

**NRDC's COMMENTS ON SEISMIC EFFECTS ON FISH ARE BASED ON  
OBSOLETE DATA, AND NRDC SHOULD DEFER TO  
NOAA/NMFS' CONCLUSIONS ABOUT SEISMIC AND FISH**

The Council on Environmental Quality has reviewed and reported on the Bureau of Ocean Energy Management, Regulation and Enforcement's compliance with NEPA. CEQ's review focuses on BOEM's NEPA practices and procedures that are relevant to Outer Continental Shelf oil and gas leasing.<sup>1</sup>

The Natural Resources Defense Council's comments to CEQ's ("NRDC's Comments") recommended, *inter alia*, that "CEQ address the following substantive issues in its 30-day review...acoustic impacts on marine wildlife and fisheries."<sup>2</sup> NRDC further commented that

"Airgun surveys also have serious consequences for the health of fisheries, as they have been shown to dramatically depress catch rates of various commercial species (by 40-80%) over large areas of ocean,<sup>8</sup> leading fishermen in some parts of the world to seek industry compensation for their losses. The cumulative effects of seismic surveys combined with other noise-producing OCS activity, such as drilling, could both affect vital rates in populations of marine mammals and adversely affect certain fisheries. Given the significance of the potential impacts, uncertainties in the emerging science, and the difficulty of detecting demographic impacts in many marine species, MMS should be required to consider a worse-case scenario when evaluating the potential for adverse population-level effects."

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"<sup>8</sup> Engås, A., Løkkeborg, S., Ona, E., and Soldal, A.V., Effects of seismic shooting on local abundance and catch rates of cod (*Gadus morhua*) and haddock (*Melanogrammus aeglefinus*), *Canadian Journal of Fisheries and Aquatic Sciences* 53: 2238-2249 (1996); see also Skalski, J.R., Pearson, W.H., and Malme, C.I., Effects of sounds from a geophysical survey device on catch-per-unit-effort in a hook-and-line fishery for rockfish (*Sebastes ssp.*), *Canadian Journal of Fisheries and Aquatic Sciences* 49: 1357-1365 (1992)."

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"Seismic exploration as well as drilling activities can adversely affect essential fish habitat."<sup>3</sup>

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<sup>1</sup> CEQ's report is available online at

[http://ceq.hss.doe.gov/current\\_developments/docs/CEQ\\_Report\\_Reviewing\\_MMS\\_OCS\\_NEPA\\_Implementation.pdf](http://ceq.hss.doe.gov/current_developments/docs/CEQ_Report_Reviewing_MMS_OCS_NEPA_Implementation.pdf)

<sup>2</sup> NRDC Comments to CEQ, page 3, available online at

<http://www.whitehouse.gov/sites/default/files/webform/CEQ%20MMS%20Review%20comments%203Jun10.pdf>

The CEQ report does not follow the recommendations in NRDC's comments. This is an appropriate response by CEQ for several reasons. One is the fact that NRDC relies on obsolete data and fails to site the best available science evidence, which does not support NRDC's concern about seismic effects on fish.

NRDC's fish comments cite no data or report later than 1996. There are many relevant studies since then. For example, in February 2010, the Norwegian Institute of Marine Research published a report on the Institute's study of the effects of oil and gas seismic surveys on fish in a study area off Vesterålen, Norway. This area is commercially fished. The study was financed by the Norwegian Petroleum Directorate, and it is one of the largest, if not the largest, research projects ever conducted on seismic and fish.<sup>4</sup>

One commentator described the results of the Norwegian study as follows:

"The details we leave to those who are particularly interested. The overall conclusion, however, is that the research programme failed to prove that seismic acquisition has a devastating effect on fish and fishing, contrary to statements often made by fishermen, and their allies in 'environmentally friendly' organizations, whose main goal is to make oil and gas exploration more difficult. It is in fact no secret that the reason why Norwegian fishermen make a lot of noise (!) about seismic acquisition is to get compensation for reduced catchments."<sup>5</sup>

The Institute's own summary of its findings follows:

#### "Findings

Our investigation into the impact of the seismic activities to the fisheries revealed the following:

- Gillnet catch rates of Greenland halibut and redfish were higher during and after the seismic survey than before it.

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<sup>3</sup> NRDC Comments to CEQ, page 7 & footnote 8; page 8.

