuli, they shown a portion of the South Fork they say goes dry. The Koktuli River flows into the Mulchatna which flows into the Nushagak. The Koktuli is also a major king spawning river. According to records, the Koktuli itself is responsible for at least 25% of the Nushagak kings. If Northern Dynasty is so sensitive to the environment and believes in a no fish loss policy, then why are they proposing taking water that is critical for the environment and habitat of the fish? I support and would like you recommend HB 134. Again thank you for your time and coming out to see us in Dillingham.

Good morning distinguished members of the Alaskan Government, Bristol Bay residents, and Dillingham Wolverines. We represent the students of Dillingham High School.

Wiinga atqa ayapek
Aataka Gareth Nelson Aanaka Jackie Bond
Yurtellruna Fairbanks a-mi
Anglillruna Curyurmi
Curyurmiungu-nga

My name is Heidi Andrews my fathers name is James, my mothers name is Vera, I was born, raised and live in the community of Dillingham.

We as the future Bristol Bay subsistence users, commercial fishermen, and residents of the watershed are opposed to Northern Dynasty's Pebble Mine and are in support of the concept of House Bill 134.

Mines are notoriously harmful to the environment. In fact, all open pit mines throughout history have been unsuccessful environmentally and have impacted the areas in negative ways, many being abandoned and left to decay. To extract the gold from the hard rock, the mine must use cyanide. The use of cyanide is harmful to the environment and the subsistence way of life. If cyanide were to leach into the aquifer and eventually the water table, it would absolutely ruin the fisheries; commercial, sport, and subsistence. Our people have been fishing this system for thousands of years. How can mining permits be issued if there is even the slightest chance of ruining our way of life? You must ask yourself, what is more important, a people who have been living unaided for thousands of years off the land and all of it's resources, or a mine that could create a few thousand jobs for fifty years and possibly ruin our culture? Whom do you support? The people of Alaska or a Canadian Mining company? Who elected you into office? Who do you represent?

In Dillingham every year we see thousands of people who come into our community, spend money, and have a great time catching sockeye salmon from the largest salmon producing water system in the world. If the system is wiped out, so is our tourism industry, and eventually our village and our way of life.

At this moment in history, the fish swim up stream every year, and every year we catch enough to make it through the winter, every year since the beginning of time. If the pebble mine were to be, life as we know it would cease to exist.

Yupik closing

Testimony of Russell Nelson
9/26/07

Thank you Representatives for coming to Dillingham to hear our concerns on House Bill 134.

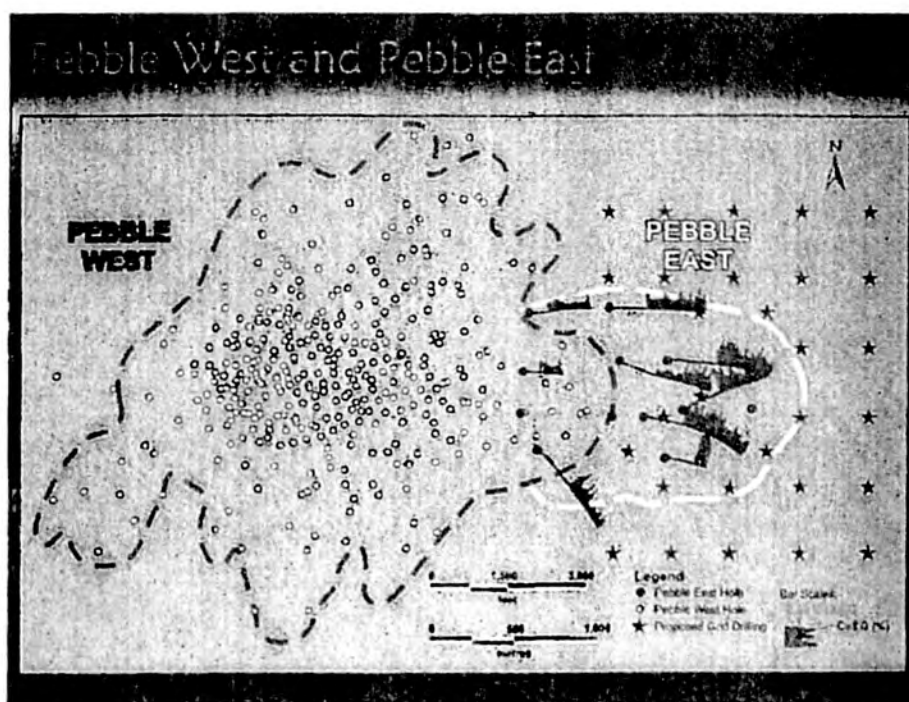
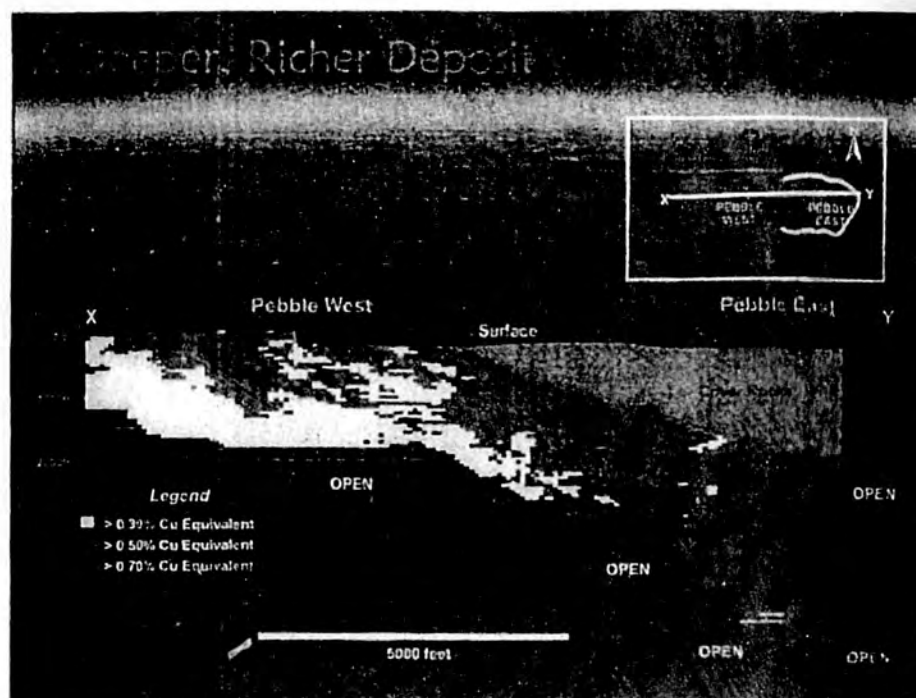
I believe that the Bristol Bay watershed needs protection for the sake of our salmon economy and lifestyle. My biggest fear is we would trade a long term renewable economy for a short term non-renewable economy that has the potential of destroying not only the salmon populations that this community depends on but also the tourism that has been built up here over the past several decades.

The only concern that I have with this bill is, that I would like to make sure that we can still continue to develop gravel pits, rock quarries, ~~and roads~~ *to Powerlines* between the villages and towns as necessary when the people in the communities of Bristol Bay require them.

While you are here I hope you will take time to look at our schools and keep in mind that Research shows a Facility condition may have a stronger effect on students performance than the influences of family background, socioeconomic status, school attendance and behavior combined. Well designed facilities send a powerful message to kids about the importance a community places on education.

Again Thank you for coming to Dillingham and listening listening

Submitted by Rick Halford





Alaska State Legislature

Please enter into the record my testimony to the House Fisheries Committee
COMMITTEE NAME
committee on 134, dated 9/26/07
BILL / SUBJECT TODAY'S DATE

I am in support of H.B.134, being born & raised in Dillingham, commercial fishermen & subsistence user we cannot afford to lose our renewable resource.

Signed: Wassiliia Bennis Wassiliia Bennis
TESTIFIER (Signed, PRINTED NAME)
self
REPRESENTING
Box 406 Dillingham, AK
ADDRESS
(907) 846-5926
PHONE NO.

Copy ★
For:
Representative
Bryce Edgmon

Sept. 26, 2007
Helen M. Chythlook
Box 1392
Dillingham, AK 99576

①

I am representing myself, but do have some comments for the Qayassig Walrus Commission and the Bristol Bay Marine Mammal Council I work for. Although what I say does not currently reflect what their stance on this HB134 Bill is.

I am an Aleknagik Traditional Council member. I have commercially fished all my life til recently. Some personal health problems have prevented me from participating in the seasonal fishery. Although, I stay with the majority of the Bristol Bay and the Alaska Peninsula heavily rely on our year-round traditional activities of harvesting, gathering for our food resources which include mainly in the Nushagak area -

Helen Chythlak

(21)

salmon, or "sayag, nega" in the Yup'ik Eskimo language. Our late father, Tom Chythlak, taught us to practice our traditional way of life, which includes Native traditional values and customs of treating the land, the sea, the water, and the air we breathe in with utmost respect, like walking into a church with reverence. One, because the lands, the earth, and the environments our traditional Native ancestors or ciurllaq's walked on were sacred traditional areas where they used to live on. Without pure water, the marine and fresh ~~water~~ water food resources will die because they will stop being nourished by water to grow, produce, and give themselves to us to sustain us. We need to continue to protect our lands, the lakes, the rivers and the ocean ecosystem we gather and harvest our traditional food resources.

Helen Chythial

(3)

Please reference the attached
2 documents I supplied for
you, a letter to Governor Sarah
Paulin, dated March 13, 2007,
and a memo dated August 22, 2007
of some of the concerns of the (QWC)
Qayassig Waters Commission I work
for - #1. The QWC Commissioners
would like to be involved with
any environmental issues that will
affect their traditional way of life.
Including - having agencies work
with them in conducting water quality
^{test} monitoring of the commercial (erring)
Salmon gillnet fishery waters of Tugash,
Nashville, Nakah - Kuichak, Eyegik
and Uqashik Districts to establish
a baseline. Please refer to attached
correspondence for further details.
I support Representative Edgman's draft
Bill HB 134, as long as our traditional
way of life will continue to be
protected with no restrictions, and to
continue to give us the freedom to

Adam Chipping
gather and harvest our

(4)

Salmon, marine mammals, moose,
Caribou, herring, herring roe, clams,
waterfowl, bird eggs, medicinal and
edible berries in pure air and
pure water and a pure environment
for generations to come.

Quyana!

FILE

Qayassiq Walrus Commission
c/o: Bristol Bay Native Association
P.O. Box 310
Dillingham, AK 99576
Phone: 907-842-5257
Fax: 907-842-5932
QWC Chair Phone: 907-493-5003

9/26/07
Submitted by
Helen Anythol
QWC Staff

March 13, 2007

The Honorable Governor Sarah Palin
Office of the Governor
State of Alaska
P.O. Box 110001
Juneau, AK 99811-0001

Dear Honorable Governor Palin:

On September 1, 2007 I attended and chaired the Qayassiq Walrus Commission's (QWC) Pre-Hunt Meeting in Dillingham. The QWC Commissioners from nine communities and QWC Hunt Captains attended the meeting as well as state and federal agencies and local participants.

The QWC Commissioners would like to be involved with any environmental issues that will affect their traditional way of life. They want their marine, land, and edible food resources protected and do not want, for example, Pebble Mine to damage the salmon habitats and the marine mammal environment. These are their traditional foods and they do not want them to get contaminated from toxic contaminants that occur from mines depositing waste in streams. The mineral toxic waste deposited into streams can flow into other river systems and waterways.

The QWC Commissioners want to be involved in any contaminant water sampling projects and recommended state or federal agencies conducting water samples for contaminants to get samples from the Nushagak, Togiak Bay and any Bristol Bay commercial salmon fishing waters. They want water samples collected before the salmon fishing season starts and during the commercial fishing season. This will establish a contaminants baseline for the marine ecosystem resources harvested as traditional foods throughout the year.

Another water sample testing recommendation by one of the QWC Hunt Captain's is to have agencies conduct water sample testing before the annual seasonal commercial herring fishing in the Kulukak Bay and Metervik Bay area. Salmon, seabirds, and marine mammals habitat is in those areas and this is also an important traditional food harvest area for the Togiak, Twin Hills, and the Nushagak Bay area residents. Conducting water samples for contaminants before the herring fishing and after the herring fishing ends is recommended. If funding allows, conducting water samples throughout the summer season in these areas would be beneficial for the traditional and scientific needs of both the commercial and subsistence users. The QWC Commissioners would like to be participants in local, state, or federal agencies working on

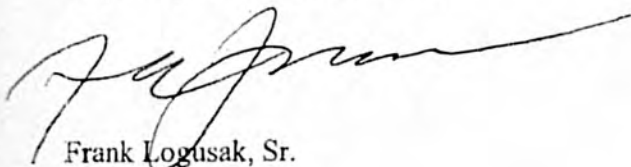
Bristol Bay environmental issues. The marine mammals are part of the environment and the ocean waters are their habitat. The QWC Commissioners want to be involved in local environmental contaminant monitor projects as cooperators, if possible.

The QWC Commissioners have mentioned their concerns to some of the state and federal agencies during their meetings, but no recommendations or volunteer to assist QWC has been done. On behalf of the QWC, we are approaching the State starting in the 2007 commercial herring and salmon gillnet fishing season, if some water samples can be taken in the Togiak herring fishery, and in the Bristol Bay commercial fishing waters. The projected water sampling collections requested is to take samples during the 2007 spring Togiak herring season, during the summer seasonal commercial salmon fishing season, and after the fishing season closes which usually is by mid-August in the Bristol Bay area. The spring seasonal Togiak herring commercial fishing season usually starts sometime in May of each year, depending on whether the ice has melted and the herring have arrived in the Togiak Bay, Kulukak Bay, and Metervik Bay area. The main waters that the QWC Commissioners expressed their concerns were in the following commercial salmon fishing districts: Togiak, Nushagak, Naknek, Kvichak, Egegik, Ugashik, and the main river tributaries that go into freshwater streams and lakes. If at all possible, the QWC would like to request the State and the Legislature to come up with funds to accomplish the collection of water samples in the Bristol Bay area commercial salmon and herring fishing waters.

I will be looking forward in hearing from you.

Sincerely,

Qayassiq Walrus Commission



Frank Logusak, Sr.
QWC Chairman

cc QWC Commissioners
QWC Hunt Captains
Ralph Andersen, Chief Executive Officer, Bristol Bay Native Association
✓ Senator Lyman Hoffman
Representative Bryce Edgmon



BRISTOL BAY NATIVE ASSOCIATION

PO Box 310
Dillingham, Alaska 99576-0310
Tel: (907) 842-5257
Fax: (907) 842-5932

Memorandum

To: Hjalmer Olsen, Sr., President, Bristol Bay Native Corporation
Luki Akelkok, Sr., President, Nushagak Mulchatna Watershed Council
Bobby Andrew, Nunamta Aulukestai Council
Ralph Andersen, BBNA Chief Executive Officer

From: Helen M. Chythlook, BBNA Marine Mammal Coordinator

Date: August 22, 2007

Re: Traditional Subsistence Harvest Concerns from New Stuyahok
for harvesting Red salmon, moose, caribou, berries, ducks, beavers, Trapping Fur-
Bearing Animals For Traditional Handicrafts, and Other Traditional Food
Resources In The Swan River and Koktuli River Areas

I work for the Bristol Bay Marine Mammal Council (BBMMC) and the Qayassiq Walrus Commission (QWC), as well as for the Bristol Bay Native Association (BBNA) Marine Mammal Program. Since I was raised in a Yupik Eskimo environment with parents that practiced year-round traditional activities including fishing, hunting, and gathering foods from the land, the lake waters, river tributaries, and from the coastal marine environment, I also deal with any traditional food harvest concerns from the Bristol Bay and the Alaska Peninsula communities. I was taught that everything from the land, the fresh water lakes and river tributaries, as well as from the marine ecosystem are given to us by Our Creator. We were taught to share with widowed families, elders who couldn't go out harvesting traditional food resources of our catch or wild edible plants gathered. These Yupik Eskimo traditions are still practiced today by the people of Bristol Bay and the Alaska Peninsula.

~~Timothy Wanhola~~ A, Qayassiq Walrus Commissioner from New Stuyahok called the BBNA Marine Mammal Program today, and would like the concerns mentioned to be brought up by BBNC, BBNA, to appropriate watershed councils, agencies and to anyone who will do something about protecting and continuing the Alaska Native Yupik Eskimo traditional way of life. Since the Pebble Mine have conducted exploratory development on the proposed mine site, there have been a substantial decrease down to little or nothing of the traditional food resources hunted, fished, edible plants gathered (berries, medicinal plants, and edible greens), ducks, geese, moose, caribou, and others not mentioned. For the last two years, ~~Timothy Wanhola~~ and other upriver Nushagak Watershed communities have traveled to their annual traditional sites to

harvest spawned out sockeye (red) salmon in the Swan River and Kaktuli River areas. Both years, the New Stuyahok salmon harvestors have observed zero (0) spawned out red salmon in the Kaktuli River and the Swan River areas. Other species have declined from both rivers including rainbow trout, dolly varden, moose, caribou, as well as ducks, and geese traditionally harvested.

Recently, some Bristol Bay residents participated on a water quality monitoring sample collection trip from the headwaters of the Kaktuli, the Swan River down to the end of the Nushagak River. It was indicated that no sockeye 'red' salmon were observed on both of the Kaktuli and Swan River areas by the Bristol Bay participants. There is concern from Timothy Wonhola that something is going on in the upper Nushagak-Mulchatna watershed areas since the proposed Pebble Mine exploration started two years ago. He mentioned the land animals, fur bearing animals, and marine mammals will become scarce next.

I am recommending all of the organizations cooperatively work on these issues of concern of why the traditional food resources are becoming scarce in the Swan River, and the Kaktuli River areas. The organizations need to resolve this issue to continue the preservation of our traditional way of life. This includes harvesting fish, moose, caribou, ducks, geese, marine mammals, fur bearing animals, shellfish, wild edible plants, clams, herring, and other traditional foods from the freshwater and watershed river tributaries and from the marine ecosystem.

cc: Molly Chythlook, BBNA Natural Resource Director
Timothy Wonhola, QWC Commissioner, New Stuyahok
Susan Flensburg, BBNA Environmental Program Manager
Frank Woods III, BBNA Subsistence Coordinator
Theodore Krieg, Division of Subsistence, ADF&G-Dillingham



Alaska State Legislature

Fisheries &

Please enter into the record my testimony to the

House Resources Committee

COMMITTEE NAME

committee on

draft work

HB 137

BILL / SUBJECT

, dated

Sept. 26, 2007

TODAY'S DATE

Signed:

Helen M. Chythlook (Helen M. Chythlook)

TESTIFIER (Signed, PRINTED NAME)

Self

REPRESENTING

P.O. Box 1392, Dillingham, AK 99576

ADDRESS

(Kusko) 907-842-5257 x 370

PHONE NO.

Public Opinion Message

Please contact your local Legislative Information Office (LIO) to send POMs.
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From: Please **PRINT** the information below. This form must be signed by the sender.

Mr. / Ms. / Mrs.	First name	M.I.	Last name	Jr. / Sr. / III
	Rachel		Muir	
Group affiliation (if applicable)				Daytime telephone number
Mailing address				Zip code
PO Box 1395, Dillingham AK				99576
Residence (street) address if different from mailing address				Zip code
100 Creekside Lane Dillingham AK				99576
Email address		Signature		Date
jrmuir@nushtel.net		Rachel Muir		9/26/07

To: Put a ☒ in the appropriate box(es).

Committees		House members		Senate members	
☐ H or S	Community & Regional Affairs (cra)	☐ Anderson (ade)	☐ Kelly (kel)	☐ Bunde (bun)	
☐	Finance (fin)	☐ Berkowitz (ber)	☐ Kerttula (ker)	☐ Cowdery (coy)	
☐	Health, Ed., & Social Services (hes)	☐ Chenault (che)	☐ Kohring (koh)	☐ Davis (dab)	
☐	Judiciary (jud)	☐ Cissna (cis)	☐ Kolt (kol)	☐ Dyson (dys)	
☐	Labor & Commerce (l&c)	☐ Coghill (cog)	☐ Ledoux (leu)	☐ Ellis (eli)	
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☐	Rules (rls)	☐ Croft (cro)	☐ McGuire (mcg)	☐ French (fre)	
☐	State Affairs (sta)	☐ Dahstrom (dal)	☐ Meyer (mey)	☐ Green (gre)	
☐	Transportation (tra)	☐ Elkins (eln)	☐ Moses (mos)	☐ Guess (gue)	
☐	Other:	☐ Foster (fos)	☐ Neuman (neu)	☐ Hoffman (hof)	
☐	Other:	☐ Gara (gar)	☐ Olson (oli)	☐ Huggins (hug)	
		☐ Gardner (gas)	☐ Ramras (rar)	☐ Kookesh (kos)	
		☐ Gatto (gat)	☐ Rokeberg (rok)	☐ Olson (ols)	
		☐ Gruenberg (gru)	☐ Salmon (sae)	☐ Seekins (sek)	
		☐ Guttenberg (glt)	☐ Samuels (sal)	☐ Stedman (smn)	
		☐ Harris (har)	☐ Seaton (san)	☐ B. Stevens (ste)	
		☐ Hawker (haw)	☐ Stoltze (stz)	☐ G. Stevens (stg)	
		☐ Holm (hol)	☐ Thomas (thm)	☐ Theriault (thr)	
		☐ Joule (jou)	☐ Weyhrauch (weh)	☐ Wagoner (wag)	
		☐ Kapsner (kap)	☐ Wilson (wis)	☐ Wilken (wik)	

Subject: Fill out the boxes below OR enter a Subject.

HB or SB	Bill number	and check one:	☐ Support	☐ Oppose	☐ Amend	OR	enter a general Subject (LIO staff may modify):
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Message: Your **PRINTED** message cannot exceed 50 words or contain any vulgar language.

I	have	only	lived	in	5
Dillingham	for	fifteen	years,	but	10
living	in	a	place	pristine	15
enough	to	support	wild	Salmon	20
habitat	is	an	honor	and,	25
globally,	is	becoming	a	rare	30
privilege.	I	support	measures	such	35
as	House	Bill	134	to	40
restore	protection	of	the	Natreshed	45
of	Bristol	Bay.			50

Public Opinion Message

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This form must be completely filled out. You may phone, fax, or deliver your POM to any LIO.

From: Please **PRINT** the information below. This form **must be signed** by the sender.

Mr. / Ms. / Mrs.	First name	M.I.	Last name	Jr. / Sr. / III
Mr.	John	M	Muir	
Group affiliation (if applicable)				Daytime telephone number
				907-842-2116
Mailing address				Zip code
PO Box 1345, Dillingham, AK 99576				99576
Residence (street) address if different from mailing address				Zip code
160 Creekside Ln, Dillingham, AK				99576
Email address			Signature	Date
johnmuir38@yahoo.com			<i>[Signature]</i>	9/24/05

To: Put a ☒ in the appropriate box(es).

Committees		House members		Senate members	
☐ H or S	Community & Regional Affairs (cra)	☐ Anderson (ade)	☐ Kelly (kel)	☐ Bunde (bun)	
☐	Finance (fin)	☐ Berkowitz (ber)	☐ Kerttula (ker)	☐ Cowdery (coy)	
☒	Health, Ed., & Social Services (hes)	☐ Chenault (che)	☐ Kohring (koh)	☐ Davis (dab)	
☐	Judiciary (jud)	☐ Cissna (cis)	☐ Kott (kot)	☐ Dyson (dys)	
☐	Labor & Commerce (l&c)	☐ Coghill (cog)	☐ Ledoux (leu)	☐ Ellis (eli)	
☒	Resources (res)	☐ Crawford (crf)	☐ Lynn (lyn)	☐ Elton (elt)	
☐	Rules (rls)	☐ Croft (cro)	☐ McGuire (mcg)	☐ French (fre)	
☐	State Affairs (sta)	☐ Dahlstrom (dal)	☐ Meyer (mey)	☐ Green (gre)	
☐	Transportation (tra)	☐ Elkins (eln)	☐ Moses (mos)	☐ Guess (gue)	
☒	Other: Fisheries	☐ Foster (fos)	☐ Neuman (neu)	☐ Hoffman (hof)	
☐	Other:	☐ Gara (gar)	☐ Olson (oll)	☐ Huggins (hug)	
		☐ Gardner (gas)	☐ Ramras (rar)	☐ Kookesh (kos)	
		☐ Galto (gal)	☐ Rokeberg (rok)	☐ Olson (ols)	
		☐ Gruenberg (gru)	☐ Salmon (sae)	☐ Seekins (sek)	
		☐ Gutenberg (gtt)	☐ Samuels (sal)	☐ Stedman (smn)	
		☐ Harris (har)	☐ Seaton (san)	☐ B. Stevens (ste)	
		☐ Hawker (haw)	☐ Stoltze (stz)	☐ G. Stevens (stg)	
		☐ Holm (hol)	☐ Thomas (thm)	☐ Theriault (thr)	
		☐ Joule (jou)	☐ Weyhrauch (weh)	☐ Wagoner (wag)	
		☐ Kapsner (kap)	☐ Wilson (wis)	☐ Wilken (wik)	

Subject: Fill out the boxes below OR enter a Subject.

HB or SB	Bill number	and check one:	☒ Support	OR	enter a general Subject
HB	134	☐ Oppose			(LIO staff may modify):
		☐ Amend			

Message: Your **PRINTED** message cannot exceed 50 words or contain any vulgar language.

I	have	spent	fifteen	years
in	Bristol	Bay.	I	grew
up	in	Minnesota	and	witnessed
the	scars,	both	physically	and
metaphorically,	that	come	with	large
scale.	mineral	extraction.	Bristol	Bay
Fisheries	need	additional	protection	from
the	potential	detrimental	effects	of
large	scale	mining.		

John B. Branson
Lake Clark
Dort Alsworth, AK 99653

9-24-07

Dear Rep. Seaton,

I believe the Bristol Bay watershed needs to be protected from hard rock mining. The healthy salmon fishery should be protected until such time as it becomes extinct — God forbid.

I hope you will continue to provide leadership in the preservation of the Bristol Bay watershed for future generations of Americans. And thank you for your efforts to protect the fisheries. Sincerely,
John Brans

It is no accident that the very first legislative acts of the Murkowski administration were to rework the Alaska Coastal Management Program and to move fish and game's habitat division into the Department of Natural Resources. These moves were made under the mantle of streamlining. In the world of coastal management, their effect was to disenfranchise local districts.

The original ACMP was designed to give local governments and districts a way to comment on development in their regions and to have these comments integrated into state and federal law – districts would have policies that reflected local priorities, and those policies gave local comments legal heft. That is to say, comments tied to these policies were backed up by statute and regulation.

The Murkowski ACMP eliminated that connection and pulled the ACMP authorities back into the state agencies. Local districts could still comment, but they would, in effect, have no more local policies to base their comments on and, hence, no statutory tie-in. This is how the Murkowski administration disenfranchised the local districts.

Rep Edgemon's bill is predicated on the notion that the watersheds feeding into the Bristol Bay Fisheries Reserve are inadequately protected.

As we went through the ACMP revision and the Habitat division move, we were assured that the fundamental statutes and regulations the agencies work under remained intact and, consequently, environmental protection was uncompromised.

While this is true to an extent – agency statutes and regulations are intact – the Habitat division in particular has lost the hooks that local policies gave them to hang their project stipulations on. What Habitat has to work with henceforth remains to be seen, in my experience, but one thing is certain – local concerns will not be so well represented.

Does this mean Habitat, and the other agencies, are inadequate to the task of regulating a Pebble Mine? I call your attention to the Kuipers Report. This a systematic, peer-reviewed study that examines the accuracy of Environmental Impact Statements written for a sampling of mining operations. The findings show that EIS's failed to predict water-quality impacts in a significant percentage of these studies.

The shortcomings boil down to testing for acid-rock drainage. Bottom line -- there is no test that adequately foretells how different bodies of waste rock will behave over time. There are a variety of tests – collectively called kinetic bench tests – and all of their shortcomings involve lack of time to adequately assess how different ores behave.

I have not found any part of the DEC regulations that even mention these tests. This is the sort of thing we would like to have policies on. But you know what? We can't. The state tells us every area we want to address with our policies is covered by the various agencies -- yet the state has nothing on this. So, no, it does not appear to us that the watershed is adequately protected. Thank you for coming to the region to hear our concerns.

Andrew deValpine

BBCRSA

My name is Alice Ruby and I am speaking to you now as the Mayor of the City of Dillingham. Welcome to Dillingham Again. Thank you for coming here and allowing us to speak to you in person

We understand that you flew over the Nushagak and Kivchak drainages during the past couple of days. So you are somewhat familiar with the geography of our area. The water body that flows past our community is the mouth of the Nushagak River – the Mulchatna River flows into the Nushagak and literally past our front door.

Dillingham is a first class city. We are located outside of the Lake and Pen Borough boundaries and we are a part of the unorganized borough. Our municipal boundaries extend about 11 miles north and about 6 miles west. They generally follow the shores of the Nushagak and Wood Rivers.

We have about a \$10 million annual municipal budget. Of that, about \$5 million is the School district and \$5 million is city operations. Our city contributed \$1.3 million to the City school district for FY 08 – that is an increase from about \$1.1 in FY07 and \$1.2 in FY06 – please note that our school contribution is almost twice what is required by law.

We are a permanent population of about 2500 people. But at any time you will see hundreds and sometimes thousands more people moving through our community. During the summer months, hundreds of people flow through for commercial fishing – fishermen, crewmembers, processing labor force and the fishing support industry. Fortunate or unfortunate, a large percentage of those people are from outside of our region – from around the state and around the nation.

We are a transition and transportation hub for the Togiak National Wildlife refuge, the Wood Tikchik State Park and the Nushagak/Mulchatna Watershed. During the spring, summer and fall, we see hundreds of people flow through our community in route to the 50# lodges and dozens of temporary sport fishing and hunting camps in those areas. A client will pay from a few hundred to over \$5,000 per week to visit one of those sites.

We support our city through a 13 mill property tax, a 6 percent sales tax, a 10 percent bed & alcohol tax and a variety of user fees via our dock, harbor, landfill, water & sewer and others.

In about 2 months our voters will be presented with a proposition for a \$15 million G.O. Bond to renovate our schools. We expect to take advantage of the state's debt reimbursement program and we expect to be able to repay the bond by holding tight to our current level of service.

We choose to tax ourselves fairly heavily; especially relative to other communities within our region. We do so because we want to maintain and grow our infrastructure and ultimately the community that we have.

It's no secret to any resident in our community that we're struggling. We are an economy in recovery. Our cost of living is high from everyday groceries to our energy.

Our economy and ultimately the community's tax base is critically dependent upon our renewable resources – that is our fish, game and the habitat that sustains us. Whether it is commercial fishing, commercial recreation, private recreation or subsistence activities. We choose to grow our economy based on the resources that surround us – we have chosen to make an effort to enhance our fishing industry and our recreational industry.

Anything that happens in the headwaters of the Nushagak/Mulchatna Rivers will have an affect on our community. It will affect our social as well as our economic well being and our future. That is why the City of Dillingham has taken a position of "Fish First". Any activity that threatens the water quality of the river is of great concern to our community. We must protect those renewable resources and we must protect the river that feeds us.

HB 134 represents the protections that are needed for the river bodies that feed our community and the economy that we are continuing to try to grow. We strongly urge your support. *Added during delivery of testimony. I listened with interest to some of the suggestions for modifying the bill. We agree that there is probably room for some modifications to the bill. The exemptions could be broadened to include community development. Though the council hasn't given direction, I believe that the suggestion that the prohibited activities could be based on size or magnitude has some potential for clarifying. I don't believe the council would support exclusion of land by ownership status because it is the water column that is being addressed. All lands whether federal, state, private or trust lands (such as allotments) should be considered; otherwise excluding parcels in a patchwork pattern would probably defeat the purpose of the bill.*

Thank you again for coming to Dillingham.

Terry Hoefflerle\
P.O. Box 825
Dillingham, Alaska 99576
Nonnie@nushtel.net

Testimony on HB134
Dillingham, AK September 26,2007

I am the fourth son of Henry and Anne Hoefflerle, and was born and raised in the Gogebic Mining District on the south shore of Lake Superior. For 35 years I have been a subsistence and sport hunter and fisherman in Western Alaska. During that time I have been a commercial fisherman, educator, and bureaucrat.

In my testimony today I want to support protection of wild salmon and clean water and prohibit threats to these. In doing so, if time permits, I intend to:

Encourage combining HB134 and SB67. Ideas in bills are not mutually exclusive and complement each other

Address problems with Exclusions and Prohibitions in HB134 which might lead to an exhaustive list of exceptions (needs to be rewritten).

Prohibitions of:

Specific operations that "use or generate" cyanide, sulfuric acid, or other toxic reagents.

Prohibit large scale industrial and commercial use, all others exempt.

Shortcomings of our management regime to address these issues.

Put it in ADF&G like SB67 does, not DNR/DEC. DNR is set up to expedite and encourage mining permits, as though these are the highest and best use of our resources.

More stringent standards.

Speak to the urgency of taking legislative action now.

A.

I want to express my concern about proposals to operate massive mines in the headwaters of our rivers. This is an exceptional, fragile environment which demands exceptional measures of us to protect it. I **speak in favor of HB134, or some combination of 134 with SB67** as measures beyond the current regulatory regime that should be enacted.

Multinational resource extraction companies are **not charitable organizations**. As profit making corporations, law requires of them a **fiduciary responsibility to the bottom line**. If the citizens of Alaska want a mining company to do anything that would diminish its profits, including often costly environmental safeguards, it is our responsibility to make and enforce laws demanding those things. **Our current regulatory regime is woefully inadequate.** *Alaska Statutes that address Mining and Water Quality take up 2 whole pages.*

We are not talking about mom and pop gold panning or placer mining. It is **not likely that anyone will see either a nugget or a flake of gold from the type of mining operations** contemplated here. The ore concentrate carried away from the mine site represents only a tiny fraction of the earth that must be dug up. The remainder is waste rock & tailings. **Hundreds of millions of tons of those tailings will be toxic** and need to be safeguarded forever. Northern Dynasty Mines (NDM) proposes nothing different from low grade metallic sulfide mines that have already failed. NDM simply proposes a greater scale – to accommodate as much as 8.2 billion tons of waste.

B.

I have heard two spurious claims repeated by opponents to HB134: 1, A mine can be developed safely here, and 2. Alaska has some of the most stringent mining laws in the world. These are patently false.

The chemical nature and location of the rock at the mine site makes the release of sulfuric acid and toxic copper into waters a virtual certainty. According to a recent survey, the governmental success rate in permitting, so as to prevent such contamination, has been demonstrated to be exceptionally poor – a 93% failure rate, nationwide*. There are reasons for such dismal results: One of the most prominent reasons is shortcomings in public policy.

(Kuipers, et al 2006 Comprison if Preducted and Actual Water Quality at Hard Rock Mines: The reliability of predictions in Environmental Impact Statements)

DNR, faced with a massive failure rate at similar mines around the country, **in much more arid climates**, is not credible in its claim that its permitting process will work when others have failed. This is why it is so important for the Legislature to enact legislation **now** that conserves the Bristol Bay drainages and establishes processes and standards that protect those drainages. Doing so is the only way to serve the public and protect Alaskan's interests in the natural resources that belong to them.

There are many (including our Governor) who **advocate letting the permitting process take its course. This approach presupposes that our permitting process indeed adequately protects those precious resources.** Experience, and a review of applicable law shows that it does not.

- The permitting process gives Alaskans no say until the decisions are made, by the fox told to guard the henhouse (paid permitting staff, DEC and DNR heads who have ties to the industry).
- Existing law and regulatory regime regarding mining and water are at a par with oil protocols in place prior to Prudhoe Bay and Exxon Valdez. Two pages in Statute. (2 pages)
- The current process places the interest of large multinational corporations above the needs of the people of Alaska.

This begs the question: **"Can the mining companies point to a single similar open pit mine that did not significantly pollute water and destroy land?"**

Mining companies have claimed in the press that they can develop mega mines in Bristol Bay without hurting the environment. Let's take them at their word and add to the permit process the requirement of Wisconsin's 1997 Act 171 which demands that any company mining in sulfite bearing rock

(www.dnr.state.wi.us/org/esscience/crandon/review/moratorium.htm)

provide examples of a mining operation in the U.S. or Canada that have not resulted in significant environmental pollution. The law includes specific qualifying criteria that must be satisfied in order for the example site, or sites, to be considered. The mining company must submit documentation from groundwater/surface water monitoring that includes data showing that:

- (1) An example mine has been *closed* for 10 years without the pollution of groundwater or surface water from acid drainage at the tailings site or at the mine site or from the release of heavy metals; and
- (2) An example mine has *operated* for 10 years without the pollution of groundwater or surface water from acid drainage at the tailings site or at the mine site or from the release of heavy metals.

OR make the prohibitions in HB134 more specific...

1. Prohibit: a. use or generation of cyanide, sulfuric acid, or toxic or acidic ore processing or reagents; b. storage or disposal of industrial waste, mining waste rock or overburden, mining processing or beneficiation products or byproducts, tailings, or chemically processed ore or waste, and c. withdrawal, appropriation, obstruction, channeling, injection, pollution or alteration, on either a temporary or permanent basis, any surface or subsurface water hydrologically interrelated or connected to waters in the area covered by the bill.
2. No state agency shall issue a permit or authorization for prohibited activities or that would have potential to create acid mine or acid rock drainage into surface or groundwater. For mining sulfide minerals or ores, both the mining area and affected area, including all facilities, shall be reclaimed and remediated to achieve a naturally self-sustaining ecosystem appropriate for the area that does not require long-term or perpetual care, including treatment, and the areas shall be returned as expeditiously as possible to the ecological conditions that approximate premining conditions.
3. Any permit, lease, compatibility determination or authorization for facilities related to mining sulfide minerals or ores in the protection area shall be subject to a public notice and comment period after which the agency shall respond to

comments in writing and with scientific or technical justification for the agency's position

Louie Flora

From: Maureen Knutsen [maureen.knutsen@gmail.com]
Sent: Monday, October 01, 2007 4:08 PM
To: Rep. Bryce Edgmon; Rep. Paul Seaton; Rep. Gabrielle LeDoux; Rep. Carl Gatto; Rep. Kyle Johansen; Rep. Lindsey Holmes; Rep. Vic Kohring@legis.state.ak.us; Rep. Bob Roses; Rep. David Guttenberg; Rep. Scott Kawasaki; Rep. Craig Johnson; Rep. Peggy Wilson
Subject: Bristol Bay watershed protections
Follow Up Flag: Follow up
Flag Status: Blue

Thank you, Resources & Fisheries Committee members, for holding public hearings in Bristol Bay on H.B. 134. I testified in Naknek that I am in favor of the greatest level of protection possible for our salmon spawning waters and habitat.

Whether we can achieve that with a reworked version of H.B. 134 or by other means, I feel it is imperative that we do this ASAP. Please give this issue the highest priority.

It may be a better strategy to take measures such as moving the Habitat Division back under the jurisdiction of ADF&G and restoring the regulations requiring no mixing zones in salmon spawning streams.

I am a resident subsistence fisherperson and have been commercial fishing with my husband on our boat since 1978. My husband was born in Bristol Bay and has been fishing and subsisting here his whole life. I speak for both of us when I say that we are depending on our representatives in Juneau to help us protect our amazing renewable salmon resource from reckless and short-sighted development.

Thank you for whatever you can do to help us preserve our way of life.

Maureen Knutsen
P.O. Box 134
Naknek, AK 99633
907-246-6675
maureen.knutsen@gmail.com

9-26-07 HB 134 Hearing Dillingham

Testimony by Dan Dunaway

Good morning and thank you for coming to Bristol Bay.

I am Dan Dunaway, born and raised Alaskan, educated at UAF.

For 14 years I was a Fish and Game fisheries biologist in Bristol Bay conducting research and management in the Bristol Bay and Lower Kuskokwim sport fisheries.

Now I am retired and live in Dillingham with my wife and 2 young sons. I am an alternate member of the Nushagak Fish and Game advisory committee and a member of the Bristol Bay Advisory Council for the Federal Subsistence program. I am also a member of the RRC.

I am a subsistence and sport user of local resources.

Today I speak only for myself.

I support HB 134 in its general intent. We must protect the water and fish habitat in the Bristol Bay area. The fish populations dependent on pristine waters of our area are critical to the subsistence users as well as world renowned to the sport and commercial fisheries. I believe the Bristol Bay WILD, NATURALLY PROPAGATED fish adds significantly to the value and prestige of all Alaska's fisheries, like Cadillac adds prestige to GM automobiles. Since 1990 trout management has been guided by the South West Alaska Rainbow Trout Management Plan that specifically precludes enhancement and artificial propagation. A survey conducted prior to implementing the plan found people don't come here to catch hatchery fish, they want wild natural salmon and trout.

Support for this and other bills comes from a fear that environmental protections were greatly diminished under Governor Murkowski. As yet Governor Palin has refused to restore the Habitat Division to Fish and Game, and allowed the Commissioner of DNR to belittle environmentally concerned Alaskans. We are no longer certain the State has the most rigorous and effective environmental standards or the will to enforce them.

We acknowledge this bill needs improvement. Changes to this bill should include provisions for small to moderate scale water uses, especially for environmentally sound commercial operations such as the local farmer Mark Herman. I don't want to see small environmentally sound economic development discouraged. I also suggest through this bill or by resurrecting older bills we should make instream flow reservations for all waters in Bristol Bay prior to allowing large industrial water use.

I have met a number of people who can afford to fish anywhere in the world who say Bristol Bay is the best, their favorite place to come world wide. Many more, especially European anglers told me - take care of what you have, protect it, there are fewer and fewer places like this. This area is a valuable resource as it is and could become more rare than gold in the future.

Thank you

Dan Dunaway, PO Box 1490, Dillingham, Alaska 99576, 907-842-2636 mwdnt@nushtel.com

Louie Flora

From: Izetta Chambers [izetta@email.arizona.edu]
Sent: Tuesday, September 25, 2007 1:18 PM
To: Rep. Bryce Edgmon; Rep. Paul Seaton; Rep. Carl Gatto; Rep. Craig Johnson
Subject: Testimony on HB 134
Follow Up Flag: Follow up
Flag Status: Blue

Dear Alaska State Representatives:

I am writing to express my support for HB 134, protection of salmon spawning. I am a resident of Naknek, Alaska, where I grew up and still consider home. I am currently a law student, and will be graduating in May 2008. I intend to come back home to Alaska, where I have maintained my residency and where my family lives. Additionally, my family and I started our own seafood company, Naknek Family Fisheries, where I participate in the management during the summer salmon season.

We must uphold the duties outlined in the Alaska constitution by protecting our precious Bristol Bay watershed. Our fishery resources are valuable, both in terms of annual return from the commercial fisheries, the economic contributions fisheries provide to a subsistence lifestyle, and the benefits that will accrue to future generations of Alaska residents from these resources.

The Pebble Mine threatens not only the quality of the water in the Bristol Bay watershed, but also the quantity of water available for salmon spawning. These risks are unjustified, given the long-term impacts of mining compared to the long-term benefits of renewable natural salmon runs. Many mining proponents claim that there are laws in place to remedy or prevent any kind of impacts of mining. They want to try to convince us that we can have our cake and eat it too. The bottom line is that mining and fish cannot co-exist. Science has proven that these fisheries populations are particularly sensitive to copper in the water, well above the legal threshold allowed in the waters as runoff or emissions from mining operations. Short term exposure to miniscule amounts of copper severely impairs the ability of salmon to navigate, thereby reducing their survival and reproduction. Current state and federal water quality standards which regulate the Bristol Bay Fisheries Reserve do not adequately protect fish from mining impacts. This is particularly true since 2003, when Alaska's long-term ban on mining zones was removed.

Recent studies have shown that despite promises of clean operations during the permitting process, a high percentage of mines in the US exceed both surface and groundwater quality standards. One need only look to the legacy of hard-rock mining in the U.S. to understand that mining is not compatible with maintaining sustainable and healthy habitat for fisheries. For example, over 12,000 miles of rivers and streams in the United States are polluted by mining operations. This is not the type of neighbor we should be allowing to move into our pristine Bristol Bay region.

My family and I depend upon the fisheries resources for subsistence and commercial uses. My grandfather fished the waters of Bristol Bay in a sailboat, prior to the introduction of diesel engines in Bristol Bay. I would be so heartbroken if my children were not able to participate in this family tradition, a tradition that stems from history and our heritage as Alaska Natives from this amazing region.

Please don't allow these bullies (Northern Dynasty and their paid supporters) to muscle you into thinking that they have some right to mine these lands. These are state lands and the mining companies thus far only

have a right to explore these lands. There has not been granted any substantive rights to mine. Please don't let threats of personal lawsuits or suits against the state scare you into voting against this important legislation to protect our salmon spawning streams. There can be no Fifth Amendment taking until a permit or some other form of property right has been granted and taken away.

In terms of the issue of bribery by local officials or leaders in the region, I wish to share with you my experience. I wrote an email to a journalist this spring in relation to the Pebble Mine. This was not meant for publication (nor was it published), but the email was seen by others. Several members of the Angasan family (most of whom were either paid employees, had received "per diem" from Northern Dynasty, or free trips from them) contacted me via their attorney, Sam Fortier. As you know, Sam Fortier is also the attorney for Alaska Peninsula Corporation, whose board is largely dominated by several members of the Angasan family (Trefon, Ralph, Mary Jane Nielsen). Mr. Fortier wrote me a letter on behalf of these individuals (and others) demanding an immediate retraction of my statements (which were either all true or based solely on my opinion of their character(s)), or they would sue me for libel. In response to this libel threat, I wrote a letter affirming my right to free speech, highlighting the public nature of the Pebble Mine debate, and their role(s) as leaders of public or tribal organizations. I never received a response to my letter. However, I did feel that my ability to discuss this issue has been stymied, and that these people were trying to "bully" me personally with this idle threat. I share this story not to paint these people in a bad light, but to emphasize the coercive and threatening environment that surrounds Northern Dynasty and some of their supporters. Don't get me wrong - I support local hire. However, what I don't support is paying people to stifle debate on an issue that is of utmost importance not only to our generation, but for future generations as well.

I applaud your efforts to get testimony from within the region and I commend Rep. Ramras' bold attempts to get to the bottom of the bribery and undue influence allegations. This is an important debate and people need to be able to express themselves freely and in a public way. I don't believe that having people from the Justice Department or from the Attorney General's office in any way will stifle the debate. On the contrary, I think that those residents who may feel intimidated by Northern Dynasty or their proponents will feel safer giving their testimony with these officials present.

Thank you for listening to the local people and I hope that you will see that we really don't want the Pebble Mine in our backyards and polluting both our salmon streams and the image of our salmon as a wild, healthy, and sustainable food product.

IZETTA CHAMBERS
J.D. CANDIDATE, CLASS OF 2008
UNIVERSITY OF ARIZONA ROGERS COLLEGE OF LAW
IZETTA@EMAIL.ARIZONA.EDU
(520) 780-7545

Representative Paul Seaton
House Fisheries Chair
345 W. Sterling Hwy
Ste 102-B
Homer, AK 99603

Box 12
King Salmon, AK 99613

September 25, 2007

Dear Representative Seaton,

I am writing to express my concern about the proposed Pebble Mine project located north of Lake Iliamna and within the Nushagak and Kvichak watersheds in Bristol Bay. I am concerned about the negative impact such a large mine would have on the natural environment, animals, and lifestyles of the village people who reside in the watersheds. I have toured the mine site and I have read the documentation on the mine and attended EIS and mining classes to better educate myself on the potential impact of the mine.

The salmon resource has helped to sustain a large share of the Bristol Bay population for thousands of years and in turn, salmon are sustained by unpolluted free flowing waters. Bristol Bay is home to the largest spawning run of sockeye salmon in the world. Over 70% of the Bristol Bay economy revolves around this renewable salmon fishery. The fishery includes the canneries, tender boaters, set netters, sport fishery, subsistence fishery and all the related businesses. Disrupting this delicate balance by developing 'the largest copper/gold mine in North America' is shortsighted and inconsiderate of the long-term needs of the indigenous people. Nor does it protect the requirements of an unpolluted freshwater/saltwater ecosystem and its estuaries to provide quality habitat for salmon to spawn and for wildlife such as caribou to eat, calve and migrate over large open undeveloped wild country.

I am asking you to address these specific concerns when considering the mine's long-term impact on the land and the people:

- What environmental and social impact would the Pebble Mine have on the Bristol Bay Fisheries Reserve as created by the Alaska State Legislature in 1972?
- How much and where will all the surface and ground water come from to be utilized within the mining process?
- What impact will the surface and ground water diversions have on the spawning runs of salmon in the Kaktuli and Upper Talarik Creeks and the entire Nushagak and Kvichak watersheds?
- What guarantees do we have that the mining processes used (surface and subsurface rock extraction, rock pulverization, and chemical extraction of metals) will not cause pollution into the surface and subsurface waters or affect the air quality?
- Who will be on site to monitor mining activities to ensure that water quality is maintained?

- How will pulverized chemically reactive rocks be contained in an air tight environment for perpetuity, and who is going to take care of the above site in perpetuity and assure all environmental quality standards continue to be followed?
- What disruption will the mine have on caribou migrations and on other large animal populations such as moose, wolverine or wolves?
- What disruption will a major road built into the heart of the Bristol Bay wilderness have on the ecosystem and the lifestyles of the village people?
- What disruption will a large power line running to the mine site have on the ecosystem and the lifestyles of the village people?
- What disruption will the mine have on the sport fishing and hunting lodges and individuals who work for these companies?
- How will the subsistence and partial subsistence lifestyles of the Bristol Bay Native populations be affected by such a large scale mine?
- Are the concerns of the individuals throughout America, who expects the State of Alaska to honor their commitment to protect the public land, water, fish and wildlife from degradation and major negative man-made impacts, being considered?

Though the mine is presently providing some economic benefits to the Bristol Bay people, most of these benefits go to highly educated engineers and professionals who do not live in the Bristol Bay area. It may be a falsity to portray that over 100 high paying jobs will be made available for over 30 years to the people most affected by the mine. Because of seasonal subsistence lifestyle preferences, skill level, and historic employment data that shows otherwise, the higher paying jobs may very likely fall to only a very limited number of Bristol Bay residents over time. And at the same time the Bristol Bay Area will experience very negative environmental and social impacts caused by the mine. Mining has been shown to be a boom and bust industry. If we take care of the needs of the salmon, we will sustain jobs and feed Bristol Bay residents for thousands of years into the future.

Documentation already shows that large-scale mining throughout the world has a very poor track record for both environmental and social health concerns. One example of a polluted mine is the Britannia Mine in British Columbia. Reported to have once been 'the largest copper mine in the British Empire', operating from 1904-1974, the Britannia Mine left a toxic water drainage legacy that is now being cleaned up with public funds costing over \$1M/year in operating costs. Can we really expect anything different from the Pebble Mine?

The estuaries of Bristol Bay have the potential to be designated as a National Estuarine Research Reserve by the National Oceanic and Atmospheric Administration. This designation would help to provide added protection, research and education to this threatened critical resource area. Your support of this potential designation would help to ensure protection of the Bristol Bay watersheds for long-term and future generations. I would also like to give my

support for HB 134 "Protection of Salmon Spawning", SB 67 "An Act establishing the Jay Hammond State Game Refuge" and HB 74 "An Act prohibiting mixing zones in freshwater spawning waters".

I offer these comments with respect to you and your position as House Fisheries Chair and as a caretaker of the Alaskan environment and the Alaskan people. And I ask you to help find answers to the questions above and to vote against moving forward with the Pebble Mine or any other large hard rock industrial mine in that region for reasons that are very obvious.

Thank you for giving me this opportunity to comment. I look forward to your reply.

Michael Kroenke

CC Representative Bryce Edgmon, Bristol Bay Representative
Representative Carl Gatto, House Resources Co-Chair
Representative Craig Johnson, Resources Co-Chair

Becky Savo
P.O. Box 109
Naknek, Alaska 99633

9/25/07

I support the protection of the waterways, spawning grounds and the environment surrounding Bristol Bay and the Bering Sea.

In 1962 my father Walt Cothran went to work as a quality control inspector for Alaska Packers Association. I was six years old then. My father traveled throughout the state but primarily spent his summers immersed in the world's largest salmon fishery, Bristol Bay. As a child I was unaware of where these places were, Egegik, Diamond E, Naknek, NN, Diamond J, Diamond O, Diamond M, Ugashik, Clarks Point, the list goes on. The dinner table conversation was always about the size of the run, the price of fish, the arrival of scows and the quality of the pack. As a child it was a delight. We roller-skated in the large warehouses amongst pallets of shiny cans of salmon. We rode on flat cars behind the forklifts as they ran back empty from the warehouse to the scow for another load of salmon. Soon the semi trucks would rumble by my house for days as the labeled cans of salmon went to market. This was Blaine Washington, a town that was employed by Alaska Packers and Bristol Bay Salmon.

When I turned 18, I went to Chignik, Alaska to process salmon. I then continued in South Naknek and Egegik working my way from patching table (snipping salmon bones off the tops of cans before the lid goes on) to the can shop, egg house, store and finally the warm kitchen. I put myself through college. I left school with no student loan debt, as the Bristol Bay Fishery again supported me.

The knowledge of the fishing industry landed me a job with Dakota Fisheries in Washington where I managed a fleet of fishing vessels that fished in the Bering Sea. For 8 years this water way again supported my needs. I continued on in life and guess what, I married a fisherman? He began fishing with his family as a young child and our children began fishing with him. We have four children, two now in college. The Bristol Bay fishery continues to support my family. As small children my kid's subsistence fished, a great family activity. My sons are now commercial fishermen. Alex fishes with his dad John Savo, and Scotty has his own fishing operation. My son's also make extra money stripping and hanging nets used in the fishery. My two daughters work for the Port of Bristol Bay, which handles the "pack" as it leave Bristol Bay. Is it ironic that those shiny cans are now supporting my daughters?

What is my point? Three generations have had good lives because of this resource. We are proof that this is a renewable resource. I now have grandchildren that will be subsistence fishing with me. That makes generation four. I really cannot imagine how any other industry could have sustained a family for three generations soon to be four. I am told that we need jobs in our region, we have jobs, we work in the fishing industry! Please help us protect and sustain this renewable resource. Protect our watersheds.

Nunamta Aulukestai "Care takers of Our Lands"
Bristol Bay, Alaska Sept. 2007

Legislative Information Packet Contents - Please find enclosed:

- Cover Letter from the Board of Directors of Nunamta Aulukestai
- Resolutions from Nunamta Member Tribal Councils
- Position Paper from United Fishermen of Alaska
- Map - Distribution of Sockeye Salmon in North America
- Map- Distribution of Salmon populations within proposed Pebble Mine Site
- Background information on Causes for Concern
- Sustainability and Bristol Bay Salmon Fisheries
- Effects of Copper on Salmon
- Biological, Technical, and Legal Questions and Answers about proposed Pebble Mine

Nunamta Aulukestai
"Caretakers of our Lands"
P.O. Box 98
Dillingham, Alaska 99576

September 24, 2007

Rep. Paul Seaton
Rep. Gabrielle LeDoux
Rep. Bryce Edgmon
Rep. Peggy Wilson
Rep. Carl Gatto
Rep. Craig Johnson

Rep. Lindsey Holmes
Rep. Scott Kawasaki
Rep. Bob Roses
Rep. Kyle Johansen
Rep. Wes Keller

Dear State Representative,

It is an honor to welcome you to the Bristol Bay Region, the largest wild stock salmon capital of the world. We at Nunamta Aulukestai "Caretakers of our Lands" wish to commend you on your willingness to hear from the hearts and minds of locals living within the watershed. We hope that over the next several days you will hear, see, and experience enough local sentiment to support you in backing legislation that will help our region obtain the protection it needs and deserves to ensure the long-term viability of our fisheries and subsistence resources.

Many of the Village Corporations whom we represent have passed resolutions to oppose the Pebble Mine and support legislation, like HB 134, that will help protect our culture and the current uses of our life sustaining renewable resources.

Protective legislation is fundamentally important to our efforts to protect the Bristol Bay watershed from the kind of industrial development that would threaten our lives and subsistence based culture as we know it, and most importantly for our future generations. You have the opportunity to be on the forefront of this effort by passing a bill that will help us raise standards of fish, wildlife, and habitat protection in our area.

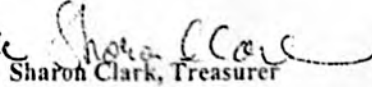
Over the next several days you will hear the truths of the people to whom this region matters most and we implore you to take action based upon the information and perspective that you gain from these hearings.

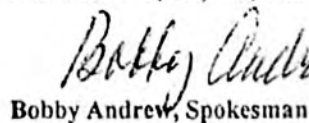
Thank you again for all of your attention to the extremely urgent matter of protecting Bristol Bay!

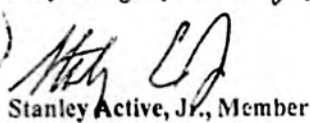
Sincerely,

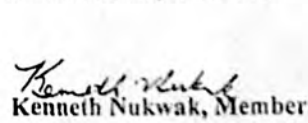

Luki Akerkok, Sr., President

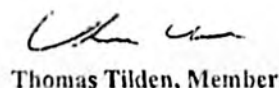

Sally Gumbekpuk, Secretary,


Sharon Clark, Treasurer


Bobby Andrew, Spokesman


Stanley Active, Jr., Member


Kenneth Nukwak, Member


Thomas Tilden, Member

UFA Opposes the Pebble Mine

By Bruce Wallace, UFA Environmental Chair, and Chip Treinen

United Fishermen of Alaska (UFA), a trade association including 36 Alaska commercial fishing organizations representing the interests of commercial fishermen throughout the state, has a keen interest in maintaining environmental quality that allows for sustainable production, harvest and marketing of Alaska's fishery resources. While any planned development that has potential effects on water quality and aquatic resources justifies UFA's attention, the risks associated with large scale mining developments such as the Pebble Mine prospect in Alaska's Bristol Bay watershed are of particular concern.

Recognizing that the Bristol Bay region's salmon resources typically account for more than a quarter of the state's ex-vessel salmon value, and are integral to an economy that provides for fishermen, tenders, processing, support businesses, communities and families as well as net positive contributions to the State's General Fund, it is critically important for the commercial fishing in-

dustry to assure that other industrial development does not disrupt or degrade the area's fishing economy. While the permitting process for the Pebble Mine is only in its beginning stages and operational plans not yet fully determined, the historic record and general understanding of mining operations indicates that established commercial fisheries will be jeopardized from not only the mine itself, but also the collateral development associated with operation and construction. Consequently, UFA strongly opposes development of the Pebble Mine.

Realizing that Northern Dynasty and other associated mining concerns are likely to continue to pursue their proprietary interests through the regulatory permitting process as well as through administrative and political influence, UFA will pursue every and all opportunities to ensure that proposed actions will neither degrade the productive habitat in the region or cause harm to the fisheries of the region.

