SB 152

<TARGET><BILL>SB 152</BILL><SUBJECT>SB 152</SUBJECT><COMM>SCRA27</COMM></TARGET>

Alaska State Legislature

Senator Hollis French

SPONSOR STATEMENT

SB 152 – LEGISLATIVE APPROVAL OF BRISTOL BAY SULFIDE MINE

Senate Bill 152 is designed to engage the legislature in development issues in the Bristol Bay Fisheries Reserve. The bill would require the legislature to enact a law that includes a finding that any proposed large-scale metallic sulfide mining operation constitutes no danger to the fishery within the reserve. This would have to be completed before the issuance of an authorization, license, permit, or approval of a plan of operation that could affect water in or flowing into or over the reserve.

The Bristol Bay Fisheries Reserve was created in 1972. At the same time, a provision was put in place to protect the reserve from oil or gas exploration or development. AS 38.05.140(f) provides that within the Bristol Bay Fisheries Reserve, a surface entry permit to develop an oil or gas lease or an exploration license may not be issued on state owned or controlled land until the legislature by appropriate resolution specifically finds that the entry will not constitute danger to the fishery. SB 152 would treat large-scale metallic sulfide mining in the same way.

The fishery in Bristol Bay is a renewable resource with huge economic benefits to Alaskans. In Bristol Bay alone, the 2008 harvest of all salmon species was approximately 29 million fish, and the value of the 2008 commercial catch topped $113 million.

Due to the geochemistry and location, sulfide deposits in the headwaters of some of the major rivers that feed Bristol Bay run a high risk of polluting it if mined. SB 152 does not prohibit mining in the Bristol Bay Fisheries Reserve, but would ensure that any large-scale metallic sulfide mining operation in the region is found to pose no danger to the existing renewable resource by the legislature.

With competing economic interests of such magnitude, it is in the best interest of the legislature to again provide heightened protection for the valuable resources in Bristol Bay.

FISCAL NOTE

STATE OF ALASKA
2012 LEGISLATIVE SESSION

Bill Version: **SB 152**
Fiscal Note Number:
() Publish Date:

Identifier (file name): SB152-DNR-MLW-02-26-12
Title: LEG. APPROVAL OF BRISTOL BAY SULFIDE MINE
Sponsor: SEN. FRENCH
Requester: (S) CRA

Dept. Affected: Department of Natural Resources
Appropriation: Land & Water Resources
Allocation: Mining Land & Water
OMB Component Number: 3002

Expenditures/Revenues (Thousands of Dollars)

Note: Amounts do not include inflation unless otherwise noted below.

	FY13 Appropriation Requested	Included in Governor's FY13 Request	Out-Year Cost Estimates				
OPERATING EXPENDITURES	**FY13**	**FY13**	**FY14**	**FY15**	**FY16**	**FY17**	**FY18**
Personal Services							
Travel							
Services							
Commodities							
Capital Outlay							
Grants, Benefits							
Miscellaneous							
TOTAL OPERATING	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**
FUND SOURCE			(Thousands of Dollars)				
1002 Federal Receipts							
1003 GF Match							
1004 GF							
1005 GF/Prgm (DGF)							
[illegible]37 GF/MH (UGF)							
[illegible]8 temp code (UGF)							
TOTAL	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**
POSITIONS							
Full-time	0	0	0	0	0	0	0
Part-time	0	0	0	0	0	0	0
Temporary	0	0	0	0	0	0	0
CHANGE IN REVENUES	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	***

Estimated SUPPLEMENTAL (FY12) operating costs 0.0 *(separate supplemental appropriation required)*
(discuss reasons and fund source(s) in analysis section)

Estimated CAPITAL (FY13) costs 0.0 *(separate capital appropriation required)*
(discuss reasons and fund source(s) in analysis section)

Why this fiscal note differs from previous version (if initial version, please note as such)

Initial Version, not applicable

Prepared by: Brent Goodrum, Director — Phone: 269-8600
Division: Mining, Land & Water — Date/Time: 2/26/12 9:00 AM
Approved by: Daniel S. Sullivan, Commissioner — Date: 2/27/2012
Department of Natural Resources

(Revised 1/17/2012 OMB)

FISCAL NOTE

STATE OF ALASKA **BILL NO.** SB 152
12 LEGISLATIVE SESSION

Analysis

SB 152 provides that an authorization, license, permit, or approval of a plan of operation for a large-scale metallic sulfide mining operation, that may adversely affect the water in or flowing into or over the Bristol Bay Fisheries Reserve designated in AS 38.05.140(f), may not be issued before the legislature enacts a law that includes a finding that the proposed large-scale metallic sulfide mining operation constitutes no danger to the fishery within the Bristol Bay Fisheries Reserve.

MLW assumes that the bill, as written, applies only to large-scale metallic sulfide mining operations and only to authorizations, licenses, permits, or approval of a plan of operations issued by the department for those types of mining operations, **and not** to authorizations, licenses, permits, or approval of a plan of operations for exploration, and base-line data gathering by holders of mining claims not under an application for a large-scale metallic sulfide mining operation. Alaska has robust permitting laws, processes, and standards in place that permit applicants are required to fulfill prior to being issued a permit.

As:
1) the bill requires that the Alaska Legislature must enact a law that includes a finding that the proposed large-scale metallic sulfide mining operation constitutes no danger to the fishery within the Bristol Bay Fisheries Reserve before DNR can issue such an authorization, license, permit, or approval of a plan of operation for a large-scale metallic sulfide mining operation,

2) the bill does not require additional finding standards or requirements in excess of those already in place under AS 38.05, and

3) the only possible candidate for a large-scale metallic sulfide mining operations in the affected area is eight to ten years away from any such authorizations,

If a project of the size and scope described in the bill were developed, the state stands to gain significant revenue. Currently, the state would collect 3% royalty, 7% mining license tax, and 9% corporate income tax on profits, and there may be an estimated hundreds of billions of dollars worth of copper, gold, and molybdenum in the deposit. However, there have not yet been any attempts to quantify the potential revenue to the state from a project as described in the bill.

Uncertainty in the legislative approval of a project and taking the decision-making out of agencies' hands may chill project proponents and potential investors from investing in resource development in Alaska. Furthermore, there could be a case for a takings lawsuit against the state if the legislature does not approve the project.

Because the fiscal note form only goes to FY18, we have indicated indeterminate in FY18 although we do not expect a financial impact until later.

LEGAL SERVICES

DIVISION OF LEGAL AND RESEARCH SERVICES
LEGISLATIVE AFFAIRS AGENCY
STATE OF ALASKA

(907) 465-3867 or 465-2450
FAX (907) 465-2029
Mail Stop 3101

State Capitol
Juneau, Alaska 99801-1182
Deliveries to: 129 6th St., Rm. 329

MEMORANDUM February 20, 2012

SUBJECT: SB 152 and the Alaska Constitution
(Work Order No. 27-LS1133\A)

TO: Senator Donald Olson
Attn: David Scott

FROM: Donald M. Bullock Jr.
Legislative Counsel

You asked whether SB 152 was in conflict with either art. I, sec. 15[1] or art. II, sec. 19[2] of the Alaska Constitution.

SB 152 would require legislative approval before an "authorization, license, permit, or approval of a plan of operation" for a mine connected by a water course to Bristol Bay could be issued.[3] The bill is specific to a mine affecting more than 640 acres near Bristol Bay that "may adversely affect the water flowing into or over the Bristol Bay Fisheries Reserve."

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[1] Article I, sec. 15, Constitution of the State of Alaska:

> **Prohibited State Action.** No bill of attainder or ex post facto law shall be passed. No law impairing the obligation of contracts, and no law making any irrevocable grant of special privileges or immunities shall be passed. No conviction shall work corruption of blood or forfeiture of estate.

[2] Article II, sec. 19, Constitution of the State of Alaska:

> **Local or Special Acts.** The legislature shall pass no local or special act if a general act can be made applicable. Whether a general act can be made applicable shall be subject to judicial determination. Local acts necessitating appropriations by a political subdivision may not become effective unless approved by a majority of the qualified voters voting thereon in the subdivision affected.

[3] Requiring legislative approval for permitting and administration of regulatory programs by the executive could be challenged under the separation of powers doctrine. Article II, sec. 1 and art. III, sec. 1 describe the powers of the legislature and the governor, respectively.

A conflict between art. I, sec. 15 and SB 152 is not readily apparent on the face of the bill. It may be that there are contracts that a mine, such as the Pebble mine, have entered into that would be impaired if legislative approval of the mine was denied. To further evaluate this possibility, the legislature could gather information during the committee process about the existence of contracts that would be impaired by the legislature failing to approve a mine going forward.

Because SB 152 basically identifies a single drainage in the state and possibly a single mine, the bill could be challenged as violating the prohibition against local and special legislation in art. II, sec. 19. A general law may be made applicable if it was directed at all mines that may affect water quality, or may affect water quality and a fishery. The applicability provision in sec. 2 of the bill further acknowledges the narrow scope of the bill. Given the narrow scope of the bill and the regional limitation, it may be challenged as local or special legislation. I do not speculate on the result of such a challenge.

There is one more constitutional concern raised by the effect of failing to approve the development of vested mineral rights. Using the Pebble Gold Project as an example, the developers of the project have acquired mineral rights in an area identified by the commissioner of natural resources as open to mining. The rights were acquired by discovery of the minerals, location, and the filing of the claims in the recorder's office. This process creates a protected property right that is subject to the takings clauses in art. I, sec. 18, Constitution of the State of Alaska, and Amendment V of the U.S. Constitution. If the state now takes those rights or imposes such extensive requirements for necessary permits that the developer is denied all economically feasible use of those rights, the state may be required to pay "just compensation" to the owner of those rights. Alaska courts have recognized that fair market value at the time of the taking is a basis for determining the amount of just compensation.

If I may be of further assistance, please advise.

DMB:ljw
12-142.ljw

LAWS OF ALASKA

1972

Source

CSSB 2 am

Chapter No.

102

AN ACT

Relating to limitations upon oil and gas leases in certain areas.

BE IT ENACTED BY THE LEGISLATURE OF THE STATE OF ALASKA:

* Section 1. AS 38.05.140 is amended by adding a new subsection to read:

(f) The submerged and shorelands lying north of 57°, 30 minutes north latitude and east of 159°, 49 minutes west longitude within the Bristol Bay drainage are designated as the Bristol Bay Fisheries Reserve. Within the Bristol Bay Fisheries Reserve no surface entry permit to develop an oil or gas lease may be issued on state owned or controlled lands until the legislature by appropriate resolution shall specifically find that such entry shall not constitute danger to the fishery.

Permitted to become law without signature: June 3, 1972
Actual effective date: September 1, 1972

STATE OF ALASKA

SEAN PARNELL, GOVERNOR

DEPARTMENT OF FISH AND GAME
ALASKA BOARD OF FISHERIES

ADF&G
P.O. BOX 115526
JUNEAU, AK 99811-5526
PHONE: (907) 465-4110
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Representative Mike Chenault
Speaker of the House, Alaska State Legislature
State Capitol, Room 208
Juneau, Alaska 99801-1182

Senator Gary Stevens
Senate President, Alaska State Legislature
State Capitol, Room 111
Juneau, Alaska 99801-1182

January 30, 2010

Dear Representative Chenault and Senator Stevens,

The Alaska Board of Fisheries (BOF) was established by the Alaska Legislature, "For purposes of the conservation and development of the fishery resources of the state," (AS 16.05.221 (a)). The BOF is tasked by AS 16.05.251 (a) to "adopt regulations it considers advisable in accordance with AS 44.62 (Administrative Procedures Act) for (1) setting apart fish reserve areas, refuges, and sanctuaries in the waters of the state over which it has jurisdiction, subject to the approval of the legislature;" and "(7) watershed and habitat improvement, and management, conservation, protection, use, disposal, propagation, and stocking of fish".

With these directives in mind, the BOF held a meeting in Anchorage in December, 2009, for the purpose of considering regulatory proposals pertaining to Bristol Bay fisheries. Among them was a non-regulatory proposal asking the BOF to recommend that the Alaska Legislature create a fish refuge in the Kvichak and Nushagak River drainages. The authors of the proposal requested it because of concerns that creation and operation of the Pebble Mine would result in environmental damage to the fish and game habitat in the two drainages.

Before public testimony was heard, the state agencies charged with permitting large mine projects made presentations to the BOF for the purpose of showing how the permitting process worked and what safeguards are provided to protect against environmental damage that might be caused by large scale mine operations.

Many members of the public from a wide range of interests testified at the meeting. A large number of these were Bristol Bay watershed residents. The majority believed that a refuge should be established with many believing that the permitting process would be inadequate to protect the fisheries habitat within the drainages. A significant number of others, many also watershed residents, testified that a refuge was unnecessary and would prohibit legitimate economic development of the area and restrict traditional uses like subsistence hunting and fishing. Some also believed that the permitting process was sufficient to protect the area.

One thing that everyone, on all sides of the issue, had in common was concern for the protection of the Bristol Bay fisheries. They disagreed on what that protection should be.

While the BOF recognizes that no specific permitting plan has yet been proposed for the development and operation of the Pebble Mine, the board is still very concerned about the Pebble Mine development because of its potential magnitude. Both proponents and opponents of the Pebble Mine have publically stated that this development could be larger than any mining operation ever created in Alaska.

Because the habitat of the potentially affected drainages is so critical to the fish and game resources of Bristol Bay, the BOF respectfully requests that the Legislature conduct a comprehensive evaluation of the permitting protections and standards, including regulations and statutes, which provide safeguards against environmental damage. After such evaluation, we further request that the legislature enact any additional safeguards which are considered prudent to provide strict protections to the fish and game habitat of the drainages to prevent any chance of environmental damage.

The various state permitting agencies also need the financial ability to properly monitor and enforce their permit standards.

Whatever the legislature decides to do regarding the public concerns expressed about future development in this area, we would request that subsistence hunting, fishing, and gathering; commercial fishing; personal use; and sport hunting and fishing activities on state lands in this region continue to be protected for the local residents and all Alaskans.

To assist the Legislature in its evaluation, we are enclosing copies of the presentations by the state agencies and copies of the testimony by the public.

If the Alaska Board of Fisheries can be of any further assistance, please let me know what we can do to help.

Sincerely,

Vince Webster

Vince Webster
Chairman, Alaska Board of Fisheries

cc: Governor Sean Parnell
Denby Lloyd, Commissioner, Department of Fish and Game
Tom Irwin, Commissioner, Department of Natural Resources
Larry Hartig, Commissioner, Department of Environmental Conservation

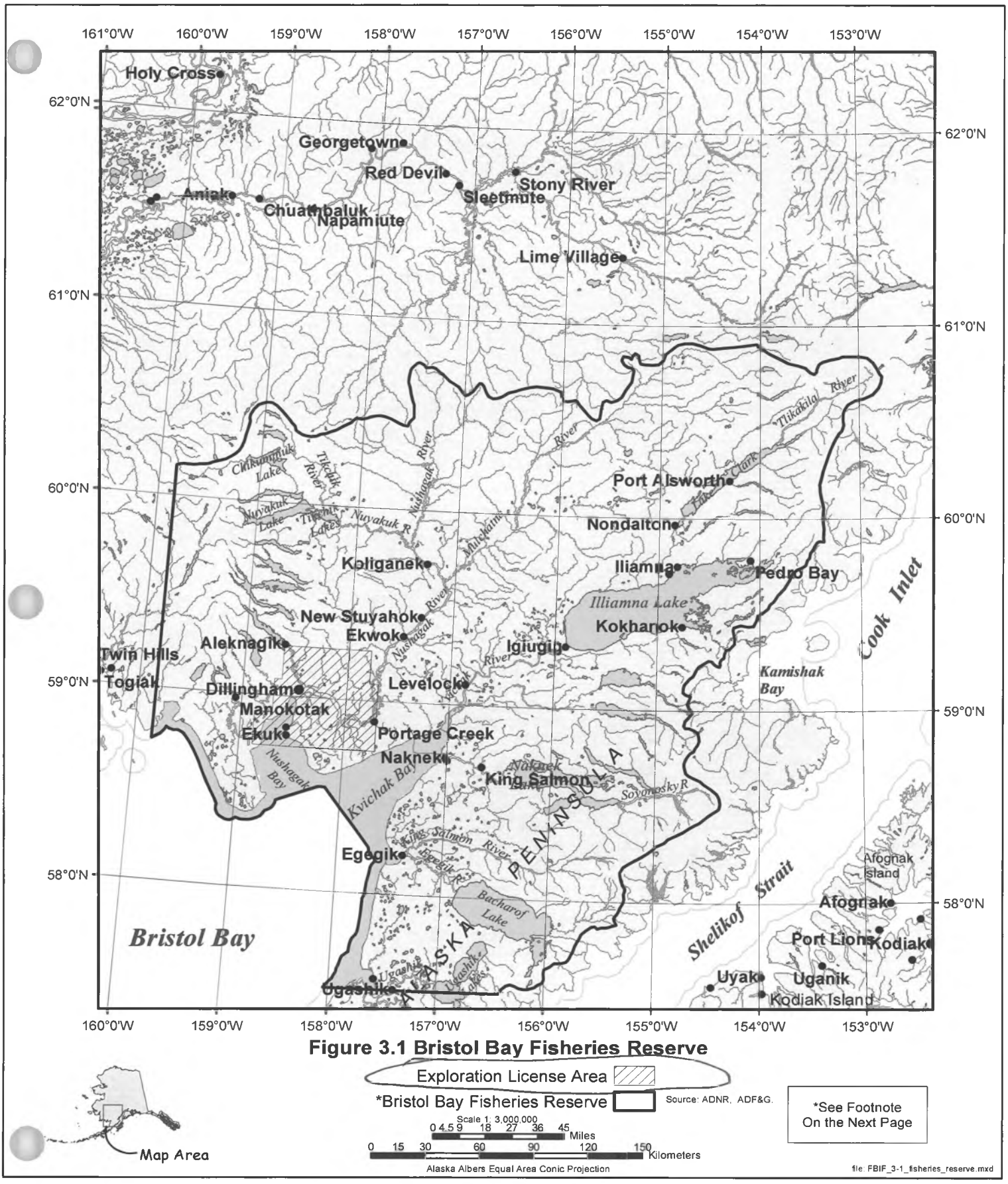

Figure 3.1 Bristol Bay Fisheries Reserve

Exploration License Area

*Bristol Bay Fisheries Reserve

Source: ADNR, ADF&G.

Scale 1: 3,000,000

0 4.5 9 18 27 36 45 Miles

0 15 30 60 90 120 150 Kilometers

Alaska Albers Equal Area Conic Projection

file: FBIF_3-1_fisheries_reserve.mxd

Map Area

*See Footnote On the Next Page

Bristol Bay
Native Corporation *Enriching Our Native Way of Life*
111 West 16th Avenue, Suite 400 / Anchorage, Alaska 99501-5109 / (907) 278-3602 / Fax (907) 276-3924

RESOLUTION 11 – 28

IN SUPPORT OF RESPONSIBLE RESOURCE DEVELOPMENT

WHEREAS, Bristol Bay Native Corporation's (BBNC) mission is "Enriching Our Native Way of Life" – and BBNC's land department policy "Responsible Resource Development" reflects that value; and

WHEREAS, as a result of the Alaska Native Claims Settlement Act (ANCSA) BBNC is the steward, owner and manager of over three million acres of land in the Bristol Bay Region – most of that being subsurface acreage; and

WHEREAS, BBNC's Directors and Shareholders have made it clear they will only support resource development on BBNC lands that is consistent with shareholder values - tasking the BBNC Land department to ensure that development projects meet high standards of fiscal, environmental and social sustainability and protect subsistence culture, practices, clean water and healthy fish;

WHEREAS, BBNC believes that Responsible Resource Development also means choosing strategic and profitable development projects that:

1) Provide economic benefit to our village communities and shareholders;
2) Invest in infrastructure that supports the health, safety, communication and transportation needs of the region such as airports, roads, harbors, gravel and rock quarries and local business opportunities;
3) Build quality of life for shareholders, descendants and residents;
4) Locate and develop sources of renewable and nonrenewable energy;
5) Pursue subsurface extraction of resources where environmentally feasible;
6) Meet BBNC's business investment standards; and
7) Plan for future generations.

WHEREAS, BBNC actively pursues in-region investments that include, but are not limited to, tourism, alternative energy, extraction of subsurface resources supported by local residents, on-shore oil production, and, that meet the above BBNC Responsible Development Policy criteria; and

WHEREAS, BBNC actively supports statewide projects such as tourism, geothermal, oil, gas and mineral exploration that strengthen our statewide economy and provide a better quality of life for our shareholders and neighbors; and

THEREFORE BE IT RESOLVED, that BBNC's Responsible Resource Development policy is sensitive to fiscal, environmental, and social sustainability concerns including the protection of subsistence culture, practices, clean water and healthy fish; and

THEREFORE BE IT FURTHER RESOLVED, that BBNC recognizes that exploration and development of natural resources on state, federal and Alaska Native corporation lands can be done responsibly and in a manner that meets the long term environmental, fiscal and social objectives of regional and statewide communities – BBNC supports Responsible Resource Development.

ADOPTED this 7th day of December 2011 at Anchorage, Alaska.

Joseph L. Chythlook, Chairman

April Ferguson, Corporate Secretary

Bristol Bay Native Corporation

Enriching Our Native Way of Life

111 West 16th Avenue, Suite 400 / Anchorage, Alaska 99501 / (907) 278-3602 / Fax (907) 276-3924

RESOLUTION 09 - 41

RESOURCE PROTECTION POLICY

WHEREAS, the Board of Bristol Bay Native Corporation (BBNC) is committed to the protection and responsible care for the resources of the Bristol Bay Region; and

WHEREAS, the Bristol Bay watershed produces the largest run of sockeye salmon in the world and is the last pristine environment for producing all species of Pacific wild salmon; and

WHEREAS, the people of Bristol Bay have cultural ties to the land and subsistence activities and access to those resources are deemed the highest priority use of resources in the Bristol Bay region; and

WHEREAS, commercial fishing has historically provided a sustainable economy in the Bristol Bay region and the State of Alaska for the last 126 years;

WHEREAS, the Board of BBNC is aware that the Pebble Mine Project represents potential catastrophic risks to our Native way of life including the cultural, ecological, subsistence and economic use of resources in Bristol Bay; and

WHEREAS, in order to protect the approximately three million acres of BBNC lands and the BBNC shareholder way of life for current and future generations, BBNC must do its part to protect sustainable resources of the region

THEREFORE BE IT RESOLVED that the Board of BBNC has determined that it is no longer in the corporation's best interest to continue its neutral stance on the Pebble Mine Project;

BE IT FURTHER RESOLVED that the Board of BBNC opposes the development of the Pebble Mine given the unquantifiable impacts the Mine could have on the resources of the Bristol Bay region and BBNC;

BE IT FURTHER RESOLVED, that BBNC management will continue to proactively monitor the Pebble Mine Project while working with appropriate organizations and agencies to further develop plans that protect the resources of the Bristol Bay region.

