

Quotes & Notes on Offshore Oil & Gas Leasing in the North Aleutian Basin Planning Area (Bristol Bay and Southeast Bering Sea)

From the *Final Environmental Impact Statement (FEIS) for the 5-Year Outer Continental Shelf Leasing Program for 2007-2012*

FEIS available online at: http://www.mms.gov/5-year/2007-2012_FEIS.htm

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➤ General Characteristics of the Bristol Bay/Southeastern Bering Sea Region

"Its **broad continental shelf** is one of the **most productive in the world.**" (III-103)

"The general **quality in marine waters** of the Bering Sea is relatively **pristine...**" (III-104)

➤ Fisheries/Subsistence/Economics in Bristol Bay and the Bering Sea

"The most important values found throughout the region are those associated with the ideology of **subsistence and commercial fishing as a means of livelihoods...**" (III-184)

"Abundant and predictable resources of the Bering Sea Subregion have been the **economic and subsistence mainstay of Native cultures** of the region for millennia." (III-196)

"In 1998, almost **50% of all fisheries landed in the United States**- primarily walleye pollock- came from the Bering Sea. **Bristol Bay supports the world's largest sockeye fishery** and the **crab fishery is the largest in the United States.**" (III-196)

"**Fisheries-related jobs** provide about **74% of the wages** in **western Alaska** (Alaska State Chamber of Commerce, 2003)." (III-23)

"In 2002, the fishing industry generated \$46.8 million in taxes in Alaska, second only to the oil industry." (III-23)

➤ Fish & Impacts

"Federal and State waters of the Bering Sea and Aleutian Islands, Alaska (BSAI), support a diverse aquatic community, including the **greatest diversity of fish species for all of the Alaska regions.** This includes at least **382 fish species** comprising 73 families....These waters also support 150 species of crustaceans and mollusks including **high concentrations of crab species** like **red king crab** and opilio Tanner crabs." (III-158)

"Routine OCS exploration, development, and production activities that could affect fish resources in the North Aleutian Basin include **seismic surveying, drilling of wells, offshore and onshore construction activities** (e.g. development of platforms and pipelines), and **releases of permitted operational discharges.**" (IV-180)

"It is **assumed** that **seismic surveys** in the North Aleutian Basin Planning Area would **damage hearing organs of adult and juvenile fishes and kill larvae and eggs** within 1 to 2 m of airgun discharge ports; cover an area of approximately 23 km² around each platform to be constructed; take 14-35 days to complete each survey (not necessarily on concurrent days); and be conducted during the late summer and early fall seasons so that the surveys take place during ice-free periods while reducing conflicts with other users." (IV-180)

"Because up to 6 new OCS production platforms could be placed in the North Aleutian Basin Planning Area, it is assumed that a total area of up to 138 km² could be subjected to seismic surveys during the 2007-2012 program..." (IV-181)

"This analysis assumes that approximately **522 tons of drill cuttings** would be released into the environment **for each exploration well** constructed. **Up to 20 exploration wells** are anticipated, which could **result in the release of up to 10,440 tons of cuttings.**" (IV-181)

"Depositions of sediments could smother more sedentary invertebrates (e.g. clams or scallops) located within a given radius of discharge points." (IV-182)

"Settling of discharge cuttings on the seafloor could smother some prey species, displace some managed groundfish species, and change substrate composition in the area where the cuttings settle." (IV-184)

"Eggs, fry, and small prey occurring or entering the mixing zone during the discharge of muds and cuttings could experience lethal and sublethal effects if they are within 1-2 m of the discharge point and if the volumes of muds and cuttings are released at the rates permitted by the USEPA (500-1,000 bbl/hour)." (IV-182)

"**Pipeline crossings** (onshore) of streams could **affect essential fish habitat (EFH)** for several life stages of managed anadromous **salmon**, including eggs, larvae, juveniles, and adults." (IV-184)

"...a **large spill** could adversely impact **hundreds of millions of eggs and juvenile stages of pelagic species**, including those of anadromous fishes that spawn upstream in tributaries of Bristol Bay." (IV-185)

"Valuable shellfish species, including various crabs and weathervane scallops, could be affected by oil spills that occur when planktonic life stages are present in surface waters." (IV-186)

"...localized areas of shellfish essential fish habitat (EFH) could be affected by leaks from offshore pipelines." (IV-186)

"...contact with some EFH resources from an oil spills would probably be unavoidable." (IV-188)

"Following offshore platform and pipeline construction, there could be some highly localized long-term changes in fish densities and species diversity in the vicinity of platforms and pipelines, due to the attraction of some fish and invertebrate species." (IV-256)

