To: National Energy Board. Oct 14. 2013

Regarding Seismic Survey Petition, submitted from Pond Inlet Residents.

Please see attached 7 pages in total to hold our case preventing seismic activity in our waters.

Contact return for resubmission if any documentation or refrences are unclear.

Sincerely, Jen Inuarak of Pond Inlet.

brisksky@hotmail.com

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A change in sperm whale (*Physeter macroephalus*) distribution correlated to seismic surveys in the Gulf of Mexico

J. Acoust. Soc. Am. Volume 96, Issue 5, pp. 3268-3269 (1994); (2 pages)

[1], [2], and [3]
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[2]Oregon State University, Newport, OR 97365
[3]Elk Mountain, WY 82324

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From 7 to 29 June 1993, vessel surveys for sperm whales were conducted in the Gulf of Mexico off the Louisiana coast. Ninety sperm whales were seen in water 600 to 1400 m deep. On four of the first five survey days, whales were found routinely in an area 100 km S.E. of the Mississippi River before a seismic survey operation began (0.092 whales/km). Within the seismic operations area, whale abundance changed significantly to 0.038 whales/km during the first two days and then to 0.0 whales/km for the following five days (p value <0.001). During the first two days of seismic activity, whales were only seen around the periphery of the seismic area. Survey effort for the last 5 days (920 km) and revealed only one group of four animals 61 km S.W. of the seismic survey area and also 56 km N.E. from another active seismic survey. Although the observation of seismic survey activity was serendipitous, it was highly correlated to numbers of sperm whales. This relationship deserves further investigation. If validated, additional efforts will be needed to identify areas used by sperm whales and assure that the effects of simultaneous seismic surveys do not overlap and prevent sperm whales from using important habitat.

KEYWORDS and PACS

Keywords

, , , , , , , , , ,

PACS

Effects of noise on animals and associated behavior, protective mechanisms

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Seismic testing could lead to thousands of marine mammal deaths, environmentalists say

(2)

Written by | By Kirk Moore @KirkMooreAPP
Sep. 17, 2013 |

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WEST LONG BRANCH — Blasting seismic air guns in ocean waters from Cape May to Florida to survey for oil and gas could injure or kill as many as 138,500 marine mammals, according to government estimates.

That calculation was part of an environmental impact statement drafted by the federal Department of Interior on seismic testing in the Atlantic Ocean.

"Seismic testing is the first step toward drilling in the Atlantic," said Nancy Sopko, an advocate for the environmental group Oceana, which hosted a public panel discussion Monday night at Monmouth University.

Oceana, which as a policy opposes expanded offshore drilling, is trying to get President Barack Obama's administration to withhold permits that would allow seismic testing. The Department of Interior has delayed its decision twice already and could finally act in January, Sopka said.

Oil and gas surveys use compressed air gun arrays towed behind ships to profile geologic formations under the sea floor, like supercharged sonar.

"They are almost as loud as explosions," said Rep. Frank Pallone Jr., D-NJ.

The Department of Interior's impact study stated the mammal injuries or mortalities could happen over eight years.

But that report appears to be incomplete because it doesn't consider broader effects on the whole ocean ecosystem, said Jessica Coakley, a fisheries management specialist with the Mid-Atlantic Fishery Management Council.

Air guns would pound the sea floor "every 10 to 12 seconds for hours, days, weeks, even months," Coakley said.

Surveys could be conducted all over the shallow continental shelf "where the depths in many places are less than 50 meters (about 150 feet)," Coakley said. "That makes the entire water column in the lethal range."

One more unknown is the effect that would have on bottom dwelling animals such as scallops and surf clams that are a valuable resource to the region's $535 million commercial seafood industry, she said.

The National Oceanic and Atmospheric Administration has been using 160 decibels as the upper sound level limit that sea life can tolerate, Sopka said.