ADOPTED this 11th day of December 2009 at Anchorage, AK.

Joseph L. Chythlook, Chairman

April Ferguson, Secretary

adn.com
Anchorage Daily News

Print Page Close Window

Pebble opponents see mine study as slanted

Agencies express concerns over lack of data into mine development plans.

By BECKY BOHRER

(02/26/12 21:40:04)

The group behind a massive copper and gold prospect near a world premier salmon fishery has released what it bills as "one of the most exhaustive environmental study programs in the history of U.S. mineral development."

The Pebble Limited Partnership, in some 27,000 pages of data and analysis, purports to provide an in-depth look at the environmental and social conditions in southwest Alaska's Bristol Bay region. Pebble vice president for environment Ken Taylor said the data, as well as ongoing studies, are critical for monitoring and ensuring that the Pebble mine project does not alter the pristine environment.

The work has been dismissed by environmentalists, fishermen and others as bought-and-paid-for science that should be viewed as tilted in favor of development. Taylor said this is a standard response from opponents and is "ridiculous." He said some consultants who helped Pebble also do work for federal agencies and that they're credible, objective scientists.

But this isn't the first time concerns have been raised about Pebble's study process.

Correspondence between state and federal agencies, obtained through a public records request by Trout Unlimited and provided to The Associated Press, shows frustration and sometimes doubt about the working groups Pebble established to provide expertise as the project moves toward the permitting phase.

"The current process is beneficial to Pebble Partners. However, the process is not beneficial to the Agencies," according to minutes from what was called the fish technical working group in a Jan. 9, 2008, meeting. "Pebble Partners need to provide additional information for the process to be useful to the Agencies."

"This is getting to be a huge time sink for agencies and at this point it does not seem like a good use of our time," Phil Brna, a U.S. Fish and Wildlife Biologist, wrote in an email to working group colleagues on Dec. 23, 2008.

"It's virtually impossible to provide substantive review comments when (Pebble) doesn't disclose more details of their development plans and their contractors only occasionally share snippets of the data they've collected," Ted Otis, of the Alaska Fish and Game Department, said in response to Brna's message.

The state Department of Natural Resources helped set up an interagency steering committee to guide the scope of and address concerns raised by the working groups. Working group meetings began in mid-2007, when studies were already under way, and they continued until January 2010, when Pebble ended the effort.

There were warnings of possible defections just months into the effort. The Army Corps of

Engineers announced it would no longer participate in the working groups in January 2009, citing lack of information.

In an interview, Brna said the agencies felt like Pebble was not really answering their questions. He said the agencies were never even able to sort out with Pebble the questions that should be addressed.

"It's one thing to have sufficient information for permitting. It's another thing to have sufficient information to study the effects of a mine over time, over the life of the mine," he said. "And we felt we needed to do both of those."

"I'm sure some of the stuff for ground water, there's probably not any better ground water data anywhere, or some of the surface water stuff, or the chemical constituents in the water or the rock, all that stuff is probably pretty amazing," Brna said. "But when it comes to some of the fish stuff, I think that's when the agencies have more concern."

Kate Harper with the Alaska Department of Fish and Game said each agency has its priorities and people with different expertise have certain things they'd like to see. She said Fish and Game must decide what it believes is necessary for Pebble to address.

The Pebble project has been the subject of a heated PR battle for years. Supporters say it would bring much-needed jobs to economically depressed rural Alaska, but opponents fear it could fundamentally change the landscape and disrupt if not destroy a way of life. Some of Pebble's own ads simply urge a "factual" conversation about the project.

The mine is a joint venture of Canada-based Northern Dynasty Minerals Ltd. and Anglo American plc of the United Kingdom.

The companies have spent hundreds of millions of dollars scoping the deposit, which Pebble, on its website, calls one of the large deposits of its kind in the world with the potential of producing 80.6 billion pounds of copper, 107.4 million ounces of gold and 5.6 billion pounds of molybdenum over decades.

Taylor called the deposit "a strategic national resource," saying the U.S. imports about 40 percent of its copper. The mine would be above Iliamna Lake, the largest producer of sockeye salmon in the world. Taylor said he'd be "gone in a heartbeat" if anything came up showing the project couldn't be developed in an environmentally responsible way.

Taylor, who was hired in 2008, said he thinks the biggest frustration among working group members was the lack of a project description, include details on where infrastructure like a mill or tailing facility would be.

"They were ready to say, 'OK, let's see what you're going to do, and we'll see if you have the right information or if your studies are focused on the right things.' It was very difficult for them to meet month after month, year after year, without having anything in front of them," he said in an interview.

Without that information, he said, it was "hard for them to figure out" what the impacts would be and what needed to be mitigated.

Taylor said it's possible the project could advance to the permitting phase as early as this year, and a full project description would surely come then.

Doug Limpinsel, a biologist with National Oceanic and Atmospheric Administration Fisheries who

was involved in the working group process, said one of his biggest unanswered questions is: How many fish are going to be removed?

Limpinsel said it would be a great gesture if Pebble, which spent a reported $150 million compiling the report and $100 million more building off that with agency input.

The U.S. Environmental Protection Agency is also conducting a baseline watershed assessment, a draft of which it plans to release in late April. Agencies also will again review Pebble's studies to determine if they're sufficient once it applies for permits.

"With Pebble, everybody can be confident there will be a pretty rigorous review of that information," said Tom Crafford, the director of project management and permitting for the state Department of Natural Resources.

Lindsey Bloom, a program manager with Trout Unlimited, said the state has never rejected a large mining project, and it will be relying on Pebble's own studies, going back to the company if it needs more information. Bloom and others say one has to question whether Pebble's work can be trusted.

Said Taylor, "We're not encouraging people to support us at this point. There's nothing to support. Wait until there's a project out and let it go through the process."

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PENINSULA CLARION

Legislature should favorably consider SB 152 for Bristol Bay region

Posted: February 24, 2012 - 8:55am

Anyone who has lived on the Peninsula long enough will tell you that decisions regarding our fisheries are of the utmost importance to our livelihoods today and in the long term.

Decisions and proposals that might affect the health of our lakes, rivers, streams, watersheds and ocean waters often go hand-in-hand with the health of our salmon, halibut and other fisheries.

Because those issues are so important to us, we often like to keep an ear to the ground in regard to other proposals and water activity around the state. Along those lines, we would like to direct attention to SB 152 introduced by Alaska State Sen. Hollis French.

French, a Democrat from Anchorage, is proposing the Legislature be more engaged in development issues in the Bristol Bay Fisheries Reserve through his bill.

Specifically, French's bill would require the Legislature to enact a law that includes a finding that any proposed large-scale metallic sulfide mining operation constitutes no danger to the fishery within the Bristol Bay reserve.

"This would have to be completed before the issuance of an authorization, license, permit or approval of a plan of operation that could affect water in or flowing into or over the reserve," French wrote in a sponsor statement.

According to the statement, the Bristol Bay Fisheries Reserve was created in 1972 with a provision put in place to protect the reserve from oil or gas exploration or development on state owned or controlled land until the Legislature by "appropriate resolution" finds such activities will not "constitute danger to the fishery."

The bill would treat large-scale metallic sulfide mining, defined as those affecting 640 or more acres of land with the goal of extracting gold and copper from a sulfide bearing rock, in the same way.

We support SB 152 because the Alaska Legislature needs to be involved in any issue that might prove harmful to the Bristol Bay fishery, which in 2011 produced a harvest of 21.9 million fish with a commercial value of $137.7 million, according to preliminary numbers from the Alaska Department of Fish and Game.

The bill wouldn't prohibit mining in the Bristol Bay reserve, but would ensure that any large-scale metallic sulfide mining operation must be found to pose no danger to the area's renewable resources by the Legislature.

The passage of SB 152 would make our Legislature pay extra attention to how that activity would affect the area. It would place an added level of accountability and responsibility on how decisions in the Bristol Bay region are made, as well.

It would also hopefully ensure state departments doing the ground work -- Department of Natural Resources, Department of Fish and Game and others -- have the best, newest and most accurate information, resources and staff at their disposal to make conclusions of such magnitude.

In short: Lawmakers should favorably consider SB 152, realize the importance of decisions made in the Bristol Bay region and that anything less than a thorough review of these large-scale decisions would not be wise for Alaska's future.

JuneauEmpire.com

Empire editorial: Alaska must take control of Bristol Bay development

Posted: February 26, 2012 - 12:00am

A healthy balance is needed in all things.

Alaska needs oil exploration, mining and natural gas extraction, and the world needs our products. America also needs the useful minerals that exist in many regions of Alaska, including the proposed Pebble Mine, because many necessary materials such as molybdenum are extracted almost exclusively in remote or unfriendly countries.

We don't need to extract those things at the expense of ecological disaster and long-term damage to the land we love. Alaska needs a strong voice in the development of Bristol Bay, where a large mine with yet-unknown potential ecological impacts is under study and moving toward the permitting process.

The federal Environmental Protection Agency is studying the Bristol Bay watershed to determine the efficacy of allowing a large mining operation to operate in close proximity to Bristol Bay, indeed among the waters that feed the bay and in which Bristol Bay's salmon stocks breed.

We think the state of Alaska's elected representatives should have a strong say in any development that could affect the world's best fishing grounds. That's why we support Senate Bill 152, which gives the people we elect final say over whether a large mine – any large mine – situated only in that specific area will be safe enough to be allowed to receive permits.

The state Legislature already has authority over permits for oil and gas exploration in the unique and pristine waters of Bristol Bay. Senate Bill 152, currently before the Senate Community and Regional Affairs Committee, is a logical extension that gives the Legislature final say over whether any large-scale metallic sulfide mining operation is safe in that environment. Any operation, not just The Pebble Project.

This bill will not kill the Pebble Mine. It will give our state control of development in a specific area, for a metallic sulfide mining operation that extracts metals including gold and copper from sulfide bearing rock and affects 640 or more acres of land. The rock that will become tailings from any mine in that area are considered toxic due to their natural composition and the chemicals they will leach.

The bill has no effect at all on existing mining operations.

It does not outlaw any mine at all.

It does demand that our elected representatives vote yea or nay on issuance of permits for large mines in the sensitive waters of Bristol Bay. We like the sound of that. Outside influences and multinational corporations increasingly seek control over Alaska's resource development, and our federal government places restrictions on so much of our state. This is one area where we should have the final say through our Legislature.

Alaska's natural resources aren't just counted in the volume of crude oil that flows from rigs on land and sea, and in the vast quantities of minerals used in industry. It's not just gold, silver, lime and coal that fire Alaska's economic engines.

This is a state where people utilize nature not as a museum, but as home, work and also a place to play.

Alaska's natural and economic abundance includes its fisheries, healthy waters that sustain fishing fleets, subsistence users and sport fishermen alike and sustain the wild creatures that also feed on salmon, groundfish and other marine life.

SB 152 is narrow in focus, brief and direct. It deserves bipartisan support in the house and senate and the full support of Alaska's governor. To oppose this bill is to oppose giving Alaska the loudest voice at the table on what is without question the most important natural resources issue to face this state since the discovery of oil.

(This editorial has been modified to clafiry that molybdenum is not among the 17 rare earth minerals.)

Comment

Follow This Article

Kristen Peterson

From: Lynn Highland <lynnhighland@gmail.com>
Sent: Tuesday, February 21, 2012 10:40 AM
To: Sen. Hollis French
Subject: I support Senate Bill 152

Dear Senator French,

I am writing in support of Senate Bill 152. Thank you for taking a stand.

If you have not already, I would encourage you to read Collapse: How Societies Choose to Fail or Succeed by Jared Diamond. Dr. Diamond's discussion of the mining industry is illuminating. (The entire book is illuminating...and a bit frightening.)

Thanks again.
Lynn Highland
4650 Southpark Bluff Drive
Anchorage, AK 99516
907-345-5035

Kristen Peterson

From: Brian Holl <birdfarm@mtaonline.net>
Sent: Wednesday, February 15, 2012 1:54 AM
To: Kristen Peterson
Subject: Re: bill 152

Kirsten,

Enclosed my letter of support

SB152:

To date the citizens of Alaska have been caught up in resource battles since the idea of land and or (resource) ownership. As of recent history there has been an ever increasing awareness to the effects of irresponsible resource development everywhere on the planet. Major Corporations sting from the idea of being thought of as not environmentally conscious. Yes even mining corporations. We now live in an empowered age where being connected and in the know is more possible than ever before. If you are an irresposible government, corporation or representitive It is a lot harder to lie about being environmentally responsible without walking the talk.

In simple words this means unless you can prove you will cause no harm to this land you simply will not be allowed to proceed. What is refreshing here is that there is finally a history and track record of grassroots change to look at what we are doing firstly to the land and finally to our selfs.

To those Corporations that believe it is business as uswal here in Alaska as far as resource development is concerned you better check again. I am in firm agreement with S/B 152 and I applaud Hollis French for his efforts with this Bill. These battles will continue to be about the challenge of educating the public to environmental vs. economic concerns and the real abilities of those in the know to convey and bring long term realities to those whom really do not understand what is at risk.

My sincere thanks to Hollis French for continuing to challenge all of those here in Alaska to think thrice and act once.

Brian E. Holl, Chugiak, Alaska

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

From: Kristen Peterson
To: Brian Holl
Sent: Tuesday, February 07, 2012 9:05 AM
Subject: RE: bill 152

Hi Brian,

Thank you for your email. I am the staff member in Senator French's office assigned to SB 152, so if you feel like writing a letter of support, please send it my way. Thanks!

Kristen Peterson

From: info@renewableresourcescoalition.org on behalf of Contessa Gossett <messa@gci.net>
Sent: Friday, February 17, 2012 4:24 PM
To: Sen. Hollis French
Subject: Act on SB152

The Honorable Hollis French
Alaska State Capitol, Room 417
Juneau, AK 99801

Dear Senator French,

I am writing in support of Senate Bill 152. Further, I would like to applaud you for having the courage to engage this important but contentious issue.

This legislation should not be considered pro or anti Pebble mine; rather, it recognizes the magnitude of the project and the sensitive habitat surrounding it. By requiring a vote of approval by the legislature, it simply adds a level of review to insure that policy makers have adequately reviewed and endorsed the safety of the mine. This additional step of approval is not a significant barrier and will add a step of integrity and confidence to a process that has never denied a mining permit. A project of this magnitude in the middle of one of the world's greatest salmon spawning grounds is worth one additional step.

Please continue to fight for a fair and reasonable permitting process, which recognizes the magnitude of mines and their relationship to Bristol Bay's fishery, I applaud you for your work on Senate Bill 152.

Sincerely yours,

Contessa Gossett
611 S.Williwaw Dr.
Palmer, Alaska 99645

Kristen Peterson

From: info@renewableresourcescoalition.org on behalf of Dee Longengaugh <deelong@alaska.com>
Sent: Friday, February 17, 2012 4:30 PM
To: Sen. Hollis French
Subject: Act on SB152

The Honorable Hollis French
Alaska State Capitol, Room 417
Juneau, AK 99801

Dear Senator French,

I am writing in support of Senate Bill 152. Further, I would like to applaud you for having the courage to engage this important but contentious issue.

This legislation should not be considered pro or anti Pebble mine; rather, it recognizes the magnitude of the project and the sensitive habitat surrounding it. By requiring a vote of approval by the legislature, it simply adds a level of review to insure that policy makers have adequately reviewed and endorsed the safety of the mine. This additional step of approval is not a significant barrier and will add a step of integrity and confidence to a process that has never denied a mining permit. A project of this magnitude in the middle of one of the world's greatest salmon spawning grounds is worth one additional step.

Please continue to fight for a fair and reasonable permitting process, which recognizes the magnitude of mines and their relationship to Bristol Bay's fishery, I applaud you for your work on Senate Bill 152.

Sincerely yours,

Dee Longengaugh
299 N. Franklin
Juneau, Alaska 99801

Kristen Peterson

From: info@renewableresourcescoalition.org on behalf of Katherine Huber <kater16@gmail.com>
Sent: Friday, February 17, 2012 5:02 PM
To: Sen. Hollis French
Subject: Act on SB152

Follow Up Flag: Follow up
Flag Status: Flagged

The Honorable Hollis French
Alaska State Capitol, Room 417
Juneau, AK 99801

Dear Senator French,

I am writing in support of Senate Bill 152. Further, I would like to applaud you for having the courage to engage this important but contentious issue.

This legislation should not be considered pro or anti Pebble mine; rather, it recognizes the magnitude of the project and the sensitive habitat surrounding it. By requiring a vote of approval by the legislature, it simply adds a level of review to insure that policy makers have adequately reviewed and endorsed the safety of the mine. This additional step of approval is not a significant barrier and will add a step of integrity and confidence to a process that has never denied a mining permit. A project of this magnitude in the middle of one of the world's greatest salmon spawning grounds is worth one additional step.

Please continue to fight for a fair and reasonable permitting process, which recognizes the magnitude of mines and their relationship to Bristol Bay's fishery, I applaud you for your work on Senate Bill 152.

Sincerely yours,

Katherine Huber
4000 Tazlina Ave
Anchorage, Alaska 99517

Kristen Peterson

From: info@renewableresourcescoalition.org on behalf of wayne c jones <wcjones@mtaonline.net>
Sent: Friday, February 17, 2012 5:52 PM
To: Sen. Hollis French
Subject: Act on SB152

The Honorable Hollis French
Alaska State Capitol, Room 417
Juneau, AK 99801

Dear Senator French,

I am writing in support of Senate Bill 152. Further, I would like to applaud you for having the courage to engage this important but contentious issue.

This legislation should not be considered pro or anti Pebble mine; rather, it recognizes the magnitude of the project and the sensitive habitat surrounding it. By requiring a vote of approval by the legislature, it simply adds a level of review to insure that policy makers have adequately reviewed and endorsed the safety of the mine. This additional step of approval is not a significant barrier and will add a step of integrity and confidence to a process that has never denied a mining permit. A project of this magnitude in the middle of one of the world's greatest salmon spawning grounds is worth one additional step.

Please continue to fight for a fair and reasonable permitting process, which recognizes the magnitude of mines and their relationship to Bristol Bay's fishery, I applaud you for your work on Senate Bill 152.

Sincerely yours,

wayne c jones
P.O. Box 1237
Palmer, Alaska 99645

Kristen Peterson

From: info@renewableresourcescoalition.org on behalf of Rika Mouw <rika@alaska.com>
Sent: Friday, February 17, 2012 6:05 PM
To: Sen. Hollis French
Subject: Act on SB152

The Honorable Hollis French
Alaska State Capitol, Room 417
Juneau, AK 99801

Dear Senator French,
I want to applaud you and support you in your introduction of Senate Bill 152. I do not have confidence in DNR alone. Industrialization of this scale needs to have the additional layer of review of an elected body of people more responsive to the public.

A project of this magnitude in the middle of one of the world's greatest salmon spawning grounds is worth one additional step.

Please continue to fight for a fair and reasonable permitting process, which recognizes the magnitude of mines and their relationship to Bristol Bay's fishery, I applaud you for your work on Senate Bill 152.
Thank you for the work you are doing!
sincerely,

Rika Mouw

ncerely yours,

Rika Mouw
P.O. Box 4084
Homer, Alaska 99603

Kristen Peterson

From: info@renewableresourcescoalition.org on behalf of Ken Marsh <trappercreekmuseum@yahoo.com>
Sent: Friday, February 17, 2012 6:57 PM
To: Sen. Hollis French
Subject: Act on SB152

The Honorable Hollis French
Alaska State Capitol, Room 417
Juneau, AK 99801

Dear Senator French,

I am writing in support of Senate Bill 152. Further, I would like to applaud you for having the courage to engage this important but contentious issue.

This legislation should not be considered pro or anti Pebble mine; rather, it recognizes the magnitude of the project and the sensitive habitat surrounding it. By requiring a vote of approval by the legislature, it simply adds a level of review to insure that policy makers have adequately reviewed and endorsed the safety of the mine. This additional step of approval is not a significant barrier and will add a step of integrity and confidence to a process that has never denied a mining permit. A project of this magnitude in the middle of one of the world's greatest salmon spawning grounds is worth one additional step.

Please continue to fight for a fair and reasonable permitting process, which recognizes the magnitude of mines and their relationship to Bristol Bay's fishery, I applaud you for your work on Senate Bill 152.

Sincerely yours,

Ken Marsh
Box 13011
Trapper Creek, Alaska 99682

Kristen Peterson

From: info@renewableresourcescoalition.org on behalf of tom young <ravnhous@xyz.net>
Sent: Friday, February 17, 2012 7:07 PM
To: Sen. Hollis French
Subject: Act on SB152

The Honorable Hollis French
Alaska State Capitol, Room 417
Juneau, AK 99801

Dear Senator French,

I am writing in support of Senate Bill 152. Further, I would like to applaud you for having the courage to engage this important but contentious issue.

This legislation should not be considered pro or anti Pebble mine; rather, it recognizes the magnitude of the project and the sensitive habitat surrounding it. By requiring a vote of approval by the legislature, it simply adds a level of review to insure that policy makers have adequately reviewed and endorsed the safety of the mine. This additional step of approval is not a significant barrier and will add a step of integrity and confidence to a process that has never denied a mining permit. A project of this magnitude in the middle of one of the world's greatest salmon spawning grounds is worth one additional step.

Please continue to fight for a fair and reasonable permitting process, which recognizes the magnitude of mines and their relationship to Bristol Bay's fishery, I applaud you for your work on Senate Bill 152.

Sincerely yours,

tom young
pob 537, 1776 saltwater dr.
homer, Alaska 99603

Kristen Peterson

From: info@renewableresourcescoalition.org on behalf of Barbara Brown <barblily7@msn.com>
Sent: Friday, February 17, 2012 7:31 PM
To: Sen. Hollis French
Subject: Act on SB152

The Honorable Hollis French
Alaska State Capitol, Room 417
Juneau, AK 99801

Dear Senator French,

I am writing in support of Senate Bill 152. Further, I would like to applaud you for having the courage to engage this important but contentious issue.

This legislation should not be considered pro or anti Pebble mine; rather, it recognizes the magnitude of the project and the sensitive habitat surrounding it. By requiring a vote of approval by the legislature, it simply adds a level of review to insure that policy makers have adequately reviewed and endorsed the safety of the mine. This additional step of approval is not a significant barrier and will add a step of integrity and confidence to a process that has never denied a mining permit. A project of this magnitude in the middle of one of the world's greatest salmon spawning grounds is worth one additional step.

I applaud you for your work on Senate Bill 152. I wish there was a way our legislature could outlaw Pebble before it even starts, and if this letter helps, great. Keep up the good work you are doing to protect Bristol Bay from this terrible threat.

Sincerely yours,

Barbara Brown
P O box 24
Palmer, Alaska 99645

Kristen Peterson

From: info@renewableresourcescoalition.org on behalf of Sybille Castro <Alaskafrau@yahoo.com>
Sent: Friday, February 17, 2012 8:37 PM
To: Sen. Hollis French
Subject: Act on SB152

The Honorable Hollis French
Alaska State Capitol, Room 417
Juneau, AK 99801

Dear Senator French,

I am writing in support of Senate Bill 152. Further, I would like to applaud you for having the courage to engage this important but contentious issue.

This legislation should not be considered pro or anti Pebble mine; rather, it recognizes the magnitude of the project and the sensitive habitat surrounding it. By requiring a vote of approval by the legislature, it simply adds a level of review to insure that policy makers have adequately reviewed and endorsed the safety of the mine. This additional step of approval is not a significant barrier and will add a step of integrity and confidence to a process that has never denied a mining permit. A project of this magnitude in the middle of one of the world's greatest salmon spawning grounds is worth one additional step.

Please continue to fight for a fair and reasonable permitting process, which recognizes the magnitude of mines and their relationship to Bristol Bay's fishery, I applaud you for your work on Senate Bill 152.

Sincerely yours,

Sybille Castro
Pobox 1849
Kenai, Alaska 99611

Kristen Peterson

From: info@renewableresourcescoalition.org on behalf of robert ransom <diegoransom@yahoo.com>
Sent: Friday, February 17, 2012 9:29 PM
To: Sen. Hollis French
Subject: Act on SB152

The Honorable Hollis French
Alaska State Capitol, Room 417
Juneau, AK 99801

Dear Senator French,

I am writing in support of Senate Bill 152. Further, I would like to applaud you for having the courage to engage this important but contentious issue.

This legislation should not be considered pro or anti Pebble mine; rather, it recognizes the magnitude of the project and the sensitive habitat surrounding it. By requiring a vote of approval by the legislature, it simply adds a level of review to insure that policy makers have adequately reviewed and endorsed the safety of the mine. This additional step of approval is not a significant barrier and will add a step of integrity and confidence to a process that has never denied a mining permit. A project of this magnitude in the middle of one of the world's greatest salmon spawning grounds is worth one additional step.

Please continue to fight for a fair and reasonable permitting process, which recognizes the magnitude of mines and their relationship to Bristol Bay's fishery, I applaud you for your work on Senate Bill 152.

Sincerely yours,

robert ransom
po box 91748
anchorage, Alaska 99509

Kristen Peterson

From: info@renewableresourcescoalition.org on behalf of Maureen Knutsen <maureen.knutsen@gmail.com>
Sent: Friday, February 17, 2012 10:37 PM
To: Sen. Hollis French
Subject: Act on SB152

The Honorable Hollis French
Alaska State Capitol, Room 417
Juneau, AK 99801

Dear Senator French,

I am writing in support of Senate Bill 152. Further, I would like to applaud you for having the courage to engage this important but contentious issue.
As a resident of Bristol Bay who depends on commercial and subsistence fishing with my husband for our livelihood, this issue is of utmost concern to me.

This legislation should not be considered pro or anti Pebble mine; rather, it recognizes the magnitude of the project and the sensitive habitat surrounding it. By requiring a vote of approval by the legislature, it simply adds a level of review to insure that policy makers have adequately reviewed and endorsed the safety of the mine. This additional step of approval is not a significant barrier and will add a step of integrity and confidence to a process that has never denied a mining permit. A project of this magnitude in the middle of one of the world's greatest salmon spawning grounds is worth one additional step.

Please continue to fight for a fair and reasonable permitting process, which recognizes the magnitude of mines and their relationship to Bristol Bay's fishery, I applaud and thank you for your work on Senate Bill 152.

Sincerely yours,

Maureen Knutsen
PO Box 134
Naknek, Alaska 99633

Kristen Peterson

From: info@renewableresourcescoalition.org on behalf of Mark Niver <markaniver@yahoo.com>
Sent: Friday, February 17, 2012 10:45 PM
To: Sen. Hollis French
Subject: Act on SB152

The Honorable Hollis French
Alaska State Capitol, Room 417
Juneau, AK 99801

Dear Senator French,

I am writing in support of Senate Bill 152. Further, I would like to applaud you for having the courage to engage this important but contentious issue.

This legislation should not be considered pro or anti Pebble mine; rather, it recognizes the magnitude of the project and the sensitive habitat surrounding it. By requiring a vote of approval by the legislature, it simply adds a level of review to insure that policy makers have adequately reviewed and endorsed the safety of the mine. This additional step of approval is not a significant barrier and will add a step of integrity and confidence to a process that has never denied a mining permit. A project of this magnitude in the middle of one of the world's greatest salmon spawning grounds is worth one additional step.

Please continue to fight for a fair and reasonable permitting process, which recognizes the magnitude of mines and their relationship to Bristol Bay's fishery, I applaud you for your work on Senate Bill 152.

Sincerely yours,

Mark Niver
955 Lich ness Ct
Wasill, Alaska 99654

Kristen Peterson

From: info@renewableresourcescoalition.org on behalf of Debra Wilson <Decwilson@aol.com>
Sent: Saturday, February 18, 2012 1:48 AM
To: Sen. Hollis French
Subject: Act on SB152

The Honorable Hollis French
Alaska State Capitol, Room 417
Juneau, AK 99801

Dear Senator French,

I am writing in support of Senate Bill 152. Further, I would like to applaud you for having the courage to engage this important but contentious issue.

This legislation should not be considered pro or anti Pebble mine; rather, it recognizes the magnitude of the project and the sensitive habitat surrounding it. By requiring a vote of approval by the legislature, it simply adds a level of review to insure that policy makers have adequately reviewed and endorsed the safety of the mine. This additional step of approval is not a significant barrier and will add a step of integrity and confidence to a process that has never denied a mining permit. A project of this magnitude in the middle of one of the world's greatest salmon spawning grounds is worth one additional step.

Please continue to fight for a fair and reasonable permitting process, which recognizes the magnitude of mines and their relationship to Bristol Bay's fishery, I applaud you for your work on Senate Bill 152.

Sincerely yours,

Debra Wilson
7261 Clairborne Drive
Anchorage, Alaska 99502

Kristen Peterson

From: info@renewableresourcescoalition.org on behalf of brian slover <alaskanartmatters@yahoo.com>
Sent: Saturday, February 18, 2012 6:03 AM
To: Sen. Hollis French
Subject: Act on SB152

The Honorable Hollis French
Alaska State Capitol, Room 417
Juneau, AK 99801

Dear Senator French,

I am writing in support of Senate Bill 152. Further, I would like to applaud you for having the courage to engage this important but contentious issue.

This legislation should not be considered pro or anti Pebble mine; rather, it recognizes the magnitude of the project and the sensitive habitat surrounding it. By requiring a vote of approval by the legislature, it simply adds a level of review to insure that policy makers have adequately reviewed and endorsed the safety of the mine. This additional step of approval is not a significant barrier and will add a step of integrity and confidence to a process that has never denied a mining permit. A project of this magnitude in the middle of one of the world's greatest salmon spawning grounds is worth one additional step.

Please continue to fight for a fair and reasonable permitting process, which recognizes the magnitude of mines and their relationship to Bristol Bay's fishery, I applaud you for your work on Senate Bill 152.

Sincerely yours,

brian slover
po box 143
seldovia, Alaska 99663

Kristen Peterson

From: info@renewableresourcescoalition.org on behalf of Robert Norris <chuckf16@att.net>
Sent: Saturday, February 18, 2012 7:12 AM
To: Sen. Hollis French
Subject: Act on SB152

The Honorable Hollis French
Alaska State Capitol, Room 417
Juneau, AK 99801

Dear Senator French,

I am writing in support of Senate Bill 152. My family believes the future of Bristol Bay and its incredible wild salmon runs are at risk due to the proposed mining project of Pebble. Thank-you for sponsoring this legislation that will help insure a project of this magnitude will not be ramrodded through the DNR without due process.

By requiring a vote of approval by the legislature, it simply adds a level of review to insure that policy makers have adequately reviewed and endorsed the safety of the mine. This additional step of approval is not a significant barrier and will add a step of integrity and confidence to a process that has never denied a mining permit. A project of this magnitude in the middle of one of the world's greatest salmon spawning grounds is worth one additional step.

Please continue to fight for a fair and reasonable permitting process, which recognizes the magnitude of mines and their relationship to Bristol Bay's fishery, I applaud you for your work on Senate Bill 152.

Sincerely yours,

Robert Norris
4005 Lakewood Loop
North Pole, Alaska 99705

Kristen Peterson

From: info@renewableresourcescoalition.org on behalf of scott bredbenner <akbred@hotmail.com>
Sent: Saturday, February 18, 2012 8:15 AM
To: Sen. Hollis French
Subject: Act on SB152

The Honorable Hollis French
Alaska State Capitol, Room 417
Juneau, AK 99801

Dear Senator French,

I am writing in support of Senate Bill 152. Further, I would like to applaud you for having the courage to engage this important but contentious issue.

This legislation should not be considered pro or anti Pebble mine; rather, it recognizes the magnitude of the project and the sensitive habitat surrounding it. By requiring a vote of approval by the legislature, it simply adds a level of review to insure that policy makers have adequately reviewed and endorsed the safety of the mine. This additional step of approval is not a significant barrier and will add a step of integrity and confidence to a process that has never denied a mining permit. A project of this magnitude in the middle of one of the world's greatest salmon spawning grounds is worth one additional step.

Please continue to fight for a fair and reasonable permitting process, which recognizes the magnitude of mines and their relationship to Bristol Bay's fishery, I applaud you for your work on Senate Bill 152.

Sincerely yours,

scott bredbenner
2711 jaime way
fairbanks, Alaska 99709

Kristen Peterson

From: info@renewableresourcescoalition.org on behalf of scott heft <wiccakettle@yahoo.com>
Sent: Saturday, February 18, 2012 11:14 AM
To: Sen. Hollis French
Subject: Act on SB152

The Honorable Hollis French
Alaska State Capitol, Room 417
Juneau, AK 99801

Dear Senator French,

I am writing in support of Senate Bill 152. Further, I would like to applaud you for having the courage to engage this important but contentious issue.

This legislation should not be considered pro or anti Pebble mine; rather, it recognizes the magnitude of the project and the sensitive habitat surrounding it. By requiring a vote of approval by the legislature, it simply adds a level of review to insure that policy makers have adequately reviewed and endorsed the safety of the mine. This additional step of approval is not a significant barrier and will add a step of integrity and confidence to a process that has never denied a mining permit. A project of this magnitude in the middle of one of the world's greatest salmon spawning grounds is worth one additional step.

Please continue to fight for a fair and reasonable permitting process, which recognizes the magnitude of mines and their relationship to Bristol Bay's fishery, I applaud you for your work on Senate Bill 152.

cerely yours,

scott heft
16322 Rebischke ln. apt#1
EagleRiver, Alaska 99577

Kristen Peterson

From: info@renewableresourcescoalition.org on behalf of Maria Juanita Montalvan <Mjmontalvan@yahoo.com>
Sent: Saturday, February 18, 2012 1:19 PM
To: Sen. Hollis French
Subject: Act on SB152

The Honorable Hollis French
Alaska State Capitol, Room 417
Juneau, AK 99801

Dear Senator French,

I am writing in support of Senate Bill 152. Further, I would like to applaud you for having the courage to engage this important but contentious issue.

This legislation should not be considered pro or anti Pebble mine; rather, it recognizes the magnitude of the project and the sensitive habitat surrounding it. By requiring a vote of approval by the legislature, it simply adds a level of review to insure that policy makers have adequately reviewed and endorsed the safety of the mine. This additional step of approval is not a significant barrier and will add a step of integrity and confidence to a process that has never denied a mining permit. A project of this magnitude in the middle of one of the world's greatest salmon spawning grounds is worth one additional step.

Please continue to fight for a fair and reasonable permitting process, which recognizes the magnitude of mines and their relationship to Bristol Bay's fishery, I applaud you for your work on Senate Bill 152.

Sincerely yours,

Maria Juanita Montalvan
PO Box 410
Dillingham, Alaska 99576

Kristen Peterson

From: info@renewableresourcescoalition.org on behalf of William Easton <willeaston@alaska.net>
Sent: Saturday, February 18, 2012 4:40 PM
To: Sen. Hollis French
Subject: Act on SB152

The Honorable Hollis French
Alaska State Capitol, Room 417
Juneau, AK 99801

Dear Senator French,

I am writing in support of Senate Bill 152. Further, I would like to applaud you for having the courage to engage this important but contentious issue.
You have my respect for taking this stand.

This legislation should not be considered pro or anti Pebble mine; rather, it recognizes the magnitude of the project and the sensitive habitat surrounding it. By requiring a vote of approval by the legislature, it simply adds a level of review to insure that policy makers have adequately reviewed and endorsed the safety of the mine. This additional step of approval is not a significant barrier and will add a step of integrity and confidence to a process that has never denied a mining permit. A project of this magnitude in the middle of one of the world's greatest salmon spawning grounds is worth one additional step.

Please continue to fight for a fair and reasonable permitting process, which recognizes the magnitude of mines and their relationship to Bristol Bay's fishery, I applaud you for your work on Senate Bill 152.

Sincerely yours,

William Easton
P.O. Box 1736
Homer, Alaska 99603

Kristen Peterson

From: info@renewableresourcescoalition.org on behalf of Sean Dougherty <doughertysean@hotmail.com>
Sent: Saturday, February 18, 2012 8:11 PM
To: Sen. Hollis French
Subject: Act on SB152

The Honorable Hollis French
Alaska State Capitol, Room 417
Juneau, AK 99801

Dear Senator French,

I am writing in support of Senate Bill 152. Further, I would like to applaud you for having the courage to engage this important but contentious issue.

This legislation should not be considered pro or anti Pebble mine; rather, it recognizes the magnitude of the project and the sensitive habitat surrounding it. By requiring a vote of approval by the legislature, it simply adds a level of review to insure that policy makers have adequately reviewed and endorsed the safety of the mine. This additional step of approval is not a significant barrier and will add a step of integrity and confidence to a process that has never denied a mining permit. A project of this magnitude in the middle of one of the world's greatest salmon spawning grounds is worth one additional step.

Please continue to fight for a fair and reasonable permitting process, which recognizes the magnitude of mines and their relationship to Bristol Bay's fishery, I applaud you for your work on Senate Bill 152.

Sincerely yours,

Sean Dougherty
3705 Arctic Blvd 1048
Anchorage, Alaska 99503

Kristen Peterson

From: info@renewableresourcescoalition.org on behalf of Vernajean Kolyaha <vjkolyaha@gmail.com>
Sent: Sunday, February 19, 2012 8:10 AM
To: Sen. Hollis French
Subject: Act on SB152

The Honorable Hollis French
Alaska State Capitol, Room 417
Juneau, AK 99801

Dear Senator French,

I am writing in support of Senate Bill 152. Further, I would like to applaud you for having the courage to engage this important but contentious issue.

This legislation should not be considered pro or anti Pebble mine; rather, it recognizes the magnitude of the project and the sensitive habitat surrounding it. By requiring a vote of approval by the legislature, it simply adds a level of review to insure that policy makers have adequately reviewed and endorsed the safety of the mine. This additional step of approval is not a significant barrier and will add a step of integrity and confidence to a process that has never denied a mining permit. A project of this magnitude in the middle of one of the world's greatest salmon spawning grounds is worth one additional step.

Please continue to fight for a fair and reasonable permitting process, which recognizes the magnitude of mines and their relationship to Bristol Bay's fishery, I applaud you for your work on Senate Bill 152.

Sincerely yours,

Vernajean Kolyaha
P.O. Box 47022
Pedro Bay, Alaska 99647

Kristen Peterson

From: info@renewableresourcescoalition.org on behalf of Rob Lund <summersong@alaska.net>
Sent: Sunday, February 19, 2012 1:08 PM
To: Sen. Hollis French
Subject: Act on SB152

The Honorable Hollis French
Alaska State Capitol, Room 417
Juneau, AK 99801

Dear Senator French,

I am writing in support of Senate Bill 152. Further, I would like to applaud you for having the courage to engage this important but contentious issue.

This legislation should not be considered pro or anti Pebble mine; rather, it recognizes the magnitude of the project and the sensitive habitat surrounding it. By requiring a vote of approval by the legislature, it simply adds a level of review to insure that policy makers have adequately reviewed and endorsed the safety of the mine. This additional step of approval is not a significant barrier and will add a step of integrity and confidence to a process that has never denied a mining permit. A project of this magnitude in the middle of one of the world's greatest salmon spawning grounds is worth one additional step.

Please continue to fight for a fair and reasonable permitting process, which recognizes the magnitude of mines and their relationship to Bristol Bay's fishery, I applaud you for your work on Senate Bill 152.

Sincerely yours,

Rob Lund
4178 Hohe St.
Homer, Alaska 99603

Kristen Peterson

From: info@renewableresourcescoalition.org on behalf of John Polonowski <Johnpolo@hotmail.com>
Sent: Sunday, February 19, 2012 8:33 PM
To: Sen. Hollis French
Subject: Act on SB152

The Honorable Hollis French
Alaska State Capitol, Room 417
Juneau, AK 99801

Dear Senator French,

I am writing in support of Senate Bill 152. Thank you for your effort to protect this amazing resource.

This legislation should not be considered pro or anti Pebble mine; rather, it recognizes the magnitude of the project and the sensitive habitat surrounding it. By requiring a vote of approval by the legislature, it simply adds a level of review to insure that policy makers have adequately reviewed and endorsed the safety of the mine. This additional step of approval is not a significant barrier and will add a step of integrity and confidence to a process that has never denied a mining permit. A project of this magnitude in the middle of one of the world's greatest salmon spawning grounds is worth one additional step.

Please continue to fight for a fair and reasonable permitting process, which recognizes the magnitude of mines and their relationship to Bristol Bay's fishery, I applaud you for your work on Senate Bill 152.
Sincerely,

John Polonowski
Sincerely yours,

John Polonowski
3000 Jones Ave
Anchorage, Alaska 99517

Kristen Peterson

From: info@renewableresourcescoalition.org on behalf of Nina Mann <nina@alyeskaelectric.com>
Sent: Monday, February 20, 2012 8:30 AM
To: Sen. Hollis French
Subject: Act on SB152

The Honorable Hollis French
Alaska State Capitol, Room 417
Juneau, AK 99801

Dear Senator French,

I am writing in support of Senate Bill 152. Further, I would like to applaud you for having the courage to engage this important but contentious issue.

I am believe the mining industry is vital to the development of our state, however, this mine, in this location, at this time, is not a good idea. I believe that large scale ventures such as this, need the support of the people of Alaska. I am sure in the future technology will be developed by the mining industry, just as in the oil industry, that will ensure development with minimal impact.

I think this legislation should not be considered pro or anti Pebble mine; rather, it recognizes the magnitude of the project and the sensitive habitat surrounding it. By requiring a vote of approval by the legislature, it simply adds a level of review to insure that policy makers have adequately reviewed and endorsed the safety of the mine. Not to mention it gives the people of Alaska a chance to talk with their representatives in government about issues that impact our home. This additional step of approval is not a significant barrier and will add a step of integrity and confidence to a process that has never denied a mining permit. A project of this magnitude in the middle of one of the world's greatest salmon spawning grounds is worth one additional step.

Please continue to fight for a fair and reasonable permitting process, which recognizes the magnitude of mines and their relationship to Bristol Bay's fishery, I applaud you for your work on Senate Bill 152.

Sincerely yours,

Nina Mann
911 Wildrose Court
Anchorage, Alaska 99518

Kristen Peterson

From: info@renewableresourcescoalition.org on behalf of Dan Oberlatz <dan@alaskaalpineadventures.com>
Sent: Monday, February 20, 2012 9:26 AM
To: Sen. Hollis French
Subject: Act on SB152

The Honorable Hollis French
Alaska State Capitol, Room 417
Juneau, AK 99801

Dear Senator French,

I am writing in support of Senate Bill 152.

I own a small adventure tourism business and we've been operating in the Bristol Bay region for almost 15 years. I was a full time resident of Port
Alsworth for 10 years and now split time between Anchorage and Lake Clark.
I'm also a board member for both the Renewable Resources Foundation and the Alaska Wilderness Recreation & Tourism Association (AWRTA).

I'm not the only one who regularly calls the Bristol Bay region "a perfect place." Given the surge of mining interest in the region Senate Bill 152 is both logical and timely. Rather than hinder the permitting process, this bill will allow transparency and accountability for both the mining industry and all Alaskans - assuring that any mining project permitted meets the constitutional requirement to provide benefit for all Alaskans.

I know that Governor Jay Hammond would also applaud your efforts and fully support Senate Bill 152.

Keep up the good fight!

Regards, Dan Oberlatz
Owner-Guide: Alaska Alpine Adventures

Sincerely yours,

Dan Oberlatz
2133 Dahl Lane
Anchroage, Alaska 99503

Kristen Peterson

From: info@renewableresourcescoalition.org on behalf of James Albert <kulikjim@yahoo.com>
Sent: Monday, February 20, 2012 9:37 AM
To: Sen. Hollis French
Subject: Act on SB152

The Honorable Hollis French
Alaska State Capitol, Room 417
Juneau, AK 99801

Dear Senator French,

I am writing in support of Senate Bill 152. Further, I would like to applaud you for having the courage to engage this important but contentious issue.

This legislation should not be considered pro or anti Pebble mine; rather, it recognizes the magnitude of the project and the sensitive habitat surrounding it. By requiring a vote of approval by the legislature, it simply adds a level of review to insure that policy makers have adequately reviewed and endorsed the safety of the mine. This additional step of approval is not a significant barrier and will add a step of integrity and confidence to a process that has never denied a mining permit. A project of this magnitude in the middle of one of the world's greatest salmon spawning grounds is worth one additional step.

Please continue to fight for a fair and reasonable permitting process, which recognizes the magnitude of mines and their relationship to Bristol Bay's fishery, I applaud you for your work on Senate Bill 152.
James Albert
Sincerely yours,

James Albert
1834 Wildberry Loop
Anchorage, Alaska 99502

Kristen Peterson

From: info@renewableresourcescoalition.org on behalf of Carol Jewell <ca-jewell@gci.net>
Sent: Monday, February 20, 2012 11:27 AM
To: Sen. Hollis French
Subject: Act on SB152

The Honorable Hollis French
Alaska State Capitol, Room 417
Juneau, AK 99801

Dear Senator French,

I am writing in support of Senate Bill 152. Further, I would like to applaud you for having the courage to engage this important but contentious issue. I think that a cyanide heap leaching mine in this area threatens a 10,000+ year fishery. The 20 to 30 year mining jobs should not outweigh the thousands of years that the fishing can still provide for the people of this state. I am also dead set against the mining industry leaving a toxic waste site that will continue to threaten the water and fish in this area for many more years after the mine is gone.

This legislation should not be considered pro or anti Pebble mine; rather, it recognizes the magnitude of the project and the sensitive habitat surrounding it. By requiring a vote of approval by the legislature, it simply adds a level of review to insure that policy makers have adequately reviewed and endorsed the safety of the mine. This additional step of approval is not a significant barrier and will add a step of integrity and confidence to a process that has never denied a mining permit. A project of this magnitude in the middle of one of the world's greatest salmon spawning grounds is worth one additional step.

Please continue to fight for a fair and reasonable permitting process, which recognizes the magnitude of mines and their relationship to Bristol Bay's fishery, I applaud you for your work on Senate Bill 152.

Sincerely yours,

Carol Jewell
4138 Brantley Pl
Anchorage, Alaska 99508

Kristen Peterson

From: info@renewableresourcescoalition.org on behalf of Evan Young <drevanyoung@gmail.com>
Sent: Monday, February 20, 2012 8:46 PM
To: Sen. Hollis French
Subject: Act on SB152

The Honorable Hollis French
Alaska State Capitol, Room 417
Juneau, AK 99801

Dear Senator French,

I am writing in support of Senate Bill 152. Further, I would like to applaud you for having the courage to engage this important but contentious issue.

This legislation should not be considered pro or anti Pebble mine; rather, it recognizes the magnitude of the project and the sensitive habitat surrounding it. By requiring a vote of approval by the legislature, it simply adds a level of review to insure that policy makers have adequately reviewed and endorsed the safety of the mine. This additional step of approval is not a significant barrier and will add a step of integrity and confidence to a process that has never denied a mining permit. A project of this magnitude in the middle of one of the world's greatest salmon spawning grounds is worth one additional step.

Please continue to fight for a fair and reasonable permitting process, which recognizes the magnitude of mines and their relationship to Bristol Bay's fishery, I applaud you for your work on Senate Bill 152.

Best Regards,

Evan Young

Sincerely yours,

Evan Young
12901 Midori Drive
Anchorage, Alaska 99516

Kristen Peterson

From: info@renewableresourcescoalition.org on behalf of Claudia Anderson <claudiaa.ak@hotmail.com>
Sent: Tuesday, February 21, 2012 11:46 AM
To: Sen. Hollis French
Subject: Act on SB152

The Honorable Hollis French
Alaska State Capitol, Room 417
Juneau, AK 99801

Dear Senator French,

I am writing in support of Senate Bill 152. Thank you for your foresight on this issue.

This legislation recognizes the magnitude of the Pebble project and the sensitive habitat surrounding it. A project of this magnitude in the middle of one of the world's greatest salmon spawning grounds is worth one additional step.

I have set net and my husband has drifted in the Bay for 35 years. Our 2 sons took their permanent fund savings and invested in boats and Bay permits. Each one of our operations employs 2 or 3 additional Alaskans. I view the Pebble as far too risky to renewable jobs.

Please continue to fight for a fair and reasonable permitting process. I applaud you for your work on Senate Bill 152.

Sincerely yours,

Claudia Anderson
PO Box 310
Kodiak, Alaska 99615

Kristen Peterson

From: info@renewableresourcescoalition.org on behalf of Rosy Thompson <rosyat_@hotmail.com>
Sent: Tuesday, February 21, 2012 1:41 PM
To: Sen. Hollis French
Subject: Act on SB152

The Honorable Hollis French
Alaska State Capitol, Room 417
Juneau, AK 99801

Dear Senator French,

I am writing in support of Senate Bill 152. Further, I would like to applaud you for having the courage to engage this important but contentious issue.

This legislation should not be considered pro or anti Pebble mine; rather, it recognizes the magnitude of the project and the sensitive habitat surrounding it. By requiring a vote of approval by the legislature, it simply adds a level of review to insure that policy makers have adequately reviewed and endorsed the safety of the mine. This additional step of approval is not a significant barrier and will add a step of integrity and confidence to a process that has never denied a mining permit. A project of this magnitude in the middle of one of the world's greatest salmon spawning grounds is worth one additional step.

Please continue to fight for a fair and reasonable permitting process, which recognizes the magnitude of mines and their relationship to Bristol Bay's fishery, I applaud you for your work on Senate Bill 152.

Sincerely yours,

Rosy Thompson
4036 Forget-me-not Rd
Kenai, Alaska 99611

Kristen Peterson

From: info@renewableresourcescoalition.org on behalf of Rhonda Maker <rhondamaker@gmail.com>
Sent: Tuesday, February 21, 2012 2:21 PM
To: Sen. Hollis French
Subject: Act on SB152

The Honorable Hollis French
Alaska State Capitol, Room 417
Juneau, AK 99801

Dear Senator French,

I am writing in support of Senate Bill 152. Further, I would like to applaud you for having the courage to engage this important but contentious issue.

This legislation should not be considered pro or anti Pebble mine; rather, it recognizes the magnitude of the project and the sensitive habitat surrounding it. By requiring a vote of approval by the legislature, it simply adds a level of review to insure that policy makers have adequately reviewed and endorsed the safety of the mine. This additional step of approval is not a significant barrier and will add a step of integrity and confidence to a process that has never denied a mining permit. A project of this magnitude in the middle of one of the world's greatest salmon spawning grounds is worth one additional step.

Please continue to fight for a fair and reasonable permitting process, which recognizes the magnitude of mines and their relationship to Bristol Bay's fishery, I applaud you for your work on Senate Bill 152.

Sincerely yours,

Rhonda Maker
508 W. Marine Way #10
Kodiak, Alaska 99615

Kvichak River, Bristol Bay
PO Box 231985 Anchorage, AK 99523 907.227.8719

February 20, 2012

Senator Hollis French,

I am in full support of SB152 in order to adequately protect the fisheries of the Bristol Bay watershed. In 1972, the Seventh Legislature created the Bristol Bay Fisheries Reserve with the main goal of permanently protecting the economically and culturally valuable renewable fishery resource. At the time, the only conceivable potential large-scale threat to this fishery was oil and gas development. Thus the legislature made it law that any oil and gas operations within the fisheries reserve would need legislative approval of its operations plan before commencement of the operations. This law did not ban oil and gas operations, however, it did ensure that the people of Alaska, through its representatives, were assured of a voice in determining the fate of this region.

Now in present day the Bristol Bay fisheries are faced with another potential large scale industrial activity, open pit mining, that has proven over the years in the lower 48 states that it is not compatible with preservation of pristine waters and healthy fisheries. It is common sense to amend the current language of the Bristol Bay Fisheries Reserve to not only include Legislative approval of plans for oil and gas development but also to include large-scale open pit mining operations within the reserve as well. Why go to the extent to ensure that one type of potentially harmful industrial activity must meet the approval of the legislature but not the other? I am quite confident that had the Seventh Legislature known of the potential of large-scale mining in the headwaters and spawning grounds of the Bristol Bay Fisheries Reserve that it would have obviously included the legislative approval requirement in its 1972 law.

Brian Kraft
Owner

RESOURCE DEVELOPMENT COUNCIL

Growing Alaska Through Responsible Resource Development

February 28, 2012

Chairman Olson
Senate Community and Regional Affairs Committee
Alaska State Legislature
State Capitol Room 508
Juneau, AK 99801

Re: SB152 Legislative Approval of Bristol Bay Sulfide Mine

Dear Senator Olson:

The Resource Development Council for Alaska (RDC) is writing in strong opposition to SB152, a bill requiring legislative approval of any sulfide mine within the Bristol Bay region.

RDC is an Alaskan business association comprised of individuals and companies from Alaska's oil and gas, mining, forest products, tourism, and fisheries industries. Our membership includes all of the Alaska Native Regional Corporations, local communities, organized labor, and industry support firms. RDC's purpose is to expand the state's economic base through the responsible development of our natural resources.

One of RDC's top legislative priorities is to encourage the state to promote and defend the integrity of Alaska's permitting process and advocate for predictable, timely, and efficient state and federal permitting processes based on sound science and economic feasibility. This bill does just the opposite. SB152 sets a terrible precedent by effectively usurping the permitting authority of state agencies, creating uncertainty for companies that are both investing and contemplating investment in Alaska. It sends a message that the Alaskan Legislature does not trust the rigorous, science-based permitting process that is in place. Sadly, even hearing a bill such as this could elicit such feelings.

We urge each of the members to send a message that Alaska is open for business and not pass this bill out of committee. Thank you for your consideration of our comments.

Sincerely,

Rick Rogers
Executive Director

121 West Fireweed Lane, Suite 250, Anchorage, Alaska 99503-2035
Phone: 907-276-0700 Fax: 907-276-3887 Email: resources@akrdc.org Website: akrdc.org

LEGAL SERVICES

DIVISION OF LEGAL AND RESEARCH SERVICES
LEGISLATIVE AFFAIRS AGENCY
STATE OF ALASKA

(907) 465-3867 or 465-2450
FAX (907) 465-2029
Mail Stop 3101

State Capitol
Juneau, Alaska 99801-1182
Deliveries to: 129 6th St., Rm. 329

MEMORANDUM December 7, 2006

SUBJECT: Taking of mineral rights, just compensation, and NAFTA (Work Order No. 25-LS0146)

TO: Representative Paul Seaton
Attn: Louie Flora

FROM: Donald M. Bullock Jr.
Legislative Counsel

You requested an opinion on the effect of the federal or state government limiting or precluding the development of a mine on state land that was open to mineral development and is being developed by a mining company. You asked about the effect of takings laws on such government action and referred me to HCR 29 (24th Alaska Legislature) that calls on the commissioner of natural resources to report to the legislature the commissioner's conclusion regarding whether mineral development is the most appropriate land use classification for the area encompassing the proposed Pebble mine project.

You also asked about the implication of chapter 11 of the North American Free Trade Agreement on a foreign mining company developing a mine in Alaska that is then subject to the tightening of state environmental standards or outright prohibition of resource extraction in an area in which the company is working.

Acquisition of mineral rights

Under Alaska law, a person obtains exclusive rights to possess and extract minerals on state land open to claim staking by discovery, location, and recording, subject to existing claims and to any denial of or restriction in the tentative approval of state selection or patent of the land to the state.[1] A person's acquisition of mineral rights requires no discretionary action by the Department of Natural Resources to authorize or permit the right to the minerals within the claim.[2] The rights are acquired simply by satisfying the

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[1] Article VIII, sec. 11, Constitution of the State of Alaska; AS 38.05.195; AS 38.305.275.

[2] With your permission, I talked with Tom Crafford, Acting Large Mine Coordinator in the Department of Natural Resources regarding the discretion of the department in recognizing the rights to mineral deposits. Mr. Crafford confirmed that his department does not have discretion in the granting of mineral rights, so long as the potential location

three requirements -- discovery, location, and filing. Discovery is the finding of the mineral, location is the marking of the land where the mineral was found, and filing is the recording of the interest in the recorder's office for the region in which the interest is located.

Not all state land is open for mining. The commissioner of natural resources has the authority to classify land so that mining, mineral entry or location, mineral prospecting, or mineral leasing is precluded or designated as an incompatible use.[3] However, the discretion to classify land as being closed to mining has been exercised on a limited basis; according to the Department of Natural Resources, approximately 92 percent of the 91 million acres for which the state has received title are open to mineral entry and the acquiring of mineral rights by staking mining locations.[4]

Although a person may acquire mineral rights by performing the three necessary steps, those rights are "subject to existing claims and to any denial of or restriction in the tentative approval of state selection or patent of the land to the state."[5] In *Beluga Mining Co. v. State, Dept. of Natural Resources*, the court found that the mining company had a property right in its claims, but had no right to mine because "its mining 'rights' were prospective and contingent, and were subject to existing claims."[6] Until any conflicting rights are identified and resolved, the holder of the right to extract the minerals proceeds at the holder's risk. If there are no "existing claims" or the land is not subject to the tentative approval of state selected land, my opinion is that the mining rights vest and development is then only subject to the holder obtaining any required permits.

Once a person has acquired mineral rights, state policy appears to favor the continued holding of those rights, even when the holder has failed to fully comply with statutory requirements. For example, AS 38.05.185(b) requires that the lessee or holder only comply with statutory requirements "as nearly as possible under the circumstances" to avoid the invalidation of the interest. That subsection reads as follows:

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holder meets the statutory requirements. In other words, a person whose rights are not subservient to a prior interest holder, who acquires the rights by following the statutory requirements, and who maintains those rights by satisfying the annual work and rental payment requirements, has the rights to those minerals.

[3] AS 38.05.300. See also, *Moore v. State, Dep't of Natural Resources*, 992 P.2d 576, 578 (Alaska 1999).

[4] See the page published on the Internet at *http://www.dnr.state.ak.us/mlw/mining /min_prop.htm* (accessed 11/9/2006).

[5] AS 38.05.275(a).

[6] *Beluga Mining Co. v. State, Dept. of Natural Resources*, 973 P.2d 570, 575 (Alaska 1999).

> (b) The failure on the part of a mining lessee or a locator to comply strictly with AS 38.05.185 - 38.05.275 and regulations adopted under those sections does not invalidate the rights of a mining lessee or a locator if it appears to the satisfaction of the commissioner that the mining lessee or the locator complied as nearly as possible under the circumstances of the case, and that no conflicting rights are asserted by any other person.

The statutes and cases interpreting those statutes point to the conclusion that a person holding a mineral interest that is superior to competing claims has an ownership interest in the minerals that are located. The holder of the interest can continue to hold that interest so long as the holder can "compl[y] as nearly as possible under the circumstances" with the requirements in AS 38.05.185 - 38.05.275,[7] including the satisfaction of the annual rental and labor requirements.[8]

However, perfection of the mineral rights does not in itself allow the interest owner to develop a mine; the owner must obtain all the necessary government-issued permits before extracting the minerals for which the rights are held. In the case of a large mine, the Large Mine Project Team in the Department of Natural Resources coordinates the timing and completion of the numerous permits.[9] Although there is a process of negotiation, modification, and amendment for permit terms and conditions, once the mine owner or operator qualifies for the permits, the mining operation can proceed.

Government liability for taking a mineral or mining right

Article I, sec. 18, Constitution of the State of Alaska, and amendment V of the U.S. Constitution prohibit the government taking of private property without just compensation. The acquisition of mineral rights by the first claimant who discovers a valuable mineral deposit, stakes a location, and files a mining claim has a legally

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[7] AS 38.05.185(b).

[8] AS 38.05.210 (annual labor requirement); AS 38.05.211 (annual rental requirement).

[9] For more information on permitting large mine projects in the state, go to the Internet site at *http://www.dnr.state.ak.us/mlw/mining/largemine/* (accessed Nov. 22, 2006). The large mine projects listed on that site are Chuitna Coal, Fort Knox Mine, Greens Creek Mine, Kensington, Nixon Fork Project, Pebble Gold Project, Pogo Project, Red Dog Mine, Rock Creek Project, True North Mine, and Tulsequah Project. A document summarizing the large mine permitting process is available on the Internet at *http://www.dnr.state.ak.us/mlw/mining/largemine/lmpt_process.pdf* (accessed Nov. 22, 2006).

protected interest,[10] that if taken by the government, entitles the holder to just compensation.

The takings doctrine is implicated when the state deprives a person of a property right. In the case of mineral rights that have been located and are not subject to a prior existing claim, the voiding of those mineral rights or regulatory action that denies all economically feasible use of those mineral rights may be found by a court to constitute a per se taking of that property interest.[11]

The issue of whether or not a mine may be allowed on particular state land initially is decided when the commissioner of natural resources classifies state land as either open or not open to mining.[12] The classification of land as available for mining opens the land to discovery, location, and filing for the mineral rights. For example, the land on which the proposed Pebble Gold Project may be developed is classified as available for mineral development as part of the Bristol Bay Area Plan.[13] Once a holder has established mineral rights -- a protected interest -- the state may not take those rights without just compensation. HCR 29 (24th Alaska Legislature) calls for the commissioner to revisit the decision of classifying the area in which the Pebble Gold Project is located for mineral development. Since the claims have already been filed, a reclassification of the land use could amount to a taking of the mineral rights that have vested and a court could require the state to compensate the holder for those rights.

If the state chose to terminate the mining activity, one option would be for the state to purchase the mineral rights from the holders. Presumably, the state would offer the fair market value for the rights, an appropriate measure of compensation used for

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[10] *Trustees for Alaska v. State*, 736 P.2d 324, 332 (Alaska 1987). Although this case described the federal location system for establishing mineral rights, it is applicable to the state's system. The difference between the state and federal systems was that at the time *Trustees* was before the court the federal requirements did not include the payment of rent and royalties nor was there a state requirement of payment. Following the decision in *Trustees*, the legislature enacted AS 38.05.211 that requires the payment of annual rent to the state for "each mining claim, leasehold location, prospecting site, and mining lease."

[11] See, *Beluga Mining Co. v. State, Dep't of Natural Resources*, 973 P.2d 570, 575 (Alaska 1999).

[12] AS 38.05.300.

[13] The Bristol Bay Area Plan, that describes land use and classification in the area of the proposed Pebble Gold project and includes area maps, is published on the Internet at *http://www.dnr.state.ak.us/mlw/planning/areaplans/bristol/pdf/bbap_complete.pdf* (accessed Nov. 22, 2006).

condemning property through the state's exercise of the power of eminent domain.[14] Another possibility for the state to stop the mining activity would be to impose such extensive requirements for necessary permits that the developer could not economically proceed with the project. With regard to this second option, a regulation that denies the property owner all economically feasible use of the property may be found to be a "per se" taking by the state, and the state would again be in the position of paying just compensation.[15]

A court may also examine governmental action on a case-by-case basis for the purpose of determining whether the action amounts to a taking that justifies compensation to the holder of the property right. This type of examination involves an analysis of the following four factors: (1) the character of the governmental action; (2) its economic impact; (3) its interference with reasonable investment-backed expectations; and (4) the legitimacy of the interest advanced by the regulation or land-use decision.[16] In *Beluga*, the court used the four-factor analysis to consider whether the state had engaged in a taking. With regard to the third element, the *Beluga* court found that the plaintiff failed to establish a basis for concluding that it had "reasonable investment backed expectations" because the claims were always contingent upon state permission to mine and other adverse existing claims.[17]

As a practical matter, it seems reasonable for a mine developer to expect that permits for a mining project will eventually be issued although the requirements are subject to negotiation. My understanding from talking to a staff member[18] of the large mine project team in the Department of Natural Resources is that government agencies have discretion in developing the terms and conditions for each permit, but once the terms and conditions are agreed upon by the applicant (generally the case) the permits are issued and the mining operation proceeds. If there is some point in the permitting process that gives discretion to the decision maker whether or not to issue a permit and the denial of that permit is the basis for stopping the development of the mine, that discretionary step may be a basis for a court to find that the investment-backed expectations were not reasonable.

My impression from the existing statutory scheme and court cases on this issue is that mining rights that have vested through discovery, location, and filing, and that are not

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[14] *Dash v. State,* 491 P.2d 1069, 1073 n. 11 (Alaska 1971).

[15] *Beluga,* 973 P.2d at 575.

[16] *Spinell Homes, Inc. v. Municipality of Anchorage*, 78 P.3d 692, 702 (Alaska 2003). The four factors are referred to as the "Sandberg factors" based on the decision in *Anchorage v. Sandberg*, 861 P.2d 554 (Alaska 1993).

[17] *Beluga,* 973 P.2d at 576.

[18] Tom Crafford, Acting Large Mine Coordinator, *supra.*

subservient to prior or other existing claims are protected property interests and that the state's taking of those interests would require the payment of just compensation under the state and federal constitutions.

Compensation for the taking of mineral or mining rights

Should a court find that the taking of mineral interest constitutes a taking under art. I, sec. 18, Constitution of the State of Alaska or amendment V of the U.S. Constitution, the court, or the parties in negotiations, would need to determine the amount of just compensation to be paid to the holder. Since fair market value has been recognized as a basis for determining just compensation,[19] the fair market value of the interest must be determined.

The valuation of mineral rights was raised in *Phillips v. United States,* in which the 9th Circuit Court of Appeals addressed the determination of the speculative value of a mining claim.[20] The Court wrote:

> 3. The "Element of Speculation" in Mineral Right Does Not Preclude Their Having an Ascertainable Market Value.
>
> "How could the jury arrive at a dollars or cents figure for a mineral interest except by pure guess?" rhetorically asks counsel for the appellee.
>
> The Supreme Court has answered this question.
>
> In Montana Railway Co. v. Warren, 1890, 137 U.S. 348, 352, 11 S.Ct. 96, 97, 34 L.Ed. 681, the Court said:
>
> > "There remains for consideration but a single point, -- that there was admitted in evidence on the trial the opinions of witnesses as to the value of the land, which were not based upon the sale of the same or similar property, and were not therefore the opinions of persons competent to so testify. It appears that the land taken was a strip running through a mining claim, which had been patented and belonged to the defendants in error. The claim adjoined the Anaconda mining claim, which had been developed and worked, and demonstrated to contain a vein of great value. The claim in controversy had been developed so far as to indicate that *possibly, perhaps probably,* the same rich vein extended through its territory. It had not been developed so

[19] *Dash v. State, supra.*

[20] *Phillips v. United States*, 243 F.2d 1, 5 (9th Cir. 1957).

> far that this could be affirmed as a fact proved. The strip taken ran lengthwise through the claim; and, upon the trial witnesses were permitted to testify as to their opinion and judgment of its value. It may be conceded that *there is some element of uncertainty in this testimony, but it is the best of which, in the nature of things, the case was susceptible.* That this mining claim, *which may be called 'only a prospect,'* had a value fairly denominated a 'market value,' may, as the Supreme Court of Montana well says, be affirmed from the fact that such prospects are the constant subject of barter and sale. Until there has been full exploiting of the vein its value is not certain, *and there is an element of speculation, it must be conceded, in any estimate thereof. And yet uncertain and speculative as it is, such prospect has a market value;* * * *'!*

In other words, a court determining the appropriate amount of just compensation to be paid to the holder of mineral rights taken by the state would consider testimony and other evidence relating to the fair market value. Some of the evidence will be speculative, particularly the quantity of valuable minerals in place, the cost of extraction, and the expected profit. I expect the fair market value will reflect the present value of future expected earnings from the minerals. An award based on the expected market value of the minerals that does not take into consideration the cost of developing the mine and the mining, transportation, and marketing of the minerals, including the cost of financing the mining operation, would be excessive and inequitable. Ultimately, if the parties are unsuccessful in negotiating an agreed price for the taking, the determination of fair market value must be determined by a fact finder.[21]

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[21] Another example of valuation testimony is found in *United States v. L.E. Cooke Co.*, 991 F.2d 336, 339 (6th Cir. 1993). In that case, the federal government was condemning land in which the L.E. Cooke Company held coal interests. Part of the action was the determination of the value of the coal lease interests for the purpose of determining just compensation. Regarding the leasehold owners expert witness, the court wrote:

> Because Cooke had the burden of persuasion in this action, its expert witness, John Praskwiecz, testified first. Praskwiecz, a licensed mining engineer, regularly performs reserve studies, mine feasibility studies, and appraisals for his employer, Gaddy Engineering Company.
>
> . . .
>
> Praskwiecz testified that reserve evaluations involve a determination of the amount of coal that is mineable and merchantable within a given piece of property and that mine feasibility studies are economic studies to determine the cost of mining coal, such as the selection of equipment and method of mining. The coal industry categorizes reserves according to standards established by the United States Geological Survey. Praskwiecz

Foreign held mineral interests in Alaska and the relevance of chapter 11 of the North American Free Trade Agreement.

You asked whether Chapter 11 of the North American Free Trade Agreement (NAFTA) may be utilized by a foreign company that has invested in exploration of a mineral resource and is then subject to tightening of state environmental standards relative to mineral extraction or the outright prohibition of resource extraction in an area where the company has been actively exploring.

The use of ch. 11 of NAFTA as a tool for a foreign corporation to bypass or otherwise challenge state law and policy was discussed in a 2004 article that appeared in STATE

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testified that such reserves are either proven, i.e., one-quarter mile from a known point of coal thickness; probable, i.e., one-quarter to three-quarters of a mile from that point; inferred, i.e., three-quarters of a mile to one and one-half miles from that point; or potential, i.e., over one and one-half miles from the known point of coal.

After explaining the procedures he used and the sources of information he relied upon, Praskwiecz concluded that the tracts at issue contained 47,000 tons of proven coal and 1,066,000 tons of probable coal, for a total of 1,113,000 tons. Praskwiecz concluded that the remaining 487,000 tons of coal reserves had no economic value, and he ignored them. When questioned about the quality of the coal in the four seams present in the Cooke property, Praskwiecz stated, "The quality is a low to middle quality steam coal, which can definitely be sold on the steam coal market, and at a price." J.A., vol. II, p. 27. On cross-examination, Praskwiecz acknowledged that only one of the data points he used in his evaluation was actually located on a Cooke tract and that the quality of the coal seams fluctuated in Lawrence County. Also, he admitted that there were some impurities present in the coal but not, in his opinion, enough to affect the coal's marketability.

Praskwiecz further testified that in his opinion the highest and best use of the Cooke tracts was coal mining. In determining market value, Praskwiecz testified that the preferred approach in the industry is to use comparable sales. However, he identified only two sales which were similar enough to be considered comparable and found that these were insufficient to establish a market trend. Instead, he used a discounted cash flow analysis. When his calculations were completed, Praskwiecz determined that the present net value of the Cooke leases was $427,000 and that this was the fair market value at the time of taking.

LEGISLATURES, a publication of the National Conference of State Legislatures (NCSL).[22] The article included a discussion of several cases in which a foreign company sought damages based on state and local government action relating to the corporation's investment. In *Methanex v. United States,* a Canadian corporation sought damages from the United States because of its alleged loss of future profits resulting from the California legislature's ban on MTBE.[23] In a second case, Metalclad, a U.S. multinational corporation brought suit for damages against Mexico after state and local officials in a Mexican state used their land-use regulatory authority to stop the development of a hazardous waste facility in which Metalclad has invested.[24] In another case involving California, Glamis Gold is pursuing a claim against the United States based on provisions in California's mining law that protect Native American sacred sites that Glamis Gold argues will deprive the company of future profits.[25] In each of these three cases, the federal government that was a party to NAFTA -- Mexico and the United States -- is the defendant.

In 1993, the Congress of the United States enacted the North American Free Trade Agreement Implementation Act.[26] Sec. 102 of the Act addresses the relationship between NAFTA to United States and state law.[27] With regard to state law, sec. 102 requires the President to consult with the states for the purpose of achieving conformity of state laws and practices with NAFTA and to assist the states to identify those state laws that may not conform to the agreement.[28] Further, with regard to legal challenges to state law, the section states that, "No State law, or the application thereof, may be declared invalid as to any person or circumstance on the ground that the provision or application is inconsistent with the Agreement, except in an action brought by the United States for the purpose of declaring such law or application invalid."[29]

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[22] William T. Warren, *Trade Agreement Trade-offs*, STATE LEGISLATURES, July/August 2004, at 20-23.

[23] *Id.* at 21. "MTBE" is methyl tertiary butyl ether, a fuel additive in motor gasoline. See, *http://www.epa.gov/mtbe/faq.htm#background* (accessed Dec. 6, 2006).

[24] *Warren* at 21.

[25] *Id.* at 21-22.

[26] Pub. L. 103-182, 107 Stat. 2057.

[27] Sec. 102 is codified as 19 U.S.C. 3312.

[28] 19 U.S.C. 3312(b)(1)(B).

[29] 19 U.S.C. 3312(b)(2).

Given the nature of mineral rights in this state -- that the interests vest following discovery, location, and filing -- state action that amounts to a taking requires just compensation to be paid to the holder of the property interest that is the subject of the taking. As discussed above, Alaska courts have recognized that regulatory action can amount to a taking and require compensation to be paid. The suits brought under ch. 11 of NAFTA that are based on a regulatory taking of an economic interest possibly could be resolved under Alaska law if the court finds that a regulatory taking has occurred. The remedy for a regulatory taking under NAFTA, in the form of a suit for damages against the host country, is available to a foreign corporation regardless as to whether a particular state recognizes a regulatory taking such as our court described in *Beluga*, supra.

NAFTA and the North American Fee Trade Agreement Implementation Act do seem to complicate a state's exercise of control over environmental concerns by raising the possibility of a suit against the federal government based on state regulation and, under the Implementation Act, requiring a state and federal government to coordinate regulatory actions for consistency under NAFTA.[30]

I do not know the extent of any interaction related to NAFTA between the state and federal government. You may wish to contact the office of the governor or the governor's office in Washington, D.C. for more information.

Summary

The commissioner of natural resources identifies land in the state that is open for mining. When a person acquires mineral rights through discovery, location, and filing, that person acquires a property interest that requires the state to pay just compensation if the property is taken either as a per se taking or a regulatory taking that deprives the owner of all economic use of the interest.

The North American Free Trade Agreement provides a means for a non-U.S. corporation to try to recover damages from the federal government based on what is found to be a regulatory taking by a state or local government.

If I may be of further assistance, please advise.

DMB:med
06-511.med

[30] Northern Dynasty, the developer of the Pebble Gold Project, is a corporation based in Vancouver, British Columbia, and potentially could seek protection of its investments under ch. 11 of NAFTA.

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THE VALUE OF COMMERCIAL FISHERIES NEAR BRISTOL BAY, ALASKA

World Wildlife Fund
August 2011

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EXECUTIVE SUMMARY

Bristol Bay Alaska is one of the world's last remaining wild places. Its highly productive marine ecosystems support the largest sockeye salmon run in the world, as well as chum salmon, Chinook salmon, Sockeye salmon, Red King crab, Pacific halibut and other commercially valuable species. The economic, social, cultural, and ecological well-being of the region depends on the health of its fisheries. Climate change and potential infrastructure projects related to oil, gas, and mineral development in the region, however, now threaten its pristine ecosystems. Understanding the economic value of Bristol Bay's fisheries, therefore, is more important now than ever before.

This study estimates the dollar value of the total economic activity supported by Bristol Bay's commercial fisheries, from harvest to processing to retail. The total economic value of economic activity is determined using a value-chain analysis supplemented by input-output modeling. This study finds that healthy and productive fisheries in Bristol Bay generate economic activity equivalent to $4.1–$5.4 billion dollars annually.

The health of Bristol Bay fisheries is not only economically important to the region, but to the nation and the globe. The men and women who fish in Bristol Bay's waters reside in states beyond Alaska. The processors and wholesalers who process the catch are located off-shore and on-shore in and beyond Alaska. The seafood products sold by retailers are purchased by consumers the world over.

This study's estimates of the dollar value of economic activity supported by Bristol Bay fisheries captures only one dimension of the total economic value of the region. It makes no attempt to monetize the value of biodiversity and ecosystem services, recreation and scenic amenities, or cultural and social significance. Nevertheless, our estimates of the economic value of commercial fisheries in Bristol Bay provide strong economic support for protecting this unique and valuable ecosystem.

Kevin Schafer / WWF-Canon

Verner Wilson / WWF

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Scott Dickerson – WWF

1] INTRODUCTION

Southwest Alaska's Bristol Bay boasts magnificent scenery, highly productive marine ecosystems, and bountiful fisheries. The area is home to the largest sockeye salmon run in the world and also supports strong runs of chum salmon, Chinook salmon, and Coho salmon. Bristol Bay provides nursery grounds for commercially valuable Red King crab and Pacific halibut. It is a staging area and wintering ground for tens of millions of birds, and a feeding ground and migration corridor for many marine mammals, including five endangered species.

As salmon populations plummet worldwide and development and population pressures encroach on the world's last remaining wild areas, Bristol Bay's abundant natural wealth assumes global significance. Development has left Bristol Bay largely untouched thus far, but climate change, off-shore oil and gas development, and mining threaten to irrevocably diminish its natural productivity and the subsistence and commercial livelihoods of those who depend on it.

The Bristol Bay region's economic, social, cultural, and ecological well-being is tied to healthy marine ecosystems. Grizzly bears, traditional subsistence lifestyles, commercial fisherman, seafood processors and retailers, sports fishing enthusiasts, and tourism all depend on its fisheries, especially salmon. The myriad of economic, cultural, ecological, and social values supported by Bristol Bay is impossible to estimate in its entirety. These values are at risk, if proposed infrastructure projects related to oil and gas development proceed. Figure B.1 in Appendix B maps potential oil and gas lease areas near Bristol Bay. These projects can potentially disrupt pristine habitats, impact fish and wildlife populations, and pollute the watershed.

This study demonstrates the economic contributions of one of the largest and most significant industries in the region – commercial fishing. It provides a range of estimates of the total dollar value of commercial fisheries, from harvest to processing to retail. These estimates comprise only one component of the total economic value of Bristol Bay, the component that can be most readily monetized. It excludes the value of biodiversity and ecosystem services, recreation and scenic amenities, cultural and social significance. Nevertheless, these estimates of the economic value of commercial fisheries in Bristol Bay provide strong economic support for protecting this unique and valuable ecosystem.

In the section that follows, we examine commercial fisheries in our base study area at glance, identifying key species and economic impacts. In section 3, we discuss our methodology and analysis. In section 4 we present our results and conclusions.

Scott Dickerson – WWF

2] BRISTOL BAY COMMERCIAL FISHERIES AT A GLANCE

2.1. Base Study Area Defined

Bristol Bay and surrounding waters support many large and valuable fisheries. The base study area for this analysis includes the marine waters of the North Aleutian Basin and adjacent waters identified as at risk from potential oil, gas, and mineral related infrastructure (Figure 1). Specifically, it includes the marine waters contained within the following Alaska Department of Fish and Game statistical areas:

- All statistical areas south and east of 59 lat and 165 long, but north of the Aleutians.[1]
- Those statistical areas represented on Chart 9 – Alaska Peninsula and Chignik south of the Aleutians based on the fact that there will be shipping and potential spill and infrastructure impacts on that area.[2]
- Statistical areas 655530, 655500, 655430, 655410, 655407, 655409, 665500, 665430, 665410, 675430, 675400, 675333, 685331, 685332, and 685400.[3]
- All state waters that fall within or are adjacent to the above described regions.

2.2. Commercial Fisheries: Landings

The base study area encompasses commercial fishing activity that spans different management agencies, management plans, and spatial scales. In 2008, the base study area comprised almost one-third of the total commercial landings in Alaska. Between 2005–2008, the value of ex-vessel landings in the base study area averaged $463 million annually, with five commercial species (salmon, pollock, King crab, Pacific cod, and halibut) accounting for almost 95% of that value (Table 1).[4] Salmon is the largest fishery in the Bristol Bay region, contributing one-third of total landings value. Four species (pollock, salmon, Pacific cod, and herring) account for almost 96% of total pounds landed in the base study area (Table 2).

FIGURE 1. BASE STUDY AREA

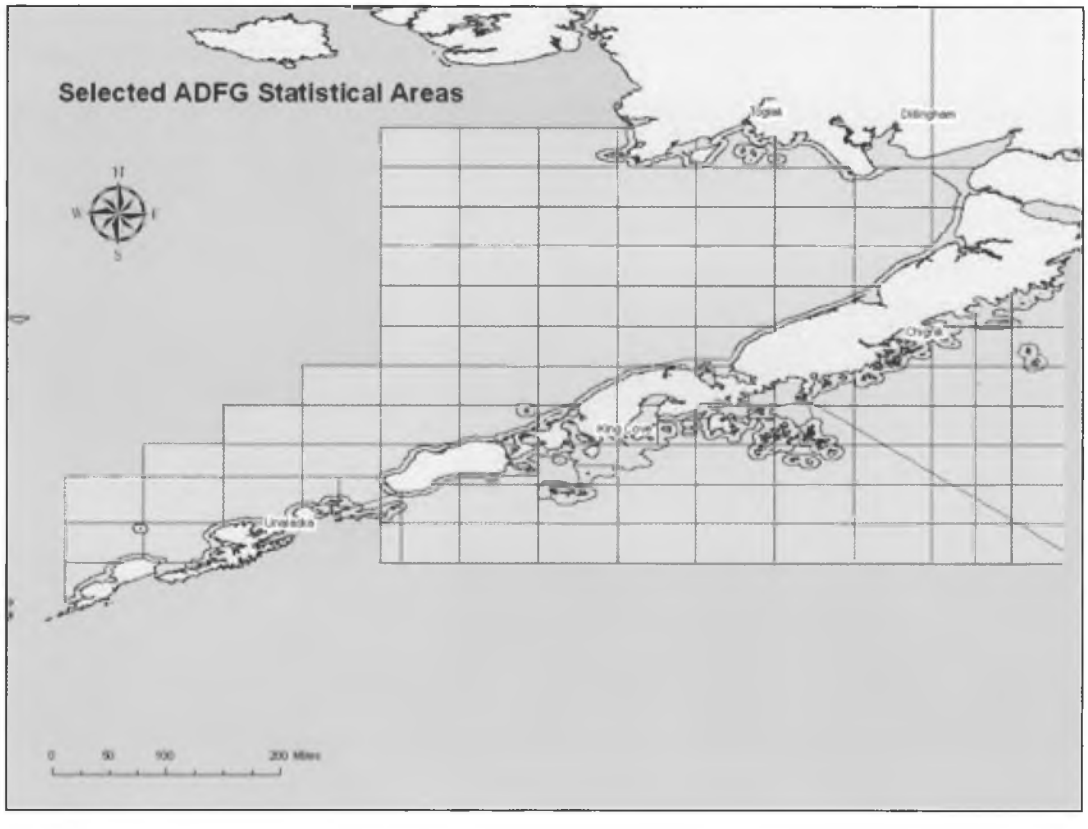


TABLE 1. LANDINGS BY SPECIES GROUP FOR SELECT ADFG STATISTICAL AREAS (MILLIONS $2008)

	2005	2006	2007	2008	Average (2005-08)	Cumulative % of total
Salmon	$142.7	$146.7	$159.8	$166.0	$153.8	33.2%
Pollock	$135.7	$126.5	$105.3	$112.3	$120.0	59.1%
King Crab	$88.1	$60.6	$91.0	$100.9	$85.1	77.5%
Pacific Cod	$39.0	$52.9	$49.4	$64.4	$51.4	88.6%
Halibut	$26.8	$29.7	$27.8	$31.4	$28.9	94.9%
Sablefish	$13.0	$15.5	$15.7	$14.7	$14.7	98.1%
Tanner Crab	$1.4	$0.9	$3.1	$3.9	$2.3	98.6%
Herring	$4.2	$3.8	$2.8	$3.3	$3.5	99.3%
Flatfish	$0.9	$1.2	$2.0	$1.2	$1.3	99.6%
Dungeness Crab	$0.6	$0.4	$1.3	$1.1	$0.9	99.8%
Scallops	-	$0.6	$0.4	$0.3	$0.3	99.9%
Rockfish	$0.3	$0.3	$0.3	$0.3	$0.3	99.9%
Other Species [5]	$0.4	$0.2	$0.2	$0.4	$0.3	100.0%
Atka Mackerel	$0.0	$0.0	$0.0	$0.0	$0.0	100.0%
Ling Cod	$0.0	$0.0	$0.0	$0.0	$0.0	100.0%
Total	**$453.1**	**$439.6**	**$459.0**	**$500.1**	**$463.0**	–

Source: Alaska Commercial Fisheries Entry Commission

TABLE 2. LANDINGS BY SPECIES GROUP FOR SELECT ADFG STATISTICAL AREAS (THOUSAND POUNDS)

	2005	2006	2007	2008	Average (2005-08)	Cumulative % of total
Pollock	1,039,076	955,297	819,118	565,685	844,794	63.6%
Salmon	243,071	241,943	270,608	263,574	254,799	82.7%
Pacific Cod	150,697	139,280	106,988	117,729	128,674	92.4%
Herring	46,495	47,778	35,328	43,876	43,369	95.7%
Flatfish	11,459	17,332	25,066	20,415	18,568	97.1%
King Crab	18,139	15,541	20,147	20,104	18,483	98.5%
Halibut	8,217	7,462	6,272	7,417	7,342	99.0%
Sablefish	5,719	6,080	6,124	5,118	5,760	99.5%
Other Species	3,294	2,875	2,850	4,397	3,354	99.7%
Tanner Crab	740	688	1,875	2,300	1,401	99.8%
Rockfish	894	1,305	1,125	772	1,024	99.9%
Atka Mackerel	1,476	1,352	629	16	868	100.0%
Dungeness Crab	437	278	653	510	470	100.0%
Scallops	0	71	50	56	44	100.0%
Ling Cod	0.673	0.594	0.762	0.341	0.593	100.0%
Total	**1,529,717**	**1,437,283**	**1,296,832**	**1,051,970**	**1,328,950**	–

Source: Alaska Commercial Fisheries Entry Commission

Harvest is conducted by permit holders. Permit holders in the base study area largely reside in Alaska, Washington, Oregon, and California (Table 3). Approximately 70% of the average landings value in the base study area over the period 2005-2008 was held by permit holders residing outside of Alaska. This demonstrates the potential geographic extent of the economic impacts of Bristol Bay commercial fisheries; revenues earned by out-of-state permit holders can contribute to spending and to the tax base in nearby states.

Case Study of Salmon Permit Holders

The Bristol Bay salmon fishery offers an instructive case study of the distribution of earnings of permit holders and the geographic extent of impacts associated with commercial harvests in the base study region. Data compiled from the Commercial Fisheries Entry Commission online database reveals that 3165 salmon permits were issued for Bristol Bay salmon permit areas in 2008. Alaska residents accounted for approximately 56% of permit ownership. Permits were also held by individuals residing in 45 U.S. states, Canada, and New Zealand.[6]

Table 4 summarizes the average earnings per permit holder per permit types for the states where ten or more permit holders reside. The data shows that the value of Bristol Bay salmon permits extends well beyond Bristol Bay.[7]

Examining the distribution of salmon permit holders within the base study region demonstrates the regional impacts of commercial harvests. The boroughs/census areas of Bristol Bay and Dillingham are the terrestrial areas most closely associated with the base study area. Less than 20% of S03T permits and just over 30% of S04T permits are held by these 'regional' residents (Table 5).

TABLE 3. AVERAGE VALUE OF TOTAL LANDINGS BY RESIDENCY OF PERMIT HOLDER

State	Landings value (millions $)	% of total landings
Alaska	$143.00	31%
Washington	$241.00	52%
Oregon	$43.00	9%
California	$13.00	3%
Other	$23.00	5%

Source: Alaska Commercial Fisheries Entry Commission

TABLE 4. SALMON PERMITS BY STATE OF RESIDENCE 2008

State	# of permits	Total gross earnings	Average gross earnings/ permit
AK	1780	$76,353,887	$42,895
WA	837	$49,847,151	$59,555
CA	157	$8,356,421	$53,226
OR	142	$7,144,183	$50,311
ID	36	$1,767,436	$49,095
MN	29	$1,346,680	$46,437
MT	28	$1,301,295	$46,475
CO	18	$657,771	$36,543
AZ	12	$636,997	$53,083
UT	10	$508,681	$50,868

Source: Authors' calculations based on permit data from Commercial Fisheries Entry Commission online database

2.3. Commercial Fisheries: Processing, Wholesale, and Retail

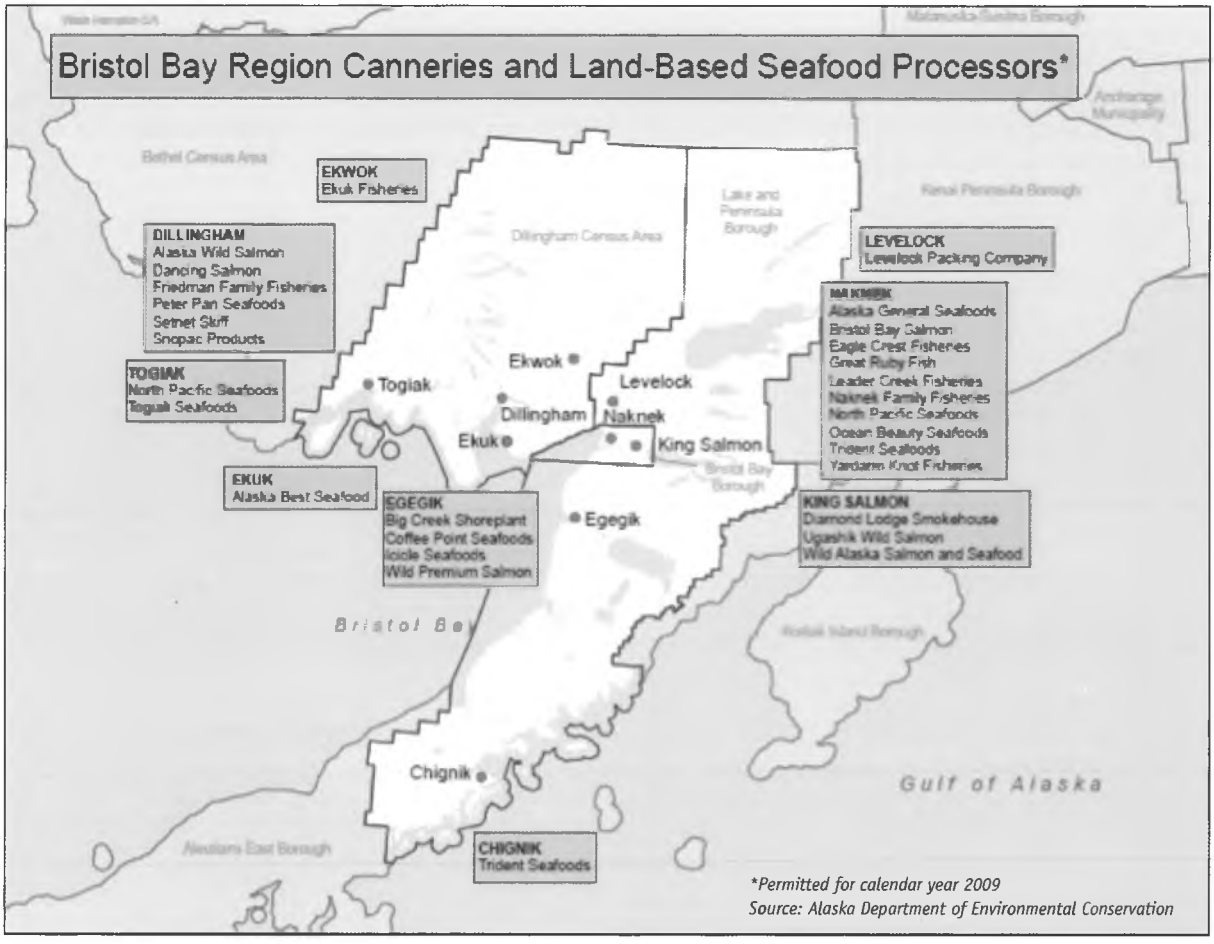
Commercial fisheries contribute economic value along the supply chain from harvest to consumption. After harvest, permit holders sell their catch to processors and wholesalers. Seafood processing is a major component of Alaska's seafood industry. Commercial processing of seafood harvested in the base study area may occur: 1) on-shore in terrestrial areas associated with Bristol Bay (i.e., Bristol Bay Borough, Lake and Peninsula Borough and Dillingham Census Area); 2) at-sea on processing ships; or 3) on-shore beyond the base study area (inside or outside of Alaska). The base study area contains off-shore processors that harvest their own catch directly. Since 1990, catcher/processors that fish exclusively off-shore and do not deliver to Alaska ports have not been required to fill out fish tickets. This makes it difficult to estimate the harvests by these vessels and the wholesale values associated with processing those harvests.

TABLE 5. NUMBER OF PERMIT HOLDERS FOR KEY BRISTOL BAY FISHERIES FROM THE REGION (2008)

		Bristol Bay		Dillingham		Total Permits		Region as a % of total	
Fishery	Area	Permits	Fished	Permits	Area	Permits	Fished	Permits	Fished
Salmon	S03T	57	50	270	227	1,863	1,469	18%	19%
	S04T	118	100	202	123	980	850	33%	26%
	TOTAL	**175**	**150**	**472**	**350**	**2,843**	**2,319**	**23%**	**22%**

Source: Authors' calculations based on permit data from Commercial Fisheries Entry Commission online database

FIGURE 2. BRISTOL BAY CANNERIES AND SEAFOOD PROCESSORS



**Permitted for calendar year 2009*
Source: Alaska Department of Environmental Conservation

Wholesale value (also commonly called 'first wholesale value') typically refers to the value of seafood products after processing. Following processing, seafood is then typically distributed to retailers or restaurants where it finally reaches consumers. This final level of distribution is referred to as 'retail' and it includes food stores, the food service industry, and non-edible industrial products resulting from secondary processing.[8]

Commercial fisheries' landings from the base study area are distributed worldwide. Figure B.5 in Appendix B details 24 recipient countries of salmon processed by one Bristol Bay salmon processor. This is but a small portion of total exported Alaskan salmon. An annual U.S. export list of salmon (excluding Atlantic salmon) in 2008 shows as many as 88 importing countries in one year (NMFS 2011a). It is clear that distribution and sales from base study area fisheries not only concern Alaska or even just the U.S., but impact international markets as well.[9]

2.4. Summary Characteristics of Base Study Area

The base study area for this analysis includes the marine waters of the North Aleutian Basin and adjacent waters that are at potential risk from oil, gas, and mineral development. The base study area, therefore, comprises a greater area than what often is referred to as "Bristol Bay". It encompasses commercial fishing activity that spans different management agencies, plans, and spatial scales. The base study area is incredibly productive, with 1.3 billion pounds of fish on average harvested annually. This is equivalent to almost one-third of total commercial landings in Alaska. Salmon is the largest fishery in the base study region, accounting for 33% of the landings value and the largest share of harvest related employment. Other major fisheries include pollock, King crab, Pacific cod, and halibut, which combined account for an additional 62% of landings value.

Commercial landings from the base study area are also distributed worldwide. Distribution and sales from base study area fisheries impact international markets as well. The economic impacts of commercial fisheries in the base study area, therefore, have broad geographic reach. This suggests that the health of Bristol Bay fisheries is economically significant not only to Alaska but to the nation as a whole.

3] METHODS AND ANALYSIS

The objective of this analysis is to demonstrate the economic contributions of commercial fisheries in the base study area, from harvest to consumption. To do this, we use a value chain analysis, supplemented by input-output modeling. This approach allows us to capture the value contributed along subsequent steps in the value-chain, from harvest through processing, wholesale, and retail; as well as the value of related economic activities.

The study focuses on three major stages in the chain; 1) harvest ⇨ 2) processing and wholesale ⇨ 3) retail and consumption. At each step along the value-chain, there is value added to the commercial fishery input. We estimate the value of the commercial fishery input upon the completion of each forward linked step in the value-chain. We refer to the value at each step along the value-chain as landings value, wholesale value, and retail value respectively.

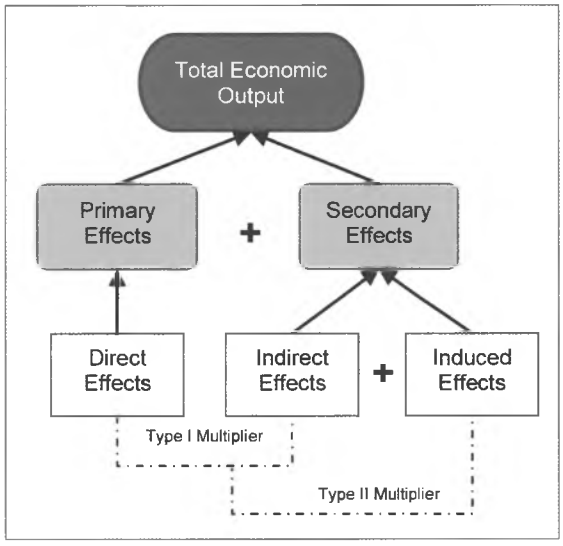
In a value-chain analysis, the value-added is cumulative across all steps; upstream steps capture the value of all previous steps and should not be treated additively. This process is best illustrated by way of example. Assume a commercial fisherman is paid $1.00 for one fish harvested from the base study area. The fish (fishery input), therefore, has a landings value of $1.00. The processor who purchased the fishery input will process it, adding value, and sell it to a retail outlet for $2.00; thus the wholesale value of the fishery input is $2.00. The retailer, the final step in the value chain, may add labeling or prepare the fishery input as part of a meal, adding further value, and sell it to the final consumer for $3.00, the final retail value. The entire process from harvest through to retail sale and consumption transforms $1.00 in landings into $3.00 in consumer product.

The value-chain analysis, however, captures only one dimension of the economic value of commercial fisheries. It does not measure economic activity linked to every step along the supply chain. There other businesses and sectors that support harvest, wholesale and processing, and retail activities. For example, to catch the fish initially, the fisherman purchased gear, bait, and other supplies and hired a crew. All of this activity was supported and paid for by sales made to processors. Processors also purchase supply inputs, employ workers, and maintain equipment. Those activities are supported by sales made to retailers. Commercial fishermen, processors, and retailers each have suppliers downstream which benefit indirectly from sales; these effects constitute the indirect economic impacts of commercial fishing.

The economic contributions of commercial fisheries, however, do not end there. Fishermen and their crew; bait and tackle shop owners and their employees; processors and their workers and suppliers; and retailers all have income to spend at other businesses due to commercial fishing. This induced economic activity is an important contribution of commercial fishing. In areas of the world where commercial fisheries have been closed due to historic overfishing, the ripple effects through the regional economy are generally very apparent. Businesses fail to thrive when a major industry that supports the local economy is in a state of decline.

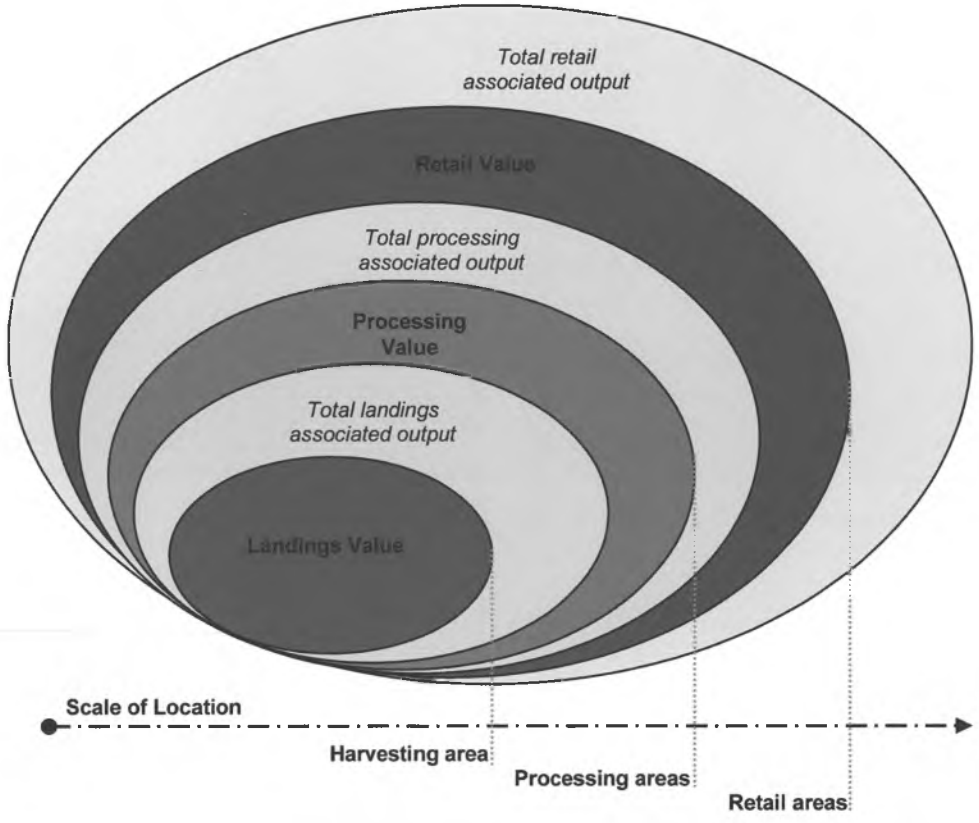
Induced effects and indirect effects are referred to in this analysis as the secondary economic impacts from commercial fishing. To calculate indirect and induced effects, an economic multiplier is used. For example, a multiplier of 1.5 implies that $1.00 of primary economic activity generates an additional $0.50 in indirect and/or induced economic activity, for a total economic output of $1.50. The total economic output, therefore, includes direct, indirect, and induced economic effects (Figure 3).[10] Multipliers are derived from input-output models that describe the industrial structure of an economy – the inputs to various sectors and the distribution of outputs – at a particular scale.[11] Typically, the larger the region impacted by the activity, the greater the multiplier effect. Moreover, the greater the multiplier effect is, the greater the impact on the region's economy.

FIGURE 3. MULTIPLIER EFFECTS



Our analysis of the total value of commercial fisheries in the base study area proceeds as follows. First, we estimate the economic value of commercial harvests using landings data. We then apply the appropriate multipliers to estimate the secondary impacts (indirect and induced economic activity) associated with that harvest. Second, we estimate the value added by processing and wholesale. We estimate wholesale value using two different approaches: 1) the application of related processing margins; and 2) the use of a seafood specific economic-value added model. We then apply the appropriate multipliers to estimate the secondary

FIGURE 4. ANALYSIS OF THE ECONOMIC VALUE OF COMMERCIAL FISHERIES



impacts of processing and wholesale. Lastly, we estimate value added by the retail sector using the same economic-value added model. Secondary impacts are again determined using appropriate economic multipliers. Throughout the analysis, we present a range of values to reflect the uncertainties in this analysis and to demonstrate the sensitivity of results to key modeling choices.[12] Unless otherwise noted, all estimates reported in this study are in real dollars ($2008).

Figure 4 depicts the forward and backward linkages captured by this multi-step value-chain and associated economic impact analysis. The three steps in the value chain (harvest, processing, and retail) are color coded to reflect the total economic output associated with each step; blue shades, for example, represent the total economic impacts from harvesting. The economic impacts are cumulative as we move from harvest to retail and cannot be summed. The scale of the geographic region impacted by the economic contributions of commercial fisheries expands outward as we move along the value chain.

3.1. Landings Value and Value of Associated Economic Output

Our analysis begins with average landings value in the base study region. Between 2005-2008, the landings value in the base study region averaged $463 million dollars annually (Table 1). This is the primary economic impact from commercial harvest. As discussed previously, the landings value supports additional economic activities, the magnitude and value of which can determined through the application of an economic multiplier.

We reviewed the literature that estimates multiplier effects from commercial fishing activities to identify a range of potential multiplier values to use in this analysis (Appendix A). Most studies employ state-level multipliers rather than national multipliers, on the assumption that most of the economic impacts from commercial fishing manifest on a regional scale. Given the wide geographic reach of Bristol Bay commercial fisheries, in terms of where permit holders reside, where labor is sourced from, and where retail products are sold, it may be that a national-level multiplier could be justified. To use state-level multipliers as we do in this analysis, therefore, ensures conservative estimates of the total economic output associated with commercial harvest. Multipliers derived for other states or regions, or for specific fisheries, do not necessarily reflect the specific input-output configurations of our base study region. At best, these multipliers indicate a likely range within which the total economic value of commercial fishing in the base study area may lie.[13]

The two studies most directly relevant to our analysis come from the McDowell Group (2010) and Hackett et al. (2009). McDowell Group (2010) developed a set of multipliers, "specifically tailored to handle the aspects of Alaska's commercial seafood industry" (p. 6). They estimated a multiplier of 1.60 for the Prince William Sound commercial salmon fishery.[14] While the salmon fishery is but one of many fisheries in the base study area, it is the largest and most valuable, accounting for 30% of the landings value ($154 million dollars) on average. Applying McDowell Group estimates we show that the Bristol Bay salmon fishery alone supports an estimated $246 million annually in total economic output for the state of Alaska (Table 7).

Hackett et al. (2009) created a modified input-output model for California commercial fisheries and calculated multipliers at the state and regional level by operational configuration. Their operational configuration for salmon can be applied to the salmon fishery in Bristol Bay. Table 8 presents estimated total annual output for the Bristol Bay commercial salmon fishery using Hackett et al. multiplier value.

Multipliers that can be applied to total fisheries activity in the base study region are taken from Hodges et al. (2000), TECHLAW (2001), and Crosson (2009) as summarized in (Table 6). Hodges et al. (2000) estimated an output multiplier of 1.58 for commercial fishing in Florida. A 2001 study entitled, "The Economic Contribution of the Sport Fishing, Commercial Fishing and Seafood Industries to New York State," estimated an output multiplier of 1.92 for New York commercial fisheries (TECHLAW 2001). Finally, Crosson (2009) conducted an analysis of ocean going commercial fisherman in North Carolina and estimated an output multiplier of 1.45 for these fisheries.

Despite differences between fisheries in these states and in the base study area, they can be used to estimate a range of values of potential economic output resulting from harvest. Table 9 provides estimates of average annual total economic output for all Bristol Bay fisheries based on these multipliers.

Summary

Average annual landings value from 2005–08 for Bristol Bay commercial fisheries was $463 million; $154 million for the salmon fishery alone. Landings value supports secondary economic activity in the base study area and beyond. The total economic value of commercial harvests, therefore, may range from a high of $889 million dollars annually to a low of $673 million dollars annually. The Bristol Bay salmon fishery alone may support total economic activity in the range of $246–$253 million per year.

TABLE 6. ECONOMIC MULTIPLIERS FOR COMMERCIAL FISHERIES

Study	Multiplier	Case study area
McDowell Group 2010	1.6	Prince William Sound
Hackett et al. 2009	1.65	California
Crosson 2009	1.45	North Carolina
TECHLAW 2001	1.92	New York State

TABLE 7. ESTIMATED TOTAL OUTPUT FOR BRISTOL BAY SALMON FISHERY, 1

Salmon	Estimated annual output (2005–08 average)		
	Primary effects	Secondary effects	Total effects
Multiplier	1	0.6	1.6
Value (millions $)	$153.8	$92.3	$246.1

Source: Authors' calculations based on McDowell Group 2010

TABLE 8. ESTIMATED TOTAL OUTPUT FOR BRISTOL BAY SALMON FISHERY, 2

Salmon	Estimated annual output (2005–08 average)		
	Primary effects	Secondary effects	Total effects
Multiplier	1	0.6474	1.6474
Value (millions $)	$153.8	$99.6	$253.4

Source: Authors' calculations based on Hackett et al. 2009

Scott Dickerson – WWF

TABLE 9. TOTAL OUTPUT OF BRISTOL BAY COMMERCIAL FISHERIES USING EXISTING MULTIPLIERS

		Estimated annual output (2005–08 average)		
	All fisheries	Direct effects	Indirect effects	Total effects
Crosson (2009)	Multiplier	1	0.453	1.453
	Value (millions $)	$463.00	$209.70	$672.70
Hodges et al. (2000)	Multiplier	1	0.578	1.578
	Value (millions $)	$463.00	$267.40	$730.40
TECHLAW (2001)	Multiplier	1	0.92	1.92
	Value (millions $)	$463.00	$426.10	$889.10

TABLE 10. SUMMARY OF REGIONAL PROCESSING MARGINS

	Landings value (2007)	Wholesale value (2007)	Processing margin
Northwest and AYK	$7,209,518	$13,999,731	94.2%
Bristol Bay	$82,618,059	$239,528,907	189.9%
Southcentral	$203,004,630	$362,484,552	78.6%
Aleutian & Pribilof Islands	$392,611,159	$821,911,580	109.3%
Kodiak	$129,918,267	$266,272,694	105.0%
Southeast	$213,448,259	$404,779,932	89.6%
At-sea	$523,390,109	$1,518,022,604	190.0%
Total	**$1,552,200,001**	**$3,627,000,000**	**133.70%**

Source: Schug et al. (2009) and Marine Conservation Alliance (2009)

3.2. Wholesale Value and Value of Associated Economic Output

Wholesale value typically refers to the value of seafood products after processing. Estimates of wholesale value for the base study area were not readily available. To determine the value added to commercial landings as they are processed for wholesale, we review existing studies that report both landings value and wholesale value estimates to identify a range of processing margins. We then apply those margins to the landings value for our base study area.

In a report for the Marine Conservation Alliance, Schug et al. (2009) estimated processing margins for Alaska's seafood industry by regions. They estimate total landings value of Alaska commercial fisheries to be near $1.6 billion (in 2007). They estimate the total wholesale value to be $3.6 billion; $2.1 billion for shore-based processing, and $1.5 billion for at-sea processing (Northern Economics 2009).[15] This implies a processing margin of 133.7% (Table 10).

The highest percentage of value added (189.9%) for shoreside processing is attributed to Bristol Bay, though this region is likely not coterminous with the base study region.[16] We use the estimated processing margins for Bristol Bay and for all of Alaska to estimate a range of wholesale values for the base study area (Table 11). We estimate wholesale value for the base study region to range from $1.1 to $1.3 billion dollars annually.

TABLE 11. ESTIMATED ANNUAL WHOLESALE VALUES FOR BRISTOL BAY COMMERCIAL FISHERIES

Landings value (millions $)	Processing margin	Wholesale value (billions $)
$463	189.92% (Bristol Bay)	$1.3
$463	133.67% (Total)	$1.1

Source: Authors' calculations

Estimating Wholesale Value Using NMFS Value-Added Model

The National Marine Fisheries Service (NMFS) has developed an economic value-added model for commercial fisheries. The model calculates the value added at each step in the value chain, beginning with fishermen's landings through the point of final sale to consumers (NMFS 2009). The model relies on primary and secondary data sources to calculate the margin of value added (mark-up) applied at each stage of the value chain (NMFS 2009). The model begins with total landings value from domestic harvest. The final retail value represents all consumer expenditures on seafood products sold through stores and food service outlets and purchases of non-edible industrial products (NMFS 2009). The value paid to fishermen, processors, and wholesalers is embodied in the final retail value. Figure 5 displays the model as adapted to our purposes.[17]

To apply the NMFS value-added model to base study area landings values, we assume basic similarities in how seafood is processed and eventually consumed from the base study area and from U.S. fisheries as a whole. Table 12 details the component of the NMFS model that allows us to estimate the value added to commercial landings values through primary and secondary processing. NMFS describes secondary processors/wholesalers as those who purchase from other wholesalers or processors and make final distributions to retailers or restaurants.

FIGURE 5. VISUAL REPRESENTATION OF NMFS VALUE-ADDED MODEL

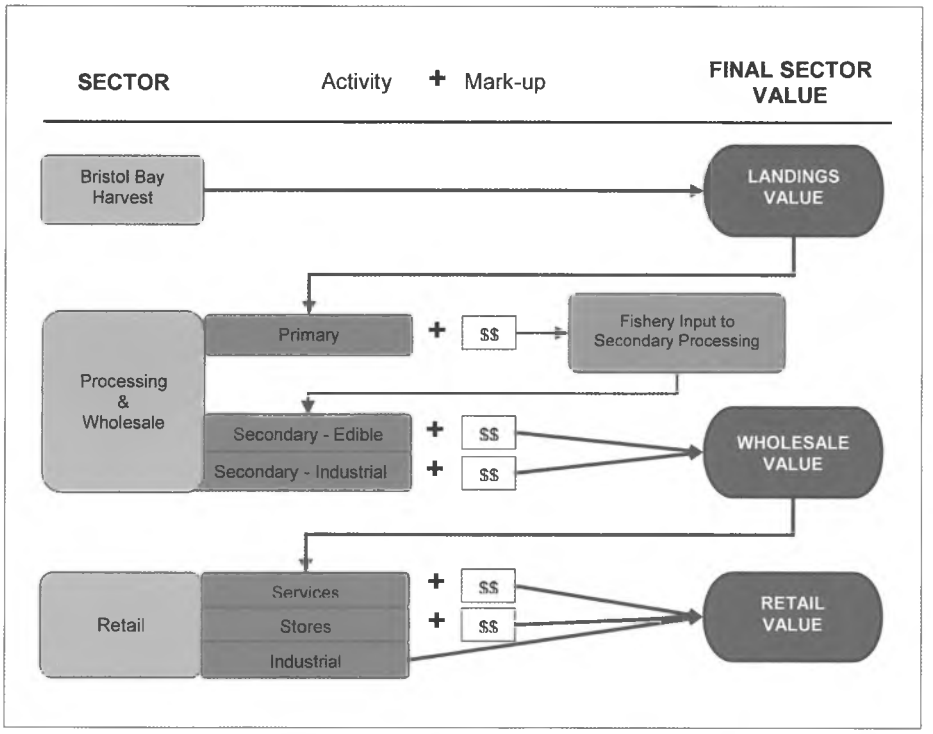


TABLE 12. ESTIMATED WHOLESALE VALUE USING ADAPTED NMFS MODEL

Sector	Activity	Allocation %	Indirect effects	Total effects	Indirect effects	Total effects
Processing & Wholesale	Primary	100%	$463.0	90.3%	$418.2	$881.1
			$463.0			**$881.1**
	Secondary - Edible	98.9%	$871.0	62.7%	$546.2	$1,417.2
	Secondary - Industrial	1.1%	$10.1	62.7%	$6.3	$16.4
			$881.1			**$1,433.7**

Source: Authors' calculations using the NMFS (2009) value-added model

Kevin Schafer / WWF-Canon

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To arrive at wholesale values, we input the average annual landings value of the base study area ($463 million) into the model. During primary processing, a mark-up of 90.3% is applied to this fishery input. The NMFS model then apportions 98.9% of the fishery input to secondary processing for edible uses and 1.1% for secondary processing for industrial uses, but applies the same mark-up (62.7%) to both. The model then calculates the final wholesale value of the fishery input after primary and secondary processing at $1.4 billion.

Multiplier Effect

Schug et al. (2009) estimated total economic output associated with seafood processing in Alaska using the IMPLAN input-output model. The multiplier they derive from IMPLAN is equal to 1.6. We apply this multiplier to our estimated wholesale values to generate a range of estimates of the total economic output associated with processing seafood harvested from our base study region (Table 13). The total estimated economic output from processing seafood harvested in Bristol Bay ranges from $1.7 to $2.3 billion dollars.

Summary

The estimated wholesale value of commercial harvests from the base study region ranges from $1.1-$1.4 billion dollars annually. This wholesale value as it is processed supports secondary economic activity in the base study area and beyond. The value of the total economic output associated with fisheries wholesale and processing, therefore, may be as high as $2.3 billion each year. These values include landings value and the value of economic activities associated with harvesting. It is a cumulative estimate of the value of the total economic activity created as fish are harvested, processed, and sold wholesale along the value chain.

3.3. Retail Value and Value of Associated Economic Output

After processing, seafood is typically distributed to retailers or restaurants where it finally reaches consumers. We refer to this final level of distribution as 'retail'. It includes food stores and the food service industry, as well as the non-edible industrial products resulting from secondary processing. We use the NMFS value-added model to produce three estimates of the value added at the retail level based on our three wholesale value estimates presented in section 3.2.

TABLE 13. AVERAGE ANNUAL OUTPUT FROM PROCESSING HARVESTS FROM BRISTOL BAY

		Estimated annual output (2005–08 average)		
		Direct effects	Indirect effects	Total effects
Approach 1: low bound	Multiplier	1	0.6	1.6
	Value (billions $)	$1.1	$0.6	$1.7
Approach 1: high bound	Multiplier	1	0.6	1.6
	Value (billions $)	$1.3	$0.8	$2.1
Approach 2	Multiplier	1	0.6	1.6
	Value (billions $)	$1.4	$0.9	$2.3

Source: Authors' calculations

TABLE 14. ESTIMATED RETAIL VALUE USING ADAPTED NMFS MODEL, LANDINGS VALUE INPUT $463 MILLION

Sector	Activity	Allocation %	Fishery input purchase (millions $)	Mark-up %	Total mark-up value (millions $)	Value of sales by sector (millions $)
Processing & Wholesale	Primary	100%	*$463.0*	90.3%	$418.2	$881.1
						$881.1
	Secondary - Edible	98.9%	$871.0	62.7%	$546.2	$1,417.2
	Secondary - Industrial	1.1%	$10.1	62.7%	$6.3	$16.4
			$881.1			**$1,433.7**
Retail	Services	48.8%	$699.3	182.4%	$1,275.5	$1,974.8
	Stores	50.1%	$718.0	33.4%	$240.0	$957.9
	Industrial	1.1%	$16.4	-	-	$16.4
			$1,433.7			**$2,949.2**

Source: Authors' calculations

TABLE 15. ESTIMATED RETAIL VALUE USING ADAPTED NMFS MODEL, WHOLESALE VALUE INPUT $1.1 BILLION

Sector	Activity	Allocation %	Fishery input purchase (millions $)	Mark-up %	Total mark-up value (millions $)	Value of sales by sector (millions $)
Retail	Services	48.8%	$527.7	182.4%	$962.5	$1,490.1
	Stores	50.1%	$541.7	33.4%	$181.1	$722.8
	Industrial	1.1%	$12.4	-	-	$12.4
			$1,081.8			**$2,225.3**

Source: Authors' calculations

TABLE 16. ESTIMATED RETAIL VALUE USING ADAPTED NMFS MODEL, WHOLESALE VALUE INPUT $1.3 BILLION

Sector	Activity	Allocation %	Fishery input purchase (millions $)	Mark-up %	Total mark-up value (millions $)	Value of sales by sector (millions $)
Retail	Services	48.8%	$654.7	182.4%	$1,194.2	$1,848.9
	Stores	50.1%	$672.2	33.4%	$224.7	$896.8
	Industrial	1.1%	$15.4	-	-	$15.4
			$1,342.2			**$2,761.1**

Source: Authors' calculations

Using the NMFS model with the base study area landings values, we have already determined that the value of Bristol Bay fisheries output after primary and secondary processing is $1.4 billion (Table 15). This wholesale value becomes the input purchase for the retail sector in the model. The NMFS model allocates 48.8% of the wholesale value of seafood to retail services (e.g. restaurants, caterers, schools, hospitals and other institutional food service providers), where the estimated retail mark-up is 182%. It apportions 50% of the wholesale value to retail stores (e.g. supermarkets, grocery stores, and seafood specialty shops), where the mark-up is 33.4%. The model assumes that there is no additional value added to the remaining 1.1% of wholesale value going to industrial products. Beginning with the landings value as the starting fishery input (italicized in Table 14), the total retail value of seafood harvested from Bristol Bay is estimated at $2.9 billion.

To provide a range of retail value estimates, we also run the NMFS value-added model inputting the alternative estimates of wholesale value ($1.1 and $1.3 billion, italicized below) we obtained above by applying processing margins found in the literature. We use these values in the NMFS model as the initial inputs for the retail sector. A wholesale value of $1.1 billion translates into retail value of $2.2 billion (Table 15). A wholesale value of $1.3 billion translates into retail value of $2.8 billion (Table 16).

Table 17 compares the values from each of the three model runs from lowest to highest. The annual value of fisheries in the base study area, from harvest through processing, retail and consumption is $2.2-$2.9 billion dollars. These estimates reflect the dollar amount final consumers are likely to spend on purchases of seafood (and seafood products) harvested in the base study region.

Multiplier Effect

Retail sales of seafood harvested from the base study area supports additional economic activity. Just as we apply economic multipliers to commercial harvest and processing, we use an appropriate multiplier to estimate the total economic output resulting from retail sales of seafood from the base study area. Multipliers for retail trade were obtained from the Bureau of Economic Analysis (BEA).[18] The multipliers are not seafood specific and represent the multiplier effect of all retail trade types. Multipliers specific to retail trade in seafood could not be obtained.

Since we do not know the exact geographic distribution of where seafood from the base study area is processed and sold, we average the BEA's state multipliers for the fifty U.S. states and District of Columbia to create national multipliers for our analysis. We then apply these multipliers to our retail value estimates of base study area seafood.

The total economic activity supported by retail sales of seafood harvested in the base study region ranges from $4.1–$5.4 billion dollars (Table 18). These estimates include the value of seafood landings, wholesale, and retail, as well as the additional economic activity supported by each of those steps along the value chain. This range is comprehensive of the total economic value of Bristol Bay commercial fisheries from harvest to final sale to consumers.

TABLE 17. SUMMARY AND COMPARISON OF WHOLESALE VALUE AND RETAIL VALUE ESTIMATES

	Wholesale value (billions $)	Retail value (billions $)
Retail value one	$1.1	$2.2
Retail value two	$1.3	$2.8
Retail value three	$1.4	$2.9

Source: Text

TABLE 18. ESTIMATED TOTAL ECONOMIC OUTPUT OF BRISTOL BAY RETAIL TRADE

	Estimated retail value (billions $)	Multiplier	Total economic output (billions $)
Retail value one	$2.2	1.83	$4.1
Retail value two	$2.8	1.83	$5.1
Retail value three	$2.9	1.83	$5.4

Source: Authors' calculations, multipliers adapted from the BEA, Benchmark Series 2002

4] CONCLUSION

This analysis demonstrates the economic value of commercial fisheries in the waters in and around Bristol Bay Alaska, from harvest to consumption. The economic value at each step of the value chain is comprised of the direct value added to the commercial fishery input plus the additional economic activity that it supports. We capture the first component – the direct value added – through a value-chain analysis. We estimate the indirect and induced economic activities using economic multipliers from input-out analyses found in the literature.

The value chain analysis estimates the direct values of the commercial fishery at three distinct steps along the value-chain: harvest, processing and wholesale, and retail. Table 19 summarizes those values.

The direct value of the fishery at every step along the value-chain supports secondary economic activities. For example, the fisherman sells his catch to processors/wholesalers to pay for his crew and supplies. The processor/wholesaler sells his product to retailers to cover the costs of supplies and employees. Retailers sell their seafood to consumers to pay for labor and other inputs. Commercial fishermen, processors, and retailers have downstream suppliers who benefit indirectly from sales; these backward linked economic activities constitute the indirect secondary impacts of commercial fishing. As the fishery input moves along the value-chain, fishermen and their crew; bait and tackle shop owners and their employees; processors and their workers and suppliers; and retailers earn income. To the extent that they spend that income on other consumer goods and services, they induce even more secondary economic activity. The multiplier effect captures the indirect and induced economic activity resulting from each step along the supply-chain. Table 20 summarizes the range of multiplier effects estimated by our analysis.

The value of the total economic activity supported by each stage in the supply chain is found by adding the values of direct and secondary economic activities. Each step along the supply chain is cumulative; the value of total economic activity at the retail level incorporates the direct and indirect values associated with harvest and wholesale.

Healthy and productive fisheries in the base study region generate economic activity equivalent to $4.1–$5.4 billion dollars annually. These estimates provide strong economic support for protecting Bristol Bay's unique and valuable ecosystem. The value of the economic activity we estimate in this report is only one component of the total economic value of Bristol Bay. It does not include other values that are more difficult (if not impossible) to monetize, including biodiversity and ecosystem services; recreation and scenic amenities; and cultural and social significance. These values, as well as the economic activities supported by Bristol Bay fisheries, are in danger of being lost to mounting development pressures in the Bristol Bay watershed.

The economic impacts of Bristol Bay fisheries extend widely; permit holders reside outside of the base study area and in other states; the catch is processed inside and outside of Alaska; and final products are sold to consumers across the U.S. and abroad. Development activities that compromise the productivity of Bristol Bay's fisheries will affect areas far beyond the base study region. The future of Bristol Bay's fisheries, therefore, is of significant national and global importance.

TABLE 19. SUMMARY OF ESTIMATED DIRECT VALUES

	Value (billions $)		
Commercial Harvest (landings value)	$0.463		
Processing & Wholesale (wholesale value)	$1.3	–	$1.3
Retail (retail value)	$2.2	–	$2.9

Source: Text

TABLE 20: SUMMARY OF ESTIMATED MULTIPLIER VALUES

	Direct value	Value of secondary economic activity	Value total economic activity
Commercial Harvest	$0.463	$0.21–$0.43	$0.67–$0.89
Processing & Wholesale	$1.1–$1.4	$0.6–$0.9	$1.7–$2.3
Retail	$2.2–$2.9	$1.9–$2.5	$4.1–5.4

Source: Text

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APPENDIX A – Review of Literature

Title	Authors	Year	Region	Type of fishery	Model used	Other important data sources
Economic Impact of Florida's Commercial Fisheries and Aquaculture Industries	Alan Hodges, David Mulkey, Effie Philippakos, and Chuck Adams	2001	FL	Commercial - Researchers assess three SIC industries (canned and cured seafood, commercial fishing, and prepared fresh/frozen seafood)	IMPLAN I-O Model	US Dept. of Agriculture, Marine Research Institute, FL Agricultural Statistics Service
The Seafood Industry in Alaska's Economy	Northern Economics of Anchorage	2009	AK	Commercial Seafood industry	IMPLAN I-O Model	AK Fisheries Science Center of the National Marine Fisheries Service; Research and Analysis Division of the AK Dept. of Labor and Workforce Development, Commercial Fisheries Entry Commission, AK Dept. of Fish and Game Commercial Operators Annual Report, seafood industry representatives
NOAA Technical Memorandum NMFS-NE-188, Northeast Region Commercial Fishing I-O Model	Scott R. Steinback and Eric M. Thunberg	2006	Coastal states from ME to NC	Commercial - Researchers delete IMPLAN's commercial fishing sector and seafood processing sector and add 18 harvesting sectors based on gear type and vessel size, a wholesale seafood dealer sector, a sub-regional processing sector, a medium bottom trawl bait supplying sector, a fish exchange sector, and a mid-water trawl bait supplying sector	Modified IMPLAN I-O Model based on Tanjuakio, Hastings, and Tytus (1996) that can accept gross output changes as entries	US Economic Census, County Business Patterns data, average Fulton Market margin, federal Northeast vessel trip reports, dealer weigh-out slips, permit applications
An I-O Analysis of Maine's Fisheries	Hugh Briggs, Ralph Townsend, and James Wilson	1982	ME	Commercial - Researchers remove fisheries harvesting from the forestry/fisheries sector (yielding a forestry sector), remove fisheries processing from the food processing sector (yielding a food except fish processing sector), and add 5 fisheries harvesting sectors, 4 fisheries processing sectors, and a household consumption sector	Modified 1963 U.S. Multiregional I-O Model	1963 U.S. Multiregional I-O Model, household consumption expenditures, fishery sales, interviews with industry and government personnel
Multiplier Values for the Fishing and Fish Processing Industries in the UK and in Scotland: An I-O Analysis	Gunilla Tegelskär Greig	1999	UK and Scotland	Commercial	Open I-O Model	Fishermen's Handbook, UK Survey of the Sea Fish Processing Industry, real cost and earnings figures, Office of National Statistics
1997 Hawaii Fishery Input-Output Model and Methodology	Aaron Peterson	2005	HI	Commercial, recreational, and charter - Researchers asses six sectors (tuna longline, swordfish longline, small boat, recreation boats, expense boats, and charter fishing) plus an out-of-state visitor charter fishing sector	Modified 1992 Hawaii Fisheries I-O Model	1992 HI Fisheries I-O Model, 1997 HI State I-O Model, 1993 survey of longline fisheries (Hamilton et al. 1996), 1995-6 cost-earnings survey (Hamilton and Huffman 1997), 2000 charter boat patron survey (O'Malley et al. 2001)
The role of the Alaska seafood industry: a social accounting matrix (SAM) model approach to economic base analysis	Chang K. Seung and Edward C. Waters	2006	AK	Commercial (including seafood processing industry)	Social accounting matrix (SAM) Model [19]	

Title	Authors	Year	Region	Type of fishery	Model used	Other important data sources
A Social and Economic Analysis of Commercial Fisheries in NC Atlantic Ocean	Scott Crosson	2009	NC	Commercial	IMPLAN I-O Model using Type I multipliers only (not Type II)	License and Statistics Section of the NC Division of Marine Fisheries
The Relative Economic Contributions of U.S. Recreational and Commercial Fisheries	Southwick Associates	2006	23 coastal states and the U.S.	Commercial and recreational	Modified Kirkley, Murray, and Duberg (2005) I-O Model	NOAA Fisheries' report on The Economic Importance of Marine Angler Expenditures in the U.S., NOAA Fisheries' Marine Recreational Fisheries Statistics Survey, National Fisheries Institute
Economic Contributions of Virginia's Commercial Seafood and Recreational Fishing Industries: A User's Manual for Assessing Economic Impacts	James E. Kirkley, Thomas J. Murray, and John Duberg3	2005	VA	Commercial, recreational, and CPFV - Researchers add commercial sectors based on 30 locations (plus statewide), 11 species, and 5 user groups (harvesters, processors, distributors, restaurants, and grocers) and add recreational sectors based on 20 locations (plus statewide), 14 species, and 3 fishing modes (charter/party boat, shore/pier/beach, and private/rental boat)	Modified IMPLAN I-O Model based on Tanjuakio, Hastings, and Tytus (1996) that can accept gross output changes as entries	US Economic Census, County Business Patterns data, average Fulton Market margin, federal Northeast vessel trip reports, dealer weigh-out slips, permit applications
An I-O Analysis of Maine's Fisheries	Hugh Briggs, Ralph Townsend, and James Wilson	1982	ME	Commercial - Researchers remove fisheries harvesting from the forestry/fisheries sector (yielding a forestry sector), remove fisheries processing from the food processing sector (yielding a food except fish processing sector), and add 5 fisheries harvesting sectors, 4 fisheries processing sectors, and a household consumption sector	Modified IMPLAN I-O Model	VA Marine Resources Commission, National Marine Fisheries Service
The Economic Contribution of the Sport Fishing, Commercial Fishing and Seafood Industries to New York State	TechLaw Inc. and Thomas J. Murray & Associates, Inc.	2001	NY	Commercial, recreational, and seafood industry - Researchers asses commercial sector by species or gear type (inshore lobster, offshore lobster, mollusks/shellfish, surf clam dredges, inshore fisheries, multi-species trawlers, longline, Great Lakes, and aquaculture), assess recreational sector by type of expenditure (head and charter boat fees, marina fees, fishing rods/reels/tackle, boats/motors/trailers, and bait) and location of fishing activity (marine and freshwater), and assess seafood sector by segment (Fulton Market wholesalers, wholesalers/distributors, processors, supermarkets/fish markets, and restaurants/food services)	Modified IMPLAN I-O Model	National Marine Fisheries Service, Port Import Export Reporting Service, U.S. Fish and Wildlife Service, U.S. Census, U.S. Bureau of Labor Statistics, NY State Dept. of Environmental Conservation

APPENDIX B – Figures

List of Figures included in Appendix B

FIGURE B.1. PROPOSED OIL AND GAS LEASE AREAS NEAR BRISTOL BAY

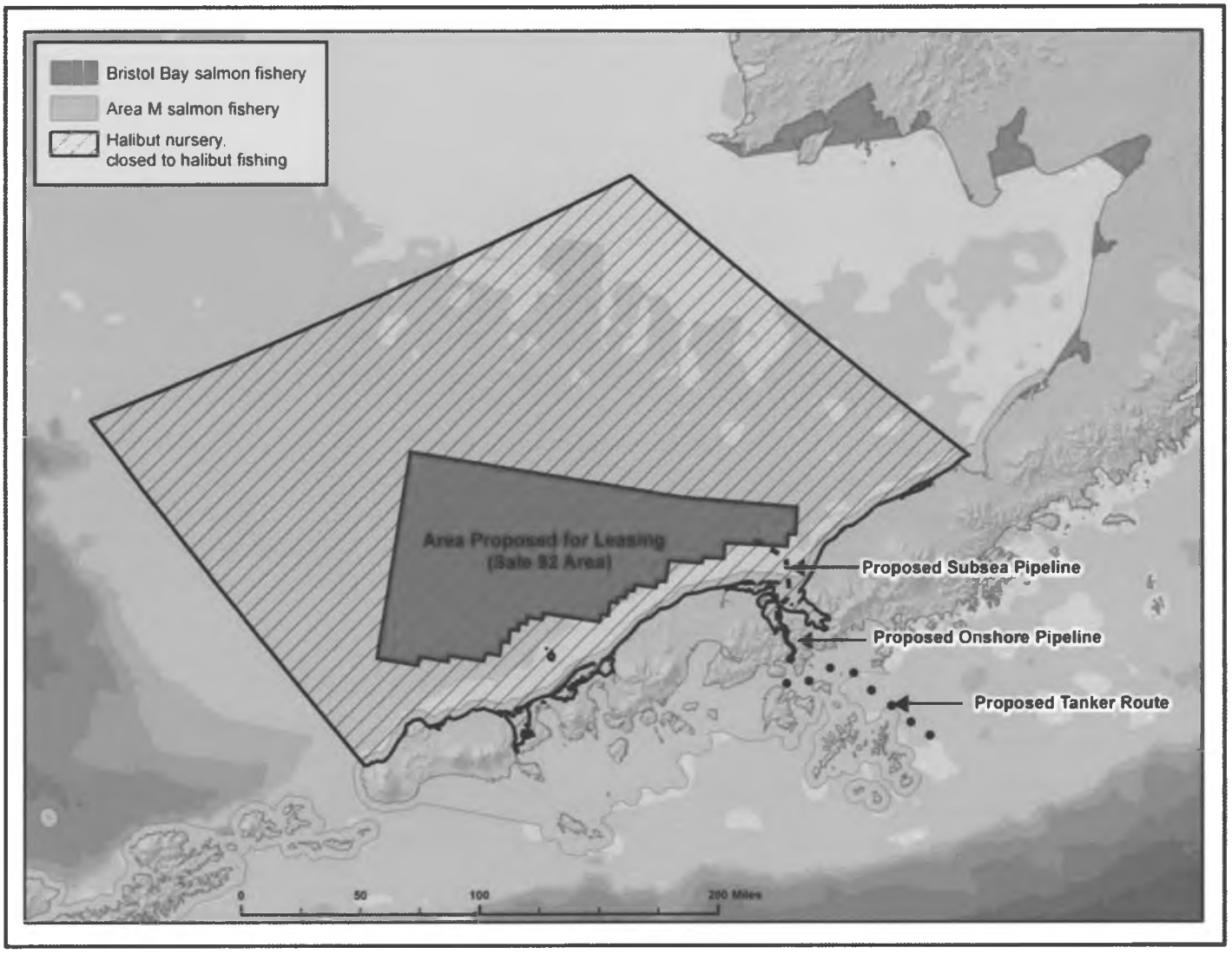


FIGURE B.2. RESIDENCY OF 2008 BRISTOL BAY SALMON PERMIT HOLDERS

FIGURE B.3. RESIDENCY OF 2008 BRISTOL BAY SALMON PERMIT HOLDERS (ALASKA ONLY)