For red king crab, "...significant portions of a year-class could be lost if oil were transported to areas of the benthic environment that were occupied by gravid females." (V-138)

➤ **Marine Mammals & Impacts**

"A total of **23 marine mammal species** occur regularly or sporadically in the North Aleutian Basin Planning Area (Table III-33) and **may be affected** by the proposed action." (IV-133)

"Of these, the **northern right whale, sei whale, fin whale, humpback whale, Steller sea lion**, and the southwest stock of the **northern sea otter** are listed as "**endangered**" or "**threatened**" under the ESA." (III-118)

"**North Pacific right whales** remain the **most highly endangered marine mammal in the world.**" (III-119)

"...**any perturbation** to this small remnant group is likely to affect **much of the North Pacific right whale population (and species).**" (IV-133)

"MMS acknowledges that the potential for population-level effects from vessel collisions is great with the highly endangered North Pacific right whale." (IV-137)

"Northern right whales appear particularly susceptible to vessel collisions." (IV-137)

"**Effects to the North Pacific right whales may be great** should the spill directly impact any individual whales or adversely affect any critical habitat and food sources." (IV-139)

"Marine mammals may be disturbed as a result of overflights of helicopters supporting offshore construction and production activities." (IV-137)

For humpback whales- "Current data demonstrate that the Bering Sea remains an important feeding area, often in shallower nearshore waters." (III-120)

"Concentrations of sea otters have been observed within Nelson Lagoon, Herendeen Bay, Port Moller, and Port Heiden." (III-121)

- Note: This is the area which has been proposed as a transportation corridor for taking oil and gas onshore

"Routine operations occurring near important habitats, such as the **Steller sea lion rookery** at Amak Island or the **Steller sea lion** and **Pacific walrus haulouts** at Walrus Islands, could affect a greater number of individuals and potentially result in **long-term** and **population-level effects** for affected species." (IV-133)

"Spills in nearshore areas could result in the **direct oiling of large numbers of pinnipeds** and **sea otter**, and adversely affect local populations of some of these species (such as the sea otter and fur seals) via direct lethal and sublethal effects...A large spill contacting an active rookery or haulout site could result in **population-level effects** for some species (such as walrus and sea lion)." (IV-139)

"Oil-spill response activities may affect marine mammals through exposure to spill response chemicals (e.g. dispersants or coagulants) and behavioral disturbance during cleanup and restoration operations." (IV-139)

"Clean-up activities near rookeries or haulouts locations (such as Amak and the Walrus Islands) could displace large numbers of individuals for many months, with unknown-population-level effects." (IV-140)

➤ **Seabirds/Waterfowl & Impacts**

"The Bering Sea Subregion holds one of the **world's greatest concentrations of seabird breeding colonies.**" (III-143)

"**Several million individuals** of about **90 waterbird species** as well as various birds of prey and other landbird species occur in or adjacent the Bering Sea Subregion." (III-141)

"About 45 species of seabirds regularly occur in the Bering Sea Subregion." (III-142)

"Substantial percentages of the North American populations of about 22 species of loons/grebes and waterfowl seasonally occur in the Bering Sea Subregion; smaller percentages of ten other species also use Bering Sea habitats." (III-142)

"A large to moderate spill could locally affect a relatively large number of **Steller's eiders** and result in **population-level impacts** for this species." (IV-155)

Note: Steller's eider is listed as endangered.

➤ **Regional Economic, Subsistence, and Cultural Impacts** (Most statements apply to all Alaska OCS)

"**Oil spills** have historically resulted in **significant effects on subsistence resources** and subsistence activities, but **routine operations** could also potentially result in **significant effects.**" (IV-230)

“Social systems in the Aleutians East Borough could potentially be disrupted by OCS development. A large influx of permanent oil and gas industry workers in the communities of Nelson Lagoon and/or Sand Point could have significant impacts on many social systems, including cultural and subsistence practices, local elections, subsistence-use conflicts, education, local government structure, and public access.” (IV-235)

“In the Alaska Region, **habitat destruction** could cause a local disturbance to subsistence resources, which could **threaten the regional economy** and **subsistence way of life.**” (IV-522)

“Short-term changes include a **shift** in land use **from subsistence- based activities to industrial activities** during the life of the proposed action.” (IV-522)

“Increased population, minor gains in revenues, and the consequences of oil spills all contain the potential for **disrupting coastal communities** in the short term.” (IV-523)

“In Alaska, added incentive to shift from subsistence-based economy to a cash-based economy, a reduction in subsistence resources, a decrease in subsistence activities, and other changes brought about by the proposed action could be factors in **long-term consequences for Native social and cultural systems.**” (IV-523)

“Most of the workers will work offshore or onshore in worker enclaves separated from local communities. Most OCS workers will likely commute to work sites from Alaska’s larger population centers or from outside the immediate area. It is assumed that OCS jobs would be available to local populations in the area, but that **rural Alaskan employment in the petroleum industry will remain relatively low.** Particularly during the early stages of exploration and development, it is reasonably foreseeable that in rural Alaska there would be **tens of jobs rather than hundreds** of jobs, and many of them would be short-term and seasonal rather than permanent.” (IV-228)

“The majority of indirect and induced employment will be located in Anchorage and other regional centers.” (IV-228)

➤ **Commercial Fisheries Impacts**

“Some exploration, development, and production activities have a potential to result in space-use conflicts with commercial fishing activities. Commercial fishing vessels could be **excluded from normal fishing grounds** to avoid the potential for gear loss. Such conflicts can sometimes be avoided by conducting seismic surveys during closed fishing periods or seasons. A potential also exists for **loss of gear or access** when floating drilling rigs used for exploration are being moved and during other vessel operations.” (IV-256)

“While compensation for loss or damage attributable to offshore oil and gas operations is available through the Fishermen’s Contingency Fund, the **MMS cannot ensure that such reimbursements would occur for all losses.**” (IV-256)

“Offshore construction of platforms could infringe on commercial fishing activities by excluding commercial fishing from adjacent areas due to safety considerations...some commercial fishing could be excluded from 480 ha (1,186 acres) of surface area within the planning area.” (IV-257)

“Fishing activities could be temporarily excluded from some areas during construction of offshore pipelines. Once pipelines are put into place, they could result in entanglement hazards for some types of fishing gear...bottom trawls, such as those employed by the commercial fishing groundfish industry in the North Aleutian Basin Planning Area, have a potential to become snagged on exposed pipelines.” (IV-257)

“...even localized decreases in stocks of fish could have effects on some commercial fisheries by **reducing catches** or **increasing the amount of effort needed** or the distances that must be traveled to obtain adequate catches.” (IV-258)

“Even if stocks of fishery resources are not reduced as a consequence of a spill, specific **fisheries could be closed** due to **actual or perceived contamination** of fish and shellfish tissues. Such closures could result in **considerable loss of income.**” (IV-258)

"When the motor vessel *Selendang Ayu* ran aground along the northern shore of Unalaska Island in the Aleutian Island chain in December 2004, approximately 8,000 bbl of fuel oil and diesel were released into marine waters. This prompted the closure of approximately 500 km² of State waters in the vicinity of the spill to all commercial fishing for a 9-month period until it was demonstrated that the threat of contaminating gear or fishery resources had subsided." (IV-259)

➤ **Protected Areas & Impacts**

"There are **five National Wildlife Refuges** (NWR's) found in the Bering Sea Subregion of Alaska providing more than 11.7 million ha (29 million acres) of protective habitat for Alaska's fish and wildlife." (III-175)

"...these **refuges** could be **subject to negative effects**, such as habitat degradation from construction and routine operations associated with the development of onshore oil and gas support facilities in adjacent areas." (IV-225)

Potential effects in NWR's include: "**habitat degradation or loss** due to nearshore dredging, construction of access roads, construction and operation of processing and waste facilities, construction and operation of shore bases, and construction of onshore pipelines." (IV-224)

➤ **Terrestrial Mammals**

Terrestrial mammals potentially affected by proposed OCS activities in the Bering Sea Subregion include: "caribou, moose, black bear, and brown bear, as well as numerous smaller mammals such as mink, river otter, wolves, fox, and wolverine." (IV-168)

➤ **Oil Spills**

"The following potential spills have been postulated for waters of the North Aleutian Planning Area under the proposed action: up to **one large condensate spill (i.e. ≥ 1,000 bbl)**; up to **2 spills with volumes between 50 and 999 bbl**; and up to **10 spills with volumes less than 100 bbl**." (IV-115)

"Oil spills occurring in the southern portions of the North Aleutian Basin Planning Area (an area of known and postulated oil and gas systems) would be expected to move northeastward along the Alaska Peninsula at all times of the year." (IV-115)

"In summer, prevailing southerly winds (5 meters per second) would move spilled oil to the northeast into Bristol Bay at 6 km/day. In winter, northerly winds (10 to 15 m/s) would move spilled oil west southwest into the Bering Sea." (IV-115)

"Oil spilled farther offshore on the North Aleutian Shelf would likely be driven by winds northeast into Bristol Bay if spilled during the summer..." (IV-186)

MMS spill estimates are based on historical spill records from the Gulf of Mexico and Pacific OCS, which are used as a proxy for Alaska (IV-29)

"For purposes of analysis, small spills are defined as spills greater than 1 bbl and less than 1,000 bbl... Small spills are further subdivided into two categories: spills greater than 1 bbl and less than 50 bbl, and spills greater than or equal to 50 bbl and less than 1,000 bbl." (IV-129)

"The liquid hydrocarbons expected to be developed in the North Aleutian Basin are expected to be condensate or light crude oil. These liquids spread and evaporate quickly, resulting in less persistence of the spilled oil in the environment than heavier crude." (IV-154)

"However, **lighter crude oils** and **condensates** also tend to be **more acutely toxic to marine organisms**." (IV-185)

"Light crude oil is generally more toxic to biota than heavier oils, and condensate is more toxic than crude oils." (IV-206)

“Vulnerable coastal wetlands sensitive to disturbance **occur along much of the Alaska Peninsula and Bristol Bay coastline.**” (IV-206)

“Because Herendeen Bay is partially protected by Deer Island, oil spills in the bay would be expected to persist for extended periods of time.” (IV-207)

“Oil spilled on the Alaska Peninsula at the pipeline crossing could potentially flow into a nearby stream.” (IV-207)

“Many of the bays and lagoons along the northern side of the Alaska Peninsula support **sensitive habitats** that contain **submerged aquatic vegetation** (e.g. eelgrass) and **nursery areas** for some commercially important invertebrate species. Consequently, oil spills in these areas could be especially detrimental.” (IV-218)

“...a large spill would likely contact some shoreline areas in Bristol Bay...and oil could persist in shoreline sediments for a number of years.” (IV-218)

➤ **Infrastructure & Impacts**

The development scenario below for the North Aleutian Basin Planning Area was developed by MMS and paints a vivid picture of the industrial-scale of activity that could be expected if leasing occurs:

- “4-6 offshore platforms
- up to 20 exploration wells
- up to 200 production wells
- up to 150 miles of offshore pipeline— gas pipeline and condensate/light crude oil pipeline (impacting up to 555 acres of benthic habitat)
- up to 50 miles of new onshore pipeline
- 2 pipeline landfalls
- 1 waste facility
- 1 processing facility
- 1 shore base and a new dock or causeway for service vessels in onshore areas along the coast of the Alaska Peninsula, Unimak Island, or north of the Bristol Bay coast
- 1 or more new access roads may be needed for each new facility and for pipeline maintenance activities” (IV-153)

“**Onshore facility construction** (e.g. pipelines, processing facilities, service bases, etc.) causes definite short-term and long-term changes, with localized **long-term effects on coastal habitats** along onshore pipeline corridors.” (IV-522)

“**Pipelines from four to six new platforms** would likely extend to the Alaska Peninsula at Herendeen Bay.” (IV-203)

“Pipeline installation would include **trench excavation** through **intertidal and shallow subtidal** areas.” (IV-204)

“**Trenching and excavation for pipeline installation** could directly disturb tidal and mud flats, eelgrass beds, marshes, or other coastal habitats (depending on the location of the pipeline route) resulting in **direct habitat losses.**” (IV-204)

➤ **Water Quality**

“**Water quality** would be **degraded** near construction sites by runoff of particulate matter, heavy metals, petroleum products, and chemicals into local streams, estuaries, and bays.” (IV-114)

“For marine waters, drilling muds and cuttings can be disposed in the sea if the facility is located at least 2 nautical miles offshore (40 CFR Part 435)....Drilling muds, cuttings, and produced water generated during well development and production are assumed to be disposed downhole and, this, would not be expected to impact nearby water quality.” (IV-115)

➤ **Geologic/Meteorological Hazards to Oil and Gas Development**

“One of the **world’s most seismically active areas** in terms of both number of events and intensity of energy released...occurs in the Bering Sea subregion...” (III-81)

“Within the North Aleutian Basin Planning Area of the Bering Sea, naturally-occurring processes and other surface and subsurface geologic features could cause seafloor instability that may become **major geologic hazards to oil and gas development.**” (III-81)

- These include sea-ice hazards, volcanic activity, seismicity, seafloor faulting etc. (III-81)

“...the potential for a **large earthquake** in this block poses a **significant threat** to hydrocarbon exploration and production facilities.” (III-83)

“The eastern Bering Sea is covered in winter by **sea ice.**” (III-98)

➤ **General Potential Benefits from 5-Year Program**

“Most **benefits** would be **short-term** and would delay the increase of the Nation’s dependency on oil imports.” (IV-522)

➤ **General Potential Impacts** (Applies to all Alaska OCS)

“The onshore effects of the OCS program and the proposed action will contribute to the continuing **alteration** of nearby coastal areas **from biologically productive** natural environments to **urbanized and industrialized environments.**” (IV-522)