Bristol Bay

Stronghold for
Sockeye Salmon

Map produced by:

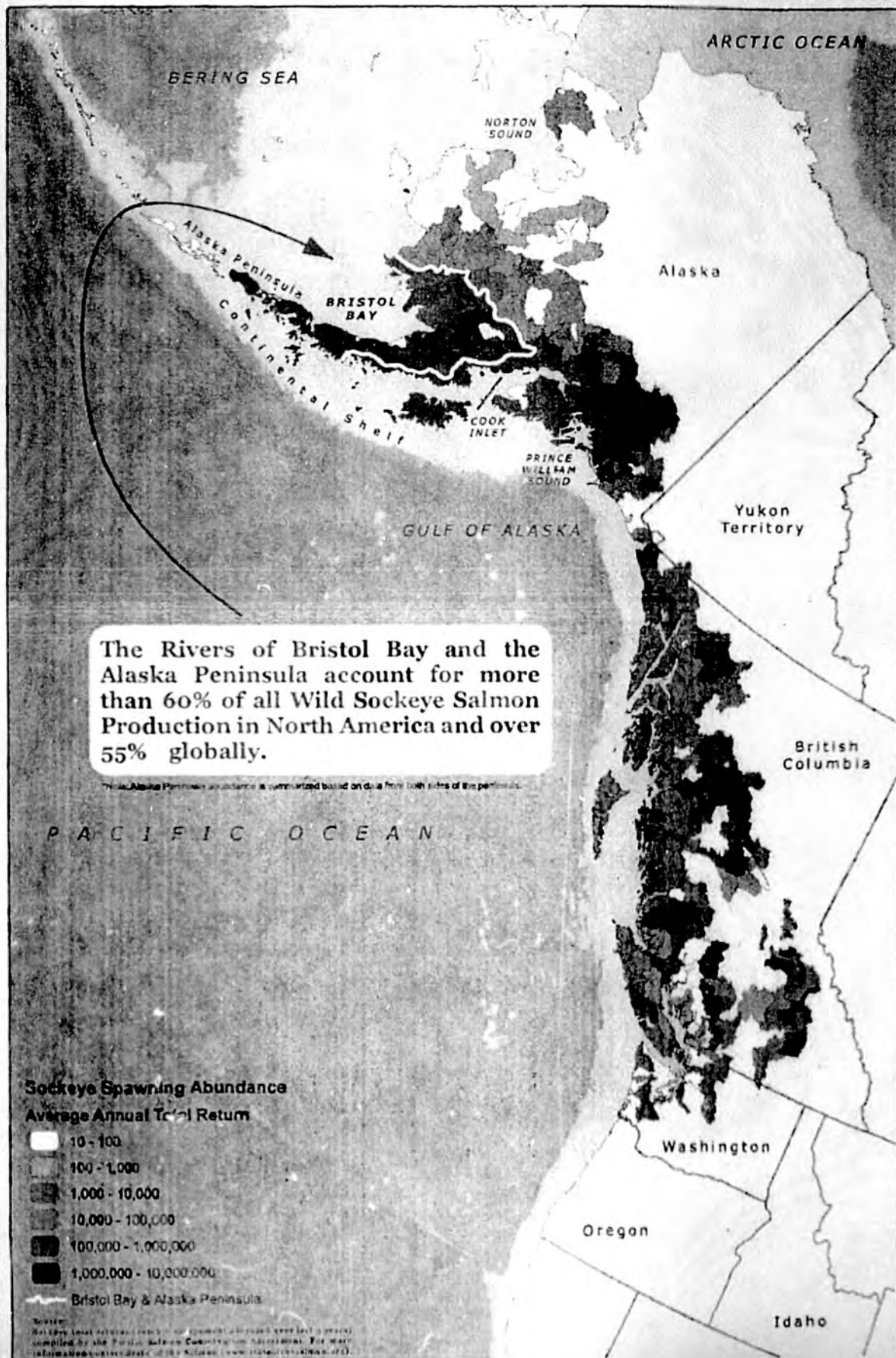
STATE OF THE SALMON

THE STATE OF ALASKA THE STATE OF BRITISH COLUMBIA THE STATE OF WASHINGTON

State of the Salmon
is a joint program of
Ecotrust and WSC



ecotrust





True North

The Proposed Pebble Mine

Relationship to Observed Salmon Populations

Legend



Salmon Observations, 2004-2006

- Chinook
- Chum
- Coho
- Sockeye

This map portrays the relationship between the proposed Pebble Mine and local salmon populations. Fish data depicts the distribution, abundance, and variety of species, and was supplied by the Alaska Department of Fish and Game.

Data Source

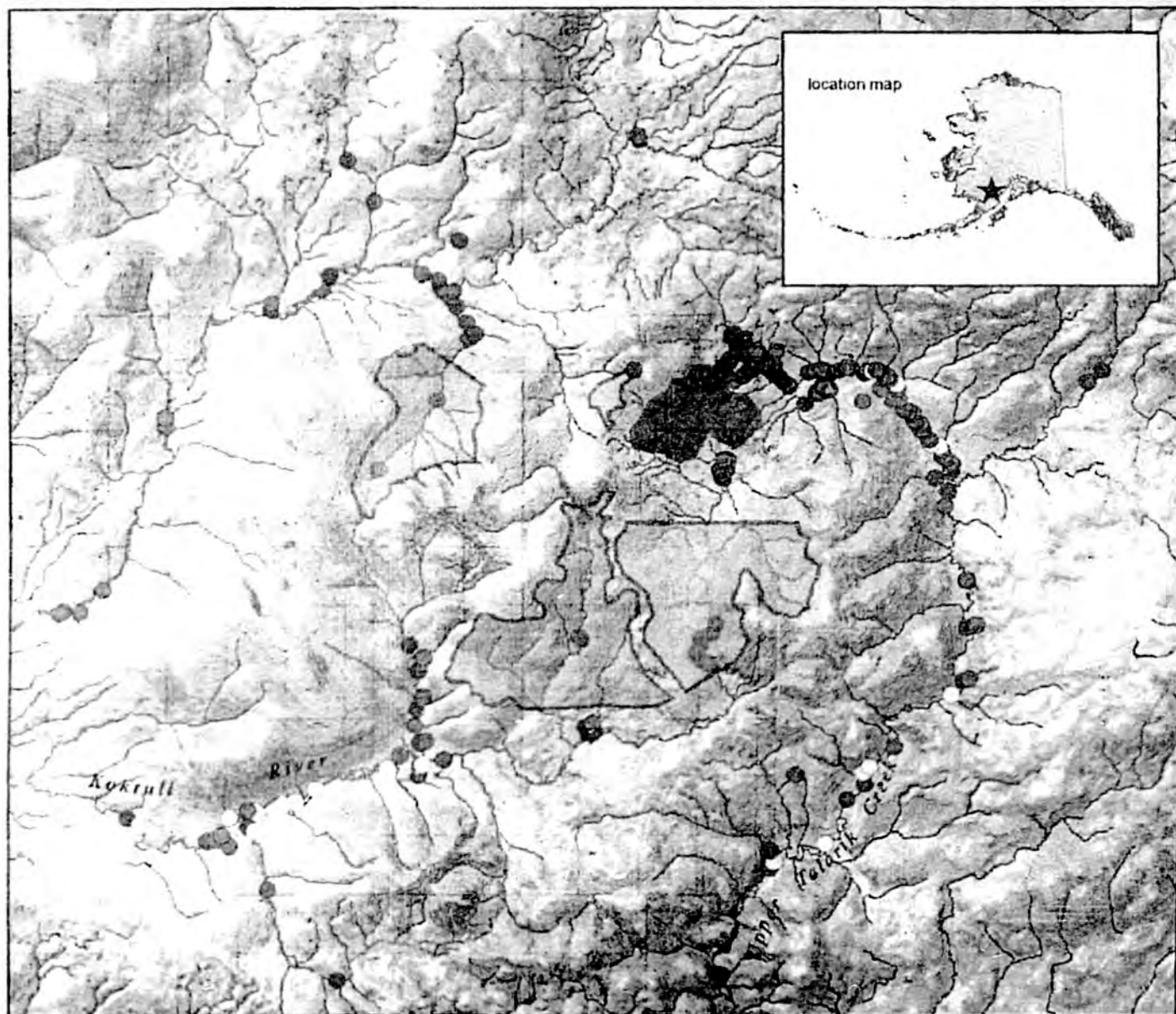
Fish Fisheries report in reference to Permit No. SF-2004-114 and Amendment No. SF-2004-114-A-1, from HDR Alaska, Inc. to Alaska Department of Fish and Game, Division of Sport Fish, dated November 23, 2004.

Report of collecting activities for the Pebble Project in reference to Permit No. SF-2005-049, from HDR Alaska, Inc. to Alaska Department of Fish and Game, Division of Sport Fish, dated October 25, 2005.

Report of collecting activities for the Pebble Project in reference to Permit No. SF-2006-057, from HDR Alaska, Inc. to Alaska Department of Fish and Game, Division of Sport Fish, dated February 2, 2007.

Pebble Mine Project. The following files were downloaded from <http://www.dnr.state.ak.us/mining/large/pebble/> as of February 5, 2007.

Pebble Project Initial Application for Certificate of Approval to Construct a Dam
Tailings Impoundment A - Figures
Tailings Impoundment G - Figures



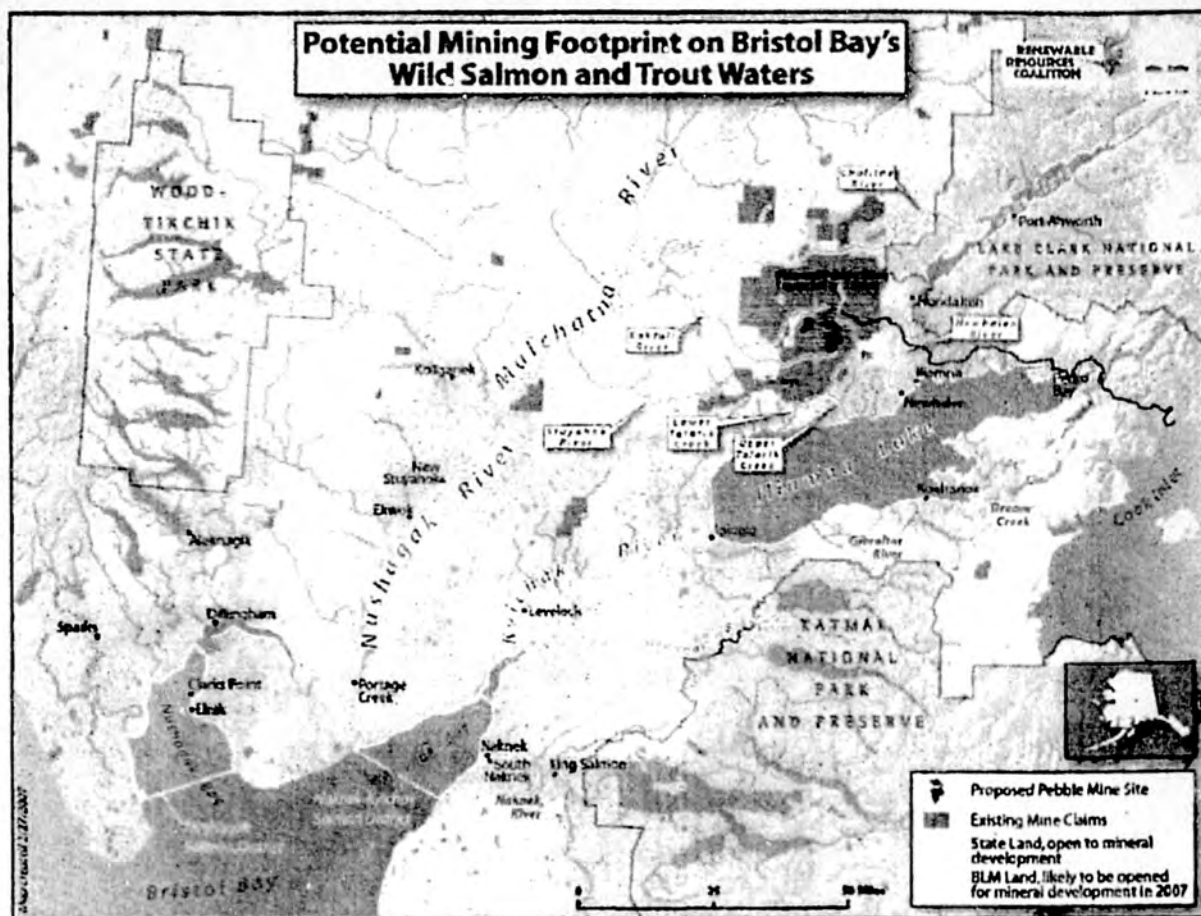
0 0.5 1 2 3 4 5 Miles

February 23, 2007
fish_distribution_salmon.mxd
Coordinate System: UTM, Zone 5, NAD27, CM -165.5

The Proposed Pebble Mine and Bristol Bay Mining District: Cause for Concern

Introduction

According to recent public statements¹ and permit applications² by Northern Dynasty Mines, a subsidiary of the Canadian company Northern Dynasty Minerals, the proposed Pebble Mine could become one of the largest metallic sulfide, copper-gold mines in the world, using both open pit and large-scale underground "block-caving" mining.



¹ Kosich, Dorothy. "As Pebble's copper and gold resources expand, so does the war against the U.S. mega-project." *MineWeb*. February 27, 2007. Accessed on March 2, 2007 via http://www.mineweb.net/american_notes/639207.htm

² Northern Dynasty Mines, Inc. "PEBBLE PROJECT, Application for Water Right, Upper Talarik Creek." July 7, 2006

Due to more than 1,000 square miles of additional mining claims staked on state lands near Pebble and the Bureau of Land Management's stated intentions to open well over 1 million acres of currently closed lands in Bristol Bay to mineral development,³ the proposed Pebble Mine could become a relatively small part of an enormous mining district in Southwest Alaska's Bristol Bay Watershed. The proposed Pebble Mine and Bristol Bay Mining District have met with strong, diverse opposition in recent months.⁴ This document highlights some of the scientifically sound reasons for this opposition.

Bristol Bay: A Powerful Economic Engine

Bristol Bay is home to the world's largest commercial sockeye salmon fishery.⁵ The 2005 ex-vessel value of all salmon species in Bristol Bay was \$93,121,351.⁶ Sportfishing also plays a major role in the Bristol Bay economy and in 2005, an estimated \$61 million was spent in Alaska on Bristol Bay fishing trips.⁷ The Bristol Bay Wild Salmon Ecosystems provided 5,540 Full Time Equivalent jobs in 2005.⁸

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

Source: Duffield, John, D. Patterson and C. Neher. "Revised Final Report, Economics of Wild Salmon Watersheds: Bristol Bay, Alaska." Department of Mathematical Sciences, The University of Montana, Missoula, MT 59812. February 2007.

The Mining Industry's Failure to Pay Its Fair Share

In 2005 state revenue from the mining industry in Alaska was approximately 0.7% of the value of the mined resource and an additional 1% was paid to municipalities. The oil and gas industry provides revenue equivalent to 20% of total production value to the state and an additional 2% is paid by the industry to municipalities.⁹

³ U.S. Bureau of Land Management. "Draft Bay Resource Management Plan/Environmental Impact Statement." September 2006. Accessed March 2, 2007 via <http://www.blm.gov/ak/ado/BayRMP01.html>

⁴ Kozick, Dorothy. "As Pebble's copper and gold resources expand, so does the war against the U.S. mega-project." *MineWeb*. February 27, 2007. Accessed on March 2, 2007 via http://www.mineweb.net/american_notes/639207.htm

⁵ Alaska Department of Fish and Game, Division of Sportfish, Research and Technical Services. "Fishery Management Report No. 06-37. Annual Management Report 2005 Bristol Bay Area." June 2006. Accessed March 2, 2007 via <http://www.afadfg.state.ak.us/FedAidPDFs/Fmr06-37.pdf>

⁶ Alaska Department of Fish and Game, Division of Commercial Fisheries. "2005 Bristol Bay Salmon Fishery Season Summary" Accessed March 2, 2007 via <http://www.afadfg.state.ak.us/rv/rion2/finfish/salmon/bbay/vrbpos05.php>

⁷ Duffield, John, D. Patterson and C. Neher. "Revised Final Report, Economics of Wild Salmon Watersheds: Bristol Bay, Alaska." Department of Mathematical Sciences, The University of Montana, Missoula, MT 59812. February 2007.

⁸ Duffield, John, D. Patterson and C. Neher. "Revised Final Report, Economics of Wild Salmon Watersheds: Bristol Bay, Alaska." Department of Mathematical Sciences, The University of Montana, Missoula, MT 59812. February 2007.

⁹ Seaton, Paul. "Mining Production Tax and License Taxes - Royalties Sponsor Statement for House Bill 418." February 17, 2006 accessed on March 2, 2007 via http://www.akrepublicans.org/seaton24/spst/seat_hb418.php

The mining industry's failure to pay its constitutionally required share for Alaska's resources has been criticized by Governor Wally Hickel and late Governor Jay Hammond. Consider the following statement by the late Governor Hammond regarding the mining industry's failure to pay its fair share for Alaska's resources.

Today Alaska is faced with three mega projects that should be required to conform to all four criteria cited above: a gas pipeline; drilling in ANWR; and what could be the world's largest open pit gold mine north of Lake Iliamna, Alaska's largest body of pristine fresh water and spawning grounds for the world's largest run of wild red salmon... Cost of providing and maintaining required infrastructure, state services, environmental studies and mitigation, plus monitoring and enforcement of protective regulations, will no doubt be astronomical. Not only should these costs be absorbed by developers, some profits should go into the state's Permanent Fund to provide every Alaskan with a discernible benefit, just as does part of the state's oil wealth. Will it? Not as of now. Our severance tax on gold is zero!

-Governor Jay Hammond in the Anchorage Daily News¹⁰

Pebble Mine Permit Applications Already Submitted

In September 2006, Northern Dynasty Mines submitted more than 1,900 pages of permit applications and mine plans to the Alaska Department of Natural Resources.¹¹ These plans show, among other things, a proposal by Northern Dynasty Mines...

- To develop an open pit mine nearly 2 miles in diameter and approximately 1,500 feet deep;¹²
- To build some of the largest earthen dams in the world in a seismically active area at the headwaters of the Koktuli River;¹³
- To withdraw more than 70 million gallons of water per day, nearly three times the amount of water used in Anchorage, from the Koktuli and Upper Talarik watersheds.¹⁴

The largest of these dams would be more than 700 feet tall and 4.3 miles long; both higher and wider than the Three Gorges Dam in China.¹⁵ Tailings storage described in these permit applications would destroy more than 10 square miles of habitat in the Koktuli and Upper Talarik Creek watersheds and would directly destroying salmon and trout habitat.

Threats to Habitat and the Alaska Wild Salmon Brand

The proposed Pebble Mine threatens the well-being and economic value of the Bristol Bay fishery due to the strong likelihood that the proposed mine and related infrastructure will directly

¹⁰ Hammond, Jay. "Resource use must benefit everyone" Anchorage Daily News. December 19, 2004.

¹¹ Alaska Department of Natural Resources, Division of Mining Land and Water. "Pebble Project." Accessed on March 2, 2007 via <http://www.dnr.state.ak.us/mlw/mining/largemine/pebble/index.htm>

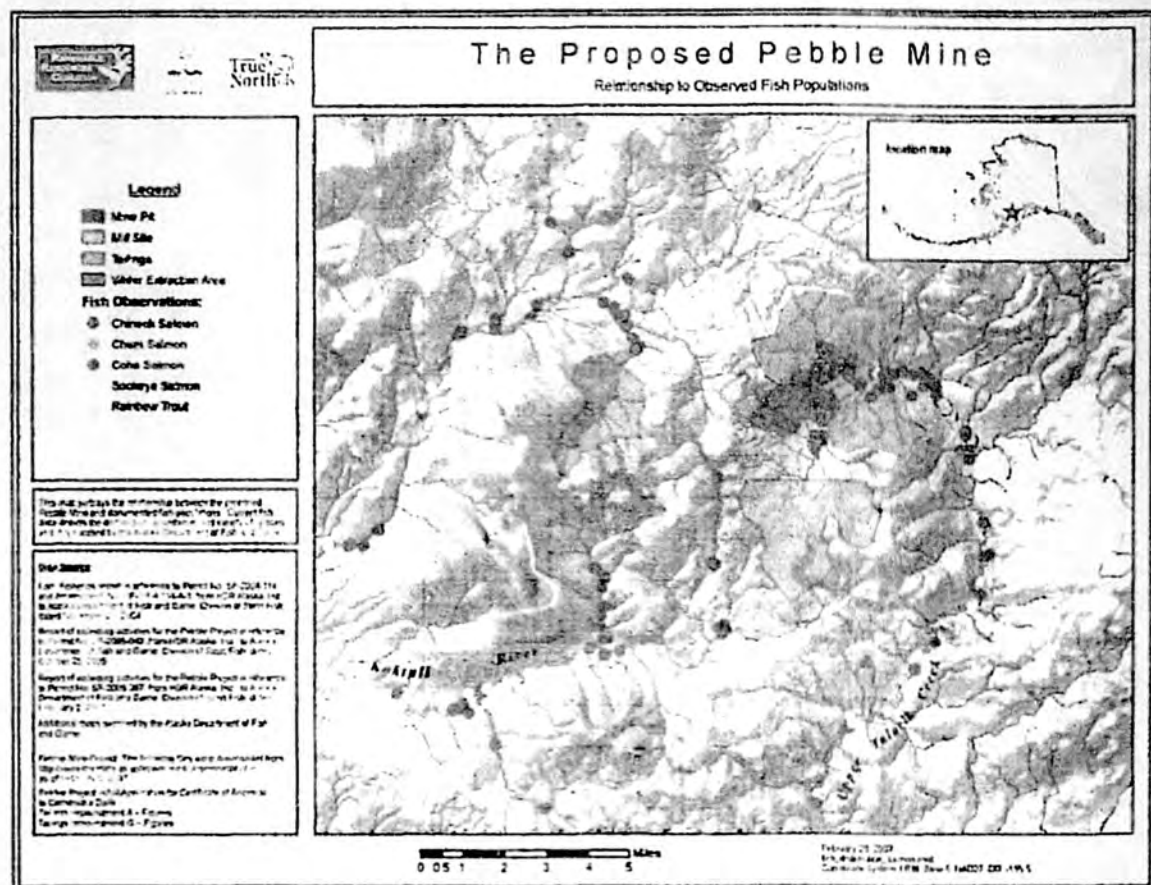
¹² Alaska Department of Natural Resources, Division of Mining Land and Water. "Pebble Project." Accessed on March 2, 2007 via <http://www.dnr.state.ak.us/mlw/mining/largemine/pebble/index.htm>

¹³ Alaska Department of Natural Resources, Division of Mining Land and Water. "Pebble Project." Accessed on March 2, 2007 via <http://www.dnr.state.ak.us/mlw/mining/largemine/pebble/index.htm>

¹⁴ Alaska Department of Natural Resources, Division of Mining Land and Water. "Pebble Project." Accessed on March 2, 2007 via <http://www.dnr.state.ak.us/mlw/mining/largemine/pebble/index.htm>

¹⁵ Alaska Department of Natural Resources, Division of Mining Land and Water. "Pebble Project." Accessed on March 2, 2007 via <http://www.dnr.state.ak.us/mlw/mining/largemine/pebble/index.htm>

destroy, dewater and pollute salmon habitat at and near the proposed mine site. The figure below combines ADF&G salmon and trout data with Pebble Mine plans submitted by Northern Dynasty in September 2006 to show the potential for direct habitat destruction and dewatering related to the proposed Pebble Mine. A larger version of this image is appended to this document.



Pebble proponent Northern Dynasty has acknowledged some of the risks associated with its proposal. The following statement comes from a recent annual report the company provided to shareholders.

*Unexpected environmental damage from spills, accidents and severe acts of nature such as earthquakes are risks which may not be fully insurable and if catastrophic could mean the total loss of shareholders' equity.*¹⁶

These risks are compounded by the following statement, also made by Northern Dynasty in the same annual report.

¹⁶ Northern Dynasty Minerals. "2004 Annual Report." U.S. SEC. Washington, DC. 20549 Form 20-F. June 30, 2004
<http://www.sedar.com/DisplayCompanyDocuments.do?lang=EN&issuerNo=00003151>

*Northern Dynasty's Management May Not Be Subject to U.S. Legal Process. As Canadian citizens and residents certain of Northern Dynasty's directors and officers may not subject themselves to U.S. legal proceedings, so that recovery on judgments issued by U.S. courts may be difficult or impossible.*¹⁷

While some people argue that the existing permitting process will guarantee protection of water quality and fish habitat in Bristol Bay, this is false. In a first-of-its-kind scientific study of large mine permitting in the U.S. published in December 2006, Jim Kuipers and Ann Maest, Ph.D. reached the following conclusions.

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.*
- *Mitigation measures predicted to prevent water quality exceedances failed at 64 percent of the mines studied in detail.*¹⁸

A summary of this report is appended to this document as is recent testimony on the inadequacies of the existing permitting process by Lance Trasky former ADF&G Habitat Division Supervisor for Bristol Bay.

In addition to the direct threat to habitat, the proposed Pebble Mine threatens the Alaska Wild Salmon brand, according to commercial fishing industry leaders. Consider the following statement from David Harsila, President of the Alaska Independent Fisherman's Marketing Association, the largest group of commercial fishermen in Bristol Bay.

*The proposed Pebble Mine and other potential mining activity on state and federal lands in Bristol Bay poses a grave threat to pure water, Wild Alaska Salmon and the tens of thousands of jobs they sustain. As you know, tens of thousands of existing Alaskan jobs depend upon the purity of our renewable and sustainable salmon fishery and the integrity of its spawning habitat. These jobs also depend upon a continued strong, positive public perception of our Wild Alaska Salmon brand. The proposed open-pit Pebble Mine, and the more than 1,000 square miles of additional mining claims staked throughout Bristol Bay's headwaters, pose an enormous threat to salmon habitat, fish populations and the Wild Alaska Salmon brand.*¹⁹

This Fact Sheet Updated March 2, 2007

¹⁷ Northern Dynasty Minerals. "2004 Annual Report." U.S. SEC. Washington, DC. 20549 Form 20-F. June 30, 2004
<http://www.sedag.com/DisplayCompanyDocuments.do?lang=EN&issuerNo=00007151>

¹⁸ Septoff, Alan. "Predicting Water Quality Problems at Hardrock Mines: A Failure of Good Science, Oversight and Good Practice." Earthworks. December 2006.

¹⁹ Harsila, David. Letter to Alaska Governor Frank Murkowski. December 12, 2005

Summary of: Copper: Effects on Freshwater Food Chains and Salmon A literature review

Highlights of a published scientific literature review of potential effects of increasing copper to salmon and their freshwater food chains.

Dr. Carol Ann Woody
Fisheries Research and Consulting

Sources of Copper

Copper occurs naturally in the environment at low levels. High levels are recorded for regions where hard rock and coal mining, smelting and refining occur and in areas near industrial and municipal waste sites.

The proposed Pebble mine would be a large-scale copper-gold-molybdenum mine with characteristics similar to other mines that increased copper and other pollutants harmful to fish in the surrounding environment and waters. The proposed Pebble site has sulfide rock that when exposed to air and water creates acid that can increase copper and other harmful pollutant concentrations downstream. Rain, which is acidic, can also mobilize and wash copper and other metals into salmon habitat from mining regions.

Copper and Salmon

While copper is a necessary trace element for all living organisms, hundreds of studies show that copper in small amounts can be lethal and have many sub-lethal effects that increase mortality rates and decrease fish survival and production. Salmon and their food sources can have a very low tolerance for this pollutant. The harmful effects of long-term, low-level exposure to copper may be difficult to detect compared to mass fish kills caused by a single toxic spill.

Copper can:

1. Impair a salmon's sense of smell.
Salmon use their keen sense of smell to identify predators, prey, kin, and mates. Mixing up any of these relationships could be detrimental or fatal to salmon.
2. Interfere with normal salmon migration.
If salmon cannot smell, or if the chemical signature changes in streams where salmon hatch, then fish will likely stray to and spawn in non-natal habitats to which they are not adapted. This could cause lower salmon survival and reduce the biodiversity that supports Bristol Bay fisheries.
3. Impair a salmon's ability to fight disease.
 - a. Copper is a biological stress agent which depresses immune system function. Fish, like humans, tend to get sick when stressed.
 - b. Copper can impair salmon's breathing and brain function.
 - c. Copper also disrupts osmoregulation in salmon, the process by which cells maintain fluid and electrolyte balance with their surroundings. This can stress salmon and make them more susceptible to disease.
4. Impair salmon's ability to sense vibrations in the water which helps them avoid predators.

5. Change salmon's enzyme activity, blood chemistry and metabolism, which can cause death and impair reproduction.
6. Delay or accelerate natural hatch rates, which can reduce salmon survival rates.
7. Kill or harm salmon food sources, including algae, zooplankton, aquatic insects and fish.

Copper and Other Toxins

Numerous elements, in addition to copper, such as zinc, cadmium, mercury, iron, lead, aluminum, and selenium are released at hard rock mining sites in a unique cocktail. The combined effect of exposure to copper and other metals, such as zinc, can be more deadly than exposure to copper alone.

1. Studies of the effects of these chemical cocktails show depressed immune systems in rainbow trout and other fish.
2. Federal and State water quality limits for metals do not take these effects into account.

Alaska's Water Quality Regulations, Copper and Salmon

The State of Alaska's water quality standard for protection of freshwater species, including salmon, is 9 micrograms of copper per liter or parts per billion (ppb). This is roughly equal to ¼ teaspoon in a 40,000 gallon swimming pool. The human drinking water standard for copper is 144 times higher than the level allowed for salmon, at 1,300 ppb. [Alaska Department of Environmental Conservation 18 AAC 2006.]

Harmful and even deadly effects of dissolved copper are documented throughout the food chain, from salmon to algae, at lower copper concentrations than the State of Alaska allows in waterways. For example:

1. Some algae, at the base of the salmon food chain, are harmed at 1/9th the level of copper allowed by the State of Alaska. Declines in algae translate to less food for sockeye.
2. Zooplankton, aquatic insects and other salmon prey are harmed within 48 hours at copper concentrations 1/3rd the allowed level.
3. Many species of freshwater plants and animals die within 96 hours at waterborne copper concentrations starting at just over ½ the allowed level. Studies have found that sensitive species of mollusks, crustaceans and fish can die at 1/26th the allowed level.
4. An increase of copper less than 1/3rd the allowed levels interferes with a juvenile coho's ability to smell. King salmon avoided waters with copper levels 1/12th the allowed level.

The State of Alaska uses a formula to calculate acceptable copper pollution levels that doesn't take into account many factors that affect toxicity to salmon, including age, size, and reproductive condition of fish, and water quality measures like temperature, pH, salinity, and dissolved particle concentrations.

This summary fact sheet is based on a paper prepared by Dr. Carol Ann Woody, founder of Fisheries Research and Consulting. Dr. Woody has a PhD in Fisheries Science from the University of Washington and over 20 years of Alaskan experience including 14 years researching salmon in both the Kvichak and Kasilof River watersheds of Alaska. She served as a technical expert for the US Geological Survey to other federal agencies for both the Galore Creek and Pebble mines and their implications to aquatic resources. She has published more than 25 scientific papers on salmon and a recent book on advances in sockeye salmon research. Dr. Woody is a past-President of the Alaska Chapter of the American Fisheries Society and currently serves on the Environmental Concerns Committee. She is adjunct faculty at the University of Alaska, Fairbanks, and the University of Idaho, Moscow.

**Sustainability of Bristol Bay Salmon Fisheries
&
Important Questions to Consider While on the ground in Bristol Bay**

Provided to House Fisheries & House Resources Committee members for the purpose of providing background information on Bristol Bay fisheries by Nunamta Aulukestai¹
Sept.24, 2007

- Commercial fisheries have harvested wild salmon from Bristol Bay for over a century and current catches are as high as during any time period in the past.
- Bristol Bay salmon catches have been sustainable for over a century despite substantial shifts in climate in western Alaska during this time period.
- The relative contributions of salmon from each of the major rivers in the Bristol Bay region have waxed and waned in response to the changing environment. The contributions of fish from rivers that were especially productive during certain decades were replaced by other rivers when their populations became less productive.
- Thus, the long-term sustainability of Bristol Bay fisheries derives from the diversity of habitats and associated salmon populations in this region.
- This effect of salmon biodiversity on fishery sustainability is analogous to a 'portfolio effect' in the stock market: while single 'hot' stocks may be very productive during short time periods, diverse stock portfolios nearly always outperform simple ones over the long term. Bristol Bay is one of the few places on Earth where its salmon habitat portfolio remains intact.
- Industrial development of the pristine watersheds of Bristol Bay represents a potentially serious risk to salmon in this region because it threatens to erode the diversity of habitats and salmon populations that have been critical for fishery sustainability.
- Although Bristol Bay is mostly known for the fact that it is the world's largest sockeye fishery, it also supports one of the largest Chinook (king salmon) fisheries in the world, and it is also home to many important species that rely on the seasonal pulse of salmon resources for their own sustenance (e.g., brown bears, rainbow trout; both of which support an enormous tourism industry)

¹ This document was compiled with technical support from Dr. Daniel Schindler at the University of Washington Fisheries Research Institute.

Key questions to ask about salmon habitat:

- 1) Where will the water come from that is needed to operate the mine? Will water need to be pirated from other watersheds beyond the proposed Pebble Mine footprint?

(it remains unclear where the water that is needed to operate the mine and treat the tailings will come from. It is also unclear whether the watershed that the Pebble Mine would be situated within has enough water to support the mine. It is actually unlikely)

- 2) What are the spin-off environmental effects of the supporting infrastructure for the mine? Roads and their associated dust, increased access, effects on hydrology are likely to all have important effects on natural ecosystems of this region.
- 3) What exactly is meant by 'no net loss' of salmon habitat? The current landscape of salmon habitat was generated by thousands of years of natural erosion processes that followed after the last glaciation. It is unclear that engineers will be able to create similarly productive habitats.
- 4) Where will the water come from to support such newly created habitats?
- 5) Heavy metal mining has a horrible environmental history – especially with respect to proper treatment and storage of wastes and tailings. Why will the Pebble Mine be any different?
- 6) How long will it take for environmental effects of the mine to be expressed?

(environmental effects of hard rock mining are often expressed decades after a mine has begun operation. By this time, the mining company has often finished their exploitation and moved on.

Thus, how will Pebble guarantee the environmental precautions it claims it will be taking?

BIOLOGICAL, TECHNICAL AND LEGAL QUESTIONS AND ANSWERS ABOUT PEBBLE MINE

Compiled for the House Fisheries and Resources Committees
by Nunamta Aulukestai - Caretakers of Our Lands¹
September 2007

BIOLOGICAL QUESTIONS AND ANSWERS

1. Is sulfuric acid, copper and fish a recipe for disaster?

Yes. The chemical nature and location of the rock at the proposed Pebble Mine site makes the release of sulfuric acid and toxic copper into waters a virtual certainty. That is why the project is so controversial.

Pebble is a low grade metallic sulfide deposit containing copper, gold and molybdenum. The deposit is located at groundwater, in a wet climate, where the groundwater flows through permeable soils to feed surface waters in the Bristol Bay drainages, the most productive salmon habitat and fisheries in the world.

Sulfides are chemically reactive. Exposing the sulfides to air and water creates sulfuric acid, which dissolves copper (and other heavy metals) into solution where it is highly toxic to fish, particularly salmon. Mining, milling and processing the ore exponentially increases the rate of exposure of sulfur to air and water, and exponentially increases the amount of sulfuric acid generated. The mine walls,² the wastes, and the dust will generate sulfuric acid. A recent study of metallic sulfide mines permitted in recent years in the U.S. found that a whopping 85% of these mines polluted surface water and an astronomical 93% polluted ground water, despite that fact that at the time of permitting, fully 89% of the environmental documents predicted that the mines would not do so.³ The Pebble Mine is virtually certain to create acid mine drainage that puts metals toxic to fish into water.

¹ Nunamta acknowledges the assistance of Dr. Daniel Schindler, fisheries professor, University of Washington; Dr. Carol Ann Woody, Fisheries Research Consultant, formerly USGS Pebble Team; Lance Trasky, ADF&G retired, Supervisor, ADF&G Habitat Division, Habitat Biologist; Geoffrey Y. Parker, Attorney for Trout Unlimited and Nondalton Tribe; Victoria Clark, Trustees for Alaska.

² The mine itself, whether by open pit or underground block caving, is likely to fill with water, be acidic, and require permanent care and treatment.

³ Kuipers, J.R., Maest, A.S., MacHardy, K.A., and Lawson, G., *Comparison of Predicted and Actual Water Quality at Hard Rock Mines: The reliability of predictions in Environmental Impact Statements* (2006). Although 100 percent of the environmental impact statements examined by the report predicted that the mines would be able to comply with water quality standards, in actuality:

- 76% of the mines polluted ground or surface water in excess of water quality standards;
- 60% of mines polluted surface water severely enough to exceed water quality standards;