"But they're coming up with new acoustic thresholds that will drastically lower those guidelines,

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Prohibit Military Sonar and Seismic Testing harming Marine Mammals

2,894 Letters and Emails Sent So Far

We the citizenry of the United States hereby petition the Congress and the President of the United States to prohibit the use of mid frequency sonar as well as seismic testing by the United States Navy and or Scientific research vessels that have been proposed by the US Navy and the National Marine Fisheries Service (NOAA) based on the following:Use of military sonar has been associated with mass whale strandings and deaths in Hawaii, the Bahamas, Greece, Madeira, Vieques, the Canary Islands, Spain, Japan and the American Northwest. But while the U.S. Navy openly acknowledges that its active sonar harms marine mammals, it refuses to comply with laws that limit sonar's use. In 2007, suit was filed against the Navy over its plans to use high-intensity, mid-frequency active sonar in Hawaii waters, including within a humpback whale sanctuary and near the Papahānaumokuākea Marine National Monument. In February 2008, a federal district judge found the Navy in violation of the law and declared that it may not proceed with its plans in Hawaii unless it adheres to measures protecting marine mammals and prepares an environmental impact statement. Most recently, in early 2012 we filed suit with allies against the National Marine Fisheries Service for failing to protect thousands of whales, dolphins, porpoises, seals and sea lions from ocean noise brought by Navy warfare training exercises along the coasts of California, Oregon and Washington.

Other kinds of oceanic noise pollution, such as that caused by seismic surveys — which create the loudest noises detectable in the ocean — also have a significant effect on whales. In 2002, two dead beaked whales were found stranded in the Gulf of California following underwater airgun blasts fired by a National Science Foundation-owned research vessel. As a result of the previously filing suit ,an injunction was granted shutting down the seismic surveys.

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e360 digest

The proposed use of seismic air guns in the search for offshore oil and gas reserves along the U.S. East Coast annually and disrupt the vital activities of other species, a new study says. The seismic testing, in which guns filled with compressed air are fired repeatedly over deep-sea target areas to provide energy companies an image of the deposits below, would threaten marine species of all sizes, from tiny fish eggs to large whales, according to . The group said that the powerful air gun blasts, which it describes as "100,000 times more intense than a jet engine," could disturb the breathing, feeding, and mating habits for dolphins and whales and cause injury or death to endangered species such as the North Atlantic right whale. The analysis comes as the U.S. Interior Department's Bureau of Ocean Energy Management completes an environmental study on the potential effects of seismic activities from Delaware to Florida. Oil industry officials point to other research that shows seismic testing is unlikely to threaten marine mammals.

The Atlantic Canyons off the Northeastern U.S. plunge as deep as 15,000 feet and harbor diverse and fragile marine ecosystems. Now, the Obama administration's plans to consider offshore oil and gas exploration in the canyons is troubling conservationists.

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Impacts of Seismic Surveys on Marine Mammals and Fish

What are seismic surveys?

Seismic surveys are used by the offshore oil and gas industry to help determine the location of oil and gas deposits beneath the seafloor. These surveys utilize large, specialized ships which tow an array of powerful air guns that generate sound waves by firing off explosive blasts of air. The sound waves are reflected off the seafloor and create a picture of underwater geological formations.

A typical seismic survey lasts 2-3 weeks and covers a range of about 300-600 miles. The intensity of sound waves produced by the firing of seismic air guns can reach up to 250 decibels (dB) near the source and can be as high as 117 dB over 20 miles away. The sound intensity produced by a jackhammer is around 120 dB, which can damage human ears in as little as 15 seconds.

What impacts can seismic surveys have on marine mammals?

Unlike humans and other terrestrial animals, marine mammals rely on sound instead of sight as their primary sense. Dolphins, whales and seals utilize their sense of hearing to locate prey, avoid predators, choose migration routes, and to communicate across long distances. The noise associated with seismic surveys can affect the ability of these animals to detect natural underwater sounds, thereby disrupting these critical activities.

Numerous scientific studies have solidified what Eskimo subsistence hunters have known for years: that whales avoid expansive areas where seismic surveys are being conducted. One recent study showed that fall-migrating bowhead whales in the Beaufort Sea were displaced from an area within 12 miles of the seismic source and began to show avoidance behavior up to 21 miles away. Researchers have also observed signs of physical stress such as startle responses in humpback whales while seismic surveys were being conducted many miles away (see Figure 1 below).

Scientists believe that pods of whales that include calves are at serious risk from seismic activities due to their need to utilize critical habitats for feeding and resting. If seismic surveys continually displace whales from these important areas, population-level consequences may result. Dr. Barret-Lennard, Senior Marine Mammal Researcher at the Vancouver Marine Science Center, has asserted that seismic exploration is one of the two greatest threats to whales and dolphins.[1]

What impacts can seismic surveys have on fish?