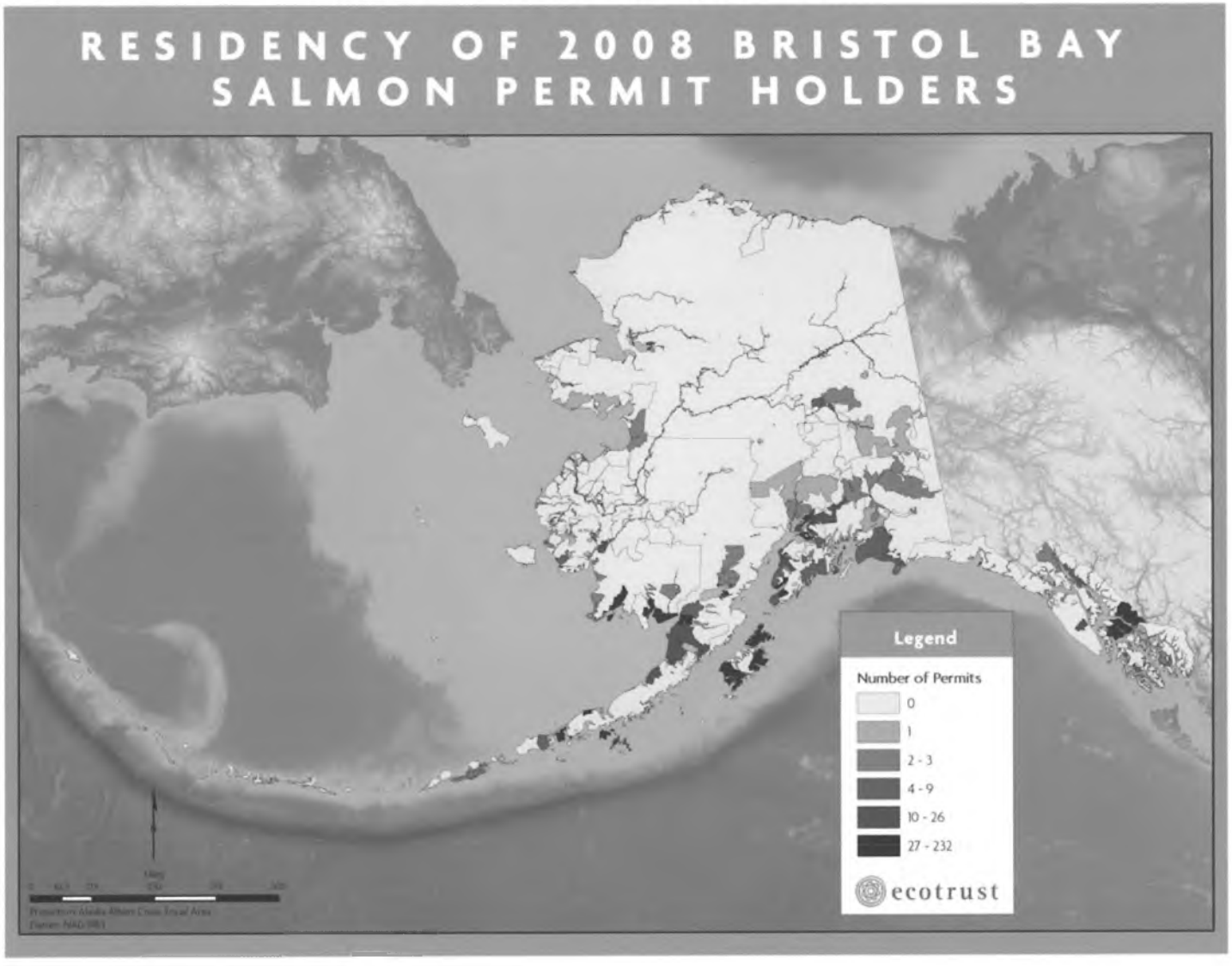


FIGURE B.4. ALASKAN 2008 BRISTOL BAY SALMON PERMIT HOLDERS PER CAPITA

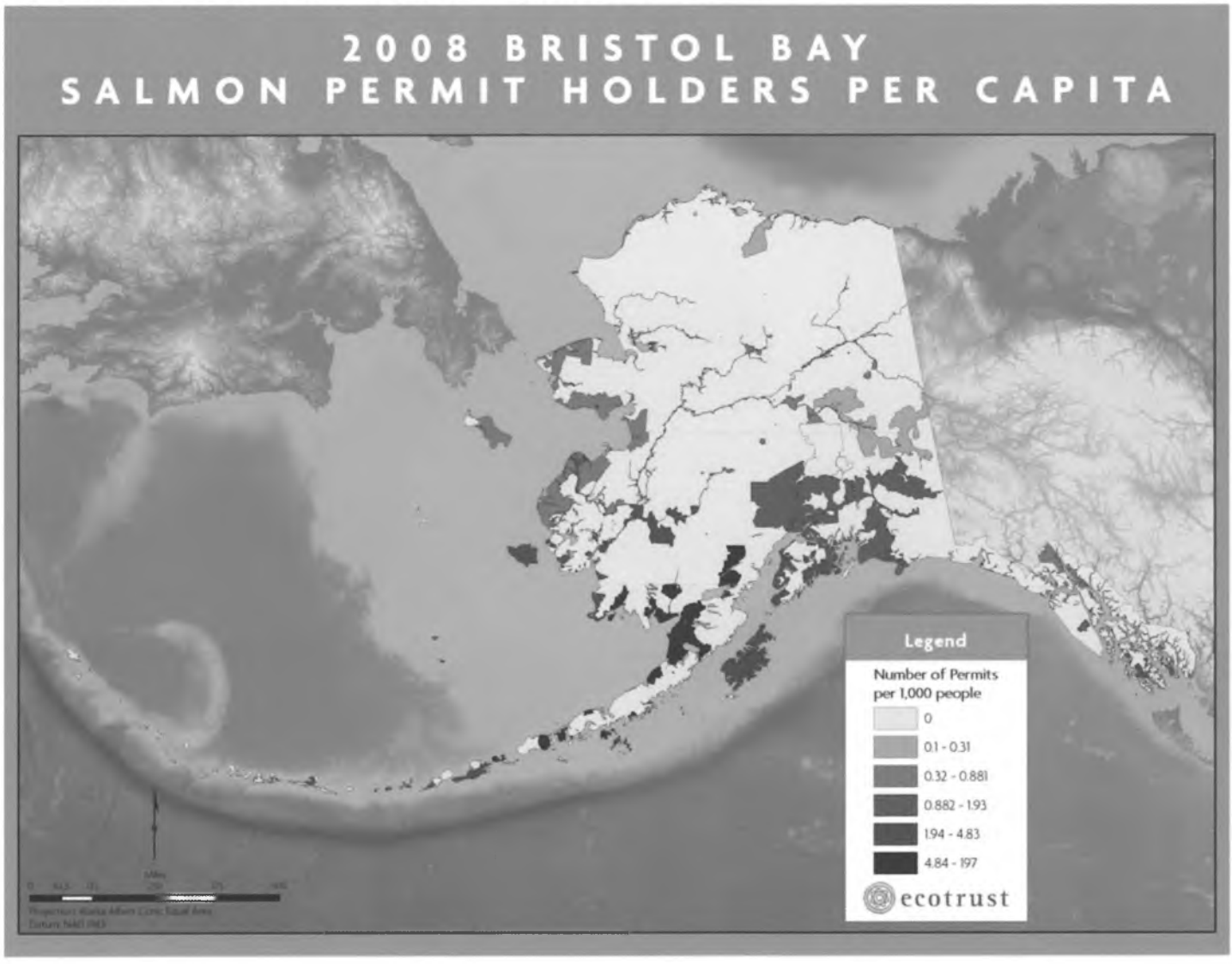
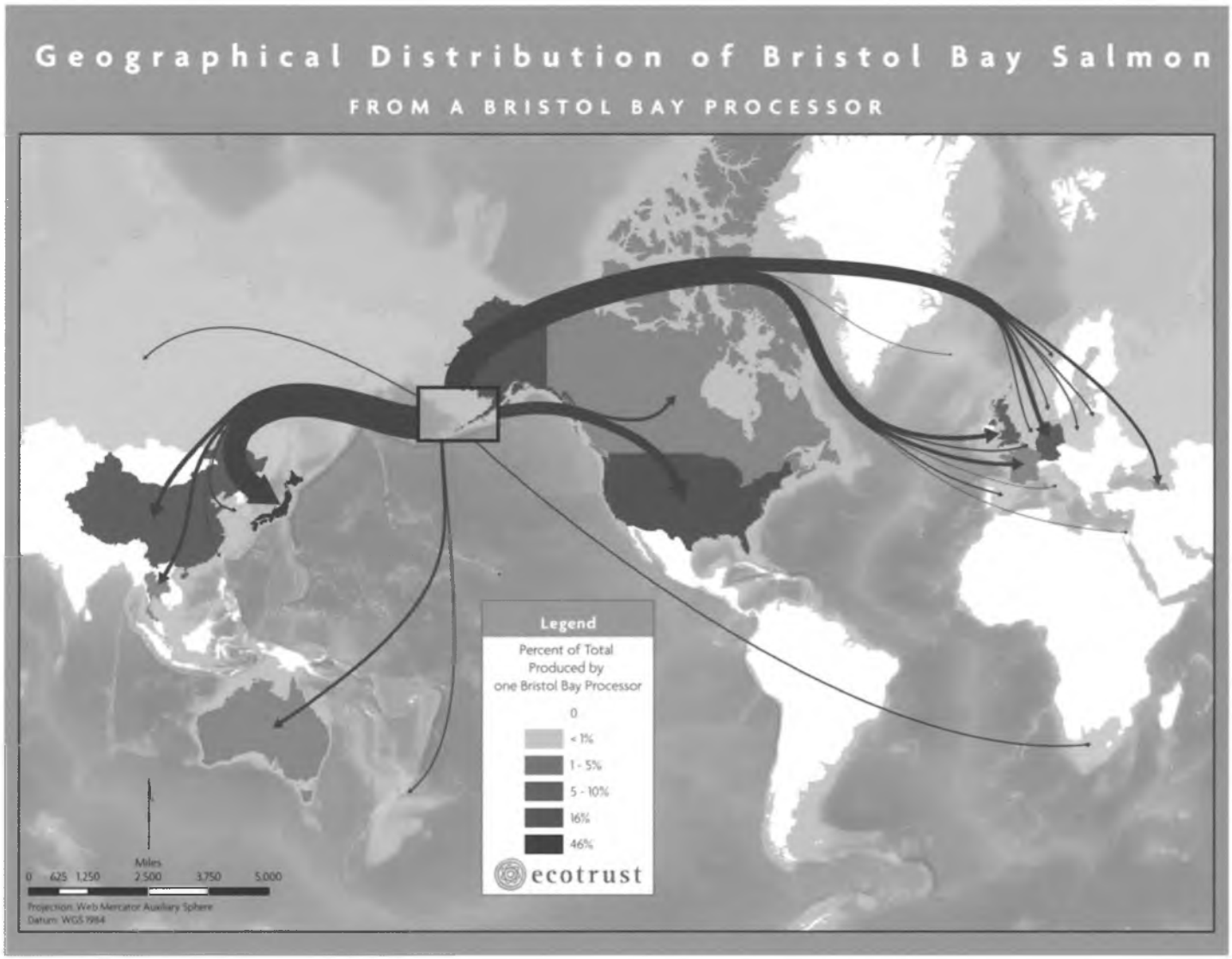


FIGURE B.5. SAMPLE GEOGRAPHICAL DISTRIBUTION OF BRISTOL BAY SALMON



APPENDIX C – Estimate Summary Table

Value Chain	Harvesting		Processing & Wholesale		Retail	
	Landings Value	*Multiplier effects*	Wholesale Value	*Multiplier effects*	Retail Value	*Multiplier effects*
Estimates	$463 million	*$673-$889 million*	$1.1 -$1.4 billion	*$1.7-$2.3 billion*	$2.2-$2.9 billion	*$4.1-$5.4 billion*
Methods	Actual landings value from base study area averaged over the four year period 2005-08.	*Using the averaged landings value and applying a range of multipliers adapted (Types I and II) from three separate studies on commercial fishing. The lowest estimate makes up the bottom value in the range, while the highest estimate represents the top. Because multipliers specific to the region were not available, a range of estimates is presented.*	Approach 1: Applying processing margins from the Bristol Bay region and from the state of Alaska between landings and wholesale values to the averaged landings value from the base study area gives a range of estimates from $1.1-$1.3 billion. Approach 2: Plugging the averaged landings value from the base study area into the NMFS economic value-added model gives and estimate of $1.4 for the wholesale value of the base study area.	*Applying a Type II multiplier used to calculate the economic output associated with seafood processing in Alaska to the base study area wholesale value.*	Plugging in all three estimates of the wholesale value into the NMFS economic value-added model for three separate runs. The lowest estimate makes up the bottom value in the range while the highest estimate represents the top.	*Applying national level broad retail multipliers to all three estimates of the retail value. Only Type II multipliers used, producing a range of estimates from $4.1-$5.4 billion.*
Data Sources	Alaska Commercial Fisheries Entry Commission	*Multipliers: Crosson (2009); Hodges et al. (2000); TECHLAW (2001) (ALL IMPLAN)*	Northern Economics (2009); Marine Conservation Alliance (2009); NMFS 2009	*Multiplier: Northern Economics (2009) (IMPLAN)*	NMFS 2009	*Multiplier: BEA 2010 (RIMS II)*
Geography covered included	Terrestrial areas where fish from the base study area are landed, primarily just surrounding the base study area.	• *Regional study area* • *Residency areas of harvesters and suppliers*	Wherever processors are located, largely within the Bristol Bay region surrounding the base study area, but also likely in neighboring states like WA, OR, etc.	• *Regional study area* • *States where main suppliers are located* • *Residency areas of those directly and indirectly employed*	All around the world, any area where seafood from the base study area is sold	*A global scale, wherever retail employees and suppliers (plus their employees) are located.*
Included	• Resident commercial fishermen • Non-resident commercial fishermen	• *Fishermen receiving wages in and out of Alaska* • *Fishery supply stores in Alaska* • *Coastal businesses supplying accommodation, food, recreational, and other needs of those employed by commercial fishing and those selling to commercial fishermen* • *Etc.*	• Processing companies • Wholesale companies • Distribution companies	• *Processing employees* • *Employees in wholesale warehouses* • *Seafood distributor truck drivers* • *Supplier stores* • *Manufacturers of processing equipment* • *Maintenance men servicing equipment* • *Areas where those directly and indirectly spend their incomes* • *Etc.*	• Fish and chips establishment • Catering companies • High-end seafood restaurants • Grocery stores (fish sticks, frozen salmon fillets, etc.) • Specialty food stores (smoked locks, caviar) • Sushi places • Companies preparing airline meals • Etc.	• *Store clerks* • *Servers* • *Caterers* • *Food packaging companies* • *Etc.*

APPENDIX D – Glossary

Backward linkages: Between the industry (i.e., a commercial fishery) and its suppliers (e.g., fuel, bait, ice, and so forth), or (for induced effects) between households and the producers of household goods and services.

Base study area: The marine area from which commercial landings assessed in this report are harvested from; the marine waters contained within specific Alaska Department of Fish and Game statistical areas, which were identified and selected as those areas potentially affected by activities within the North Aleutian Basin Outer Continental Shelf Planning Area; referenced specifically in section 2.1.

Benefit transfer: The method of transferring estimates or results from past valuation studies to the present study, in order to reduce costs, time, and or effort. The applicability of the approach depends on the degree of similarity between the various studies.

Consumer expenditures: Amounts paid for goods or services received or services rendered.

Direct effects: Economic activity occurring in industries directly associated with, in this study, the sale of landings to processors, the sale of wholesale value seafood to retail, and finally the retail sale to final consumers.

Economic activity: The exchange of goods and services.

Economic benefits: Benefits quantifiable in terms of money, such as revenue, net cash flow, net income.

Economic impact: A measure of any resulting increase or decrease in the productive potential of the economy, usually stated in monetary terms or changes in employment.

Economic multiplier: A calculated number used to multiply a dollar amount to get an estimate of economic impact. It is a way of identifying impacts beyond the original expenditure. It can also be used with respect to income and employment.

Economic output: The total value of all goods and services.

Economic value-added: The difference between the value of goods and the cost of materials or supplies that are used in producing them; a measure of which the value of a good has increased due to its processing.

Fishery input: The fish products purchased at one level in the value chain to be used as starting inputs in a higher level to undergo value added processing to be sold at a higher margin.

Forward linkages: Between the industry (i.e., a commercial fishery) and the entities that purchase its output (e.g., processors)

Gross: The total amount before any deductions have been made.

IMPLAN model: A micro-computer-based, input-output modeling system providing or generating economic multipliers to estimate potential economic impacts associated with an increase or decrease in spending in certain economic sectors.

Indirect effects: Sales, income, and employment resulting from various rounds of inter-industry economic activity generated by the initial direct sales.

Induced effects: The sales, income, and employment resulting from household spending of income earned as a result of the original direct sale either directly or indirectly.

Input-output analysis: A systematic method that both describes the financial linkages and network of input supplies and production which connect industries in a regional economy (however defined), and predicts the changes in regional output, income, and employment.

Landings value: The final amount paid to commercial harvesters upon sale of commercial landings to processors.

Long run: A period of time in which all prices, including wages, are flexible, and have achieved their equilibrium levels. This is one of two macroeconomic time designations; the other is the short run. Long-run wage and price flexibility means that all markets, including resources markets and labor markets, are in equilibrium, with neither surpluses nor shortages.

Mark-up: The difference between the sales value and the purchase value of a product, including the cost of materials or supplies purchased from other and the economic value-added.

Net: The total amount once all expenditures and revenues have been accounted for.

Primary effects: The direct effects of economic activity.

Processing margin: The difference between the sales value and the purchase value of a product due to processing, usually expressed as a percentage.

Retail value: The monetary value of seafood available for purchase at the retail level to final consumers.

Revenue: The entire, or gross, amount of income for goods or services before costs have been accounted for.

Secondary effects: The sum of indirect and induced effects.

Short run: A period of time in which some prices, including wages, are rigid, inflexible, or otherwise in the process of adjusting. This is one of two macroeconomic time designations; the other is the long run. Short-run wage and price rigidity prevents some markets, especially resources markets and most notably labor markets, from achieving equilibrium.

Total dollar value: As applied to commercial fisheries in this study, the total monetary value of commercially landed fish after undergoing value-added processing from harvest to the point of final sale at the retail level, including all associated multiplier effects.

Total economic value: The sum of all use and non-use values including both market and nonmarket attributable to that which is being valued.

Type I multiplier: Measures the economic activity due to direct and indirect effects only. Usually resulting estimates are more regionally applicable than those associated with Type II multipliers.

Type II multiplier: Measures the economic activity attributable to direct, indirect, and induced effects. Resulting estimates portray economic activity at a greater scale than Type I multipliers.

Wholesale value: The value of seafood products after undergoing primary and secondary processing, the price at which these products are then sold.

ENDNOTES

[1] See http://www.cf.adfg.state.ak.us/geninfo/statmaps/charts/chart03_bering_sea.pdf; and http://www.mms.gov/Alaska/cproject/NAB214/NAB214_map.pdf

[2] See http://www.cf.adfg.state.ak.us/geninfo/statmaps/charts/chart09_chignik.pdf

[3] See http://www.cf.adfg.state.ak.us/geninfo/statmaps/charts/chart10_aleutian.pdf

[4] Commercial landings data for the base study comes from the Alaska Commercial Fisheries Entry Commission (CFEC). Estimates include commercial harvests only: test fishing, discards, illegal harvests, hatchery, & personal use are excluded. Estimates represent harvests taken from select statistical areas and recorded on fish tickets. Significant harvests may have occurred in Federal waters that were not recorded on fish tickets.

[5] Herring bycatch is included in Other Species.

[6] Please see Appendix B, Figures B.2, B.3, and B.4 for visual representation of permit holders both nationally and for the state of Alaska.

[7] The estimates assume that all permits were active and that within each category of permit type, permit holders earned the same revenue, which is not necessarily the case.

[8] The NMFS value-added model defines consumer expenditures as retail trade from food service and stores as well as wholesale purchases of industrial products (NMFS 2009).

[9] Seafood landed and processed in Alaska makes up a large component of U.S. seafood exports, likely 20% or more (NMFS 2009). NMFS generally assumes that 100% of "non-bait species" harvested in the state of Alaska are domestically processed, after which 93% are exported (Kirkley 2009). After additional exports are made elsewhere in the value chain, approximately 2.5% of seafood commercially harvested from the state of Alaska generally remains domestic. This does not imply that 2.5% of base study area seafood remains in the U.S., as the composition of species commercially harvested in the base study region is not representative of the state as a whole.

[10] Type I multipliers measure only direct and indirect effects. Type II multipliers measure direct, indirect, and induced effects. Type I multipliers generate more conservative estimates while Type II multipliers capture more economic activity on a macro-scale. To provide a range of estimates in our analysis, different multipliers are used. We distinguish between Type I and II multipliers whenever possible. See Appendix A for more details.

[11] HEconomic multipliers are derived from input-output (I-O) models that describe the structure of an economy in terms of the inputs to its various industry sectors and the distribution of the outputs from those sectors. I-O models offer the most comprehensive economic accounting at an economy-wide level. In the United States, two standard I-O modeling systems are commonly used: IMPLAN (IMpact analysis for PLANning, a privately owned computer based I-O modeling system developed by the Minnesota IMPLAN Group, Inc.) and RIMS II (Regional Input-Output Modeling System, a similar I-O modeling system developed by the Bureau of Economic Analysis of the Department of Commerce). The multipliers used throughout this study are directly referenced in the text and are either: 1) taken from closely related studies that used the IMPLAN I-O model; or 2) directly obtained from RIMS II. For more information on I-O modeling in general, please see Miller and Blair (2009).

[12] A succinct estimate summary table including the final estimates, brief methods, data sources used, geography covered, and examples of those affected is included in Appendix C.

[13] Note that all of the multipliers reviewed in this study range from 1.4-1.9. With such a narrow range of estimates of multiplier effects, it is likely that any multiplier selected would result in estimates of total economic value that are very close to accurate.

[14] The study does not specify whether this is a Type I or Type II multiplier.

[15] According to Northern Economics (2009), these estimates "exclude wholesale value of catcher processors, motherships, and shore-based processing plants located outside of Alaska" (p. 50).

[16] Landings data for our base study area excludes harvests made directly by at-sea processors. The processing margin for at-sea processing, therefore, is not relevant to our analysis.

[17] Our adaptation of the NMFS model excludes the foreign trade component, because it is difficult to know exactly how much seafood harvested in the base study area is exported and at what stage in the value chain it is actually exported. NMFS traditionally assumes that only about 2.5% of seafood harvested from the state of Alaska remains within the country after undergoing processing and wholesale processes (Kirkley 2009). Once fishery products are exported, however, they may undergo similar mark-ups during processing at the primary, secondary, and/or retail levels elsewhere. Though our estimates of the final retail value of Bristol Bay fisheries for the U.S. may be high, because we exclude the foreign trade component, the estimates are globally relevant.

[18] The Type II multipliers used here are the Benchmark Series RIMS II (Regional Input-Output Modeling System) aggregated retail multipliers covering 50 states plus the District of Columbia. Benchmark Series multipliers are based on 2002 national benchmark input-output data and 2007 regional data.

[19] A Social Accounting Matrix (SAM) represents all the interactions among buyers and sellers that take place within an economy (national or regional) over a specified time period.

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