<sup>4</sup> A copy of this report is available online at [http://www.npd.no/Global/Norsk/1%20-%20Aktuelt/Nyheter/%5bPDF-vedlegg%5d/rapport\\_seismikk/FH%202-2010.pdf](http://www.npd.no/Global/Norsk/1%20-%20Aktuelt/Nyheter/%5bPDF-vedlegg%5d/rapport_seismikk/FH%202-2010.pdf)

<sup>5</sup> **Shooting Seismic Does Not Kill Fish**, Halfdan Carstens, available online at <http://webcache.googleusercontent.com/search?q=cache:EARfkoDuaRwJ:www.geoexpro.com/edutorials/shootingseismic/+seismic+fish&cd=7&hl=en&ct=clnk&gl=us>

- Longline catch rates of Greenland halibut fell during the seismic survey, but rose afterwards.
- Saithe catch rates tended to decrease during and after the seismic survey, but the differences were not statistically significant.
- By-catches of ling in redfish and saithe gillnets tended to increase immediately after the seismic activities commenced, before decreasing after a few days. After the seismic survey was concluded, catch rates returned to roughly the same level as prior to the seismic period.
- Longline catch rates of haddock tended to decrease towards the end of the seismic shooting, when the seismic vessel came closer to the haddock longlines. At its closest, the seismic vessel was within a nautical mile of the haddock longlines.”<sup>6</sup>

These findings do not support NRDCs alarmist comments about seismic and fish.

In light of this and other recent studies, NOAA/NMFS have concluded that oil and gas seismic airguns aren't likely to any significant adverse effects on fish. In granting Statoil Inc.'s application for an Incidental Harassment Authorization under the Marine Mammal Protection Act, NOAA/NMFS stated:

“NMFS' proposed action (i.e., issuing an IHA to Statoil) would not cause substantial damage to the ocean and coastal habitats. Relatively short-term exposure to seismic sounds (approximately 60 consecutive days for Statoil's seismic survey, not including weather delays) within a limited area is not likely to have a significant impact on the marine environment. To date, fish mortalities associated with seismic operations are thought to be slight. Behavioral changes in fish associated with sound exposures are expected to be minor (e.g., temporary abandonment of the ensonified area). Only a small portion (less than 0.089 percent of the Chukchi Sea) of the available foraging habitat would be subjected to sound pulses with received levels at or above 160 dB re 1  $\mu$ Pa at any given time. Therefore, impacts, if they were to occur, would add an incremental degree of adverse impacts to fish resources, but these impacts would not be significant.”

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“Little or no mortality to fish and/or invertebrates is anticipated. The Beaufort and Chukchi Seas open-water marine survey program is predicted to have minor physical effects on the

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<sup>6</sup> Institute of Marine Research document available online at [http://www.imr.no/forskning/prosjekter/seismikk\\_gav\\_bade\\_ekte\\_og\\_reduserte\\_fiskefangster/en](http://www.imr.no/forskning/prosjekter/seismikk_gav_bade_ekte_og_reduserte_fiskefangster/en)

various life stages of fish and invertebrates. Though these effects do not require authorization under the IHA, the effects on these features were considered with respect to consideration of effects to marine mammals and their habitats, and NMFS finds that these effects from the survey itself on fish and invertebrates are not anticipated to have a substantial effect on biodiversity and/or ecosystem function within the survey area.”<sup>7</sup>

NRDC’s Comments repeatedly urge CEQ to promulgate regulations and to seek legislation that requires BOEM to consult with and defer to NOAA/NMFS during BOEM’s NEPA analysis of seismic impacts. For example,

“[CEQ should] Require through regulation that [BOEM]prepare programmatic and project-specific NEPA reviews on the acoustic impacts of OCS activities on marine wildlife, to consider a ‘worse-case’ scenario for acoustic impacts on wildlife populations, and to consult with NOAA on both its impact methodology and alternatives analysis.”

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“[CEQ should]Strengthen NOAA’s role in EIS preparation beyond the status of a co-operating agency, such as by adopting regulations requiring [BOEM] to justify, in the Federal Register, its derogation from any recommendations made by its sister agency; and suggest that Congress amend OCSLA to accord NOAA further deference, particularly at the planning and leasing stages of OCS review.”<sup>8</sup>

Given NRDC’s deference to NOAA/NMFS on seismic, and given NOAA/NMFS’ decisions on the Statoil and other IHAs, we assume that NRDC’s Comments about seismic and fish are now moot.

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<sup>7</sup>NOAA/ NMFS’ Finding of No Significant Impact for the Issuance of an Incidental Harassment Authorization to Statoil USA E&P Inc. to Take Marine Mammals by Harassment Incidental to Conducting Open Water Marine Seismic Surveys in the Chukchi Sea, Alaska, pages 1, 2, available online at [http://www.nmfs.noaa.gov/pr/pdfs/permits/statoil\\_fonsi\\_singed.pdf](http://www.nmfs.noaa.gov/pr/pdfs/permits/statoil_fonsi_singed.pdf)

<sup>8</sup> NRDC Comments, pages 2-3, <http://www.whitehouse.gov/sites/default/files/webform/CEQ%20MMS%20Review%20comments%203Jun10.pdf> .