The powerful sound waves generated by seismic surveys can have a variety of harmful effects on fish. Within close range, seismic surveys have been found to kill adult fish as well as larvae and fish eggs. Scientific studies have also shown that air gun blasts can cause a variety of sublethal impacts on fish such as damaging orientation systems and reducing their ability to find food. Researchers have noted disturbances in the migration routes of salmon and other anadromous species as a result of seismic operations.

Seismic surveys can cause physical damage to fish ears and other tissues and organs such as swim bladders. Although such effects may not kill fish immediately, they may lead to reduced fitness, which increases their susceptibility to predation and decreases their ability to carry out important life processes. Furthermore, if important prey species in the food web such as squid and zooplankton are harmed by seismic testing, the fish dependent on these creatures may also be negatively affected.

Proponents of offshore oil and gas production often argue that overall impacts of seismic surveys on fish are negligible. However, Stanislav Patin, an international expert on the environmental impacts of offshore oil and gas development, has warned that "…there seems to be no reason for the optimism that is sometimes expressed regarding the ecological safety of seismic surveys and their harmlessness to fish resources."[2]

(over please)

How do seismic surveys impact fishing efforts?

Seismic surveys not only threaten commercial and subsistence fishing by harming fish resources, but also by interfering with fishing operations and dramatically affecting catch rates. Seismic ships tow streamers that can be miles long. These can get tangled up with crab pots, set nets and trawl nets causing damage and decreasing crucial fishing time. The best time to conduct seismic surveys in Arctic environments is during the summer, which is also prime season for many Alaskan fisheries. As a result, seismic survey operations can end up competing with fishing for time and space on the water.

Even if these kinds of conflicts can be avoided, several studies have shown that seismic operations have greatly reduced catches of fish around areas where air guns were being fired. These studies have demonstrated reduced catches over 20 miles away from the source with catch reductions continuing five days after the testing was complete (See Table 1 below). Researchers believe these catch reductions are a result of altered fish behavior due to seismic operations which cause them to be less likely to take hooks and/or to move down and away from the seismic firing.

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 (*Gadus morhua*)	Trawl	250 decibels (dB)	46-69% lasting at least 5 days	Engas et al. 1993
Atlantic cod (*Gadus morhua*)	Longline	250 dB	17-45% lasting at least 5 days	Engas et al. 1993
Atlantic cod (*Gadus morhua*)	Longline	Undetermined, 9.32 miles from source	55-79 % lasting at least 24 hours	Lokkeborg and Soldal, 1993
Haddock (*Melanogrammus aeglefinus*)	Trawl	250 dB	70-72% lasting at least 5 days	Engas et al. 1993
Haddock (*Melanogrammus aeglefinus*)	Longline	250 dB	49-73% lasting at least 5 days	Engas et al. 1993
Rockfish (*Sebastes* spp.)	Longline	223 dB	52%- effect period not determined	Skalski et al., 1992

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For more information, please contact AMCC at (907) 277-5357;

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Seismic Testing Could Kill Thousands of Marine Mammals, Environmentalists Say

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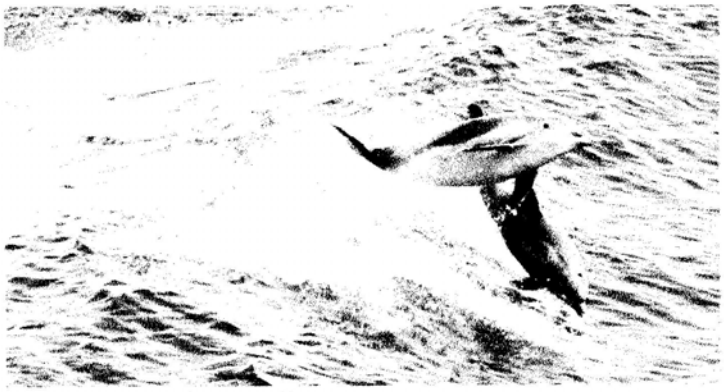

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"But they're coming up with new acoustic thresholds that will drastically lower those guidelines, down to 120 decibels, from what we hear," she said.

Source: