

**Testimony of
Captain Keith H. Colburn
USCG Master 1600 tons, Owner and Operator of the Fishing Vessel Wizard**

**Joint Oversight Hearing on
Energy Development in the Outer Continental Shelf (OCS) and the Future of Our Oceans**

**Before the Subcommittees on
Energy and Mineral Resources
and
Insular Affairs, Oceans and Wildlife
U.S. House of Representatives**

March 24, 2009

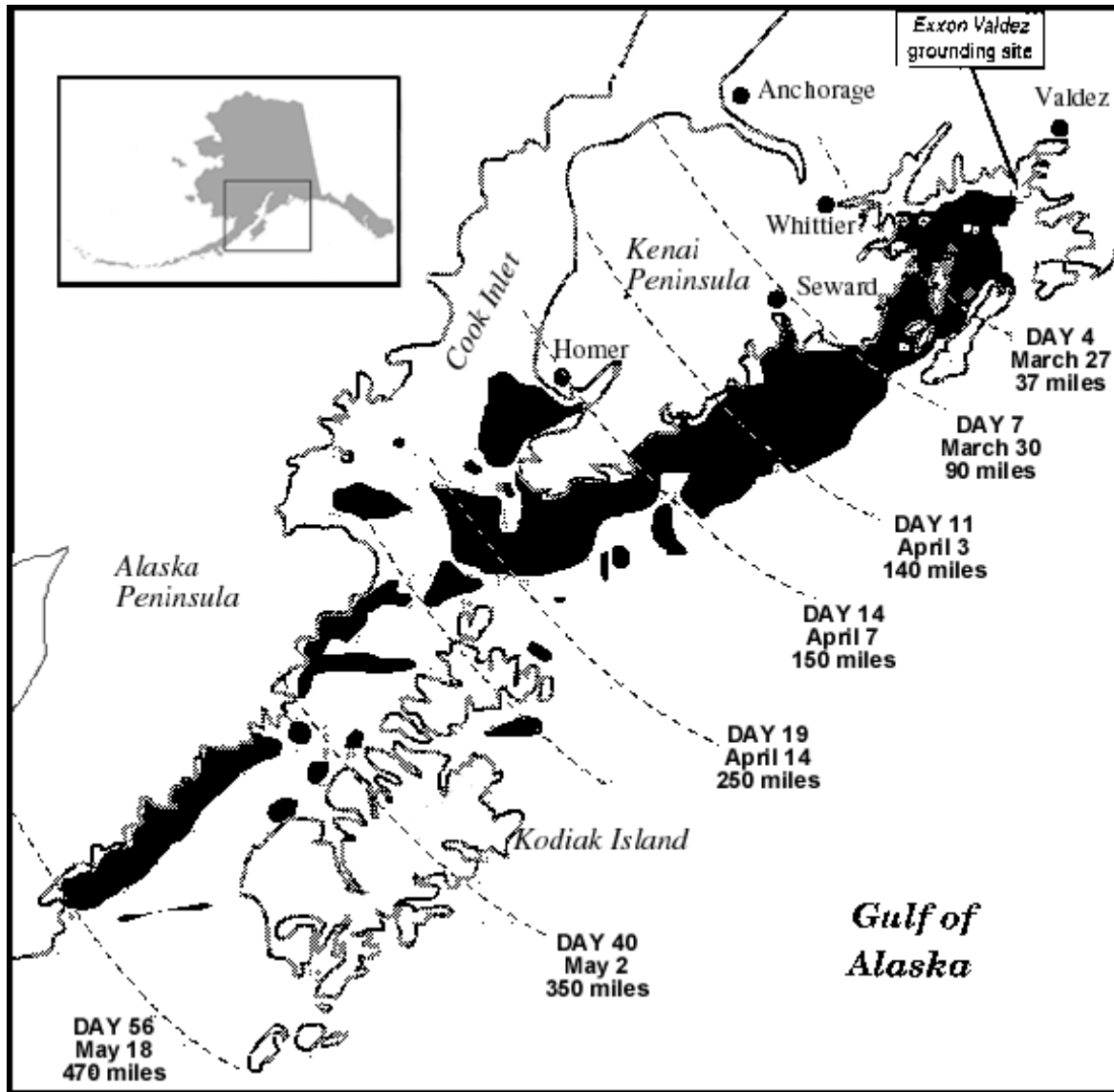
Chairman Costa and Chairwoman Bordallo, Ranking Members Lamborn and Brown, I'd like to thank you for the invitation to provide comments on energy development on the Outer Continental Shelf (OCS) and the future of our oceans.

My name is Captain Keith H Colburn. I have fished commercially in Alaskan waters for the past 24 years. I am a USCG licensed master, and I own and operate the 155' *F/V Wizard*.

My fishing grounds are the Bering Sea Aleutian Island (BSAI) fisheries, and the North Aleutian Basin (NAB), otherwise known as Bristol Bay. I have fished virtually every species in the NAB, from purse seining herring, gillnetting Bristol Bay salmon, long-lining halibut, and pot fishing cod and crab. The *Wizard* is a crabber home ported in Seattle, but fishes exclusively in the BSAI crab fisheries.

My concern for the fleet and the resource rests not only with fishing, but with the management, enforcement, and policy surrounding Alaska's fisheries. I previously served as a board member of the Alaska Marketing Association, negotiating prices for fishermen, and I currently serve on the Pacific Northwest Crab Industry Advisory Committee, which is overseen by the North Pacific Fisheries Management Council. I am on the board of the Alaska Fishermen's Safety Association, the overseeing body for insurance that has 63 vessel members of the crab and trawl fleet of Alaska, Washington and Oregon. I am also a member of the Crab Group of Independent Harvesters.

I. The Legacy of the Exxon Valdez Oil Spill



Map from Exxon Valdez Oil Spill Trustee Council. 1993. Map of the Exxon Valdez Oil Spill. 1993 State On-Scene Coordinator's Report. Anchorage, Alaska.

Today, March 24th, 2009, marks the 20th anniversary of one of America's most tragic environmental catastrophes.

Oil from the Exxon Valdez oil spill, shown in dark shading, stretched for miles along the Alaskan coastline.

The Exxon Valdez spilled 11 million gallons of crude oil into Prince William Sound, soiling over 1300 miles of shoreline, as far as 460 miles from the spill site. In all, the death toll to native species of sea birds, bald eagles, seals, killer whales, and sea otters was in the tens of thousands. Tens of millions of salmon, herring, and fish species were destroyed due to the devastating effects of the

spill. Every species below and above the surface was affected in the spill, including fishermen and communities that lost millions of dollars in revenue in commercial fisheries and the tourist industry.

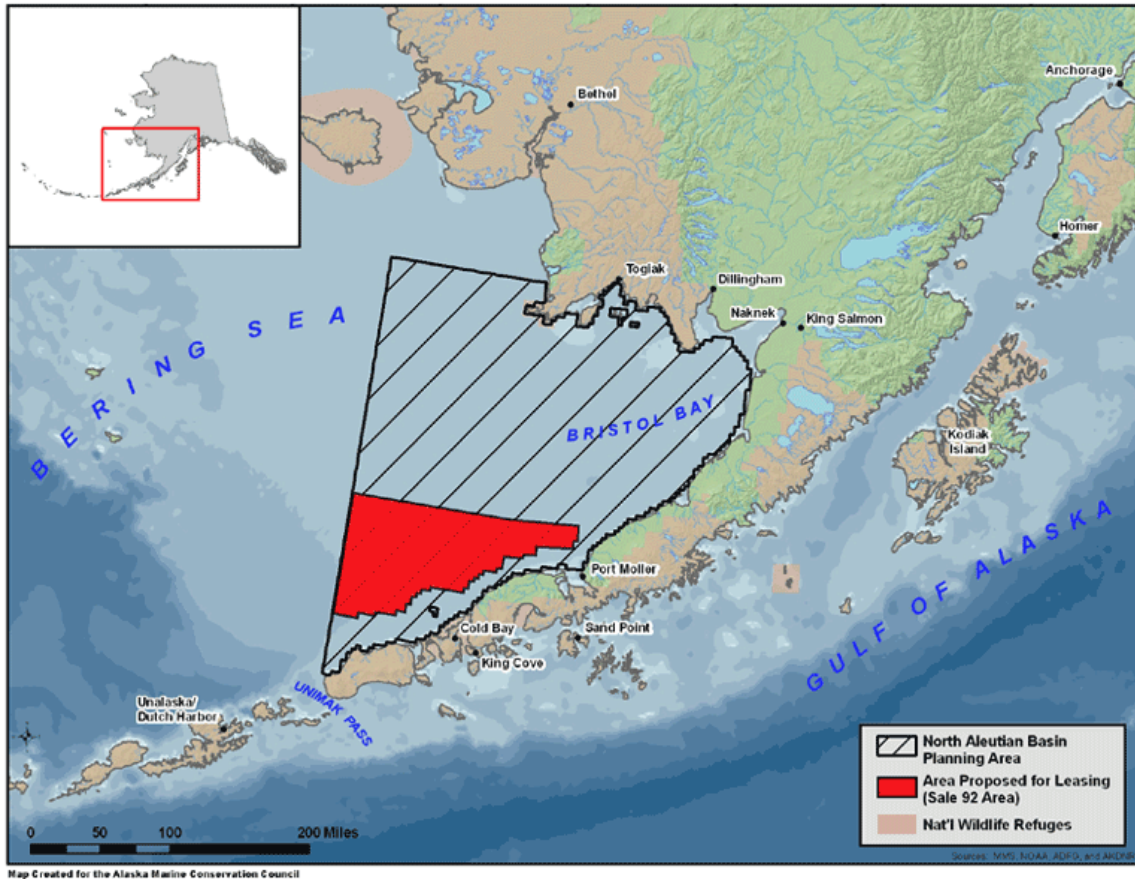
On the surface, the pristine nature of Prince Williams Sound appears to have recovered its storied beauty as one of the jewels of Alaska's wild and untouched coastal areas. Below the surface is another story. Oil still cakes rocks and cobbles throughout the inter-tidal zone. The Pacific herring fishery is closed and shows no signs of recovery. Since the spill, this herring stock, which is central to the marine food web, has developed unprecedented disease and viral infections to all year classes of fish. The ecosystem has been altered, and it will be generations before the true effects of the spill can be ascertained.

II. Looking Ahead: Outer Continental Shelf oil development in Alaska

In recent years, the troubled Minerals Management Service has moved to develop offshore Alaska with an alacrity rarely seen in a federal agency. In the past year alone, the MMS has expanded the territory available for leasing in Alaska's offshore waters from roughly 10 million acres to more than 80 million. Earlier this year, MMS leased 2.9 million acres of that newly opened territory to oil companies in the remote Chukchi Sea. In addition, another 25 million acres of state and federal lands in the U.S. Arctic — onshore and off — are open to oil and gas leasing; of that, 13.5 million acres have already been leased. The only area that now remains totally off-limits to oil drilling is the coastal plain of the Arctic National Wildlife Refuge. The past administration's protocol of drilling our way to energy independence was misguided and was fueled by prices at the pump eclipsing \$4.00 per gallon. But with our financial institutions in ruins, and our economy battered, gas has dropped to \$2.00 per gallon.

Today's energy crisis has not abated due to recent global economic events, but it has just been overshadowed. Fuel prices for diesel eclipsed \$5.00 per gallon less than 6 months ago for Alaska's fishing fleet. This was not a localized event, but a worldwide crisis. The blissful ignorance of "drill baby drill" resounds in my ears, and reminds me that the solutions to our energy crisis should look beyond resource extraction. We are at a crossroads in our nation's history where difficult choices need to be made to achieve energy independence. Quoting from President Barack Obama's Inaugural Address, "Each day brings further evidence that the ways we use energy strengthen our adversaries, and threaten our planet." Based on the president's recent statements, I am confident that the choices we will make in the months and years to come are now backed by scientific evidence, and will lead to energy policies based on science. These intelligent choices will allow us to develop the resources that are viable, and to protect and preserve sustainable resources for future generations.

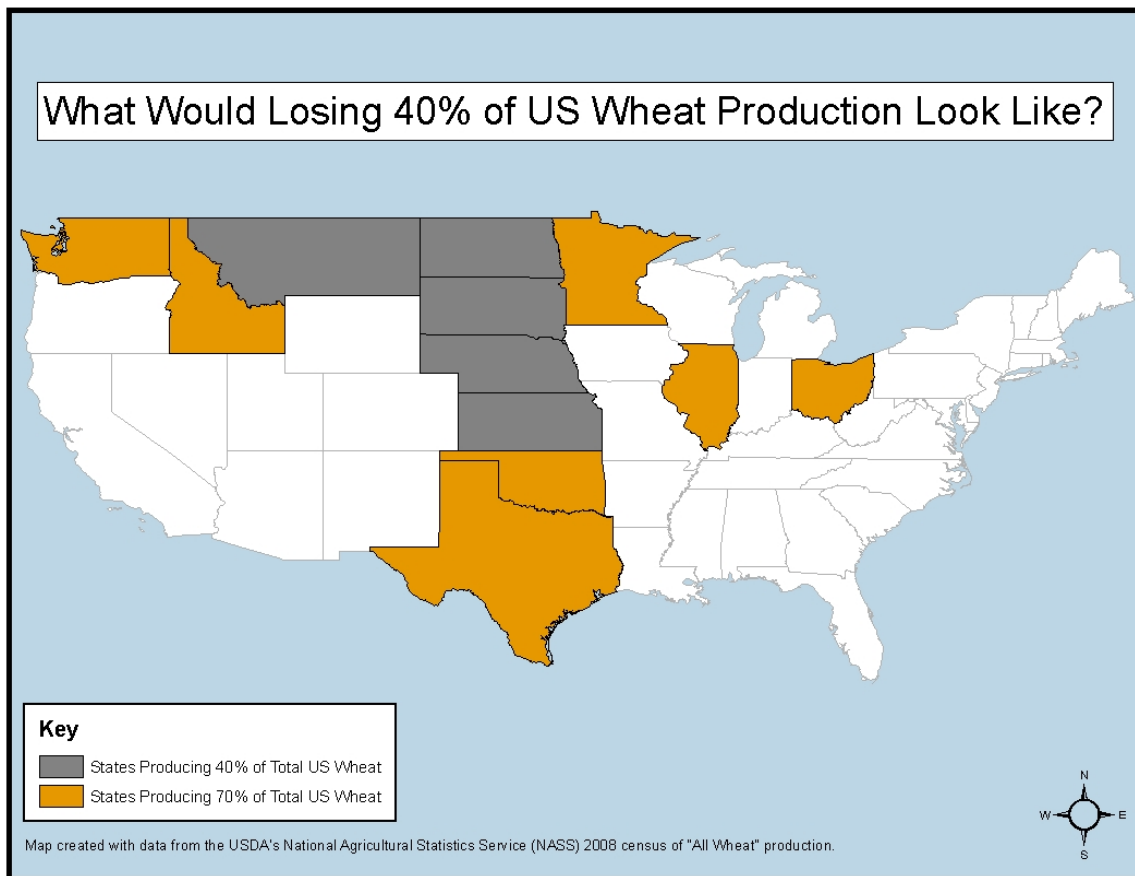
North Aleutian Basin Fisheries



The North Aleutian Basin (NAB) lease sale Area 92 is scheduled to be opened in 2011 to oil development.

NAB, Area 92: acronyms and numbers suggest it is another generic or obscure offshore vacant lot, but the Bering Sea Aleutian Islands (BSAI) and Bristol Bay are not just vacant lots.

As a fisherman, I see the bread basket, the fish basket of America. It is the heartland of an incredibly diverse, rich and sustainable resource. Forty percent of the catch from U.S. domestic fisheries is harvested in the BSAI fisheries. This can easily be overlooked as another obscure statistic, but what if we were talking about 40% of America's wheat production? The Bering Sea and Bristol Bay represent in seafood what the states of Kansas, Montana, Nebraska, North Dakota and South Dakota combined represent in U.S. wheat production.



The North Aleutian Basin comprises millions of square miles offshore of Alaska. It has been recognized by National Geographic as one of only three well-managed fisheries in the world. Fisheries managers using science-based management overseeing Alaska’s ocean received accolades from around the world for their stewardship in maintaining a balance between harvest and conservation.

Pollock, halibut, cod, herring, sole, salmon, and crab make up part of the list of commercially harvested species in Area 92. These species have one common thread. They all inhabit, migrate, or propagate in one of the world’s most prolific and diverse marine ecosystems. Our nation’s most valuable sustainable fisheries resource, our fish basket, lies at the epicenter of lease sale Area 92.

On the other hand, oil revenues from Area 92 are estimated to be 8 billion dollars over the life of the drilling project. Fisheries revenues currently derived from the same area are in excess of 2 billion dollars annually –that’s 50-80 billion dollars over the life of the drilling project –and the fisheries are fully renewable and sustainable where the oil is not.

Economic Value of Bristol Bay and Southeastern Bering Sea Fisheries

February 2008

Sustainable fisheries resources potentially affected by offshore oil and gas drilling in the North Aleutian Basin Planning Area are worth more than \$2 billion dollars annually

The economic figures for the fisheries provided below are intended to give an approximate assessment of the value of the fisheries that could be affected by oil and gas development in the portion of the North Aleutian Basin Planning Area currently scheduled for leasing 2011 (Sale 92 area). These fisheries were determined to be potentially affected by the impacts of offshore oil and gas development based on two criteria: 1.) the fisheries take place within or surrounding the proposed lease sale area (Sale 92 area) and/or 2.) the species that are fished utilize habitat within or surrounding the area proposed for leasing.

The impacts of oil and gas development would extend beyond the proposed 5.6 million acre lease sale area. Offshore seismic surveys, infrastructure construction and emplacement, vessel traffic, the discharge of drilling muds and cuttings, as well as chemical or oil spills could affect fisheries that occur inside and outside the lease sale area. Oil and gas activities have the potential to cause displacement from fishing grounds, degradation of fish habitat, as well as lethal and sublethal impacts to fish and their prey. Even the perception of a reduction in the quality of product harvested in the region could drive down prices on the world market.

Values after processing were only available for the federal groundfish fisheries. In all other fisheries the ex vessel values, or value before processing, are given below. Thus, the total value for these fisheries actually exceeds the numbers presented below, as value after processing is higher than the price paid to fishermen at the dock.

<u>Federally-Managed Bering Sea/Aleutian Islands (BSAI) Groundfish</u>	
<u>2005 Value after Processing</u> (includes pollock, Pacific cod, and flatfish) ¹ :	\$1.7 billion
<u>Pacific Halibut 2006 Ex vessel value</u> ² :	\$193 million
<u>Salmon 2007 Ex vessel values</u> ³ :	
• Alaska Peninsula/Aleutian Islands Salmon	\$27 million
• Bristol Bay Salmon (includes sockeye and other species)	\$108 million
• Kuskokwim Salmon	\$1.2 million
• Yukon Salmon	\$2.5 million
Total Salmon:	\$138.7 million
<u>Shellfish 2006 Ex Vessel Values</u> ⁴ :	
• Red King Crab 2006 ex vessel value:	\$78 million
• Tanner Crab 2006 ex vessel value:	\$1.2 million
Total Shellfish:	\$79.2 million
<u>State-Managed Groundfish 2007 Ex Vessel Values</u> ⁵ :	
• Bering Sea/Aleutian Islands	\$4.3 million
• Alaska Peninsula	\$6 million
Total State-Managed Groundfish:	\$10.3 million
<u>Bristol Bay (Togiak) Herring Sac Roe 2007 Ex Vessel Values</u> ⁶ :	
• Seine	\$1.4 million
• Gillnet	\$ 492,000
Total Herring:	\$1.9 million

Overall Total Value: *more than \$2.1 billion*

Effects of oil exploration, and extraction

Today on the anniversary of a major oil spill, it is important to shed light on both improvements and remaining gaps in the capacity to respond to oil spills in Alaska’s northern waters, but there are many other aspects of the proposed lease sale in the North Aleutian Basin which are cause for concern among Bristol Bay fishermen like myself. These include the use of seismic activity in the exploration phase; the dumping of drilling wastes into the marine environment; and the disturbance posed by infrastructure and traffic.

Seismic activity

There is increasing concern regarding the effect of human-generated (anthropogenic) sounds on marine organisms. While most concern is focused on marine mammals, many of the lower frequency (under 1,000 Hz) sounds are also likely to affect fish. Fish are of particular concern since many species use sounds to find prey, to avoid predators, and for social interactions. Sounds may affect behavior and/or physiology, although very little is specifically known about how sounds affect fish. Moreover, the sensory receptors used by fishes to detect sounds are very similar to those of marine (and terrestrial) mammals, and, as a consequence, sounds that damage or in other ways affect marine mammals could have similar consequences for fishes (Popper, 2003). Study findings of altered fish behavior from seismic shooting support the basis for management actions in Norway against seismic shooting on and close to spawning grounds and over well-established migration routes to spawning grounds (Slotte et al, 2004). See **Table 1** for a summary of one study demonstrating impacts of seismic on fish.

While less is known about the impacts of seismic activity on crabs, observations and data on fisheries catch indicate a potential adverse impact of seismic on this population.

1978-1980 marked the king crab heyday. Landings of Bristol Bay red king crab exceeded 100 million pounds each year, five times our current harvest level. In 1981, a catastrophic crash in the crab stocks occurred. Simultaneous with the crash however, the oil industry was conducting hundreds of thousands of seismic tests in the same waters. These tests were undertaken mostly during the summer months when the crab stocks were at their most vulnerable state of mating and molting.

Table 1: Reductions in fish catch rates as a result of seismic survey activity

Species	Gear type	Noise level of seismic testing	Catch reduction	Source
Atlantic cod (<i>Gadus morhua</i>)	Trawl	250 decibels (dB)	46-69% lasting at least 5 days	Engas et al. 1993
Atlantic cod (<i>Gadus morhua</i>)	Longline	250 dB	17-45% lasting at least 5 days	Engas et al. 1993
Atlantic cod (<i>Gadus morhua</i>)	Longline	Undetermined, 9.32 miles from source	55-79 % lasting at least 24 hours	Lokkeborg and Soldal, 1993
Haddock (<i>Melanogrammus aeglefinus</i>)	Trawl	250 dB	70-72% lasting at least 5 days	Engas et al. 1993
Haddock (<i>Melanogrammus aeglefinus</i>)	Longline	250 dB	49-73% lasting at least 5 days	Engas et al. 1993
Rockfish (<i>Sebastes</i> spp.)	Longline	223 dB	52%- effect period not determined	Skalski et al., 1992

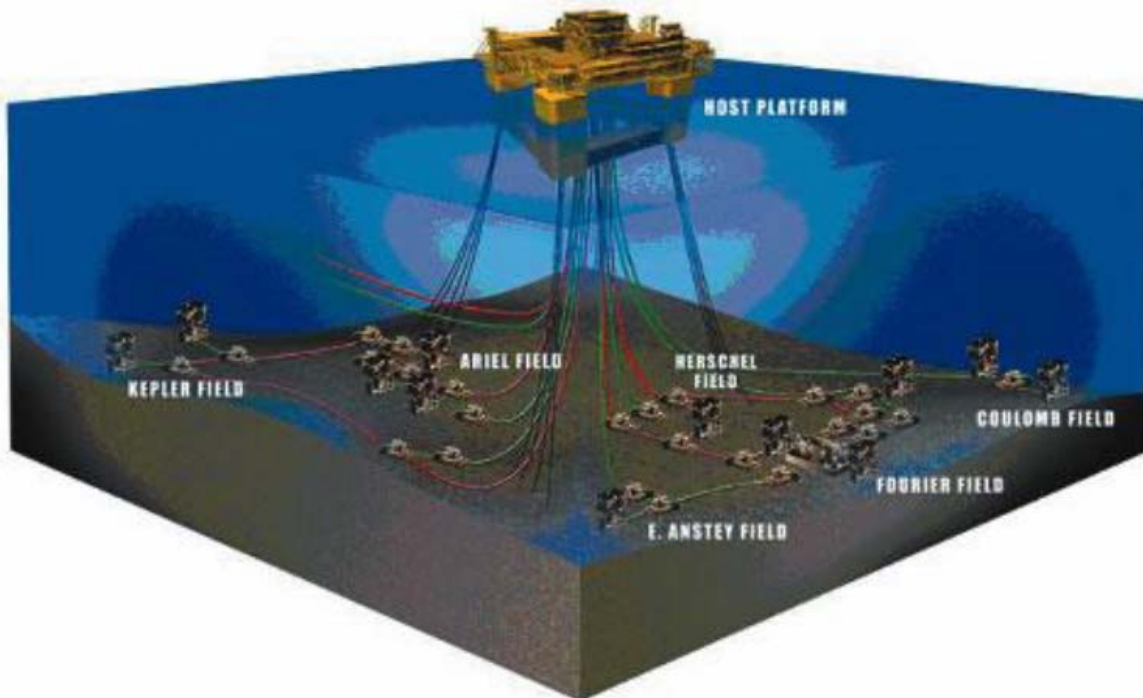
Whereas a multitude of studies show the detrimental effects of seismic testing to fish, scientific data and reports quantifying the impacts of seismic tests on shellfish are scant or non-existent. One preliminary report, the 2004 study by the Canadian Dept. of Fisheries and Oceans, involved hard-shelled, egg bearing opilio crab. It revealed that damage observed to opilio crab organs provided recurring evidence of abnormalities in their reproductive systems, hemorrhaging and bruising of the ovaries, as well as dilated and detached membranes. In test animals, larvae that survived to hatch were weaker and smaller than normal larvae, with smaller eyes and spines.

As a fisherman, I do look at the entire marine ecosystem. Ongoing seismic concussions would pummel the sea bed for the duration of the project, affecting migratory paths of marine mammals such as whales, seals, sea lions, and walrus that transit and forage in the area. Any reverberations to egg-bearing ground fish and crab that mate and spawn could be catastrophic – for people as well as these other species in the Bristol Bay ecosystem.

Infrastructure, and Development

The impact to Bristol Bay’s waters during initial and development stages of drilling would also be severe. Disruption of the bottom in both stages would be substantial. Turbidity throughout the water column severely impact plankton and other food sources throughout the food web.

The noise levels of drills, pumps, de-sanders, compressors, and multi phase boosters would create a cacophony of sounds whose effects are known to disrupt, disorient, and damage vital systems of mature, and adolescent fish. Unknown are the effects on crab and fish larvae. Additionally, pipelines would force crab and migratory bottom dwellers to either reach impasses, or alter their migration paths, and impede their access to food sources.



Oil platform with multiple fields (Stocker, *Pacific Marine Expo 2008*).

On top of this, drilling spoils would be in the tens of thousands of tons, suffocating the bottom, and releasing high levels of heavy metals such as mercury, cadmium, zinc, chromium, and copper. In these amounts, these are toxic to every organism in the surrounding area, and would subject animals to viral infections and disease. That would be consequently borne out of the region by migrating fish.

Weather

In addition to the anthropogenic activities described above, one of the most significant challenges facing a potential offshore lease sale is weather. Few places on the planet witness more severe and dramatic weather conditions than Bristol Bay.

Flooding northeast and ebbing southwest, the tidal activity in the Bristol Bay area is routinely in excess of 25 feet. Storms originating in the Orient and combining with low pressure systems from Siberia travel over 2000 miles, and intensify when they hit Alaska's land mass. Wind velocities that exceed hurricane strength are commonplace during winter months. The sea state associated with these storms as they intensify, traveling through the birthplace of storms in the North Pacific, regularly create wave heights of 30-50 feet. The opposing current from the Bristol Bay ebb turns these waves into confused, sharp, and mountainous seas experienced in few other places on the planet.

Annual ice pack reaches into Area 92 frequently, and then gets crushed back by massive seas. Clean up and containment of a spill would be unequivocally impossible in these conditions.

While the oil industry has experience working in areas with comparable tidal action and smaller confined areas with ice conditions, they have never undertaken developing at sea equipment that has been tested to withstand all three conditions, wind waves and ice, that regularly pummel the Bristol Bay region simultaneously.

Liquid Natural Gas (LNG)

While much of our discussion and concern centers on oil and the possibility of oil spills, the majority of reserves in Area 92 is in Liquefied Natural Gas. However, there are many social and environmental risks associated with developing this resource as well.

To begin, it is doubtful whether local people would benefit in any form from the products that may be close in proximity but may not become available for remote communities hoping to get cheaper heating fuel. Under current law, shipment of LNG from one U.S. port to another requires the vessel be built in the U.S., operate under U.S. flag, and be manned by U.S. licensed officers and merchant mariners. However, currently no U.S. ships meet these requirements, and there are no plans by domestic shipyards to construct any. Without a regulatory change to allow foreign flagged vessels to transport LNG to domestic ports none of Bristol Bay's natural gas reserves would be utilized by American consumers.

There is currently only one export terminal in the U.S. shipping LNG. Based in Cook Inlet, Alaska, 100% of these reserves are shipped abroad to Japan despite shortages in the local and domestic

utilities markets. Thus, hundreds of Alaska coastal residents counting on some benefits from this risky endeavor are likely to be left out of the picture.

Furthermore, the increase of foreign flagged vessels in our pristine fishing grounds is of great concern. Increased traffic by vessels from nations whose safety requirements are almost always less stringent than those in the U.S. is another contributing factor to the risk.

III. Summary

Drilling for a finite resource in Bristol Bay is not worth jeopardizing America's most prolific and sustainable fisheries resource. Every stage from exploration to extraction in the NAB poses substantial risks to disrupting essential fish habitat and the delicate marine ecosystem. There are no conclusive scientific studies that can state otherwise. In the absence of scientific studies gauging the effects of seismic testing and long term excessive noise levels, it would be premature to conclude that we can safely explore and extract in Area 92.

The potential for disaster is exacerbated by the climactic environment, which is one of the harshest and most unforgiving on the planet. The reserves there would not help curtail the immediate energy crisis, but only exacerbate it, and the nation would not see any benefits to the energy crisis by exporting it overseas.

Noise, suspended sediment and toxic waste would completely disrupt the ocean floor and the delicate marine ecosystem. If we are to look to our northern European neighbors who have had fisheries and oil drilling co-exist for years, we will find no solace. Although touted for its successful coexistence of oil and fisheries, Norway has seen a 39% drop in fish stocks since offshore oil began working in the Barents and North Seas. The interconnected nature of the marine ecosystem in Area 92 guarantees that the effects of exploration and oil extraction would spread well beyond the lease sale area and into the entire Bering Sea.

March 24th, 1989 is a grim reminder of our dependence on oil and the monumental catastrophes that can result from our policy choices. We should be working toward leaving these policies in the twentieth century, and focusing our efforts on smarter energy policies for the twenty first century. We have an obligation to our children, to our environment and to our sustainable resources. As a country, it's time to remember we have to lead by example. We have the scientific and engineering prowess to lead in the new fields of renewable energy production. Risking our nation's fish basket for oil reserves would only throw us back to the policies of the past, not propel us into the future. Is there any risk level in the development of oil and gas in the North Aleutian Basin where we could say we would give our nation's most prolific ocean food source in exchange? I don't think so.

Thank you for your time, your consideration, and the opportunity to speak before you. It has been an honor to speak on behalf of fishermen that want to continue the sustainable harvest of seafood in the pristine waters of Bristol Bay Alaska. I am happy to respond to any questions that you may have.

References

- Alaska Marine Conservation Council. "The Impacts of Seismic Surveys on Marine Mammals and Fish." Anchorage, Alaska. Available here: http://www.akmarine.org/our-work/protect-bristol-bay/Impacts_of_Seismic_Surveys_AMCC.pdf
- Alaska Marine Conservation Council. Proposed Lease Sale Area Map. Anchorage, Alaska. Available here: <http://www.akmarine.org/our-work/protect-bristol-bay/map-gallery>
- Bowers, Forrest R., Mike Cavin, Karla Granath, Amy Gilson and Chris Lillo. 2003. "Annual Management Report for the Commercial Shellfish Fisheries of the Bering Sea." Alaska Department of Fish and Game, Dutch Harbor, Alaska. 116 p.
- Brown, Evelyn D. and Mark G. Carls. 1998. Pacific Herring (*Clupea Pallasii*). *Restoration Notebook*, Exxon Valdez Oil Spill Trustee Council. Anchorage, Alaska. Available here: http://www.evostc.state.ak.us/Universal/Documents/Publications/RestorationNotebook/RN_herring.pdf
- Christian, John R., Anne Mathieu, Denis H. Thomson, David White and Robert A. "Buchanan Effect of Seismic Energy on Snow Crab (*Chionoecetes opilio*)." 7 November 2003. Environmental Research Funds Report No.144. Calgary. 106 p. Available here: <http://dsp-psd.pwgsc.gc.ca/Collection/NE23-122-2003E.pdf>
- DFO, 2004. "Potential Impacts of Seismic Energy on Snow Crab." DFO Can. Sci. Advis. Sec.Habitat Status Report 2004/003.
- Engas et al. 1993. "Effects of Seismic Shooting on Catch and Catch-Availability of Cod and Haddock." *Fisken og Havet*, nr. 9, 99. 117. *Friends of Bristol Bay*.
- Exxon Valdez Oil Spill Trustee Council. 1990. *Final Report, Alaska Oil Spill Commission*. State of Alaska. 5-14. Anchorage, Alaska. Available here: www.evostc.state.ak.us/facts/details.cfm
- Exxon Valdez Oil Spill Trustee Council. 1993. Map of the *Exxon Valdez Oil Spill. 1993 State On-Scene Coordinator's Report*. Anchorage, Alaska. Available here: <http://www.evostc.state.ak.us/facts/spillmap.cfm>
- Harrell, Kelly. 2007. "Economic Value of Bristol Bay and Southeastern Bering Sea Fisheries." Alaska Marine Conservation Council. Anchorage, Alaska.
- Lokkeborg,S. and Solda, A.V. 1993. "The Influence of Seismic Exploration with Air Guns on Cod (*Gadus morthua*) Behavior and Catch Rates." *ICES Marine Science Symposium*. 196, pp.62-67
- Popper, A.N. 2003. "Effects of anthropogenic sounds on fishes." *Fisheries* 28:24-31.

- Skalski, John R., Walter H. Pearson and Charles I. Malme. 1992. Effects of Sounds from Geophysical Survey Device on Catch-per-Unit-Effort in a Hook-and-Line Fishery for Rockfish (*Sebastes* spp.) *Canadian Journal of Fisheries and Aquatic Sciences* Vol. 49, pp. 1357-1365. Available here:
http://www.awionline.org/oceans/Noise/IONC/Docs/Skalski_1992.pdf
- Slotte, A., K. Hansen, J. Dalen, and E. Ona. 2004. "Acoustic mapping of pelagic fish distribution and abundance in relation to a seismic shooting area off the Norwegian west coast." *Fisheries Research* 67:143-150.
- Stocker, Michael, et al. "Rigs in the Nation's Fish Basket? What Fishermen should know about Proposed Offshore Drilling in Bristol Bay." Presentation delivered 20 November 2008. *Pacific Marine Expo 2008*.
- USDA. 2008. U.S. & All States Data - Wheat All. *National Agriculture Statistics Service 2008 Census*.
- World Wildlife Fund. 2009. "Lessons Not Learned: 20 Years After the *Exxon Valdez* Disaster." Anchorage, Alaska. Available here: www.worldwildlife.org/bristolbay
- World Wildlife Fund. 2009. North Aleutian Bay Map. *Don't Take the Bait on Offshore Oil & Gas Drilling in Bristol Bay*. Anchorage, Alaska. p. 2. Available here:
<http://www.worldwildlife.org/what/wherewework/arctic/WWFBinaryitem10785.pdf>